



relax  
 classic quadro indirect  
 downlight tubus vario futuro accent avant  
 modul ccs plastic wall emergency simple prestige  
 tornado relax classic quadro indirect downlight tubu  
 vario futuro accent avant modul ccs plastic wall emerge  
 simple prestige tornado relax classic quadro indirect dov  
 tubus vario futuro accent avant modul ccs plastic wall em  
 simple prestige tornado relax classic quadro indirect downlight tu  
 futuro accent avant modul ccs plastic wall emergency simp  
 tornado relax classic quadro indirect downlight tubus vario futuro a  
 modul ccs plastic wall emergency simple prestige tornado relax cl  
 indirect downlight tubus vario futuro accent avant modul ccs  
 emergency simple prestige tornado relax classic quadro indirect do  
 vario futuro accent avant modul ccs plastic wall emergency sim  
 tornado relax classic quadro indirec downlight tubus vario futuro  
 modul ccs plastic wall emergency simple prestige tornado relax cl  
 indirect downlight tubus vario futuro accent avant modul ccs  
 emergency simple prestige tornado relax classic quadro indirec  
 tubus vario futuro accent avant modul ccs plastic wall emerge  
 prestige tornado relax classic quadro indirect downlight tub  
 futuro accent avant modul ccs plastic wall emergency  
 prestige tornado relax classic quadro indirect downlight  
 vario futuro accent avant modul ccs plastic wall emerge  
 simple prestige tornado relax classic quadro indirec  
 downlight tubus vario futuro accent avant  
 modul ccs plastic wall emergency  
 simple prestige tornado





# RELAX V

# RELAX

# CLASSIC ASN V

# CLASSIC ASN V A

# CLASSIC ASR

# CLASSIC ASN

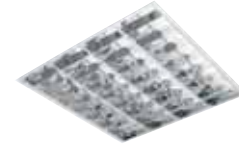
**18** PAR-V A1



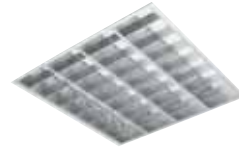
PAR-V A2



**30** PAR



PAR MAT



PRISMA



OPAL



**42** PAR-V



PAR MAT-V



**48** PAR-V A1



PAR-V A2



**50** ASR



**new**

**58** PAR



PAR MAT

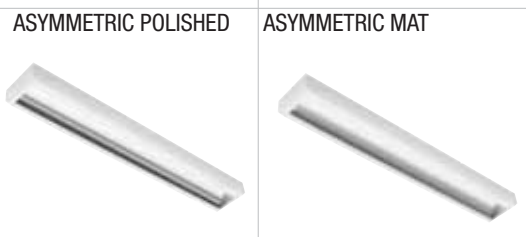
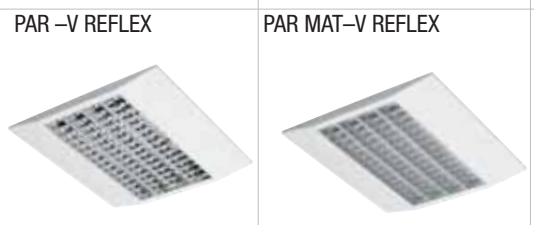
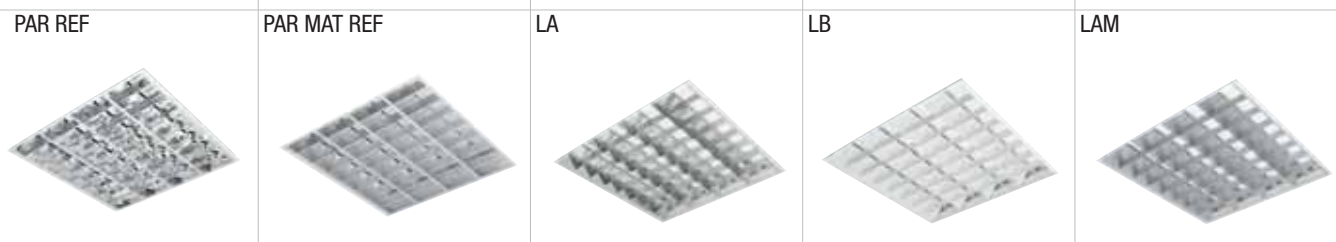


SLIM LA



SLIM LAM





# CLASSIC AS

**68** PAR



PAR MAT



# QUADRO

**84** PAR



PAR-MAT



# INDIRECT

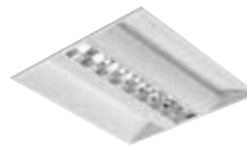
**92** C



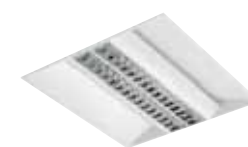
C-P



C PAR



C-D PAR-V **new**



AS C



AS C-P



# DOWNLIGHT PRO

**132** 211 POLISHED



211 MAT



213 POLISHED



213 MAT



# DOWNLIGHT

**140** 201/211/221 POLISHED



201/211 MAT







# DOWNLIGHT

**152**

204/214/224

205/215/225



# DOWNLIGHT HID

**160**

PRO

251

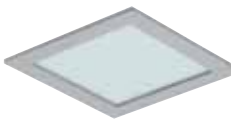
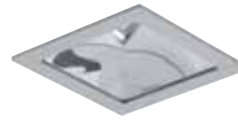


# DOWNLIGHT S

**168**

211/221 POLISHED

212/222 POLISHED



# TUBUS

**188**

291

292



# TUBUS PRO

**204**

PRO

PRO PENDANT



**210**

## ACCESSORIES DOWNLIGHT/TUBUS



# VARIO

**224**

TRACK EXE

TRACK 13



# VARIO MINI/MODUL MINI

**234**

MINI 1

**new**

MINI 2

**new**



242



MAXI 271



MAXI 273



252 FLEXI



253 FLEXI



254 FLEXI



214/224 CROSS LOUVRE



293



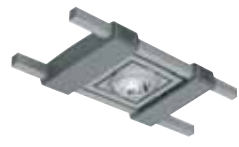
294



TRACK 12



TRACK 11



MINI 3

**new**



MODUL MINI 2

**new**

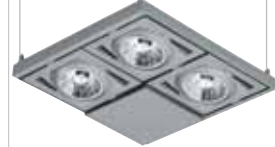


MODUL MINI 4

**new**



SQUARE





# FUTURO

**244** 22



14



# AVANT

**254** PAR



PAR MAT



# MODUL

**268** ESO



ESO G



LAMBDA



QUARK



**new**

# LINE

**322** EN



LAMBDA



**new**

# PRESTIGE

**334**



# ACCENT

**370** X1



X2



# CCS T5

**384**



13



12



11



PAR



OPAL



AL SYMMETRIC



AL ASYMMETRIC



EXE/EXE TWIN



GAMMA



DA



**new**

EN PAR



EN PRISMA



RENDO



**new**

KA



AAZ



AA



AVANT



X3



X4



A5



# PLASTIC

**394** CHUBBY



PLAST-M



PLAST-3



PLAST-4



# EMERGENCY

**434** 2700



2710



2770



2780



3000



# SIMPLE

**454** TS



TSM-W



USM-AL



PS



# TORNADO


























**468** PC



PX.ABS





PLAST-P 	PLAST-C 	PLAST-D 	PLAST-H 	<b>new</b> PLAST-1 
PLAST-2 	FORWALL 10 	FORWALL 20 	FORWALL 30 	
2720 	2730 	2740 	2750 	2760 
2810 	2820 	2830 	2840 	2850 
TSM-AL 	WS 	WS-T 	US 	USM-W 
PSM-W 	PSM-AL 			
STEEL 	<b>new</b>			

TECHNICAL PART

**494**

**496**

**SUSPENSIONS**

**508**

LIGHTING CONTROL

**526**

GENERAL TERMS  
& CONDITIONS  
OF SALE

**528**

SALES ORGANIZATION






# SYMBOLS

12 V

Napätie

Lamp Voltage

Lamp Elektrische Spannung

220 V  
50 Hz

Napätie

Lamp Voltage

Lamp Elektrische Spannung

230 V  
50 Hz

Napätie

Lamp Voltage

Lamp Elektrische Spannung

240 V  
50 Hz

Napätie

Lamp Voltage

Lamp Elektrische Spannung

220-240V  
50-60Hz

Napätie

Lamp Voltage

Lamp Elektrische Spannung

T5  
G5

Svetelný zdroj T5, Päťica G5

Lamp T5, Lampholder G5

Lampen T5, Lampenhalter G5

T8  
G13

Svetelný zdroj T8, Päťica G13

Lamp T8, Lampholder G13

Lampen T8, Lampenhalter G13

TC-S  
G23

Svetelný zdroj TC-S, Päťica G23

Lamp TC-S, Lampholder G23

Lampen TC-S, Lampenhalter G23

TC-SE  
2G7

Svetelný zdroj TC-SE, Päťica 2G7

Lamp TC-SE, Lampholder 2G7

Lampen TC-SE, Lampenhalter 2G7

TC-L  
2G11

Svetelný zdroj TC-L, Päťica 2G11

Lamp TC-L, Lampholder 2G11

Lampen TC-L, Lampenhalter 2G11

TC-D  
G24d

Svetelný zdroj TC-D, Päťica G24d

Lamp TC-D, Lampholder G24d

Lampen TC-D, Lampenhalter G24d

TC-DEL  
G24q

Svetelný zdroj TC-DEL, Päťica G24q

Lamp TC-DEL, Lampholder G24q

Lampen TC-DEL, Lampenhalter G24q

TC-T  
GX24d

Svetelný zdroj TC-T, Päťica GX24d

Lamp TC-T, Lampholder GX24d

Lampen TC-T, Lampenhalter GX24d

TC-TEL  
GX24q

Svetelný zdroj TC-TEL, Päťica GX24q

Lamp TC-TEL, Lampholder GX24q

Lampen TC-TEL, Lampenhalter GX24q

T-R  
G10q

Svetelný zdroj T-R, Päťica G10q

Lamp T-R, Lampholder G10q

Lampen T-R, Lampenhalter G10q

T-R  
2GX13

Svetelný zdroj T-R, Päťica 2GX13

Lamp T-R, Lampholder 2GX13

Lampen T-R, Lampenhalter 2GX13

TC-DD  
GR10q

Svetelný zdroj TC-DD, Päťica G10q

Lamp TC-DD, Lampholder G10q

Lampen TC-DD, Lampenhalter G10q

TC-DD  
GR8

Svetelný zdroj TC-DD, Päťica GR8

Lamp TC-DD, Lampholder GR8

Lampen TC-DD, Lampenhalter GR8

HI  
E27

Svetelný zdroj HI, Päťica E27

Lamp HI, Lampholder E27

Lampen HI, Lampenhalter E27

HI  
E40

Svetelný zdroj HI, Päťica E40

Lamp HI, Lampholder E40

Lampen HI, Lampenhalter E40

HS  
E27

Svetelný zdroj HS, Päťica E27

Lamp HS, Lampholder E27

Lampen HS, Lampenhalter E27

HS  
E40

Svetelný zdroj HS, Päťica E40

Lamp HS, Lampholder E40

Lampen HS, Lampenhalter E40

HI  
RX7s

Svetelný zdroj HI, Päťica RX7s

Lamp HI, Lampholder RX7s

Lampen HI, Lampenhalter RX7s

HS  
RX7s

Svetelný zdroj HS, Päťica RX7s

Lamp HS, Lampholder RX7s

Lampen HS, Lampenhalter RX7s

HI  
G12

Svetelný zdroj HI, Päťica G12

Lamp HI, Lampholder G12

Lampen HI, Lampenhalter G12

QR111  
G53

Svetelný zdroj QR111, Päťica G53

Lamp QR111, Lampholder G53

Lampen QR111, Lampenhalter G53

A60  
E27

Svetelný zdroj A60, Päťica E27

Lamp A60, Lampholder E27

Lampen A60, Lampenhalter E27



Svetelný zdroj IT, Päťica E27

Lamp IT, Lampholder E27

Lampen IT, Lampenhalter E27



Svetelný zdroj TC-F, Päťica 2G10

Lamp TC-F, Lampholder 2G10

Lampen TC-F, Lampenhalter 2G10



Svetelný zdroj ENDURA

Lamp ENDURA

Lampen ENDURA



Tlmivka

Magnetic ballast

Magnetische Vorschaltgerät



Tlmivka, trieda B2

Magnetic ballast, class B2

Magnetische Vorschaltgerät, Klasse B2



Tlmivka, trieda B1

Magnetic ballast, class B1

Magnetische Vorschaltgerät, Klasse B1



Elektronický predradník

Electronic ballast

Elektronische Vorschaltgerät



Elektronický predradník, trieda A2

Electronic ballast, class A2

Elektronische Vorschaltgerät, Klasse A2



Stmievateľný elektronický predradník

Dimmable electronic ballast

Elektronische Dimmer - Vorschaltgerät



Stmievateľný elektronický predradník - DALI

Dimmable electronic ballast - DALI

Elektronische Dimmer - Vorschaltgerät - DALI



Magnetický transformátor

Magnetic transformer

Magnetische Transformator



Elektronický transformátor

Electronic transformer

Elektronische Transformator



Stmievateľný transformátor

Dimmable electronic transformer

Elektronische Dimmer - Transformator



Stmievateľný transformátor - DALI

Dimmable electronic transformer - DALI

Elektronische Dimmer - Transformator - DALI



Núdzová jednotka

Emergency unit

Notlicht-Ausführung



Svietidlo je možné montovať na normálne horľavý povrch

Fixture which can be installed on normally flammable surfaces

Haltenrung für Montage an normal entflammaren Oberflächen

Svietidlá spĺňajúce EN 60598-2-24



Luminaire fulfil to EN 60598-2-24

Leuchte erfüllt EN 60598-2-24



Svietidlo triedy III

Class III luminaire

Klasse III Leuchte



Ochrana proti mechanickým nárazom

Impact resistance

Schutzarten gegen äussere mechanische Beanspruchungen

Krytie IP XX



Protection degree IP XX

Schutzart IP XX





# RELAX

## RELAX

**Svietidlá Relax predstavujú ucelený rad vstavaných žiarivkových svietidiel vhodných do stropov s viditeľnými T-profilmi (600x600mm a 620x620mm) a do sadrokartónových podhládov.**

### KONŠTRUKCIA

**Teleso svietidla:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela, lesklá). Spodný plech svietidla sa vyrába v plnom (L1) alebo perforovanom (L2) prevedení.

**Mriežky:** LA, LAM, LB, PAR, PAR MAT, PAR-V, PAR MAT-V

**Difúzory:** vyrobené v opálovom (PMMA) alebo v prizmatickom (PS) prevedení. Obidve varianty môžu byť na želanie z polykarbonátu.

**Reflektor:** pre verzie s parabolickou mriežkou na požiadanie možný prídavný vrchný reflektor (verzia REF), v ponuke aj asymetrický reflektor

Optický systém je uchytený pomocou štyroch pružín, ktoré umožňujú beznástrojovú výmenu svetelných zdrojov.

Bližší popis jednotlivých typov optiky je uvedený na stranách 76-79, v kapitole OPTICS.

**Relax LG:** dekoratívne vyhotovenie spodného plechu svietidla s mierne spusteným okrajom, cez ktorý uniká časť svetla smerom na strop. Pre lepší efekt je perforovaný okraj svietidla prekrytý prizmatickým difúzorom.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm), T8 (26 mm), kompaktné žiarivky TC-L (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- svietidlo je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

### PRÍSLUŠENSTVO

- držiaky umožňujúce montáž do sadrokartónových podhládov (automaticky pre verziu PB)
- konektory umožňujúce rýchle elektrické pripojenie: 3-pólové konektory Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A (na požiadanie konektory ISODOM, 5-pólové konektory Wieland gesis GST 18i5, Wago Winsta 770)
- poistné lanko zamedzujúce úplnému vypadnutiu svietidla z podhládu



## RELAX

**The Relax range of built-in lighting fixtures is suitable for mounting into T-bar ceiling grids (600 x 600 mm and 620 x 620 mm) and into plasterboard ceilings.**

### CONSTRUCTION

**Housing:** sheet steel, electrostatic powder coat finish – basic shade RAL 9003 (signal white, glossy). Bottom sheet can be delivered in two variants: solid (L1) and perforated (L2).

**Louvers:** LA, LAM, LB, PAR, PAR MAT, PAR-V, PAR MAT-V

**Diffuser:** made of PMMA in opal or prismatic (PS) finish. As an option, both types can be made of polycarbonate.

**Reflector:** additional top reflector (REF version) on request for parabolic louver versions, asymmetric reflector also available

Optical system is held by four clamping springs that allow easy lamp replacement.

Further description of individual optic types is listed on pages 76-79, in section OPTICS.

**Relax LG:** decorative modification of bottom sheet of the luminaire with softly damped edges, through them some fraction of light is going on the ceiling. For better effect is perforated edge of the luminaire covered with prismatic diffuser.

### WIRING

**Lighting fixtures can be equipped with:**

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, light fixtures are standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signals)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm), T8 (26 mm), compact fluorescent lamps TC-L (lamps must be ordered separately)
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three or five pole terminal allows connecting conductors up to 2.5 mm<sup>2</sup> cross-section
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request

### ACCESSORIES

- accessories for easy mounting of lighting fixtures into plasterboard ceilings (automatically for PB version)
- connectors for fast electrical connection: 3-pole connectors Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A (on request: connectors ISODOM, 5-pole connectors Wieland gesis GST 18i5, Wago Winsta 770)
- a safety wire to prevent the light fixture from falling out of the lower ceiling

## RELAX

**Die Relax-Leuchten stellen eine komplexe Reihe von eingebauten Leuchtstofflampen dar, die für die Decken mit sichtbaren T-Profilen (600x600mm und 620x620mm) und in die Gipskartonuntersichten geeignet sind.**

### KONSTRUKTION

**Leuchtenkörper:** Stahlblech, Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe - Grundton RAL 9003 (Signalweiß, glänzend). Das Unterblech der Leuchte wird in einer vollen (L1) oder perforierten Ausführung (L2) hergestellt.

**Raster:** LA, LAM, LB, PAR, PAR MAT, PAR-V, PAR MAT-V

**Diffusoren:** in einer Opalausführung (PMMA) oder einer prismatischen Ausführung (PS) hergestellt. Beide Varianten können wunschgemäß aus Polykarbonat sein.

**Reflektor:** für Ausführungen mit einem parabolischen Raster ist ein zusätzlicher Oberreflektor (REF-Variante) wunschgemäß möglich, im Angebot ist auch ein assymetrischer Reflektor

Das optische System ist mit vier Federn befestigt, die einen Lichtquellenaustausch ohne Werkzeug ermöglichen.

Nähere Beschreibung von einzelnen Optiktypen ist an Seiten 76-79 in OPTICS Anlage angeführt.

**Relax LG:** eine dekorative Ausführung des Unterblechs der Leuchte mit einem mäßig gesenkten Rand, durch den ein Teil des Lichtes deckenwärts strömt. Für einen besseren Effekt ist der Lochrand der Leuchte mit einem prismatischen Diffusor verdeckt.

### ELEKTRISCHE AUSRÜSTUNG

**Die Leuchten können wie folgt ausgerüstet sein:**

- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, Klasse EEI=B1 auf Wunsch, die Leuchten sind standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

**Andere Komponenten:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm), T8 (26 mm), kompakte Leuchtstofflampen TC-L (die Lichtquellen sind extra zu bestellen)
- Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Leuchte können auf Wunsch mit Noteinheiten mit Autonombetrieb von 1 oder 3 Stunden ausgerüstet werden

### ZUBEHÖR

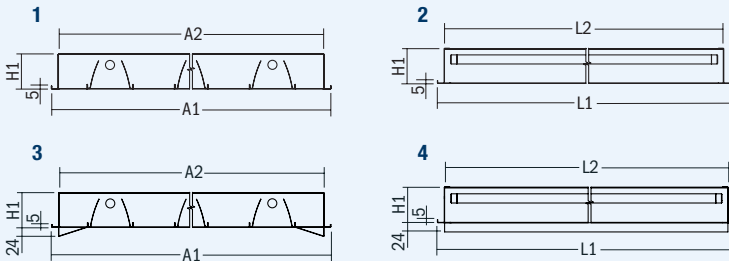
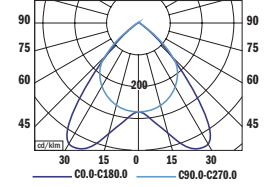
- Halter, die den Einbau in die Gipskartonuntersichten ermöglichen (automatisch für die PB-Variante)
- Verbindungsstecker für schnellen elektrischen Anschluß: dreipolige Verbindungsstecker Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A (Verbindungsstecker ISODOM, 5-polige Verbindungsstecker Wieland gesis GST 18i5, Wago Winsta 770 auf Wunsch)
- Sicherungslitze, die den völligen Ausfällen der Leuchte aus der Untersicht verhindert

# RELAX

## PV/PB T5 PAR-V/PAR MAT-V/PAR-V REFLEX/PAR MAT-V REFLEX A1/A2/A3/A4/A5/A9



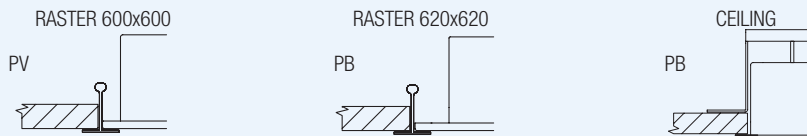
RELAX T5 PAR-V A1 4x14W



	OPTIC				DECOR		POWER	LAMP	PICTURE	DIMENSIONS				
	PAR-V	PAR-MAT-V	PAR-V REF	PAR-MAT-V REF	L1	L2				A1	A2	L1	L2	H1
Relax PV T5 PAR-V A1	•	•	•	•	•	•	4x14	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A1	•	•	•	•	•	•	4x24	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A2	•	•	•	•	•	•	3x14	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A2	•	•	•	•	•	•	3x24	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A3	•	•	•	•	•	•	4x14	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A3	•	•	•	•	•	•	4x24	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A4	•	•	•	•	•	•	4x14	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A4	•	•	•	•	•	•	4x24	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A5	•	•	•	•	•	•	4x14	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A5	•	•	•	•	•	•	4x24	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A9	•	•	•	•	•	•	3x14	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A9	•	•	•	•	•	•	3x24	T5	1;2	595	572	595	572	62
Relax PV T5 PAR-V A5 LG	•	•	•	•	•	•	4x14	T5	3; 4	595	572	595	572	62
Relax PV T5 PAR-V A5 LG	•	•	•	•	•	•	4x24	T5	3; 4	595	572	595	572	62
Relax PV T5 PAR-V A9 LG	•	•	•	•	•	•	3x14	T5	3; 4	595	572	595	572	62
Relax PV T5 PAR-V A9 LG	•	•	•	•	•	•	3x24	T5	3; 4	595	572	595	572	62

	OPTIC				DECOR		POWER	LAMP	PICTURE	DIMENSIONS					HOLE	
	PAR-V	PAR-MAT-V	PAR-V REF	PAR-MAT-V REF	L1	L2				A1	A2	L1	L2	H1	O1	O2
Relax PB T5 PAR-V A1	•	•	•	•	•	•	4x14	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A1	•	•	•	•	•	•	4x24	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A2	•	•	•	•	•	•	3x14	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A2	•	•	•	•	•	•	3x24	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A3	•	•	•	•	•	•	4x14	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A3	•	•	•	•	•	•	4x24	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A4	•	•	•	•	•	•	4x14	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A4	•	•	•	•	•	•	4x24	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A5	•	•	•	•	•	•	4x14	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A5	•	•	•	•	•	•	4x24	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A9	•	•	•	•	•	•	3x14	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A9	•	•	•	•	•	•	3x24	T5	1;2	620	572	620	572	62	580	580
Relax PB T5 PAR-V A5 LG	•	•	•	•	•	•	4x14	T5	3,4	620	572	620	572	62	580	580
Relax PB T5 PAR-V A5 LG	•	•	•	•	•	•	4x24	T5	3,4	620	572	620	572	62	580	580
Relax PB T5 PAR-V A9 LG	•	•	•	•	•	•	3x14	T5	3,4	620	572	620	572	62	580	580
Relax PB T5 PAR-V A9 LG	•	•	•	•	•	•	3x24	T5	3,4	620	572	620	572	62	580	580

### INSTALLATION





RELAX PV T5 PAR-V A1 L1 4x14W

A1



A2



A3



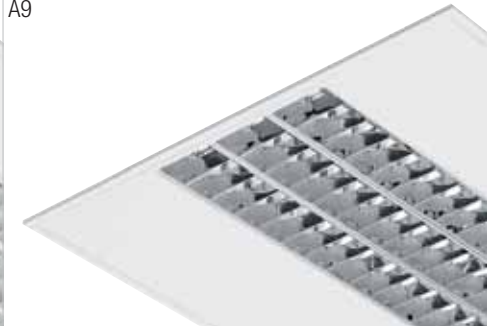
A4



A5



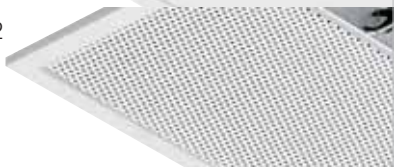
A9



DECOR L1



DECOR L2



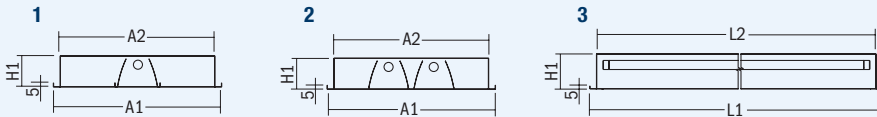
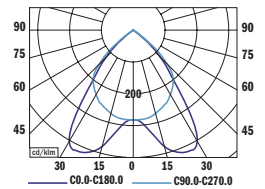
LG



# RELAX

## PV/PB T5 PAR-V/PAR MAT-V/PAR-V REFLEX/PAR MAT-V REFLEX A8

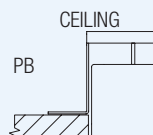
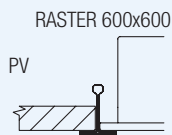
RELAX PV T5 PAR-V A8 2x28W



	OPTIC				DECOR		POWER	LAMP	PICTURE	DIMENSIONS				
	PAR-V	PAR MAT-V	PAR-V REF	PAR MAT-V REF	L1	L2				A1	A2	L1	L2	H1
Relax PV T5 PAR-V A8	•	•	•	•	•	•	1x14	T5	1,3	297	272	595	570	58
Relax PV T5 PAR-V A8	•	•	•	•	•	•	1x24	T5	1,3	297	272	595	570	58
Relax PV T5 PAR-V A8	•	•	•	•	•	•	1x28	T5	1,3	297	272	1195	1170	58
Relax PV T5 PAR-V A8	•	•	•	•	•	•	1x54	T5	1,3	297	272	1195	1170	58
Relax PV T5 PAR-V A8	•	•	•	•	•	•	2x14	T5	2,3	297	272	595	570	58
Relax PV T5 PAR-V A8	•	•	•	•	•	•	2x24	T5	2,3	297	272	595	570	58
Relax PV T5 PAR-V A8	•	•	•	•	•	•	2x28	T5	2,3	297	272	1195	1170	58
Relax PV T5 PAR-V A8	•	•	•	•	•	•	2x54	T5	2,3	297	272	1195	1170	58

	OPTIC				DECOR		POWER	LAMP	PICTURE	DIMENSIONS					HOLE	
	PAR-V	PAR MAT-V	PAR-V REF	PAR MAT-V REF	L1	L2				A1	A2	L1	L2	H1	O1	O2
Relax PB T5 PAR-V A8	•	•	•	•	•	•	1x14	T5	1,3	318	272	616	570	58	285	580
Relax PB T5 PAR-V A8	•	•	•	•	•	•	1x24	T5	1,3	318	272	616	570	58	285	580
Relax PB T5 PAR-V A8	•	•	•	•	•	•	1x28	T5	1,3	318	272	1216	1170	58	285	1180
Relax PB T5 PAR-V A8	•	•	•	•	•	•	1x54	T5	1,3	318	272	1216	1170	58	285	1180
Relax PB T5 PAR-V A8	•	•	•	•	•	•	2x14	T5	2,3	318	272	616	570	58	285	580
Relax PB T5 PAR-V A8	•	•	•	•	•	•	2x24	T5	2,3	318	272	616	570	58	285	580
Relax PB T5 PAR-V A8	•	•	•	•	•	•	2x28	T5	2,3	318	272	1216	1170	58	285	1180
Relax PB T5 PAR-V A8	•	•	•	•	•	•	2x54	T5	2,3	318	272	1216	1170	58	285	1180

### INSTALLATION





RELAX PV T5 PAR-V A8 L1 2x28W

PAR-V



PAR MAT-V



DECOR L1



PAR-V REFLEX



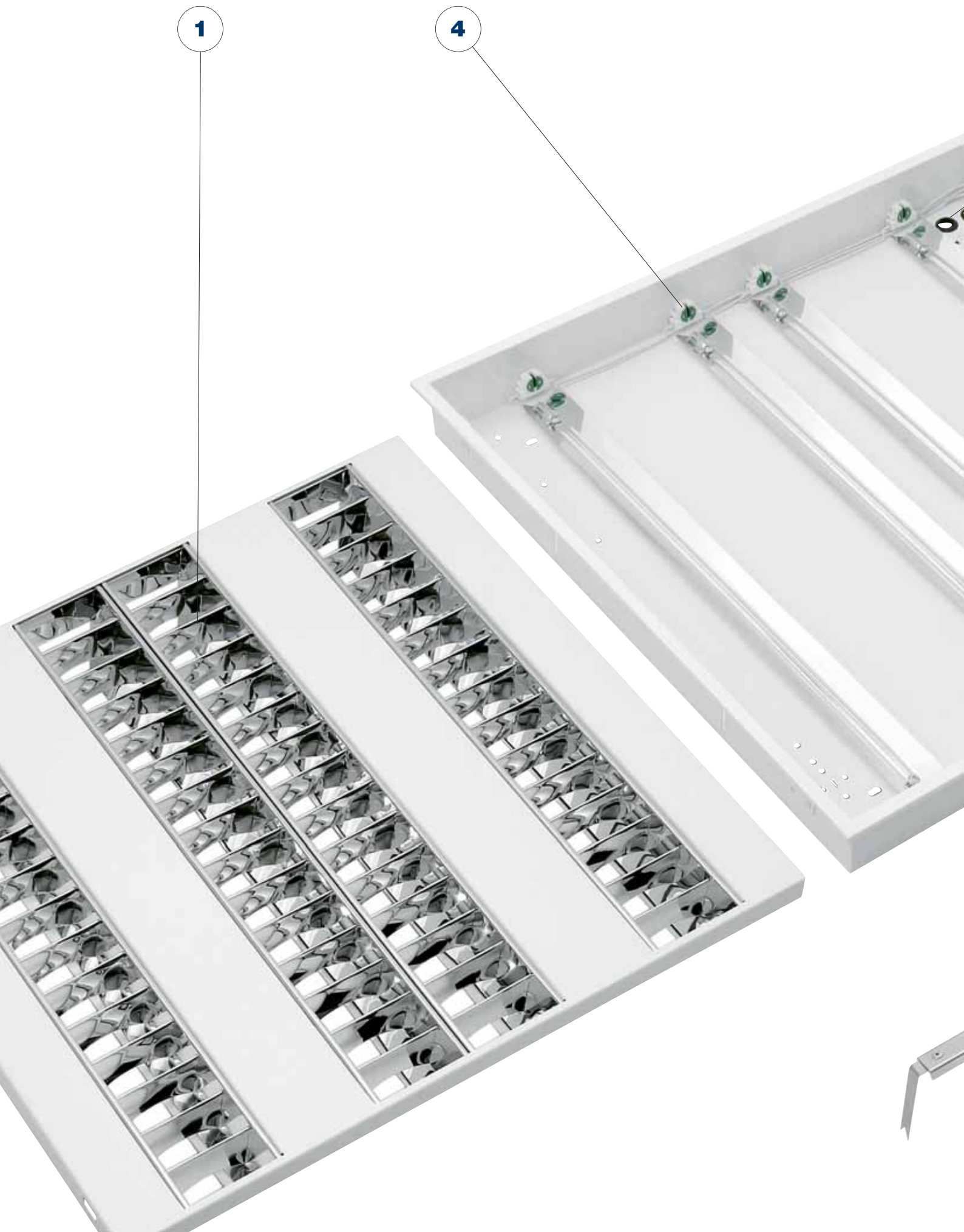
PAR MAT-V REFLEX



DECOR L2



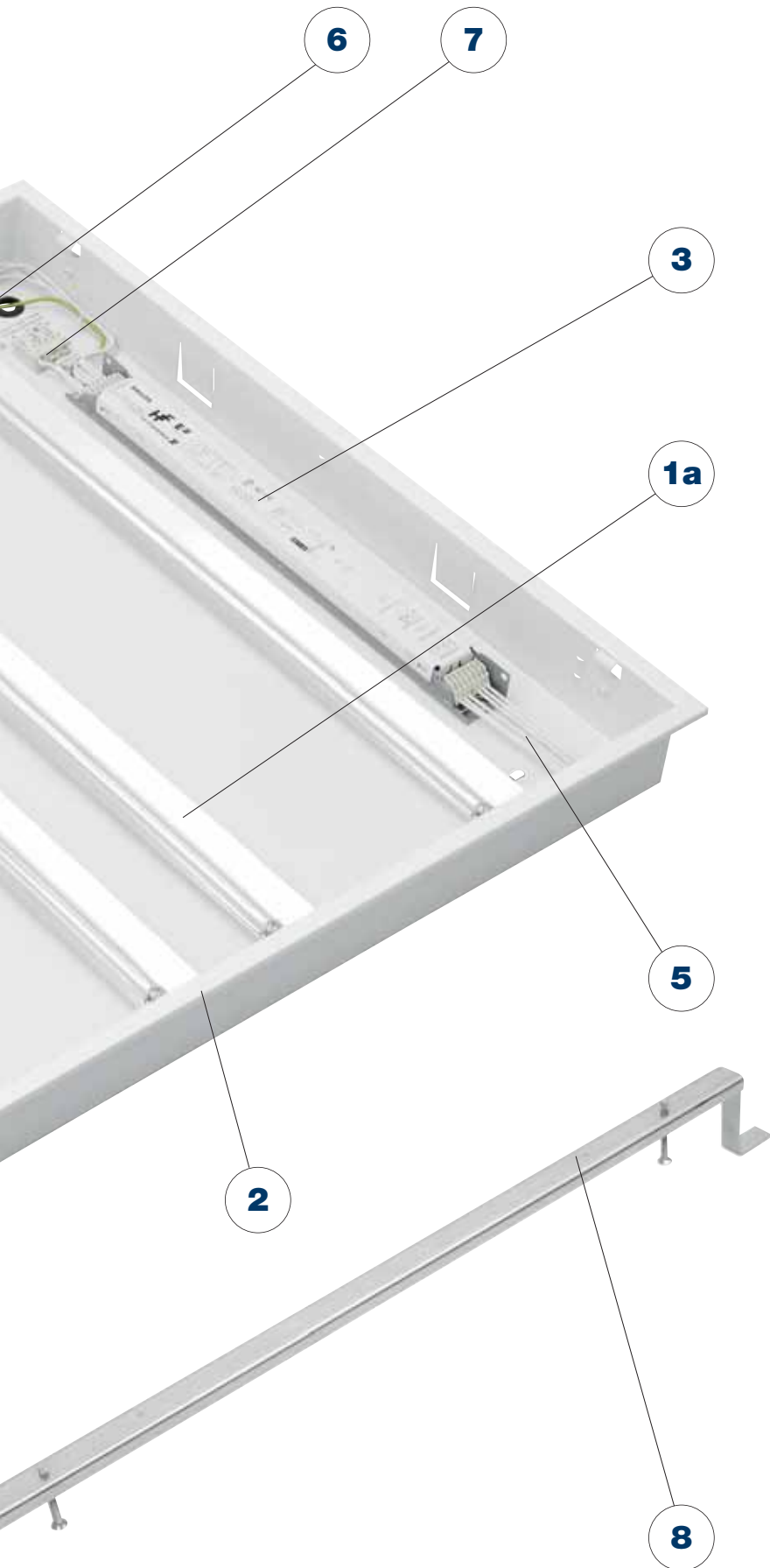




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4





**PV  
T5  
PAR-V REFLEX  
A1 L1  
ELECTRONIC CONTROL GEAR**

- 1** Parabolická mriežka  
Parabolic louvre  
Parabolspiegelraster
- 1a** Top reflektor  
Top reflector  
Oberer Reflektor
- 2** Teleso svietidla  
Housing  
Leuchtenkörper
- 3** Elektronický predradník  
Electronic ballast  
Vorschaltgeräte
- 4** Päťica  
Lampholder  
Lampenhalter
- 5** Vodič  
Cable  
Kabel
- 6** Prechodka  
Rubber band  
Gummiband
- 7** Svorkovnica  
Terminal block  
Anschlussklemme
- 8** Držiak telesa (pre PB verziu)  
Housing holder (for PB version)  
Körperhalter (für Version PB)



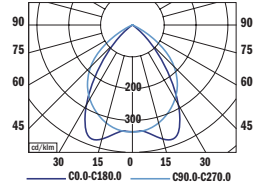
ORDER CODE	TYPE	SPECIFICATION
RB3090241482000	RELAX LG PV PAR MAT-V	4x14W,1100G,ECG A2,9003
RB3090242482000	RELAX LG PV PAR MAT-V	4x24W,1100G,ECG A2,9003
<b>RELAX LG PB PAR-V</b>		
RBD030231482000	RELAX LG PB PAR-V	3x14W,316G2,ECG A2,9003
RBD030232482000	RELAX LG PB PAR-V	3x24W,316G2,ECG A2,9003
RBD090231482000	RELAX LG PB PAR MAT-V	3x14W,1100G,ECG A2,9003
RBD090232482000	RELAX LG PB PAR MAT-V	3x24W,1100G,ECG A2,9003
RBD030241482000	RELAX LG PB PAR-V	4x14W,316G2,ECG A2,9003
RBD030242482000	RELAX LG PB PAR-V	4x24W,316G2,ECG A2,9003
RBD090241482000	RELAX LG PB PAR MAT-V	4x14W,1100G,ECG A2,9003
RBD090242482000	RELAX LG PB PAR MAT-V	4x24W,1100G,ECG A2,9003
<b>ACCESSORIES</b>		
RBZ0000000000001	HOUSING HOLDER 1 (RELAX PB)	RELAX A1,A2,A3,A4,A5,A9
RBZ0000000000002	HOUSING HOLDER 2 (RELAX PB)	RELAX A8
<b>XXXXXXXXXXXXXXXXXX</b>		
<b>02 - PAR-V (MIRO4)</b>		
<b>0E - PAR-V REFLEX (316G2)</b>		
<b>0F - PAR-V REFLEX (MIRO4)</b>		
<b>0K - PAR MAT-V REFLEX (1100G)</b>		
<b>XXXXXXXXXXXXXXX</b>		
<b>9 - ECG DIM 1-10V</b>		
<b>A - ECG DIM DSI</b>		
<b>B - ECG DALI</b>		
<b>XXXXXXXXXXXXXXX</b>		
<b>EW1 - Wieland connector</b>		



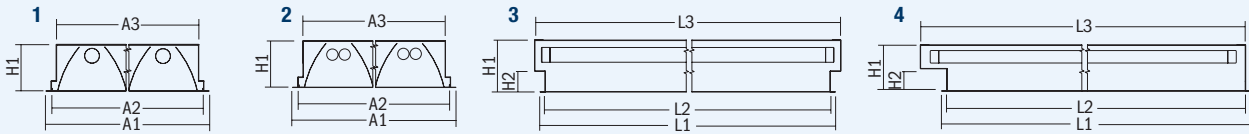
# RELAX

## PV/PB T8/T5/TC-L PAR/PAR MAT/PAR REFLEX/PAR MAT REFLEX

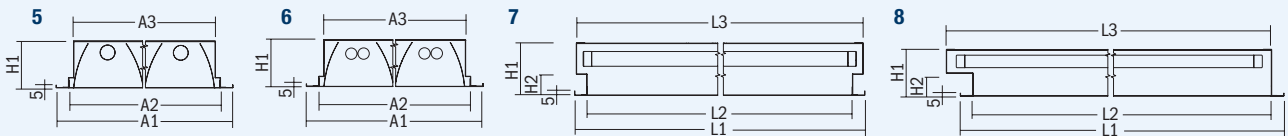
RELAX PV T8 PAR 4x18W



220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 4x18W G13	T5 4x14W G5	TC-L 26 11	CCG EE-82	CCG EE-81	ECG EE-42	AAAA ECG 1-18 EE-41	AAAA ECG 2-18 EE-41	AAAA ECG DALI EE-41	EMERGENCY	F	IP 20	IP 54
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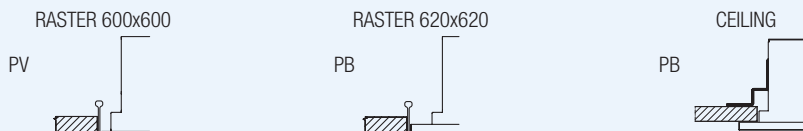


	OPTIC				POWER	LAMP	PICTURE	DIMENSIONS							
	PAR	PAR MAT	PAR REF	PAR MAT REF				A1	A2	A3	L1	L2	L3	H1	H2
Relax PV T8	•	•	•	•	2x18	T8	1;4	295	275	256	595	575	624	82	40
Relax PV T8	•	•	•	•	2x36	T8	1;4	295	275	256	1195	1176	1223	82	40
Relax PV T8	•	•	•	•	3x18	T8	1;3	595	575	557	595	575	615	92	40
Relax PV T8	•	•	•	•	3x36	T8	1;4	595	575	557	1195	1176	1223	92	40
Relax PV T8	•	•	•	•	4x18	T8	1;3	595	575	557	595	575	615	92	40
Relax PV T8	•	•	•	•	4x36	T8	1;4	595	575	557	1195	1176	1223	92	40
Relax PV T8 IP 54	•				4x18	T8	1;3	595	575	575	595	575	628	95	42
Relax PV T5	•	•	•	•	2x14	T5	1;3	295	275	256	595	575	575	90	-
Relax PV T5	•	•	•	•	2x24	T5	1;3	295	275	256	595	575	575	90	-
Relax PV T5	•	•	•	•	2x28	T5	1;3	295	275	256	1195	1175	1175	82	-
Relax PV T5	•	•	•	•	2x54	T5	1;3	295	275	256	1195	1175	1175	82	-
Relax PV T5	•	•	•	•	4x14	T5	1;3	595	575	557	595	575	575	90	-
Relax PV T5	•	•	•	•	4x24	T5	1;3	595	575	557	595	575	575	90	-
Relax PV T5 IP 54	•				4x14	T5	1;3	595	575	575	595	575	628	95	42
Relax PV T5 IP 54	•				4x24	T5	1;3	595	575	575	595	575	628	95	42
Relax PV TC-L	•	•			2x36	TC-L	2;4	295	275	256	595	575	624	82	40
Relax PV TC-L	•	•			2x55	TC-L	2;4	295	275	256	595	575	624	82	40
Relax PV TC-L	•	•			3x36	TC-L	2;3	595	575	557	595	575	575	90	-



	OPTIC				POWER	LAMP	PICTURE	DIMENSIONS								HOLE	
	PAR	PAR MAT	PAR REF	PAR MAT REF				A1	A2	A3	L1	L2	L3	H1	H2	O1	O2
Relax PB T8	•	•	•	•	2x18	T8	5;8	320	273	256	620	574	624	82	40	285	585
Relax PBr T8	•	•	•	•	2x18	T8	5;8	310	273	256	620	574	624	82	40	285	585
Relax PB T8	•	•	•	•	2x36	T8	5;8	320	273	256	1220	1173	1223	82	40	285	1180
Relax PBr T8	•	•	•	•	2x36	T8	5;8	310	273	256	1240	1200	1223	82	40	280	1213
Relax PB T8	•	•	•	•	3x18	T8	5;7	620	575	557	620	574	615	92	40	585	605
Relax PB T8	•	•	•	•	3x36	T8	5;8	620	575	557	1220	1173	1223	92	40	585	1180
Relax PB T8	•	•	•	•	4x18	T8	5;7	620	575	557	620	574	615	92	40	585	605
Relax PB T8	•	•	•	•	4x36	T8	5;8	620	575	557	1220	1173	1223	92	40	585	1185
Relax PBr T8	•	•	•	•	4x36	T8	5;8	620	575	557	1240	1173	1223	92	40	585	1185
Relax PB T5	•	•	•	•	2x14	T5	5;7	320	273	256	620	574	575	90	-	285	580
Relax PB T5	•	•	•	•	2x24	T5	5;7	320	273	256	620	574	575	90	-	285	580
Relax PB T5	•	•	•	•	2x28	T5	5;7	320	273	256	1220	1173	1175	90	-	285	1180
Relax PB T5	•	•	•	•	2x54	T5	5;7	320	273	256	1220	1173	1175	90	-	285	1180
Relax PB T5	•	•	•	•	4x14	T5	5;7	620	575	557	620	574	575	90	-	580	580
Relax PB T5	•	•	•	•	4x24	T5	5;7	620	575	557	620	574	575	90	-	580	580
Relax PB TC-L	•	•			2x36	TC-L	6;8	320	273	256	620	574	624	82	40	285	585
Relax PB TC-L	•	•			2x55	TC-L	6;8	320	273	256	620	574	624	82	40	285	585
Relax PB TC-L	•	•			3x36	TC-L	6;7	620	575	557	620	575	575	90	-	580	580

### INSTALLATION







RELAX PV T8 PAR 4x18W

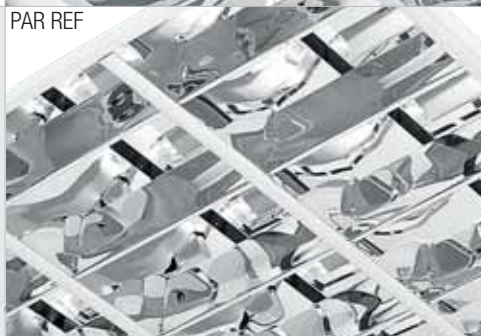
PAR



PAR MAT



PAR REF



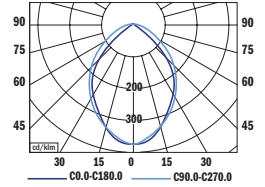
PAR MAT REF



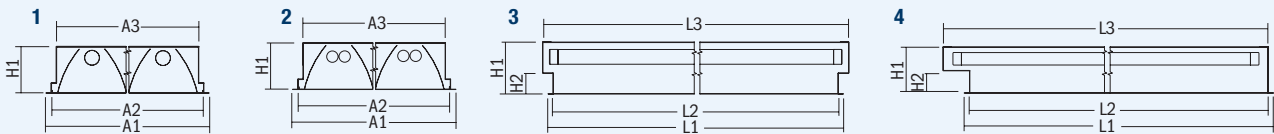
# RELAX

## PV/PB T8/T5/TC-L LA/LB/LAM

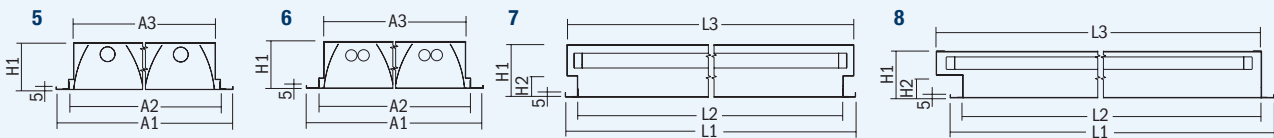
RELAX PV T8 LA 4x18W



220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 G13	T5 G5	TC-L 2G 11	CCG EEB-R2	CCG EEB-B1	ECG EEB-K2	ECG EEB-A1	ECG EEB-A1	ECG EEB-A1	ECG EEB-A1	EMERGENCY	F	IP 20
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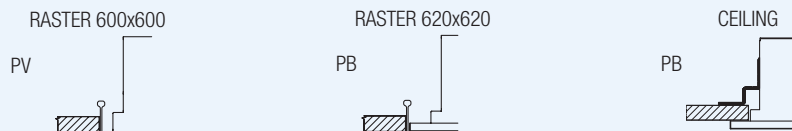


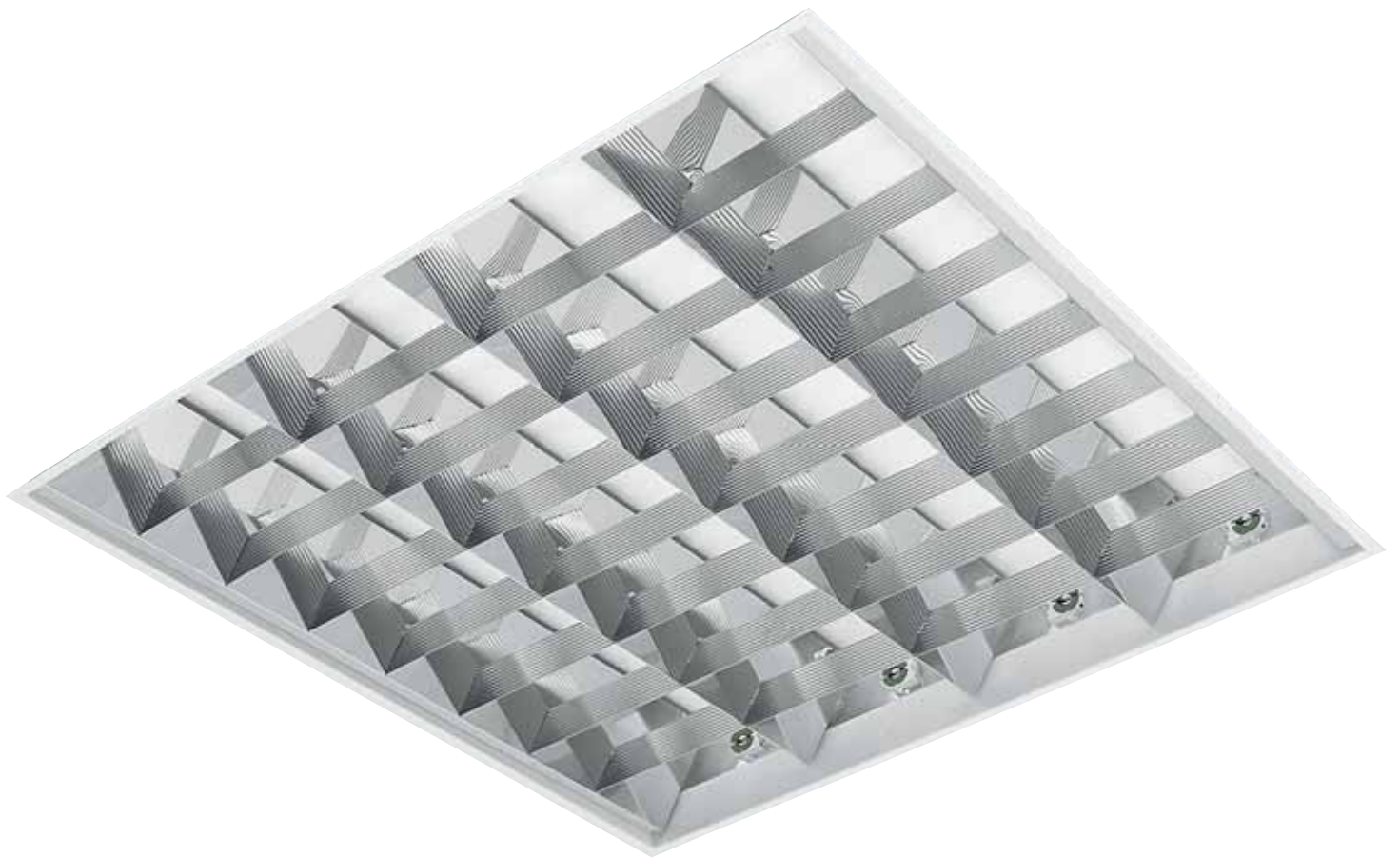
	LA	OPTIC LAM	LB	POWER	LAMP	PICTURE	A1	A2	A3	DIMENSIONS			H1	H2
										L1	L2	L3		
Relax PV T8	•	•	•	2x18	T8	1;4	295	275	256	595	575	624	82	40
Relax PV T8	•	•	•	2x36	T8	1;4	295	275	256	1195	1176	1223	82	40
Relax PV T8	•	•	•	3x18	T8	1;3	595	575	557	595	575	615	92	40
Relax PV T8	•	•	•	3x36	T8	1;4	595	575	557	1195	1176	1223	92	40
Relax PV T8	•	•	•	4x18	T8	1;3	595	575	557	595	575	615	92	40
Relax PV T8	•	•	•	4x36	T8	1;4	595	575	557	1195	1176	1223	92	40
Relax PV TC-L	•	•	•	2x36	TC-L	2;4	295	275	256	595	575	624	82	40
Relax PV TC-L	•	•	•	2x55	TC-L	2;4	295	275	256	595	575	624	82	40
Relax PV TC-L	•	•	•	3x36	TC-L	2;3	595	575	557	595	575	575	90	-



	LA	OPTIC LAM	LB	POWER	LAMP	PICTURE	A1	A2	A3	DIMENSIONS			H1	H2	HOLE	
										L1	L2	L3			O1	O2
Relax PB T8	•	•	•	2x18	T8	5;8	320	273	256	620	574	624	82	40	285	585
Relax PBr T8	•	•	•	2x18	T8	5;8	310	273	256	620	574	624	82	40	285	585
Relax PB T8	•	•	•	2x36	T8	5;8	320	273	256	1220	1173	1223	82	40	285	1180
Relax PBr T8	•	•	•	2x36	T8	5;8	310	273	256	1240	1200	1223	82	40	280	1213
Relax PB T8	•	•	•	3x18	T8	5;7	620	575	557	620	574	615	92	40	585	605
Relax PB T8	•	•	•	3x36	T8	5;8	620	575	557	1220	1173	1223	92	40	585	1180
Relax PB T8	•	•	•	4x18	T8	5;7	620	575	557	620	574	615	92	40	585	605
Relax PB T8	•	•	•	4x36	T8	5;8	620	575	557	1220	1173	1223	92	40	585	1185
Relax PBr T8	•	•	•	4x36	T8	5;8	620	575	557	1240	1173	1223	92	40	585	1185
Relax PB TC-L	•	•	•	2x36	TC-L	6;8	320	273	256	620	574	624	82	40	285	585
Relax PB TC-L	•	•	•	2x55	TC-L	6;8	320	273	256	620	574	624	82	40	285	585
Relax PB TC-L	•	•	•	3x36	TC-L	6;7	620	575	557	620	575	575	90	-	580	580

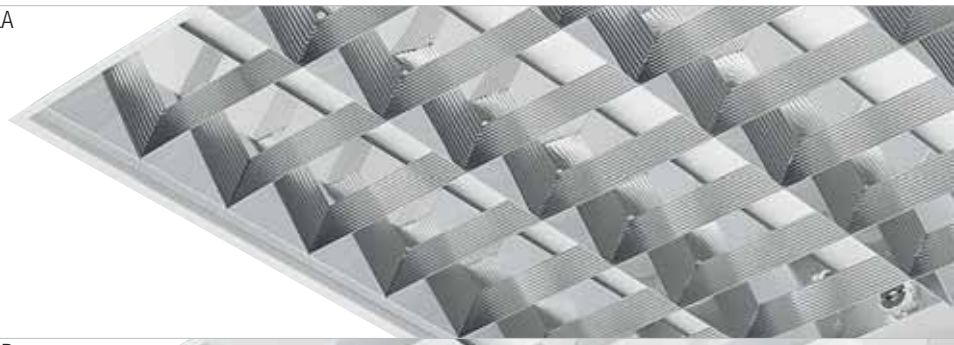
### INSTALLATION





RELAX PV T8 LA 4x18W

LA



LB



LAM

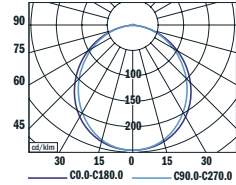


# RELAX

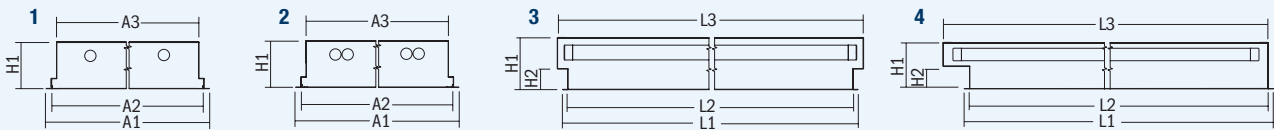
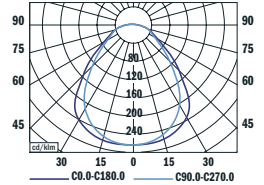
## PV/PB T8/T5/TC-L OPAL/PRISMA

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 G13	T5 G5	TC-L 2G 11	CCG EEB-R2	CCG EEB-R1	ECG EEB-K2	ECG EEB-A1	ECG EEB-A1	ECG EEB-A1	EMERGENCY	F	IP 40	IP 54
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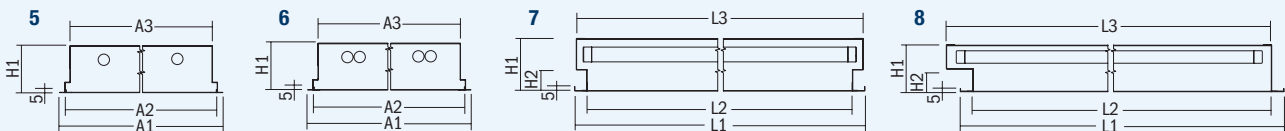
RELAX PV OPAL 4x18W



RELAX PV PRISMA 4x18W

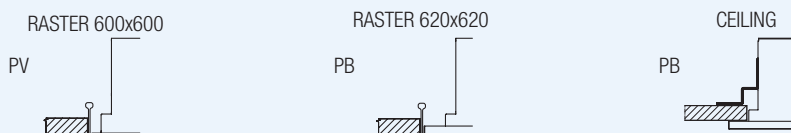


	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS							
	OPAL	PRISMA				A1	A2	A3	L1	L2	L3	H1	H2
Relax PV T8	•	•	2x18	T8	1,4	295	275	256	595	575	624	82	40
Relax PV T8	•	•	2x36	T8	1,4	295	275	256	1195	1176	1223	82	40
Relax PV T8	•	•	3x18	T8	1,3	595	575	557	595	575	615	92	40
Relax PV T8	•	•	3x36	T8	1,4	595	575	557	1195	1176	1223	92	40
Relax PV T8	•	•	4x18	T8	1,3	595	575	557	595	575	615	92	40
Relax PV T8	•	•	4x36	T8	1,4	595	575	557	1195	1176	1223	92	40
Relax PV T8 IP 54	•	•	4x18	T8	1,3	595	575	575	595	575	628	95	42
Relax PV T5	•	•	2x14	T5	1,3	295	275	256	595	575	575	90	-
Relax PV T5	•	•	2x24	T5	1,3	295	275	256	595	575	575	90	-
Relax PV T5	•	•	2x28	T5	1,3	295	275	256	1195	1176	1176	90	-
Relax PV T5	•	•	2x54	T5	1,3	295	275	256	1195	1176	1176	90	-
Relax PV T5	•	•	4x14	T5	1,3	595	575	557	595	575	575	90	-
Relax PV T5	•	•	4x24	T5	1,3	595	575	557	595	575	575	90	-
Relax PV T5 IP 54	•	•	4x14	T5	1,3	595	575	575	595	575	628	95	42
Relax PV T5 IP 54	•	•	4x24	T5	1,3	595	575	575	595	575	628	95	42
Relax PV TC-L	•	•	2x36	TC-L	2,4	295	275	256	595	575	624	82	40
Relax PV TC-L	•	•	2x55	TC-L	2,4	295	275	256	595	575	624	82	40
Relax PV TC-L	•	•	3x36	TC-L	2,3	595	575	557	595	575	575	90	-



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS							HOLE		
	OPAL	PRISMA				A1	A2	A3	L1	L2	L3	H1	H2	O1	O2
Relax PB T8	•	•	2x18	T8	5,8	320	273	256	620	574	624	82	40	285	585
Relax PBr T8	•	•	2x18	T8	5,8	310	273	256	620	574	624	82	40	285	585
Relax PB T8	•	•	2x36	T8	5,8	320	273	256	1220	1173	1223	82	40	285	1180
Relax PBr T8	•	•	2x36	T8	5,8	310	273	256	1240	1200	1223	82	40	280	1213
Relax PB T8	•	•	3x18	T8	5,7	620	575	557	620	574	615	92	40	585	605
Relax PB T8	•	•	3x36	T8	5,8	620	575	557	1220	1173	1223	92	40	585	1180
Relax PB T8	•	•	4x18	T8	5,7	620	575	557	620	574	615	92	40	585	605
Relax PB T8	•	•	4x36	T8	5,8	620	575	557	1220	1173	1223	92	40	585	1185
Relax PB T5	•	•	2x14	T5	5,7	320	273	256	620	574	575	90	-	285	1180
Relax PB T5	•	•	2x24	T5	5,7	320	273	256	620	574	575	90	-	285	1180
Relax PB T5	•	•	2x28	T5	5,7	320	273	256	1220	1173	1175	90	-	285	1180
Relax PB T5	•	•	2x54	T5	5,7	320	273	256	1220	1173	1175	90	-	285	1180
Relax PB T5	•	•	4x14	T5	5,7	620	575	557	620	574	575	90	-	580	580
Relax PB T5	•	•	4x24	T5	5,7	620	575	557	620	574	575	90	-	580	580
Relax PB TC-L	•	•	2x36	TC-L	6,8	320	273	256	620	574	624	82	40	285	585
Relax PB TC-L	•	•	2x55	TC-L	6,8	320	273	256	620	574	624	82	40	285	585
Relax PB TC-L	•	•	3x36	TC-L	6,7	620	575	557	620	575	575	90	-	580	580

### INSTALLATION







RELAX PV T8 PRISMA

PRISMA



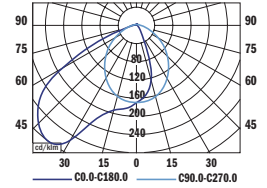
OPAL



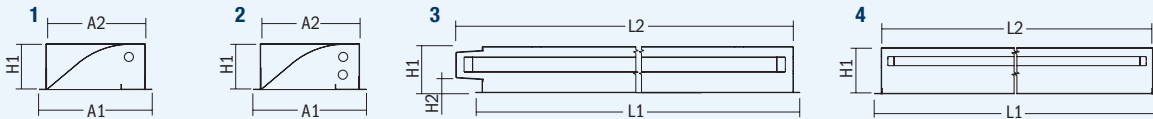
# RELAX

## PV T8/T5 ASYMMETRIC POLISHED/ASYMMETRIC MAT

RELAX PV ASYMMETRIC 1x18W



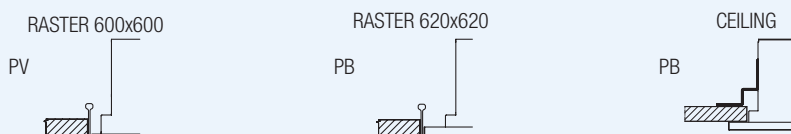
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 G13	T5 G5	TC-L 2G 11	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP 20
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	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS					
	POLISHED	MAT				A1	A2	L1	L2	H1	H2
Relax PV ASSYMETRIC T5	•	•	1x14	T5	1 ; 4	198	175	595	572	81	-
Relax PV ASSYMETRIC T5	•	•	1x24	T5	1 ; 4	198	175	595	572	81	-
Relax PV ASSYMETRIC T5	•	•	1x28	T5	1 ; 4	198	175	1195	1172	81	-
Relax PV ASSYMETRIC T5	•	•	1x54	T5	1 ; 4	198	175	1195	1172	81	-
Relax PV ASSYMETRIC TC-L	•	•	1x40	TC-L	2 ; 4	198	175	595	572	81	-
Relax PV ASSYMETRIC TC-L	•	•	1x55	TC-L	2 ; 4	198	175	595	572	81	-
Relax PV ASSYMETRIC T5	•	•	2x14	T5	2 ; 4	198	175	595	572	81	-
Relax PV ASSYMETRIC T5	•	•	2x24	T5	2 ; 4	198	175	595	572	81	-
Relax PV ASSYMETRIC T5	•	•	2x28	T5	2 ; 4	198	175	1195	1172	81	-
Relax PV ASSYMETRIC T5	•	•	2x54	T5	2 ; 4	198	175	1195	1172	81	-
Relax PV ASSYMETRIC TC-L	•	•	2x40	TC-L	2 ; 4	198	175	1195	1172	81	-
Relax PV ASSYMETRIC TC-L	•	•	2x55	TC-L	2 ; 4	198	175	1195	1172	81	-
Relax PV ASSYMETRIC T8	•	•	1x18	T8	1 ; 3	198	175	595	622	81	35
Relax PV ASSYMETRIC T8	•	•	1x36	T8	1 ; 3	198	175	1195	1222	81	35

	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS						HOLE	
	POLISHED	MAT				A1	A2	L1	L2	H1	H2	O1	O2
Relax PB ASSYMETRIC T5	•	•	1x14	T5	1 ; 4	220	175	620	572	81	-	185	580
Relax PB ASSYMETRIC T5	•	•	1x24	T5	1 ; 4	220	175	620	572	81	-	185	580
Relax PB ASSYMETRIC T5	•	•	1x28	T5	1 ; 4	220	175	1220	1172	81	-	185	1180
Relax PB ASSYMETRIC T5	•	•	1x54	T5	1 ; 4	220	175	1220	1172	81	-	185	1180
Relax PB ASSYMETRIC TC-L	•	•	1x40	TC-L	2 ; 4	220	175	620	572	81	-	185	580
Relax PB ASSYMETRIC TC-L	•	•	1x55	TC-L	2 ; 4	220	175	620	572	81	-	185	580
Relax PB ASSYMETRIC T5	•	•	2x14	T5	2 ; 4	220	175	620	572	81	-	185	580
Relax PB ASSYMETRIC T5	•	•	2x24	T5	2 ; 4	220	175	620	572	81	-	185	580
Relax PB ASSYMETRIC T5	•	•	2x28	T5	2 ; 4	220	175	1220	1172	81	-	185	1180
Relax PB ASSYMETRIC T5	•	•	2x54	T5	2 ; 4	220	175	1220	1172	81	-	185	1180
Relax PB ASSYMETRIC TC-L	•	•	2x40	TC-L	2 ; 4	220	175	1220	1172	81	-	185	1180
Relax PB ASSYMETRIC TC-L	•	•	2x55	TC-L	2 ; 4	220	175	1220	1172	81	-	185	1180
Relax PB ASSYMETRIC T8	•	•	1x18	T8	1 ; 3	220	175	620	622	81	35	185	580
Relax PB ASSYMETRIC T8	•	•	1x36	T8	1 ; 3	220	175	1220	1222	81	35	185	1180

### INSTALLATION





RELAX PV ASYMMETRIC POLISHED 1x36W

POLISHED



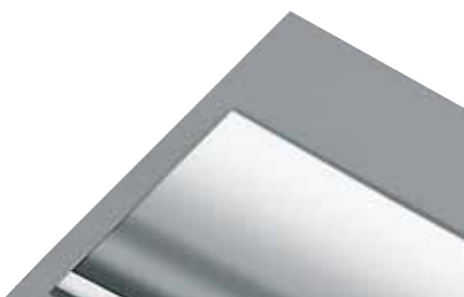
RAL 9003

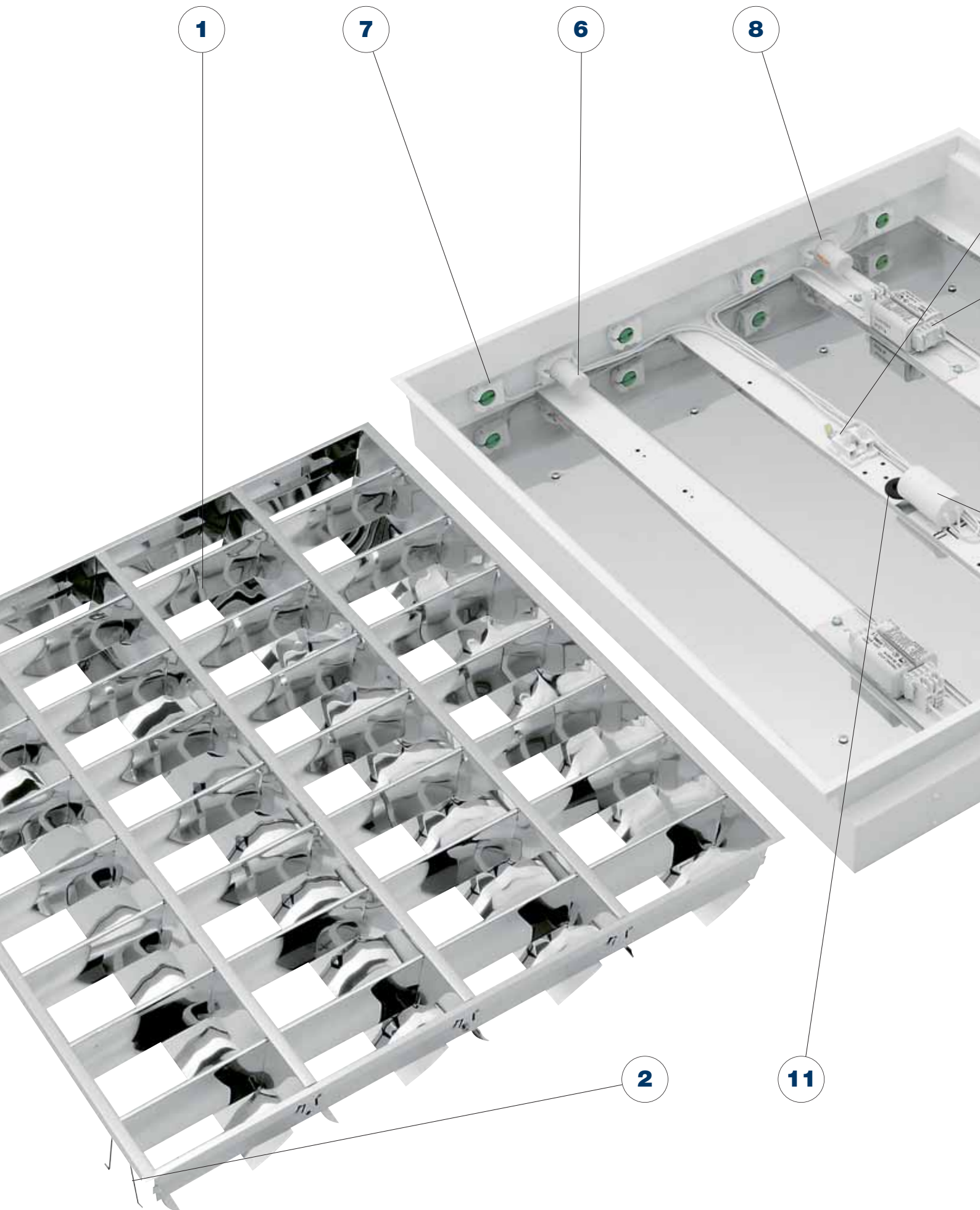


MAT



RAL 7001







## PV T8 PAR REFLEX CONVENTIONAL CONTROL GEAR

- 1** Parabolická mriežka  
Parabolic louvre  
Parabolspiegelraster
- 1a** Top reflektor  
Top reflector  
Oberer Reflektor
- 2** Upínacia pružina  
Clamping spring  
Federnde Verrschlüsse
- 3** Teleso svetidla  
Housing  
Leuchtenkörper
- 4** Predradník  
Ballast  
Vorschaltgeräte
- 5** Kondenzátor  
Capacitor  
Kondensatoren
- 6** Štartér  
Starter  
Zündgeräte
- 7** Päťica  
Lampholder  
Lampenhalter
- 8** Držiak štartéra  
Starterholder  
Zündgerätehalter
- 9** Vodič  
Cable  
Kabel
- 10** Svorkovnica  
Terminal block  
Anschlussklemme
- 11** Prechodka  
Rubber band  
Gummiband





ORDER CODE	TYPE	SPECIFICATION	ORDER CODE	TYPE	SPECIFICATION
<b>RELAX PB LA TC-L</b>			<b>RAU3F0341832000</b>	RELAX PV PRISMA T8	4x18W,CCG B2,RAL 9003
RAV211023682000	RELAX PB LA TC-L	2x36W,ECG A2,RAL 9003	RAU3F0341882000	RELAX PV PRISMA T8	4x18W,ECG A2,RAL 9003
RAV211025582000	RELAX PB LA TC-L	2x55W,ECG A2,RAL 9003	RAU3F0343632000	RELAX PV PRISMA T8	4x36W,CCG B2,RAL 9003
RAV211033682000	RELAX PB LA TC-L	3x36W,ECG A2,RAL 9003	RAU3F0343682000	RELAX PV PRISMA T8	4x36W,ECG A2,RAL 9003
<b>RELAX PB LAM TC-L</b>			<b>RELAX PV PRISMA T5</b>		
RAV2K1023682000	RELAX PB LAM TC-L	2x36W,ECG A2,RAL 9003	RAU3F0221482000	RELAX PV PRISMA T5	2x14W,ECG A2,RAL 9003
RAV2K1025582000	RELAX PB LAM TC-L	2x55W,ECG A2,RAL 9003	RAU3F0222482000	RELAX PV PRISMA T5	2x24W,ECG A2,RAL 9003
RAV2K1033682000	RELAX PB LAM TC-L	3x36W,ECG A2,RAL 9003	RAU3F0222882000	RELAX PV PRISMA T5	2x28W,ECG A2,RAL 9003
<b>RELAX PB LB TC-L</b>			RAU3F0225482000	RELAX PV PRISMA T5	2x54W,ECG A2,RAL 9003
RAV291023682000	RELAX PB LB TC-L	2x36W,ECG A2,RAL 9003	RAU3F0241482000	RELAX PV PRISMA T5	4x14W,ECG A2,RAL 9003
RAV291025582000	RELAX PB LB TC-L	2x55W,ECG A2,RAL 9003	RAU3F0242482000	RELAX PV PRISMA T5	4x24W,ECG A2,RAL 9003
RAV291033682000	RELAX PB LB TC-L	3x36W,ECG A2,RAL 9003	<b>RELAX PV PRISMA TC-L</b>		
<b>RELAX PBr LA</b>			RAU3F1023632000	RELAX PV PRISMA TC-L	2x36W,CCG B2,RAL 9003
<b>RELAX PBr LA T8</b>			RAU3F1023682000	RELAX PV PRISMA TC-L	2x36W,ECG A2,RAL 9003
RAW210321832000	RELAX PBr LA T8	2x18W,CCG B2,RAL 9003	RAU3F1025582000	RELAX PV PRISMA TC-L	2x55W,ECG A2,RAL 9003
RAW210321882000	RELAX PBr LA T8	2x18W,ECG A2,RAL 9003	RAU3F1033632000	RELAX PV PRISMA TC-L	3x36W,CCG B2,RAL 9003
RAW210323632000	RELAX PBr LA T8	2x36W,CCG B2,RAL 9003	RAU3F1033682000	RELAX PV PRISMA TC-L	3x36W,ECG A2,RAL 9003
RAW210323682000	RELAX PBr LA T8	2x36W,ECG A2,RAL 9003	<b>RELAX PB PRISMA</b>		
RAW210343632000	RELAX PBr LA T8	4x36W,CCG B2,RAL 9003	<b>RELAX PB PRISMA T8</b>		
RAW210343682000	RELAX PBr LA T8	4x36W,ECG A2,RAL 9003	RAV3F0321832000	RELAX PB PRISMA T8	2x18W,CCG B2,RAL 9003
<b>RELAX PBr LAM T8</b>			RAV3F0321882000	RELAX PB PRISMA T8	2x18W,ECG A2,RAL 9003
RAW2K0321832000	RELAX PBr LAM T8	2x18W,CCG B2,RAL 9003	RAV3F0323632000	RELAX PB PRISMA T8	2x36W,CCG B2,RAL 9003
RAW2K0321882000	RELAX PBr LAM T8	2x18W,ECG A2,RAL 9003	RAV3F0323682000	RELAX PB PRISMA T8	2x36W,ECG A2,RAL 9003
RAW2K0323632000	RELAX PBr LAM T8	2x36W,CCG B2,RAL 9003	RAV3F0331832000	RELAX PB PRISMA T8	3x18W,CCG B2,RAL 9003
RAW2K0323682000	RELAX PBr LAM T8	2x36W,ECG A2,RAL 9003	RAV3F0331882000	RELAX PB PRISMA T8	3x18W,ECG A2,RAL 9003
RAW2K0343632000	RELAX PBr LAM T8	4x36W,CCG B2,RAL 9003	RAV3F0333632000	RELAX PB PRISMA T8	3x36W,CCG B2,RAL 9003
RAW2K0343682000	RELAX PBr LAM T8	4x36W,ECG A2,RAL 9003	RAV3F033682000	RELAX PB PRISMA T8	3x36W,ECG A2,RAL 9003
<b>RELAX PBr LB T8</b>			RAV3F0341832000	RELAX PB PRISMA T8	4x18W,CCG B2,RAL 9003
RAW290321832000	RELAX PBr LB T8	2x18W,CCG B2,RAL 9003	RAV3F0341882000	RELAX PB PRISMA T8	4x18W,ECG A2,RAL 9003
RAW290321882000	RELAX PBr LB T8	2x18W,ECG A2,RAL 9003	RAV3F0343632000	RELAX PB PRISMA T8	4x36W,CCG B2,RAL 9003
RAW290323632000	RELAX PBr LB T8	2x36W,CCG B2,RAL 9003	RAV3F0343682000	RELAX PB PRISMA T8	4x36W,ECG A2,RAL 9003
RAW290323682000	RELAX PBr LB T8	2x36W,ECG A2,RAL 9003	<b>RELAX PB PRISMA T5</b>		
RAW290343632000	RELAX PBr LB T8	4x36W,CCG B2,RAL 9003	RAV3F0221482000	RELAX PB PRISMA T5	2x14W,ECG A2,RAL 9003
RAW290343682000	RELAX PBr LB T8	4x36W,ECG A2,RAL 9003	RAV3F0222482000	RELAX PB PRISMA T5	2x24W,ECG A2,RAL 9003
<b>RELAX PV OPAL</b>			RAV3F0222882000	RELAX PB PRISMA T5	2x28W,ECG A2,RAL 9003
<b>RELAX PV OPAL T8</b>			RAV3F0225482000	RELAX PB PRISMA T5	2x54W,ECG A2,RAL 9003
RAU300321832000	RELAX PV OPAL T8	2x18W,CCG B2,RAL 9003	RAV3F0241482000	RELAX PB PRISMA T5	4x14W,ECG A2,RAL 9003
RAU300321882000	RELAX PV OPAL T8	2x18W,ECG A2,RAL 9003	RAV3F0242482000	RELAX PB PRISMA T5	4x24W,ECG A2,RAL 9003
RAU300323632000	RELAX PV OPAL T8	2x36W,CCG B2,RAL 9003	<b>RELAX PB PRISMA TC-L</b>		
RAU300323682000	RELAX PV OPAL T8	2x36W,ECG A2,RAL 9003	RAV3F1023632000	RELAX PB PRISMA TC-L	2x36W,CCG B2,RAL 9003
RAU300331832000	RELAX PV OPAL T8	3x18W,CCG B2,RAL 9003	RAV3F1023682000	RELAX PB PRISMA TC-L	2x36W,ECG A2,RAL 9003
RAU300331882000	RELAX PV OPAL T8	3x18W,ECG A2,RAL 9003	RAV3F1025582000	RELAX PB PRISMA TC-L	2x55W,ECG A2,RAL 9003
RAU30033632000	RELAX PV OPAL T8	3x36W,CCG B2,RAL 9003	RAV3F1033632000	RELAX PB PRISMA TC-L	3x36W,CCG B2,RAL 9003
RAU30033682000	RELAX PV OPAL T8	3x36W,ECG A2,RAL 9003	RAV3F1033682000	RELAX PB PRISMA TC-L	3x36W,ECG A2,RAL 9003
RAU300341832000	RELAX PV OPAL T8	4x18W,CCG B2,RAL 9003	<b>RELAX PBr PRISMA</b>		
RAU300341882000	RELAX PV OPAL T8	4x18W,ECG A2,RAL 9003	<b>RELAX PBr PRISMA T8</b>		
RAU300343632000	RELAX PV OPAL T8	4x36W,CCG B2,RAL 9003	RAW3F0321832000	RELAX PBr PRISMA T8	2x18W,CCG B2,RAL 9003
RAU300343682000	RELAX PV OPAL T8	4x36W,ECG A2,RAL 9003	RAW3F0321882000	RELAX PBr PRISMA T8	2x18W,ECG A2,RAL 9003
<b>RELAX PV OPAL T5</b>			RAW3F0323632000	RELAX PBr PRISMA T8	2x36W,CCG B2,RAL 9003
RAU300221482000	RELAX PV OPAL T5	2x14W,ECG A2,RAL 9003	RAW3F0323682000	RELAX PBr PRISMA T8	2x36W,ECG A2,RAL 9003
RAU300222482000	RELAX PV OPAL T5	2x24W,ECG A2,RAL 9003	<b>RELAX PV PAR IP54</b>		
RAU300222882000	RELAX PV OPAL T5	2x28W,ECG A2,RAL 9003	<b>RELAX PV PAR T8 IP54</b>		
RAU300225482000	RELAX PV OPAL T5	2x54W,ECG A2,RAL 9003	RAY140341832000	RELAX PV PAR T8 IP54	4x18W,CCG B2,RAL 9003
RAU300241482000	RELAX PV OPAL T5	4x14W,ECG A2,RAL 9003	RAY140341882000	RELAX PV PAR T8 IP54	4x18W,ECG A2,RAL 9003
RAU300242482000	RELAX PV OPAL T5	4x24W,ECG A2,RAL 9003	<b>RELAX PV PAR T5 IP54</b>		
<b>RELAX PV OPAL TC-L</b>			RAY140241482000	RELAX PV PAR T5 IP54	4x14W,ECG A2,RAL 9003
RAU301023632000	RELAX PV OPAL TC-L	2x36W,CCG B2,RAL 9003	RAY140242482000	RELAX PV PAR T5 IP54	4x24W,ECG A2,RAL 9003
RAU301023682000	RELAX PV OPAL TC-L	2x36W,ECG A2,RAL 9003	<b>RELAX PV OPAL T8 IP54</b>		
RAU301025582000	RELAX PV OPAL TC-L	2x55W,ECG A2,RAL 9003	RAY370341832000	RELAX PV OPAL T8 IP54	4x18W,CCG B2,RAL 9003
RAU301033632000	RELAX PV OPAL TC-L	3x36W,CCG B2,RAL 9003	RAY370341882000	RELAX PV OPAL T8 IP54	4x18W,ECG A2,RAL 9003
RAU301033682000	RELAX PV OPAL TC-L	3x36W,ECG A2,RAL 9003	<b>RELAX PV OPAL T5 IP54</b>		
<b>RELAX PB OPAL</b>			RAY370241482000	RELAX PV OPAL T5 IP54	4x14W,ECG A2,RAL 9003
<b>RELAX PB OPAL T8</b>			RAY370242482000	RELAX PV OPAL T5 IP54	4x24W,ECG A2,RAL 9003
RAV300321832000	RELAX PB OPAL T8	2x18W,CCG B2,RAL 9003	<b>RELAX PV PRISMA T8 IP54</b>		
RAV300321882000	RELAX PB OPAL T8	2x18W,ECG A2,RAL 9003	RAY3M0341832000	RELAX PV PRISMA T8 IP54	4x18W,CCG B2,RAL 9003
RAV300323632000	RELAX PB OPAL T8	2x36W,CCG B2,RAL 9003	RAY3M0341882000	RELAX PV PRISMA T8 IP54	4x18W,ECG A2,RAL 9003
RAV300323682000	RELAX PB OPAL T8	2x36W,ECG A2,RAL 9003	<b>RELAX PV PRISMA T5 IP54</b>		
RAV300331832000	RELAX PB OPAL T8	3x18W,CCG B2,RAL 9003	RAY3M0241482000	RELAX PV PRISMA T5 IP54	4x14W,ECG A2,RAL 9003
RAV300331882000	RELAX PB OPAL T8	3x18W,ECG A2,RAL 9003	RAY3M0242482000	RELAX PV PRISMA T5 IP54	4x24W,ECG A2,RAL 9003
RAV300333632000	RELAX PB OPAL T8	3x36W,CCG B2,RAL 9003	<b>RELAX PV ASYMMETRIC POLISHED</b>		
RAV30033682000	RELAX PB OPAL T8	3x36W,ECG A2,RAL 9003	<b>RELAX PV ASYMMETRIC T8 POLISHED</b>		
RAV300341832000	RELAX PB OPAL T8	4x18W,CCG B2,RAL 9003	RAU520311832000	RELAX PV ASYMMETRIC T8 POLISHED	1x18W,CCG B2,RAL 9003
RAV300341882000	RELAX PB OPAL T8	4x18W,ECG A2,RAL 9003	RAU520311882000	RELAX PV ASYMMETRIC T8 POLISHED	1x18W,ECG A2,RAL 9003
RAV300343632000	RELAX PB OPAL T8	4x36W,CCG B2,RAL 9003	RAU520313632000	RELAX PV ASYMMETRIC T8 POLISHED	1x36W,CCG B2,RAL 9003
RAV300343682000	RELAX PB OPAL T8	4x36W,ECG A2,RAL 9003	RAU520313682000	RELAX PV ASYMMETRIC T8 POLISHED	1x36W,ECG A2,RAL 9003
<b>RELAX PB OPAL T5</b>			<b>RELAX PV ASYMMETRIC T5 POLISHED</b>		
RAV300221482000	RELAX PB OPAL T5	2x14W,ECG A2,RAL 9003	RAU520211482000	RELAX PV ASYMMETRIC T5 POLISHED	1x14W,ECG A2,RAL 9003
RAV300222482000	RELAX PB OPAL T5	2x24W,ECG A2,RAL 9003	RAU520212482000	RELAX PV ASYMMETRIC T5 POLISHED	1x24W,ECG A2,RAL 9003
RAV300222882000	RELAX PB OPAL T5	2x28W,ECG A2,RAL 9003	RAU520212882000	RELAX PV ASYMMETRIC T5 POLISHED	1x28W,ECG A2,RAL 9003
RAV300225482000	RELAX PB OPAL T5	2x54W,ECG A2,RAL 9003	RAU520215482000	RELAX PV ASYMMETRIC T5 POLISHED	1x54W,ECG A2,RAL 9003
RAV300241482000	RELAX PB OPAL T5	4x14W,ECG A2,RAL 9003	RAU520221482000	RELAX PV ASYMMETRIC T5 POLISHED	2x14W,ECG A2,RAL 9003
RAV300242482000	RELAX PB OPAL T5	4x24W,ECG A2,RAL 9003	RAU520222482000	RELAX PV ASYMMETRIC T5 POLISHED	2x24W,ECG A2,RAL 9003
<b>RELAX PB OPAL TC-L</b>			RAU520222882000	RELAX PV ASYMMETRIC T5 POLISHED	2x28W,ECG A2,RAL 9003
RAV301023632000	RELAX PB OPAL TC-L	2x36W,CCG B2,RAL 9003	RAU520225482000	RELAX PV ASYMMETRIC T5 POLISHED	2x54W,ECG A2,RAL 9003
RAV301023682000	RELAX PB OPAL TC-L	2x36W,ECG A2,RAL 9003	<b>ACCESSORIES</b>		
RAV301025582000	RELAX PB OPAL TC-L	2x55W,ECG A2,RAL 9003	RBZ00000000003	HOUSING HOLDER 3 (RELAX PB)	
RAV301033632000	RELAX PB OPAL TC-L	3x36W,CCG B2,RAL 9003	<b>XXXXXXXXXX</b>		
RAV301033682000	RELAX PB OPAL TC-L	3x36W,ECG A2,RAL 9003	<b>9 - ECG DIM 1-10V</b>		
<b>RELAX PBr OPAL</b>			<b>A - ECG DIM DSI</b>		
<b>RELAX PBr OPAL T8</b>			<b>B - ECG DALI</b>		
RAW300321832000	RELAX PBr OPAL T8	2x18W,CCG B2,RAL 9003	<b>XXXXXXXXXX</b>		
RAW300321882000	RELAX PBr OPAL T8	2x18W,ECG A2,RAL 9003	<b>EW1 - Wieland conector</b>		
RAW300323632000	RELAX PBr OPAL T8	2x36W,CCG B2,RAL 9003			
RAW300323682000	RELAX PBr OPAL T8	2x36W,ECG A2,RAL 9003			
<b>RELAX PV PRISMA</b>					
<b>RELAX PV PRISMA T8</b>					
RAU3F0321832000	RELAX PV PRISMA T8	2x18W,CCG B2,RAL 9003			
RAU3F0321882000	RELAX PV PRISMA T8	2x18W,ECG A2,RAL 9003			
RAU3F0323632000	RELAX PV PRISMA T8	2x36W,CCG B2,RAL 9003			
RAU3F0323682000	RELAX PV PRISMA T8	2x36W,ECG A2,RAL 9003			
RAU3F0331832000	RELAX PV PRISMA T8	3x18W,CCG B2,RAL 9003			
RAU3F0331882000	RELAX PV PRISMA T8	3x18W,ECG A2,RAL 9003			
RAU3F0333632000	RELAX PV PRISMA T8	3x36W,CCG B2,RAL 9003			
RAU3F0333682000	RELAX PV PRISMA T8	3x36W,ECG A2,RAL 9003			







# CLASSIC

## CLASSIC

**Svietidlá Classic sú určené pre inštaláciu na stropy ako prisadené svietidlá. Použitím vhodného príslušenstva je možné väčšinu svietidiel použiť aj ako závesné.**

### KONŠTRUKCIA

**Teleso svietidla:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela, lesklá), RAL 7001 (strieborná šedá) na požiadanie. Spodný plech svietidla sa vyrába v plnom (L1) alebo perforovanom (L2) prevedení.

**Mriežky:** LA, LAM, LB, PAR, PAR MAT, PAR-V, PAR MAT-V

**Difúzory:** vyrobené v opálovom (PMMA) alebo v prizmatickom (PS) prevedení. Obidve varianty môžu byť na želanie z polykarbonátu.

**Reflektor:** pre verzie T5 s parabolickou mriežkou na požiadanie možný prídavný vrchný reflektor (verzia REF), v ponuke aj asymetrický reflektor

Optický systém je uchytený pomocou štyroch pružín, ktoré umožňujú beznástrojovú výmenu svetelných zdrojov.

Bližší popis jednotlivých typov optiky je uvedený na strane 76/79, v kapitole OPTICS.

**Classic ASR:** trojžiarivková nárazu-odolná verzia, vyvinutá špeciálne pre osvetlenie športových hál a priestorov, v ktorých je vyžadovaná zvýšená ochrana svietidiel pred nárazmi z rôznych smerov. Optická časť (parabolická mriežka) je chránená plastovým krytom (čirý PC), ktorý je vsadený do plechového rámu a uchytený k telesu svietidla štyrmi pružinami. Možná závesná a prisadená montáž.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm), T8 (26 mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrútková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

### PRÍSLUŠENSTVO

- závesné príslušenstvo
- držiaky svietidiel do podhľadu umožňujúce polozapustenú montáž (verzia ASN T5)
- pri polozapustenej alebo závesnej montáži je možné svietidlá vybaviť konektormi umožňujúce rýchle elektrické pripojenie: 3-pólové konektory Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A (na požiadanie konektory ISODOM, 5-pólové konektory Wieland gesis GST 18i5, Wago Winsta 770)

## CLASSIC

The Classic range of light fixtures are designed for ceiling installations as surface mounted. Using suitable accessories, most of the light fittings can also be used as pendant fittings.

### CONSTRUCTION

**Housing:** sheet steel, electrostatic powder coat finish – basic shade RAL 9003 (signal white, glossy), RAL 7001 (silver grey) on request. Bottom sheet can be delivered in two variants: solid (L1) and perforated (L2).

**Louvers:** LA, LAM, LB, PAR, PAR MAT, PAR-V, PAR MAT-V

**Diffuser:** made of PMMA in opal or prismatic (PS) finish. Optionally, both types can be made of polycarbonate.

**Reflector:** additional top reflector (REF version) on request for T5 parabolic louver versions, an asymmetric reflector is also available

The optical system is held by four clamping springs that allow easy lamp replacement.

Further description of individual optic types is listed on the page 76/79, in section OPTICS.

**Classic ASR:** three lamp, impact-resistant version, developed especially for lighting of sport halls and areas, where higher protection against impacts from different directions is needed for luminaires. Optical part (parabolic louver) is protected with plastic cover (clear PC), which is built in sheet frame and secured to the luminaire's body with four clamping springs. Suspended and surface mounted versions available.

### WIRING

Light fixtures can be equipped with:

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, light fixtures are standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signals)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm), T8 (26 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> diameter
- a screwless three or five pole terminal allows connecting conductors up to 2.5 mm<sup>2</sup> cross-section
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request

### ACCESSORIES

- suspension accessories
- lamp holders allowing semi-recess mounting of light fixtures (ASN T5 version)
- in case of semi-recessed or pendant installation, the fixtures can be equipped with connectors allowing fast electrical connection: 3-pole connectors Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A (on request: connectors ISODOM, 5-pole connectors Wieland gesis GST 18i5, Wago Winsta 770)

## CLASSIC

Die Leuchten Classic sind zum Einbau in die Decken als Anbauleuchten bestimmt. Mit einem geeigneten Zubehör ist es möglich die meisten Leuchten auch als Hängeleuchten zu verwenden.

### KONSTRUKTION

**Leuchtenkörper:** Stahlblech, Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe - Grundton RAL 9003 (Signalweiß, glänzend), RAL 7001 (Silbergrau) auf Wunsch. Das Unterblech der Leuchte wird in einer vollen (L1) oder perforierten Ausführung (L2) hergestellt.

**Raster:** LA, LAM, LB, PAR, PAR MAT, PAR-V, PAR MAT-V

**Diffusor:** in einer Opalausführung (PMMA) oder einer prismatischen Ausführung (PS hergestellt. Beide Varianten können auf Wunsch aus Polykarbonat sein.

**Reflektor:** für Ausführungen T5 mit einem parabolischen Raster ist ein Zusatzoberreflektor (REF-Variante) auf Wunsch möglich, im Angebot ist auch ein asymmetrischer Reflektor

Das optische System wird mit vier Federn befestigt, die Lichtquellenaustausch ohne Werkzeug ermöglichen.

Nähere Beschreibung von einzelnen Optiktypen ist am Seite 76/79 in OPTICS Anlage angeführt.

**Classic ASR:** eine stoßfeste Ausführung mit drei Leuchtstofflampen, die speziell für die Beleuchtung von Sporthallen und Räumen entwickelt wurde, in denen ein erhöhter Schutz von Leuchten gegen Stöße von verschiedenen Richtungen erfordert ist. Der optische Teil (ein parabolischer Raster) ist mit einem Kunststoffdeckel (klares PC) geschützt, der in einen Blechrahmen eingesetzt und zum Leuchtenkörper mit vier Federn befestigt ist. Die Hänge- und Anbaumontage sind möglich.

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten können wie folgt ausgerüstet werden:

- mit konventionellen magnetischen Vorschaltgeräten, Standardklassen EEI=B2, Klasse EEI=B1 auf Wunsch, Leuchten sind standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, Standardklassen EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

**Andere Komponente:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm), T8 (26 mm) - die Lichtquellen sind extra zu bestellen
- Innenleiter mit einem festem Kupferkern mit einem Durchschnitt von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchschnitt von max. 2,5 mm<sup>2</sup> anzuschließen
- Leuchte können auf Wunsch mit Noteinheiten mit Autonombetrieb von 1 oder 3 Stunden ausgerüstet werden

### ZUBEHÖR

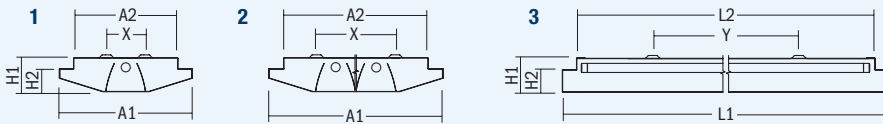
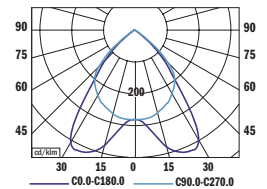
- Aufhängezubehör
- Leuchtenhalter für die Untersicht, die eine Imputzinstallation ermöglichen (ASN T5 Ausführung)
- bei einer Imputzinstallation oder Hängeinstallation ist es möglich, die Leuchten mit Verbindungssteckern für schnellen elektrischen Anschluss auszurüsten: dreipolige Verbindungsstecker Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A (Verbindungsstecker ISODOM, 5-polige Verbindungsstecker Wieland gesis GST 18i5, Wago Winsta 770 auf Wunsch)

# CLASSIC

## ASN T5 PAR-V/PAR MAT-V/PAR-V REFLEX/PAR MAT-V REFLEX

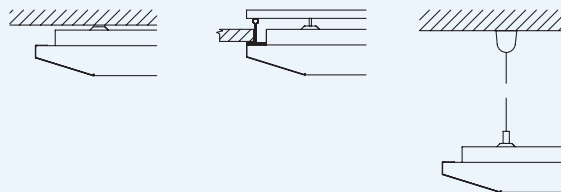


CLASSIC ASN T5 PAR-V 2x28W



	OPTIC				POWER	LAMP	PICTURE	DIMENSIONS				FIXING			
	PAR-V	PAR MAT-V	PAR-V REF	PAR MAT-V REF				A1	A2	L1	L2	H1	H2	X	Y
Classic ASN T5 PAR-V	•	•	•	•	4x14	T5	2;3	620	569	620	569	60	40	160	460
Classic ASN T5 PAR-V	•	•	•	•	4x24	T5	2;3	620	569	620	569	60	40	160	460
Classic ASN T5 PAR-V	•	•	•	•	1x14	T5	1;3	235	182	620	569	60	40	60	373
Classic ASN T5 PAR-V	•	•	•	•	1x24	T5	1;3	235	182	620	569	60	40	60	373
Classic ASN T5 PAR-V	•	•	•	•	1x28	T5	1;3	235	182	1220	1170	60	40	60	973
Classic ASN T5 PAR-V	•	•	•	•	1x35	T5	1;3	235	182	1520	1470	60	40	60	1273
Classic ASN T5 PAR-V	•	•	•	•	1x49	T5	1;3	235	182	1520	1470	60	40	60	1273
Classic ASN T5 PAR-V	•	•	•	•	1x54	T5	1;3	235	182	1220	1170	60	40	60	973
Classic ASN T5 PAR-V	•	•	•	•	1x80	T5	1;3	235	182	1520	1470	60	40	60	1273
Classic ASN T5 PAR-V	•	•	•	•	2x14	T5	2;3	315	260	620	569	60	40	140	373
Classic ASN T5 PAR-V	•	•	•	•	2x24	T5	2;3	315	260	620	569	60	40	140	373
Classic ASN T5 PAR-V	•	•	•	•	2x28	T5	2;3	315	260	1220	1170	60	40	140	973
Classic ASN T5 PAR-V	•	•	•	•	2x35	T5	2;3	315	260	1520	1470	60	40	140	1273
Classic ASN T5 PAR-V	•	•	•	•	2x49	T5	2;3	315	260	1520	1470	60	40	140	1273
Classic ASN T5 PAR-V	•	•	•	•	2x54	T5	2;3	315	260	1220	1170	60	40	140	973
Classic ASN T5 PAR-V	•	•	•	•	2x80	T5	2;3	315	260	1520	1470	60	40	140	1273

INSTALLATION





CLASSIC ASN T5 PAR-V 4x14W

1x...



PAR-V



PAR MAT-V



2x...



PAR-V REFLEX



PAR MAT-V REFLEX



4x ...

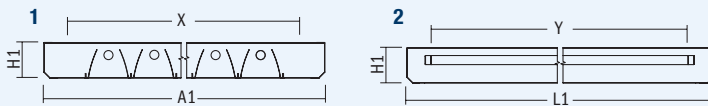
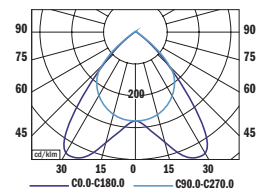


# CLASSIC

## ASN T5 PAR-V/PAR MAT-V/PAR-V REFLEX/PAR MAT-V REFLEX A1/A2/A3/A4/A5/A9

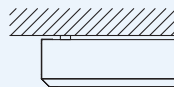


CLASSIC ASN T5 PAR-V A1 4x14W



	OPTIC				DECOR		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	PAR-V	PAR MAT-V	PAR-V REF	PAR MAT-V REF	L1	L2				A1	L1	H1	X	Y
Classic ASN T5 PAR-V A1	•	•	•	•	•	•	4x14	T5	1;2	615	615	62	444	485
Classic ASN T5 PAR-V A1	•	•	•	•	•	•	4x24	T5	1;2	615	615	62	444	485
Classic ASN T5 PAR-V A2	•	•	•	•	•	•	3x14	T5	1;2	615	615	62	444	485
Classic ASN T5 PAR-V A2	•	•	•	•	•	•	3x24	T5	1;2	615	615	62	444	485
Classic ASN T5 PAR-V A3	•	•	•	•	•	•	4x14	T5	1;2	615	615	62	444	485
Classic ASN T5 PAR-V A3	•	•	•	•	•	•	4x24	T5	1;2	615	615	62	444	485
Classic ASN T5 PAR-V A4	•	•	•	•	•	•	4x14	T5	1;2	615	615	62	444	485
Classic ASN T5 PAR-V A4	•	•	•	•	•	•	4x24	T5	1;2	615	615	62	444	485
Classic ASN T5 PAR-V A5	•	•	•	•	•	•	4x14	T5	1;2	615	615	62	444	485
Classic ASN T5 PAR-V A5	•	•	•	•	•	•	4x24	T5	1;2	615	615	62	444	485
Classic ASN T5 PAR-V A9	•	•	•	•	•	•	3x14	T5	1;2	615	615	62	444	485
Classic ASN T5 PAR-V A9	•	•	•	•	•	•	3x24	T5	1;2	615	615	62	444	485

INSTALLATION







CLASSIC ASN T5 PAR-V A1 4x14W

A1



A2



DECOR L1



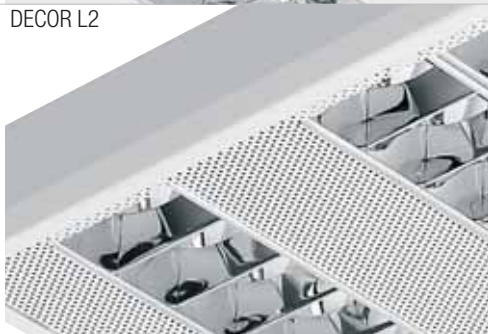
A3



A4



DECOR L2



A5



A9

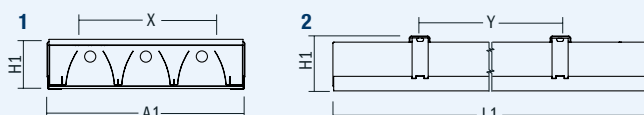
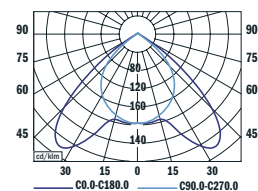


# CLASSIC

## ASR T5 PAR-V/PAR MAT-V/PAR-V REFLEX/PAR MAT-V REFLEX

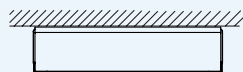


CLASSIC ASR T5 PAR-V 3x35W

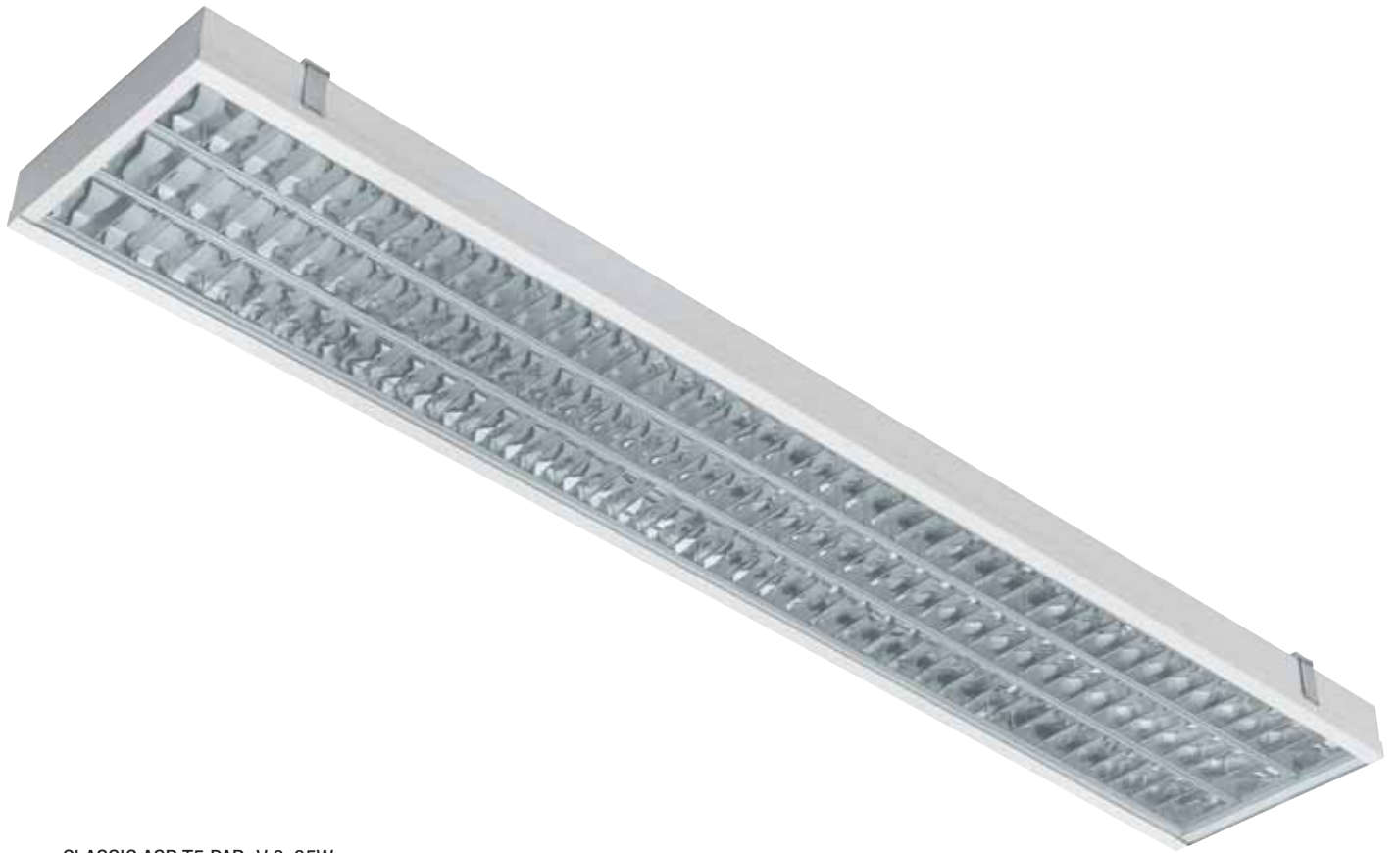


	OPTIC				POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	PAR-V	PAR MAT-V	PAR-V REF	PAR MAT-V REF				A1	L1	H1	X	Y
CLASIC ASR T5	•	•	•	•	3x28W	T5	1;2	282	1206	72	198	980
CLASIC ASR T5	•	•	•	•	3x54W	T5	1;2	282	1206	72	198	980
CLASIC ASR T5	•	•	•	•	3x35W	T5	1;2	282	1506	72	198	1280
CLASIC ASR T5	•	•	•	•	3x49W	T5	1;2	282	1506	72	198	1280
CLASIC ASR T5	•	•	•	•	3x80W	T5	1;2	282	1506	72	198	1280

INSTALLATION

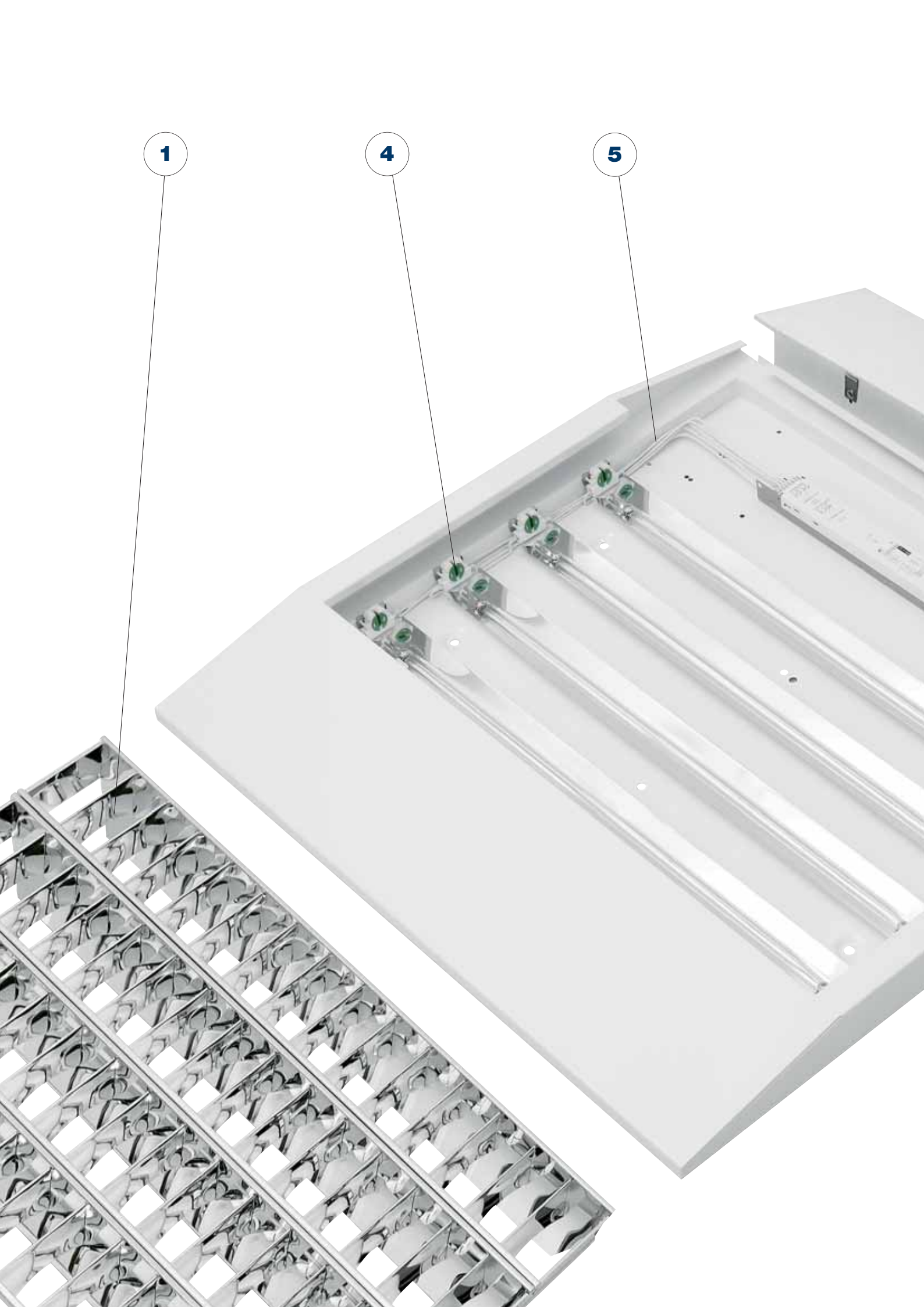






CLASSIC ASR T5 PAR-V 3x35W





1

4

5

# CLASSIC



## **ASN T5 PAR-V REFLEX ELECTRONIC CONTROL GEAR 4X14W**

- 1** Parabolická mriežka  
Parabolic louvre  
Parabolspiegelraster
- 1a** Top reflektor  
Top reflector  
Oberer Reflektor
- 2** Teleso svietidla  
Housing  
Leuchtenkörper
- 3** Elektronický predradník  
Electronic ballast  
Vorschaltgeräte
- 4** Päťica  
Lampholder  
Lampenhalter
- 5** Vodič  
Cable  
Kabel
- 6** Prechodka  
Rubber band  
Gummiband
- 7** Svorkovnica  
Terminal block  
Anschlussklemme





# CLASSIC



## ASN

T5

A1

L1

## ELECTRONIC CONTROL GEAR 4X14W

- 1** Parabolická mriežka  
Parabolic louvre  
Parabolspiegelraster
- 1a** Top reflektor  
Top reflector  
Oberer Reflektor
- 2** Teleso svietidla  
Housing  
Leuchtenkörper
- 3** Elektronický predradník  
Electronic ballast  
Vorschaltgeräte
- 4** Päťica  
Lamp holder  
Lampenhalter
- 5** Vodič  
Cable  
Kabel
- 6** Prechodka  
Rubber band  
Gummiband
- 7** Svorkovnica  
Terminal block  
Anschlussklemme



XXXXXXXXXXXXXXXX

02 - PAR-V (MIRO4)

0F - PAR-V REFLEX (MIRO4)

XXXXXXXXXXXXXXX

9 - ECG DIM 1-10V

A - ECG DIM DSI

B - ECG DALI

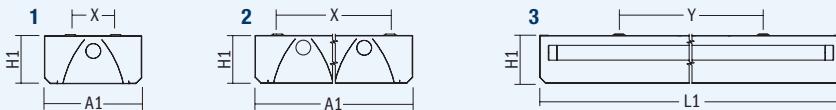
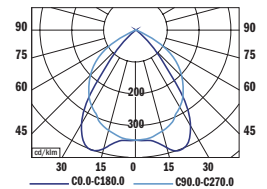


# CLASSIC

## ASN T8/T5 PAR/PAR MAT

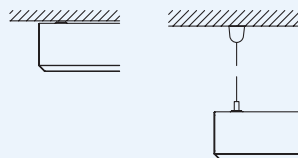
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 G13	T5 G5	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP20
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CLASSIC ASN T8 PAR 2x36W



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	PAR	PAR MAT				A1	L1	H1	X	Y
Classic ASN T8	•	•	1x36	T8	1,3	173	1250	84	85	1070
Classic ASN T8	•	•	1x58	T8	1,3	173	1550	84	85	1378
Classic ASN T8	•	•	1x70	T8	1,3	173	1810	84	85	1600
Classic ASN T8	•	•	2x18	T8	2,3	290	620	84	205	460
Classic ASN T8	•	•	2x36	T8	2,3	290	1250	84	205	1070
Classic ASN T8	•	•	2x58	T8	2,3	290	1550	84	205	1370
Classic ASN T8	•	•	2x70	T8	2,3	290	1810	84	205	1603
Classic ASN T8	•	•	3x18	T8	2,3	623	623	84	518	340
Classic ASN T8	•	•	4x18	T8	2,3	623	623	84	518	340
Classic ASN T8	•	•	3x36	T8	2,3	623	1250	84	518	950
Classic ASN T8	•	•	4x36	T8	2,3	623	1250	84	518	950
Classic ASN T5	•	•	1x28	T5	1,3	173	1250	84	85	1070
Classic ASN T5	•	•	1x54	T5	1,3	173	1250	84	85	1070
Classic ASN T5	•	•	1x35	T5	1,3	173	1550	84	85	1378
Classic ASN T5	•	•	1x49	T5	1,3	173	1550	84	85	1378
Classic ASN T5	•	•	1x80	T5	1,3	173	1550	84	85	1378
Classic ASN T5	•	•	2x14	T5	2,3	290	620	84	205	460
Classic ASN T5	•	•	2x24	T5	2,3	290	620	84	205	460
Classic ASN T5	•	•	2x28	T5	2,3	290	1250	84	205	1070
Classic ASN T5	•	•	2x54	T5	2,3	290	1250	84	205	1070
Classic ASN T5	•	•	2x35	T5	2,3	290	1550	84	205	1370
Classic ASN T5	•	•	2x49	T5	2,3	290	1550	84	205	1370
Classic ASN T5	•	•	2x80	T5	2,3	290	1550	84	205	1370

INSTALLATION



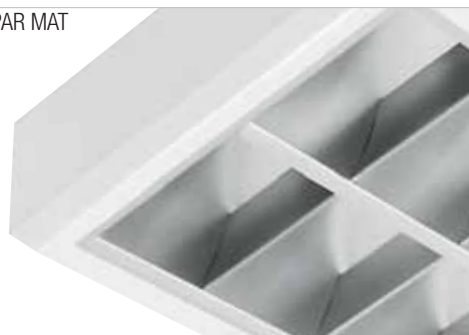


CLASSIC ASN T8 PAR 2x36W

PAR



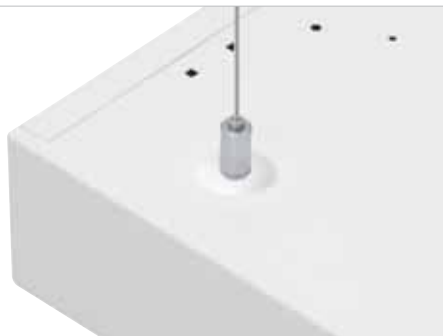
PAR MAT



RAL 9003



RAL 7001

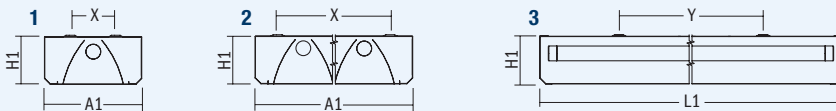
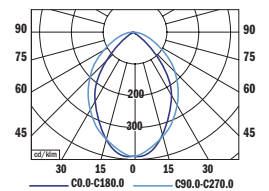


# CLASSIC

## ASN T8/T5 LA/LB/LAM

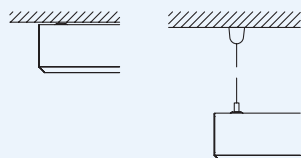
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 G13	T5 G5	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP20
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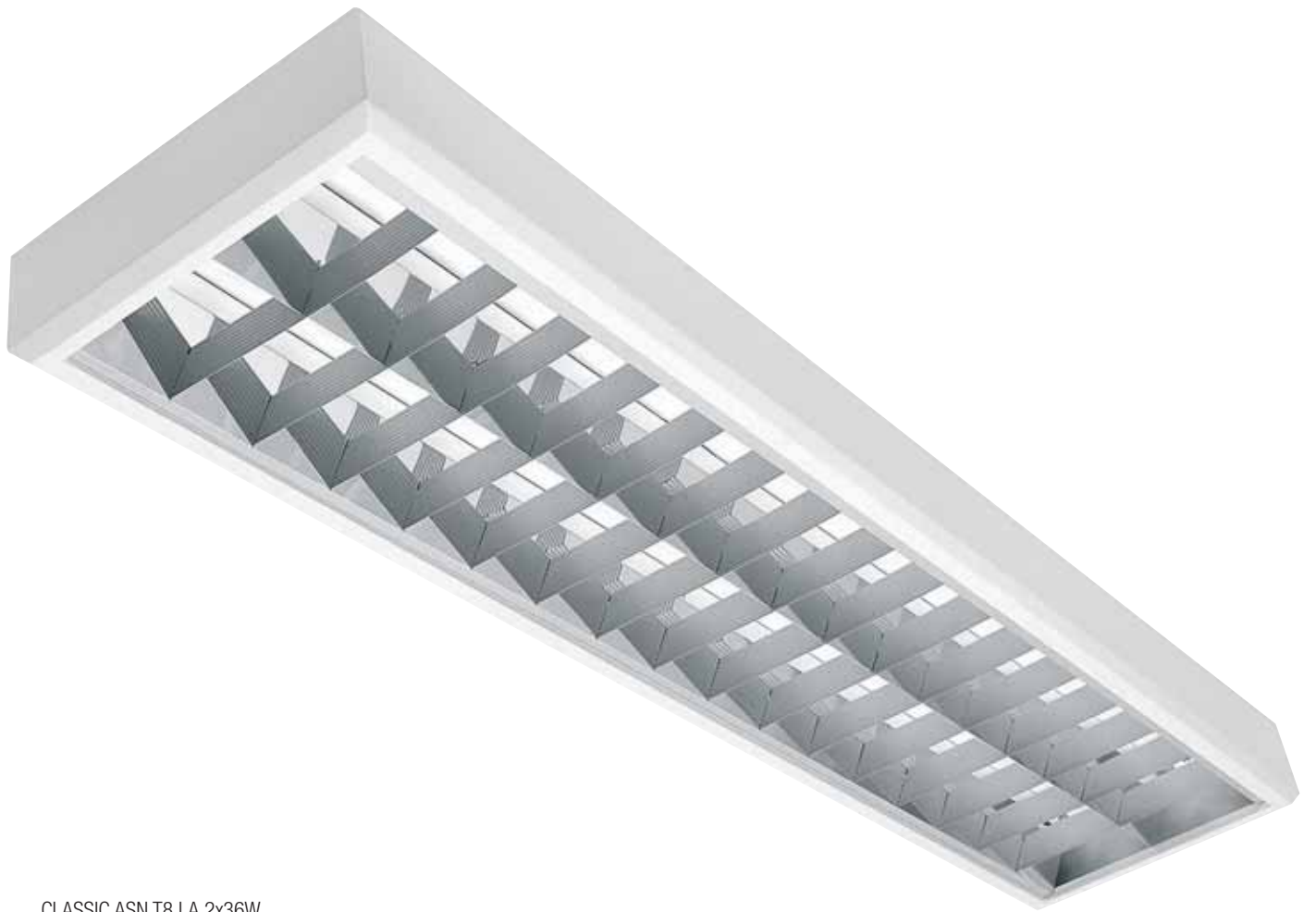
CLASSIC ASN T8 LA 2x36W



	OPTIC			POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	LA	LAM	LB				A1	L1	H1	X	Y
Classic ASN T8	•	•	•	1x36	T8	1;3	173	1250	84	85	1070
Classic ASN T8	•	•	•	1x58	T8	1;3	173	1550	84	85	1378
Classic ASN T8	•	•	•	1x70	T8	1;3	173	1810	84	85	1600
Classic ASN T8	•	•	•	2x18	T8	2;3	290	620	84	205	460
Classic ASN T8	•	•	•	2x36	T8	2;3	290	1250	84	205	1070
Classic ASN T8	•	•	•	2x58	T8	2;3	290	1550	84	205	1370
Classic ASN T8	•	•	•	2x70	T8	2;3	290	1810	84	205	1603
Classic ASN T8	•	•	•	3x18	T8	2;3	623	623	84	518	340
Classic ASN T8	•	•	•	4x18	T8	2;3	623	623	84	518	340
Classic ASN T8	•	•	•	3x36	T8	2;3	623	1250	84	518	950
Classic ASN T8	•	•	•	4x36	T8	2;3	623	1250	84	518	950
Classic ASN T5	•	•	•	1x28	T5	1;3	173	1250	84	85	1070
Classic ASN T5	•	•	•	1x54	T5	1;3	173	1250	84	85	1070
Classic ASN T5	•	•	•	1x35	T5	1;3	173	1550	84	85	1378
Classic ASN T5	•	•	•	1x49	T5	1;3	173	1550	84	85	1378
Classic ASN T5	•	•	•	1x80	T5	1;3	173	1550	84	85	1378
Classic ASN T5	•	•	•	2x14	T5	2;3	290	620	84	205	460
Classic ASN T5	•	•	•	2x24	T5	2;3	290	620	84	205	460
Classic ASN T5	•	•	•	2x28	T5	2;3	290	1250	84	205	1070
Classic ASN T5	•	•	•	2x54	T5	2;3	290	1250	84	205	1070
Classic ASN T5	•	•	•	2x35	T5	2;3	290	1550	84	205	1370
Classic ASN T5	•	•	•	2x49	T5	2;3	290	1550	84	205	1370
Classic ASN T5	•	•	•	2x80	T5	2;3	290	1550	84	205	1370

INSTALLATION





CLASSIC ASN T8 LA 2x36W

LA



LB



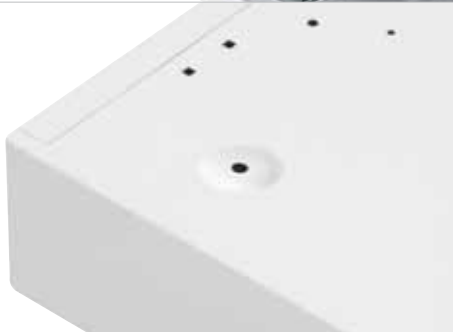
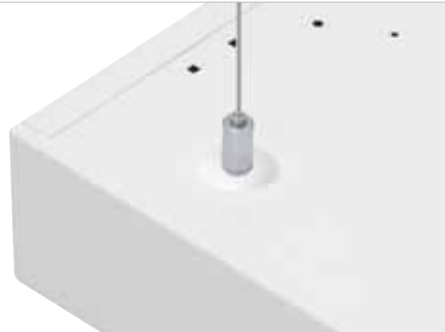
RAL 9003



LAM



RAL 7001

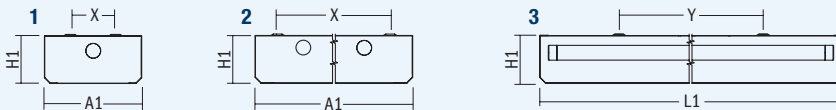
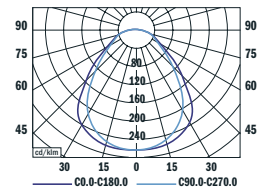


# CLASSIC

## ASN T8/T5 OPAL/PRISMA

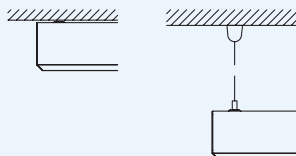
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 G13	T5 G5	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP 40
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CLASSIC ASN T8 PRISMA 4x18W



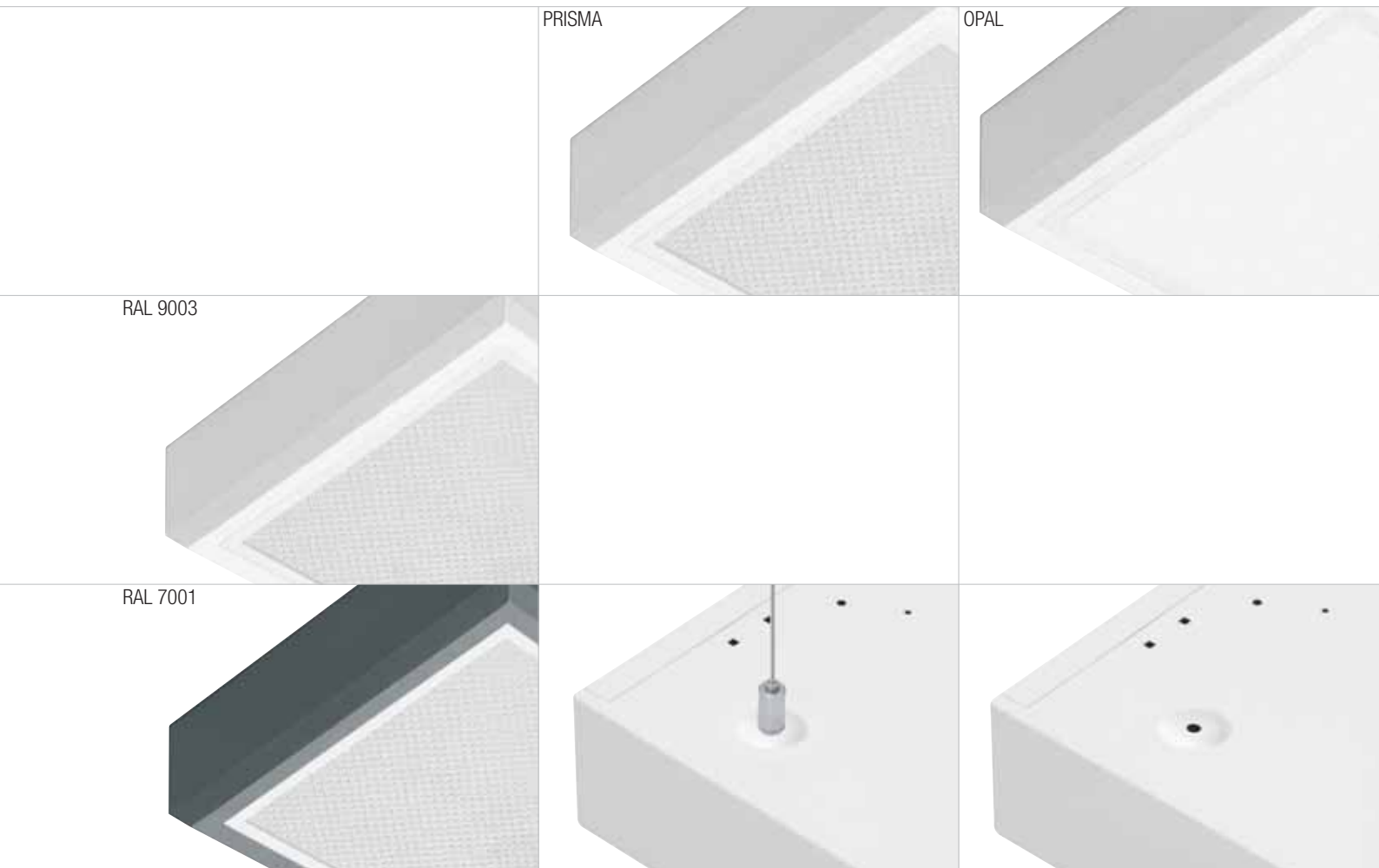
	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	OPAL	PRISMA				A1	L1	H1	X	Y
Classic ASN T8	•	•	1x36	T8	1,3	173	1250	84	85	1070
Classic ASN T8	•	•	1x58	T8	1,3	173	1550	84	85	1378
Classic ASN T8	•	•	2x18	T8	2,3	290	620	84	205	460
Classic ASN T8	•	•	2x36	T8	2,3	290	1250	84	205	1070
Classic ASN T8	•	•	2x58	T8	2,3	290	1550	84	205	1370
Classic ASN T8	•	•	3x18	T8	2,3	623	623	84	518	340
Classic ASN T8	•	•	4x18	T8	2,3	623	623	84	518	340
Classic ASN T8	•	•	3x36	T8	2,3	623	1250	84	518	950
Classic ASN T8	•	•	4x36	T8	2,3	623	1250	84	518	950
Classic ASN T5	•	•	1x28	T5	1,3	173	1250	84	85	1070
Classic ASN T5	•	•	1x54	T5	1,3	173	1250	84	85	1070
Classic ASN T5	•	•	1x35	T5	1,3	173	1550	84	85	1378
Classic ASN T5	•	•	1x49	T5	1,3	173	1550	84	85	1378
Classic ASN T5	•	•	1x80	T5	1,3	173	1550	84	85	1378
Classic ASN T5	•	•	2x14	T5	2,3	290	620	84	205	460
Classic ASN T5	•	•	2x24	T5	2,3	290	620	84	205	460
Classic ASN T5	•	•	2x28	T5	2,3	290	1250	84	205	1070
Classic ASN T5	•	•	2x54	T5	2,3	290	1250	84	205	1070
Classic ASN T5	•	•	2x35	T5	2,3	290	1550	84	205	1370
Classic ASN T5	•	•	2x49	T5	2,3	290	1550	84	205	1370
Classic ASN T5	•	•	2x80	T5	2,3	290	1550	84	205	1370

INSTALLATION





CLASSIC ASN T8 PRISMA 2x36W



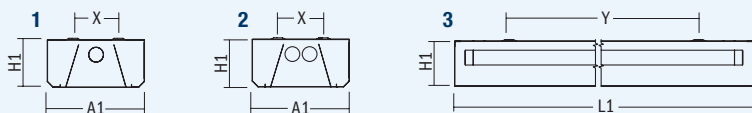
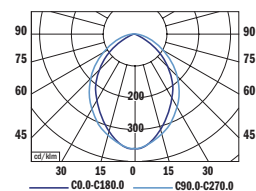


# CLASSIC

## SLIM T8/T5 LA/LAM

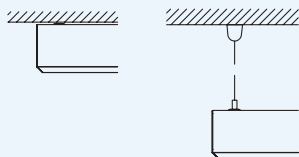
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 G13	T5 G5	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP20
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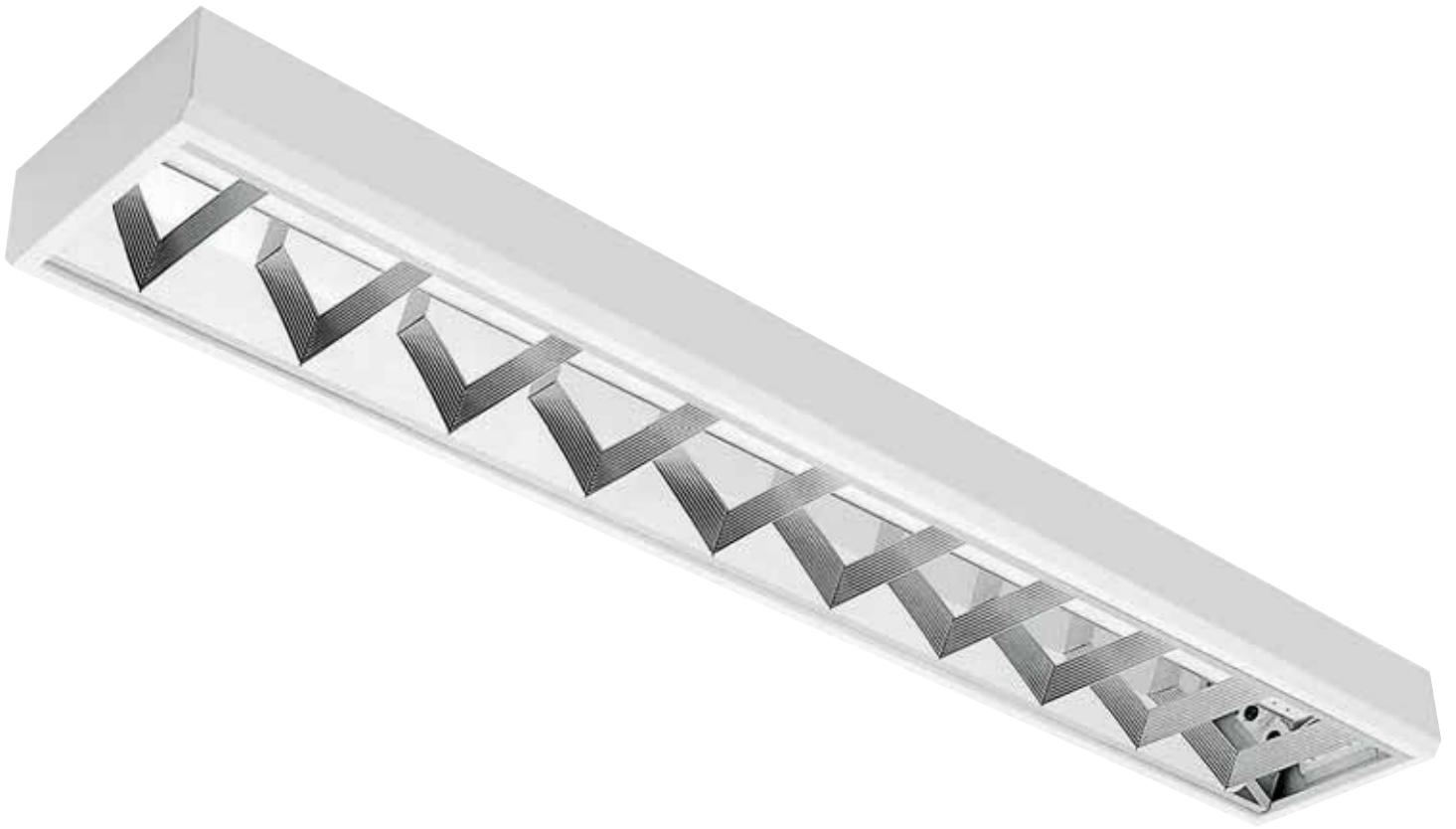
CLASSIC SLIM T8 LA 2x36W



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	LA	LAM				A1	L1	H1	X	Y
Classic SLIM T8	•	•	1x18	T8	1,3	210	625	80	118	433
Classic SLIM T8	•	•	1x36	T8	1,3	210	1235	80	118	1043
Classic SLIM T8	•	•	1x58	T8	1,3	210	1535	80	118	1343
Classic SLIM T8	•	•	2x18	T8	2,3	210	625	80	118	433
Classic SLIM T8	•	•	2x36	T8	2,3	210	1235	80	118	1043
Classic SLIM T8	•	•	2x58	T8	2,3	210	1535	80	118	1343
Classic SLIM T5	•	•	1x14	T5	1,3	210	625	80	118	433
Classic SLIM T5	•	•	1x24	T5	1,3	210	625	80	118	433
Classic SLIM T5	•	•	1x28	T5	1,3	210	1235	80	118	1043
Classic SLIM T5	•	•	1x35	T5	1,3	210	1535	80	118	1343
Classic SLIM T5	•	•	1x49	T5	1,3	210	1535	80	118	1343
Classic SLIM T5	•	•	1x54	T5	1,3	210	1235	80	118	1043
Classic SLIM T5	•	•	1x80	T5	1,3	210	1535	80	118	1343
Classic SLIM T5	•	•	2x14	T5	2,3	210	625	80	118	433
Classic SLIM T5	•	•	2x24	T5	2,3	210	625	80	118	433
Classic SLIM T5	•	•	2x28	T5	2,3	210	1235	80	118	1043
Classic SLIM T5	•	•	2x49	T5	2,3	210	1535	80	118	1343
Classic SLIM T5	•	•	2x35	T5	2,3	210	1535	80	118	1343
Classic SLIM T5	•	•	2x54	T5	2,3	210	1235	80	118	1043
Classic SLIM T5	•	•	2x80	T5	2,3	210	1535	80	118	1343

INSTALLATION





CLASSIC SLIM T8 LA 2x36W

LA



1x... LAM



2x...





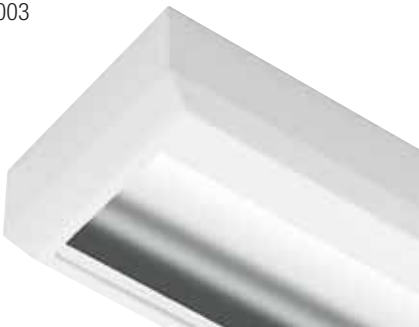


CLASSIC ASN T8 ASYMMETRIC POLISHED 1x36W

POLISHED



RAL 9003



MAT



RAL 7001

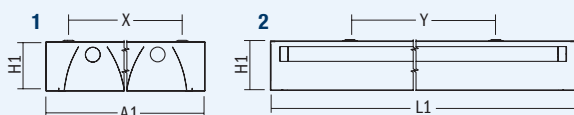
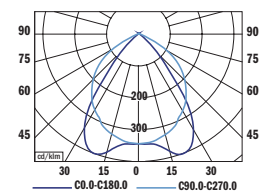


# CLASSIC

## AS T8 PAR/PAR MAT

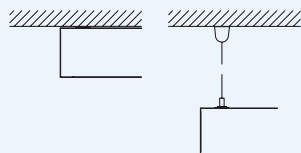


CLASSIC AS T8 PAR 2x36W



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	PAR	PAR MAT				A1	L1	H1	X	Y
Classic AS T8	•	•	2x18	T8	1,2	285	620	90	206	341
Classic AS T8	•	•	2x36	T8	1,2	285	1250	90	206	950
Classic AS T8	•	•	2x58	T8	1,2	285	1550	90	206	1250
Classic AS T8	•	•	4x18	T8	1,2	623	623	90	518	340
Classic AS T8	•	•	4x36	T8	1,2	623	1250	90	498	950

INSTALLATION





CLASSIC AS T8 PAR 2x36W

PAR



RAL 9003



PAR MAT



RAL 7001



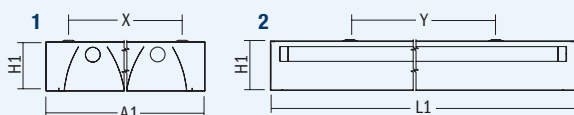
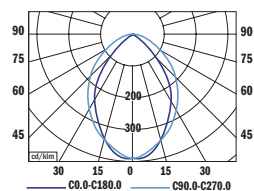


# CLASSIC

**AS**  
**T8**  
**LA/LAM/LB**

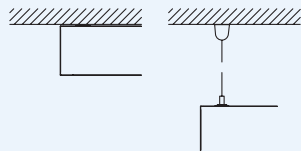


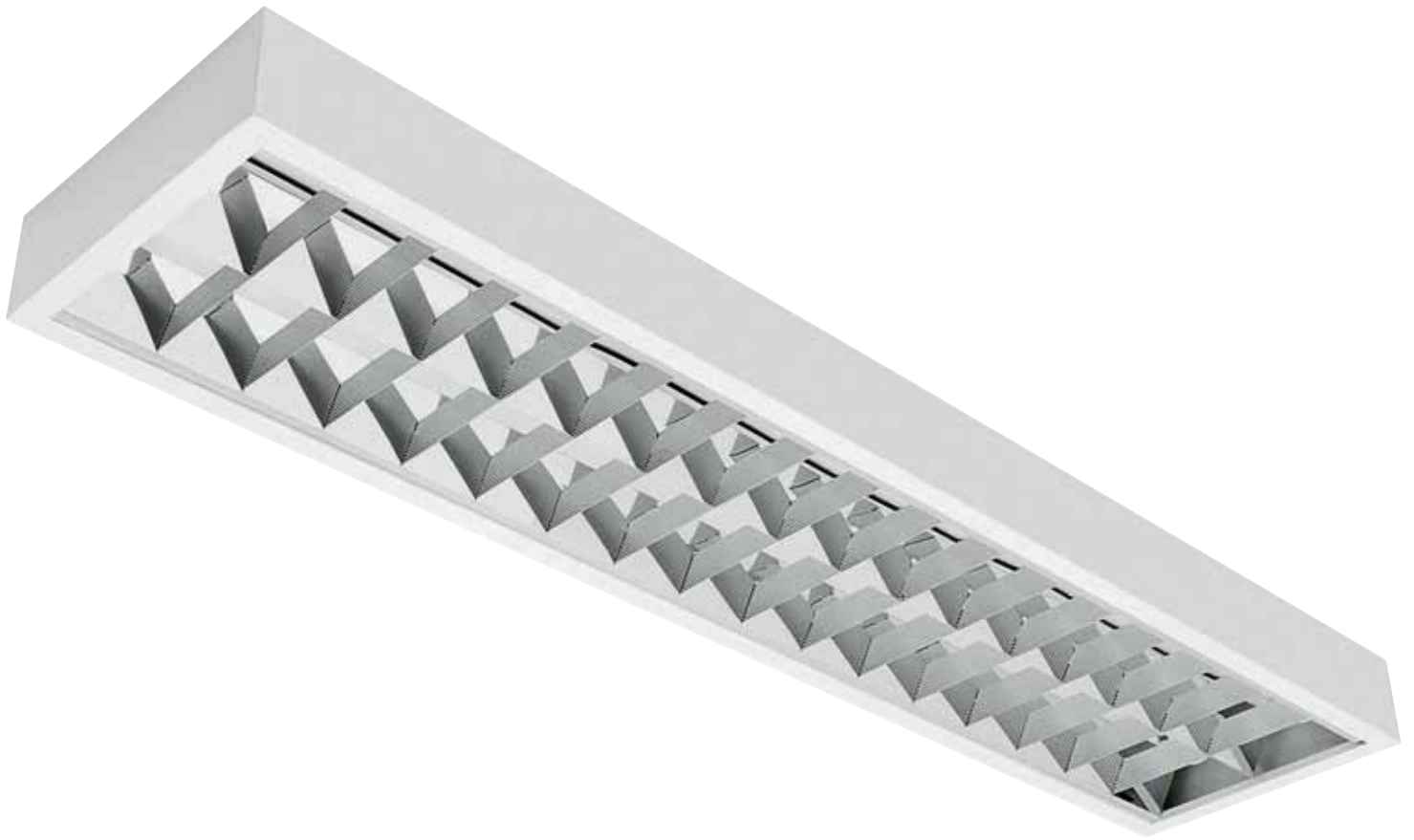
CLASSIC AS T8 LA 2x36W



	LA	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
		LAM	LB				A1	L1	H1	X	Y
Classic AS T8	•	•	•	2x18	T8	1;2	285	620	90	206	341
Classic AS T8	•	•	•	2x36	T8	1;2	285	1250	90	206	950
Classic AS T8	•	•	•	2x58	T8	1;2	285	1550	90	206	1250
Classic AS T8	•	•	•	4x18	T8	1;2	623	623	90	518	340
Classic AS T8	•	•	•	4x36	T8	1;2	623	1250	90	498	950

INSTALLATION





CLASSIC AS T8 LA 2x36W

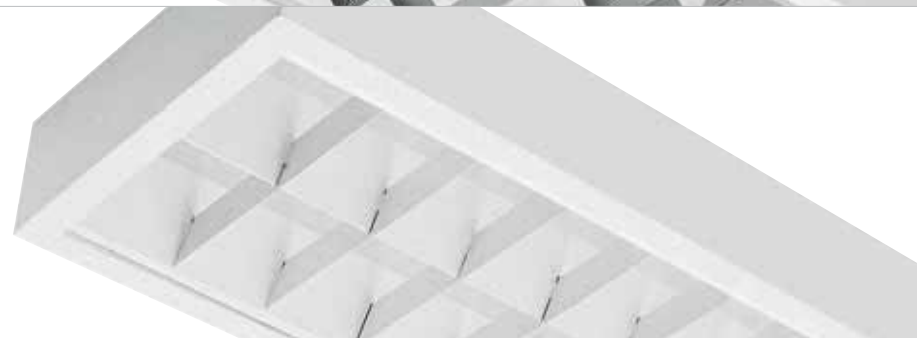
LA



RAL 9003



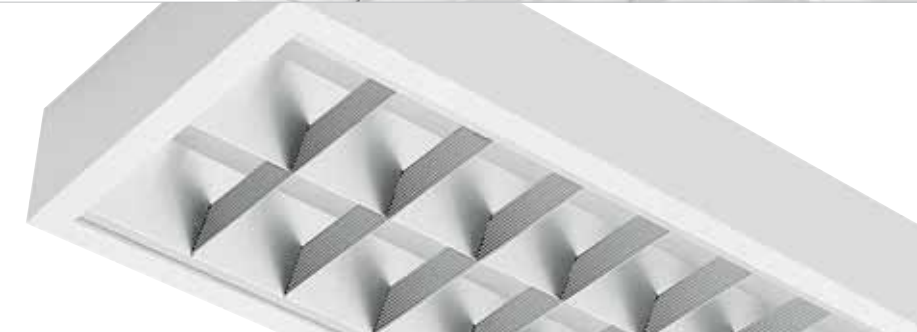
LB



RAL 7001



LAM

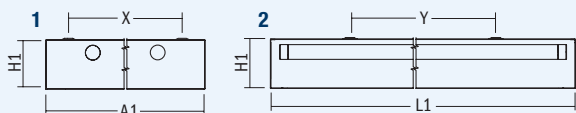
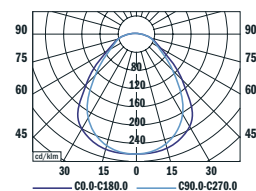


# CLASSIC

**AS  
T8  
OPAL/PRISMA**

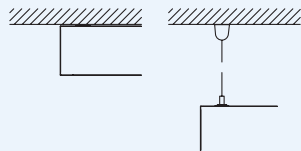


CLASSIC AS T8 PRISMA 4x18W



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	OPAL	PRISMA				A1	L1	H1	X	Y
Classic AS T8	•	•	2x18	T8	1,2	285	620	90	206	341
Classic AS T8	•	•	2x36	T8	1,2	285	1250	90	206	950
Classic AS T8	•	•	2x58	T8	1,2	285	1550	90	206	1250
Classic AS T8	•	•	4x18	T8	1,2	623	623	90	518	340
Classic AS T8	•	•	4x36	T8	1,2	623	1250	90	498	950

INSTALLATION



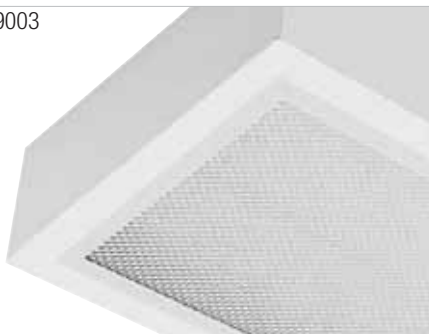


CLASSIC AS T8 PRISMA 2x36W

PRISMA



RAL 9003

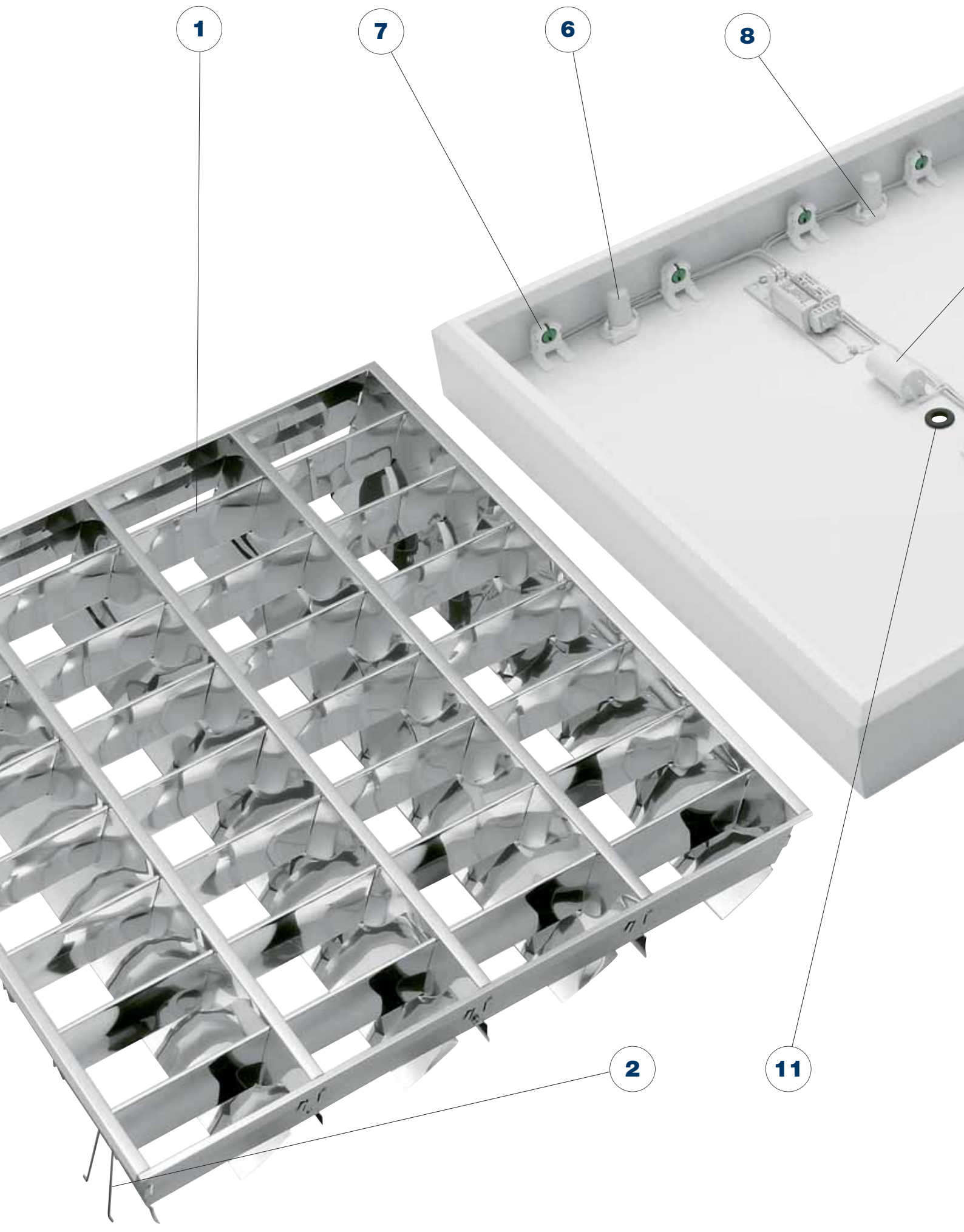


OPAL



RAL 7001





# CLASSIC



## ASN T8 PAR CONVENTIONAL CONTROL GEAR

- 1** Parabolická mriežka  
Parabolic louvre  
Parabolspiegelraster
- 2** Upínacia pružina  
Clamping spring  
Federnde Verrschlusse
- 3** Teleso svietidla  
Housing  
Leuchtenkörper
- 4** Predradník  
Ballast  
Vorschaltgeräte
- 5** Kondenzátor  
Capacitor  
Kondensatoren
- 6** Štartér  
Starter  
Zündgeräte
- 7** Päťica  
Lampholder  
Lampenhalter
- 8** Držiak štartéra  
Starterholder  
Zündgerätehalter
- 9** Vodič  
Cable  
Kabel
- 10** Svorkovnica  
Terminal block  
Anschlussklemme
- 11** Prechodka  
Rubber band  
Gummiband



# OPTIC

## RELAX/CLASSIC T5/T8

Rad svetidiel Relax/Classic je flexibilný a univerzálny. Široký výber mriežok a difúzorov spolu s možnosťou osadenia do väčšiny súčasných podhľadových stropov (Relax) robia z týchto typov svetidiel vhodnú voľbu pre takmer každú interiérovú aplikáciu. Vysokoleštené a matné mriežky sú navrhované tak, aby svetidlá spĺňali prísne požiadavky kladené na vysoký zrakový komfort, ktoré sú normou vyžadované v kancelárskych priestoroch. Rozptylné osvetlenie pre menej náročné využitie je dosahované pomocou kvalitných, účinných opálových alebo prizmatických v ráme vsadených difúzorov.

Mriežkové systémy zabezpečujú vynikajúce obmedzenie oslnenia a zrakový komfort v porovnaní s plastovými difúzormi. Ich hlavnou úlohou je zamedziť nežiadúcim odrazom vznikajúcich na obrazovkách počítačov.

### T5 optics

Menší priemer žiariviek T5 (o 40% menší priemer ako u žiariviek T8) umožňuje konštrukciu odpovedajúcu menším mriežkam. Úspory z ušetreného materiálu však nie sú všetky výhody, ktoré ponúkajú mriežky T5. Menší priemer žiariviek (16mm) spolu s použitím dômyselne vytvarovaných, vysoko účinných mriežok má za následok veľmi presné smerovanie svetelného toku žiariviek smerom von zo svetidla. Pre žiarivkové svetidlá osadené T5 zdrojmi je najvhodnejšou voľbou použitie parabolickej mriežky. V svetidlách Relax/Classic T5 sú skombinované vlastnosti ako vysoká účinnosť svetidla a špičkové rozloženie svetelného toku. Tienidlá medzi mriežkami môžu byť z plného alebo perforovaného plechu. Perforované poskytujú okrem estetického hľadiska aj mierne zvýšenie účinnosti svetidla.

Series of Relax (Classic) fittings is flexible and universal. The wide choice of louvers and diffusers, along with its compatibility with many different ceiling types, makes this luminaires suitable for almost any interior application. In office applications, the mirror and satin louver attachments are designed to meet the most demanding of visual tasks. For more general applications, diffuse efficient lighting is achieved via high quality, frame mounted opal or prismatic covers.

Louvers provide superior glare control and high visual comfort compared with lens-diffuser systems. The most common application of louvers is to eliminate the fixture glare reflected on computer screens.

### T5 optics

The smaller diameter of T5 lamps (40% smaller in diameter than T8 Lamps) enables the design of correspondingly smaller louvers. Economy of scale, however, is not the complete story. The small diameter of the lamps (16mm) together with the use of high performance reflectors, results in more precise control of the direction and the output of the light source.

For fluorescent luminaires with T5 lamps, the most effective means of optical control is parabolic reflection. Efficiency, excellent light distribution and a wide choice of standard options have been combined to produce Relax/Classic T5 range. Solid or back-lit perforated feature panels can be selected. Besides the aesthetic aspect, perforated panels provides also little increase of luminaire efficiency.

Aufgrund der großen Auswahl an Rastern und Abdeckelementen sowie der Einbaumöglichkeiten bei unterschiedlichen Deckenkonstruktionen eignen sich die Relax/Classic-Leuchten für nahezu alle Anwendungen im Innenbereich. In Büroräumen erfüllen die Spiegel- und Mattrasterblenden die anspruchsvollsten Sehaufgaben. In Anwendungen mit Allgemeinbeleuchtung ergeben unsere hochwertigen opalen und prismatischen Abdeckelemente, die am Leuchtenrahmen montiert werden, eine wirkungsvolle diffuse Beleuchtung. Raster bieten im Vergleich zu Linsenstreukörper-Systemen eine effizientere Blendungskontrolle und höheren Sehkomfort. Raster werden insbesondere verwendet, um Leuchtenblendung an Computerbildschirmen zu verhindern.

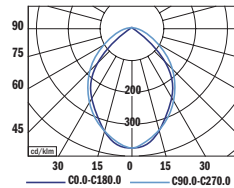
### T5 optics

Der kleinere Durchmesser der T5-Lampen (40% kleiner als bei T8) ermöglicht dementsprechend kleinere Raster. Der Unterschied in der Größe ist aber nicht alles. Aufgrund des kleinen Lampendurchmessers (16mm) und der Verwendung von hochwirksamen Reflektoren ist die Lichtquelle hinsichtlich Ausbreitungsrichtung und Ausbeute präziser.

Bei Leuchtstoffleuchten mit T5-Lampen ist die wirkungsvollste Optiklösung parabolische Reflexion. Relax/Classic T5 bietet einen hohen Wirkungsgrad und eine exzellente Lichtverteilung. Bei der optischen Abdeckung kann zwischen Vollelementen und gelochten Elementen gewählt werden, wodurch die Leuchte den spezifischen Anforderungen genau angepasst werden kann.



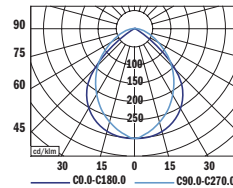
LA  
T8  
4x18W



efficiency 64%



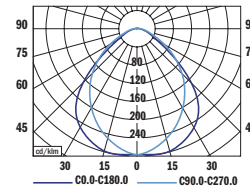
LAM  
T8  
4x18W



efficiency 59%



LB  
T8  
4x18W



efficiency 61%

**Glare Evaluation According to UGR**

	70	70	50	50	30	30	70	70	50	50	30	30
p-ceiling	50	30	50	30	30	20	70	30	50	30	30	20
p-walls	20	20	20	20	20	20	20	20	20	20	20	20
p-floor	20	20	20	20	20	20	20	20	20	20	20	20
Room size	X	Y	Viewing direction at right angles to lamp axis				Viewing direction parallel to lamp axis					
2H	2H	2H	12.7	13.8	13.0	14.0	14.2	16.4	17.4	16.6	17.6	17.9
3H	3H	3H	12.6	13.5	12.9	13.8	14.0	17.4	18.3	17.7	18.6	18.8
4H	4H	4H	12.5	13.4	12.8	13.7	13.9	17.8	18.7	18.2	19.0	19.3
6H	6H	6H	12.4	13.2	12.8	13.5	13.8	18.2	19.1	18.6	19.4	19.7
8H	8H	8H	12.4	13.2	12.7	13.5	13.8	18.4	19.2	18.7	19.5	19.8
12H	12H	12H	12.3	13.1	12.7	13.4	13.7	18.5	19.2	18.9	19.5	19.9
4H	2H	3H	13.1	14.0	13.5	14.3	14.6	16.4	17.3	16.7	17.5	17.8
4H	4H	4H	13.0	13.7	13.4	14.0	14.4	18.1	18.8	18.5	19.1	19.5
6H	6H	6H	13.0	13.5	13.4	13.9	14.3	18.7	19.3	19.1	19.6	20.0
8H	8H	8H	12.9	13.5	13.4	13.8	14.3	18.9	19.4	19.3	19.8	20.2
12H	12H	12H	12.3	13.4	13.3	13.8	14.2	19.1	19.5	19.9	20.4	
8H	4H	6H	13.3	13.8	13.7	14.2	14.6	18.1	18.6	18.5	19.0	19.4
8H	6H	8H	13.2	13.7	13.7	14.1	14.5	18.7	19.1	19.2	19.6	20.0
12H	8H	12H	13.2	13.6	13.7	14.0	14.5	19.0	19.4	19.5	19.8	20.3
12H	12H	12H	13.2	13.5	13.7	14.0	14.5	19.2	19.5	19.7	20.0	20.3
12H	4H	6H	13.3	13.8	13.7	14.2	14.6	18.1	18.5	18.5	18.9	19.4
6H	6H	8H	13.3	13.7	13.8	14.1	14.6	18.7	19.4	19.2	19.5	20.0
8H	8H	12H	13.3	13.6	13.8	14.1	14.6	19.0	19.3	19.5	19.8	20.3

**variation of observer position for the luminaire distances S**

S=	1.0H	+1.3/-2.7	+0.2/-0.2
	1.5H	+2.6/-5.4	+0.3/-0.6
	2.0H	+4.1/-6.1	+1.2/-1.2
Standard table	BK01	BK05	
CorrectionSummand	-6.4	0.4	

corrected glare indices for 5852lm total flux

**Glare Evaluation According to UGR**

	70	70	50	50	30	30	70	70	50	50	30	30
p-ceiling	50	30	50	30	30	20	70	30	50	30	30	20
p-walls	20	20	20	20	20	20	20	20	20	20	20	20
p-floor	20	20	20	20	20	20	20	20	20	20	20	20
Room size	X	Y	Viewing direction at right angles to lamp axis				Viewing direction parallel to lamp axis					
2H	2H	2H	13.7	14.8	13.9	15.0	15.2	15.9	17.0	16.2	17.2	17.5
3H	3H	3H	13.5	14.5	13.9	14.8	15.0	16.9	17.9	17.2	18.1	18.4
4H	4H	4H	13.5	14.4	13.8	14.7	15.0	17.4	18.3	17.7	18.6	18.8
6H	6H	6H	13.4	14.2	13.7	14.6	14.9	17.7	18.6	18.1	18.9	19.2
8H	8H	8H	13.4	14.2	13.7	14.5	14.8	17.9	18.7	18.2	19.0	19.3
12H	12H	12H	13.3	14.1	13.7	14.4	14.8	18.0	18.8	18.4	19.1	19.4
4H	2H	3H	14.1	15.0	14.4	15.3	15.5	16.0	17.0	16.4	17.2	17.5
4H	4H	4H	14.0	14.8	14.4	15.1	15.4	17.2	18.0	17.5	18.3	18.6
6H	6H	6H	14.0	14.6	14.3	15.0	15.3	17.8	18.5	18.2	18.8	19.2
8H	8H	8H	13.9	14.5	14.3	14.9	15.3	18.3	18.9	18.7	19.3	19.7
12H	12H	12H	13.9	14.4	14.3	14.8	15.2	18.5	19.1	18.9	19.5	19.9
12H	12H	12H	13.8	14.3	14.3	14.7	15.2	18.7	19.2	19.4	19.6	20.0
8H	4H	6H	14.1	14.7	14.6	15.1	15.5	17.7	18.3	18.2	18.7	19.1
6H	6H	8H	14.1	14.5	14.6	15.0	15.4	18.4	18.8	18.8	19.2	19.7
8H	8H	12H	14.1	14.5	14.6	14.9	15.4	18.7	19.0	19.1	19.5	20.0
12H	12H	12H	14.0	14.4	14.5	14.8	15.3	18.9	19.2	19.4	19.7	20.2
12H	4H	6H	14.2	14.7	14.6	15.1	15.5	17.7	18.2	18.2	18.6	19.0
6H	6H	8H	14.2	14.6	14.6	15.0	15.5	18.3	18.7	18.8	19.2	19.6
8H	8H	12H	14.2	14.5	14.6	15.0	15.5	18.6	19.0	19.1	19.4	19.9

**Variation of observer position for the luminaire distances S**

S=	1.0H	+1.1/-2.1	+0.2/-0.3
	1.5H	+2.4/-5.3	+0.5/-0.7
	2.0H	+4.0/-6.3	+0.9/-1.2
Standard table	BK01	BK04	
CorrectionSummand	-5.8	-0.8	

Corrected Glare Indices referring to 5124lm Total Luminous Lux

**Glare Evaluation According to UGR**

	70	70	50	50	30	30	70	70	50	50	30	30
p-ceiling	50	30	50	30	30	20	70	30	50	30	30	20
p-walls	20	20	20	20	20	20	20	20	20	20	20	20
p-floor	20	20	20	20	20	20	20	20	20	20	20	20
Room size	X	Y	Viewing direction at right angles to lamp axis				Viewing direction parallel to lamp axis					
2H	2H	2H	11.5	12.4	11.8	12.7	12.9	15.8	16.7	16.1	16.9	17.2
3H	3H	3H	11.4	12.2	11.7	12.5	12.7	15.7	16.5	16.0	16.8	17.0
4H	4H	4H	11.3	12.1	11.6	12.4	12.6	15.6	16.4	15.9	16.7	16.9
6H	6H	6H	11.2	12.0	11.6	12.2	12.5	15.5	16.3	15.8	16.5	16.8
8H	8H	8H	11.2	11.9	11.5	12.2	12.5	15.5	16.2	15.8	16.5	16.7
12H	12H	12H	11.2	11.8	11.5	12.1	12.4	15.5	16.1	15.8	16.4	16.7
4H	2H	3H	11.6	12.4	11.9	12.7	12.9	15.6	16.4	15.9	16.7	16.9
4H	4H	4H	11.4	12.2	11.7	12.5	12.8	15.7	16.5	16.0	16.8	17.0
6H	6H	6H	11.4	12.0	11.6	12.3	12.7	15.4	16.0	15.8	16.3	16.7
8H	8H	8H	11.4	11.8	11.6	12.2	12.6	15.4	15.8	15.8	16.2	16.6
12H	12H	12H	11.3	11.8	11.7	12.1	12.5	15.3	15.8	15.8	16.2	16.6
12H	12H	12H	11.3	11.7	11.7	12.1	12.5	15.3	15.7	15.7	16.1	16.5
8H	4H	6H	11.3	11.8	11.7	12.1	12.5	15.3	15.8	15.8	16.2	16.6
6H	6H	8H	11.2	11.6	11.7	12.0	12.5	15.2	15.6	15.7	16.0	16.5
8H	8H	12H	11.2	11.5	11.7	11.9	12.4	15.2	15.5	15.7	15.9	16.4
12H	12H	12H	11.1	11.4	11.6	11.9	12.4	15.2	15.4	15.6	15.9	16.4
12H	4H	6H	11.3	11.7	11.7	12.1	12.5	15.3	15.7	15.7	16.1	16.5
6H	6H	8H	11.2	11.5	11.7	11.9	12.4	15.2	15.5	15.7	15.9	16.4
8H	8H	12H	11.1	11.4	11.6	11.9	12.4	15.2	15.4	15.6	15.9	16.4

**Variation of observer position for the luminaire distances S**

S=	1.0H	+2.5/-8.5	+1.1/-1.4
	1.5H	+4.1/-13.6	+2.4/-6.2
	2.0H	+5.8/-18.5	+4.3/-15.5
Standard table	BK00	BK00	
CorrectionSummand	-8.6	-4.4	

Corrected Glare Indices referring to 5124lm Total Luminous Lux

Vysokoleštená, anodizovaná zrkadlová mriežka s matnými, vrúbkovanými priečnymi lamelami. Zabezpečuje veľmi dobré smerovanie svetelného toku pri vysokej účinnosti svetidla. Táto hliníková mriežka ponúka veľmi dobrý pomer medzi jej vlastnosťami, kvalitou a cenou. Priečne lamely z matného hliníkového plechu majú stromčekový profil. Mriežka je vybavená 4 upínacími pružinami. Hliník: Alanod 350G (316G2 - na želanie)

A specular polished aluminium optic, with matte etched aluminium cross blades, provides very good control of the light beam through high fixture efficiency. This aluminium louver offers a very good properties/quality/price ratio. The dull finish, aluminium cross blades have a tree profile. The louver is equipped with 4 clamping springs. Aluminium: Alanod 350G (316G2 - on request)

Ein hochpolierter, anodisierter Spiegelraster mit matten Kerbquerlamellen. Er gewährleistet eine sehr gute Richtung des Lichtstromes bei einer hohen Leuchtwirkung. Dieser Aluminiumraster bietet ein sehr gutes Verhältnis zwischen seinen Eigenschaften, Qualität und Preis an. Die Querlamellen aus mattem Aluminiumblech haben einen Baumprofil. Der Raster ist mit vier Spannfedern ausgerüstet. Aluminium: Alanod 350G (316G2 - auf Wunsch)

Rovnaká mriežka ako typ LA zabezpečuje vďaka matnej úprave ešte väčšie smerovanie svetla ako mriežky z lešteného hliníka. Matná anodizovaná hliníková mriežka, priečne lamely z matného hliníkového plechu so stromčekovým profilom. Mriežka je vybavená 4 upínacími pružinami. Hliník: Alanod mill finish 1300

The same louver as LA but provides even softer light distribution than a louver with polished aluminium. The matte finish, anodised aluminium louver and dull finish, aluminium cross blades have a tree profile. The louver is equipped with 4 clamping springs. Aluminium: Alanod mill finish 1300

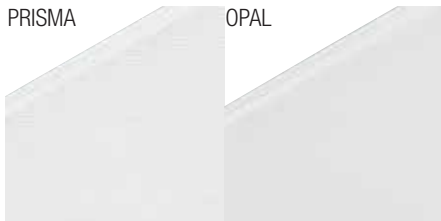
Der gleiche Raster wie der LA-Typ gewährleistet dank der matten Gestaltung eine noch weichere Lichtrichtung als die Raster aus poliertem Aluminium. Matter anodisierter Aluminiumraster, Querlamellen aus mattem Aluminiumblech mit Baumprofil. Der Raster ist mit vier Spannfedern ausgestattet. Aluminium: Alanod mill finish 1300

Na bielo nastriekaná mriežka s difúznym odrazom svetla, vybavená 4 upínacími pružinami. Je vhodná pre montáž do miestností, kde nie je kladený veľký dôraz na precízne smerovanie svetelného toku zo svetidiel.

These white coloured, sheet fixture optics, which utilise diffusion reflection, are also equipped with 4 clamping springs. Suitable for room installations where specific control of light flux is not requested.

Ein weiß gespritzter Raster mit einer diffusen Lichtreflexion, ausgestattet mit 4 Spannfedern. Er ist zum Einbau in einen Raum geeignet, wo keine große Betonung auf präzise Richtung des Lichtstromes aus den Leuchten gelegt wird.



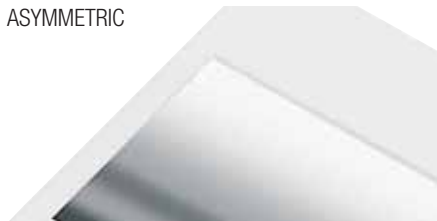
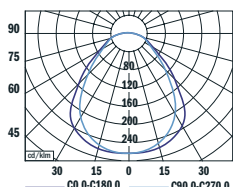
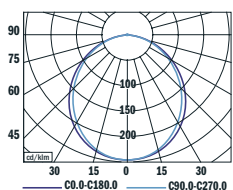


OPAL  
T8  
4x18W

efficiency 66%

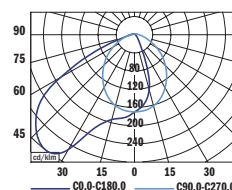
PRISMA  
T8  
4x18W

efficiency 60,1%



ASYMMETRIC  
T8  
1x18W

efficiency 49%



Asymetrické smerovanie svetelného toku len do jednej strany umožňuje návrhom osvetlenia vyzdvihnúť steny alebo tovar vystavený na policiach pri zachovaní rovnakého typu svetidla, ktorý je použitý pre celú osvetľovaciu sústavu. Taktiež veľmi vhodné pre osvetlenie tabule v učebniach.

Asymmetrical light distribution that enables designers to accentuate walls and displays while still applying the same type of luminaire appearance as used for general lighting. Suitable for the brightening up of shelves in sales rooms or boards in class rooms.

Asymmetrische Lichtstärkeverteilung, die eine Hervorhebung von bestimmten Bereichen im Raum ermöglicht, wobei die gleichen Leuchtentypen wie für die Allgemeinbeleuchtung verwendet werden. Geeignet für das Aufhellen von Regalen in Verkaufsräumen oder Schultafeln in Klassenzimmern.

#### Glare Evaluation According to UGR

p-ceiling		70	70	50	50	30	70	70	50	50	30		
p-walls		50	30	50	30	30	70	30	50	30	30		
p-floor		20	20	20	20	20	20	20	20	20	20		
Room size		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis						
X	Y												
2H	2H	17.2	18.5	17.5	18.7	18.9	16.7	18.0	17.0	18.3	18.5		
	3H	18.7	19.8	19.0	20.1	20.4	18.2	19.3	18.5	19.6	19.9		
	4H	19.2	20.3	19.6	20.6	20.9	18.7	19.8	19.0	20.1	20.4		
	6H	19.6	20.6	19.9	20.9	21.2	19.1	20.1	19.4	20.4	20.7		
	8H	19.7	20.7	20.0	21.0	21.3	19.1	20.1	19.5	20.5	20.8		
12H	19.7	20.7	20.1	21.0	21.3	19.2	20.1	19.5	20.5	20.8			
4H	2H	17.8	18.9	18.1	19.2	19.5	17.4	18.5	17.8	18.8	19.1		
	3H	19.4	20.4	19.8	20.7	21.0	19.0	20.0	19.4	20.3	20.6		
	4H	20.1	21.0	20.5	21.3	21.7	19.7	20.5	20.1	20.9	21.3		
	6H	20.6	21.3	21.0	21.7	22.1	20.2	20.9	20.6	21.3	21.7		
	8H	20.7	21.4	21.2	21.8	22.2	20.3	21.0	20.7	21.4	21.8		
12H	20.8	21.4	21.3	21.8	22.2	20.4	21.0	20.8	21.4	21.8			
8H	4H	20.4	21.0	20.8	21.4	21.9	20.0	20.7	20.4	21.1	21.5		
	6H	21.0	21.5	21.4	21.9	22.4	20.6	21.1	21.0	21.5	22.0		
	8H	21.2	21.6	21.6	22.1	22.6	20.8	21.2	21.2	21.7	22.2		
	12H	21.3	21.7	21.8	22.2	22.7	20.9	21.3	21.4	21.7	22.2		
12H	4H	20.4	21.0	20.8	21.4	21.6	20.0	20.6	20.4	21.0	21.5		
	6H	21.0	21.5	21.5	21.9	22.4	20.6	21.1	21.1	21.5	22.0		
	8H	21.2	21.6	21.7	22.1	22.6	20.8	21.2	21.3	21.7	22.2		
variation of observer position for the luminaire distances S													
S=		1.0H					+0.1/-0.1					+0.1/-0.1	
		1.5H					+0.2/-0.4					+0.2/-0.4	
		2.0H					+0.4/-0.7					+0.4/-0.7	
Standard table							BK05					BK05	
Correction Summand		2.2										1.8	
corrected glare indices for 5852lm total flux													

Dekoratívna difúzna optika z PMMA pre rovnomerný široký rozptyl svetelného toku. Vhodná pre miestnosti s nižšími stropmi alebo tam, kde je vyžadované zvýšené krytie svetelných zdrojov. Optika pozostáva z povrchovo upraveného rámu vo farbe svetidla, ktorý drží samotný difúzor – ten je vyrobený z priesvitného plastu v opálovom alebo prizmatickom prevedení.

A decorative, closed PMMA prismatic optic for a wider un-iform beam spread, this optic is suitable for low installation rooms and where mechanical lamp protection is required. This prismatic optic is composed of a diffuser-holding frame in a painted sheet on which the metacrylate plate is fixed. The cover can be made of opal or a transparent prismatic metacrylate.

Dekorative prismatische Abdeckung aus PMMA-Metacrylat für eine größere Ausstrahlungsbreite. Geeignet für niedrigere Räume und wo ein Schutz der Lampe erwünscht ist. Lackierter Metallrahmen, an dem das Abdeckelement angebracht ist. Plastik-Abdeckung in opaler oder prismatischer Ausführung.

#### MIRO aluminium – viac možností pre štandardné mriežky

Firma Alanod ponúka pre výrobcov svetidiel vysokokvalitný hliníkový materiál s vysokou odrazivosťou. Normálny anodizovaný hliníkový materiál má celkovú odrazivosť do 87%. Pre posunutie tejto odrazivosti na vyššiu úroveň, musí byť na hliníkový povrch vo vákuu nanosená niekoľko nanometrov hrubá optická vrstva. Naparená vrstva je z čistého hliníka (Al 99.99%).

MIRO je názov pre špeciálny typ materiálov s vysokou odrazivosťou. Rad produktov MIRO ponúka ucelený výber z leštených alebo matných povrchov z 95% celkovou odrazivosťou. Povrch s vysokou odrazivosťou dovoľuje zvýšiť účinnosť svetidla o 10-20%. Zvýšená svetelná účinnosť prináša mnohé úspory. Počas samotnej inštalácie je potrebný menší počet svetidiel, počas každodenného svietenia sa teda ďalej šetria náklady za elektrickú energiu a klimatizáciu.

Na všetkých plochách z MIRO materiálu úplne absentuje dúhové zafarbenie hliníka. Majú výbornú UV stabilitu. Všetky MIRO produkty umožňujú tvarovanie bez viditeľného popraskania. Aj po vytvarovaní si hliník stále uchováva svoju vysokú odolnosť voči korózii. Pokiaľ je MIRO používané vo vysokokvalitných mriežkach svetidiel, je vždy zaručené presné smerovanie svetla a uhly clonenia pre svetelné zdroje môžu byť podstatne zmenšené. Pre tieto vlastnosti je hliník MIRO ideálny materiál pre osvetlenie kancelárií a pracovísk so zobrazovacími jednotkami (DSE). Hodnoty jasov svetidiel v elevačných uhloch 65° a väčších bez výnimky nepresahujú maximálnu dovolenú hodnotu 200 cd/m<sup>2</sup>. Hliník MIRO sa veľmi ľahko čistí a v normálnej prevádzke nepritahuje žiadny prach.

#### MIRO aluminium – new possibilities for standard louvers

Alanod is a producer of high quality and highly reflective surfaces for the lighting industry. Normal anodised aluminium lighting grades have a total reflectivity of up to 87%. To increase this total reflectivity to another level, several nanometre-thin optical coatings must be applied to the aluminium surface in a vacuum. The vapour deposited layer is pure aluminium (Al 99.99%).

MIRO is the name for a unique brand of highly reflective products. The MIRO range has a complete range of specular and diffuse surfaces with 95% total reflectivity. This highly reflective surface enables achieving a 10 - 20 % increase in fixture efficiency. The increased light output brings many cost savings. During installation, fewer fittings are required, and, during normal usage, lighting energy costs and air-conditioning costs are considerably reduced. MIRO® surfaces are absolutely free of iridescent colours. They have outstanding UV stability. All MIRO products allow forming without any visible defects (scratches). After forming, the material shows no reduction in corrosion resistance. When MIRO is used in quality lighting louvers, exact light reflection is enhanced, and cut-off angles are considerably reduced. Therefore MIRO is the ideal material to use for office and DSE (display screen equipment) areas. The values achievable with all standard angles are, without exception, well below 200 cd/m<sup>2</sup>. MIRO aluminium can be easily cleaned. It is antistatic and will attract no dust under normal operating conditions.

#### MIRO aluminium – mehr Möglichkeiten für Standardraster

Die Gesellschaft Alanod erzeugt für die Leuchtenindustrie ein hochwertiges Aluminiummaterial mit hoher Reflexionsfähigkeit. Das übliche anodisierte Aluminiummaterial hat eine gesamte Reflexionsfähigkeit bis zu 87 %. Um diese Reflexionsfähigkeit auf ein höheres Niveau zu bringen, muß auf die Aluminiumfläche im Vakuum eine optische Schicht mit der Dicke von einigen Nanometern aufgetragen werden. Die bedampfte Schicht ist aus einem Reinaluminium (Al 99,99 %).

MIRO ist der Name für einen einzigartigen Typ der Materialien mit einer hohen Reflexionsfähigkeit. Die Produktreihe MIRO bietet eine komplexe Auswahl an polierten oder matten Oberflächen mit gesamer Reflexionsfähigkeit von 95 %. Die Oberfläche mit hoher Reflexionsfähigkeit erlaubt die Wirksamkeit der Leuchte um 10 – 20 % zu erhöhen. Die erhöhte Lichtwirksamkeit bringt viele Einsparnisse. Während der Installation ist eine kleinere Anzahl an Leuchten notwendig, beim tagtäglichen Leuchten werden die Kosten für elektrische Energie und Klimatisierung gespart.

Auf allen Flächen aus dem MIRO-Material fehlt die Regenbogenfärbung des Aluminiums. Sie haben eine ausgezeichnete UV-Stabilität. Alle MIRO-Produkte ermöglichen Formen ohne sichtbare Ribbildung. Auch nach der Formgebung erhält sich das Aluminium ständig seine hohe Widerstandsfähigkeit gegen Korrosion. Wenn MIRO in hochwertigen Leuchtern verwendet wird, ist immer eine genaue Lichtrichtung gewährleistet und die Schirmwinkel können wesentlich reduziert werden. Aufgrund dieser Eigenschaften ist das MIRO-Aluminium ein ideales Material für Beleuchtung der Büroräumlichkeiten und Arbeitsplätze mit Bildschirmangeegeräten (DSE). Die Werte der Leuchtdichten in Elevationswinkeln von 65° und größer übersteigen ohne Ausnahme den maximalen zulässigen Wert von 200 cd/m<sup>2</sup> nicht. Das MIRO-Aluminium wird sehr einfach gereinigt, es ist nicht statisch und zieht während eines üblichen Betriebs kein Staub an.







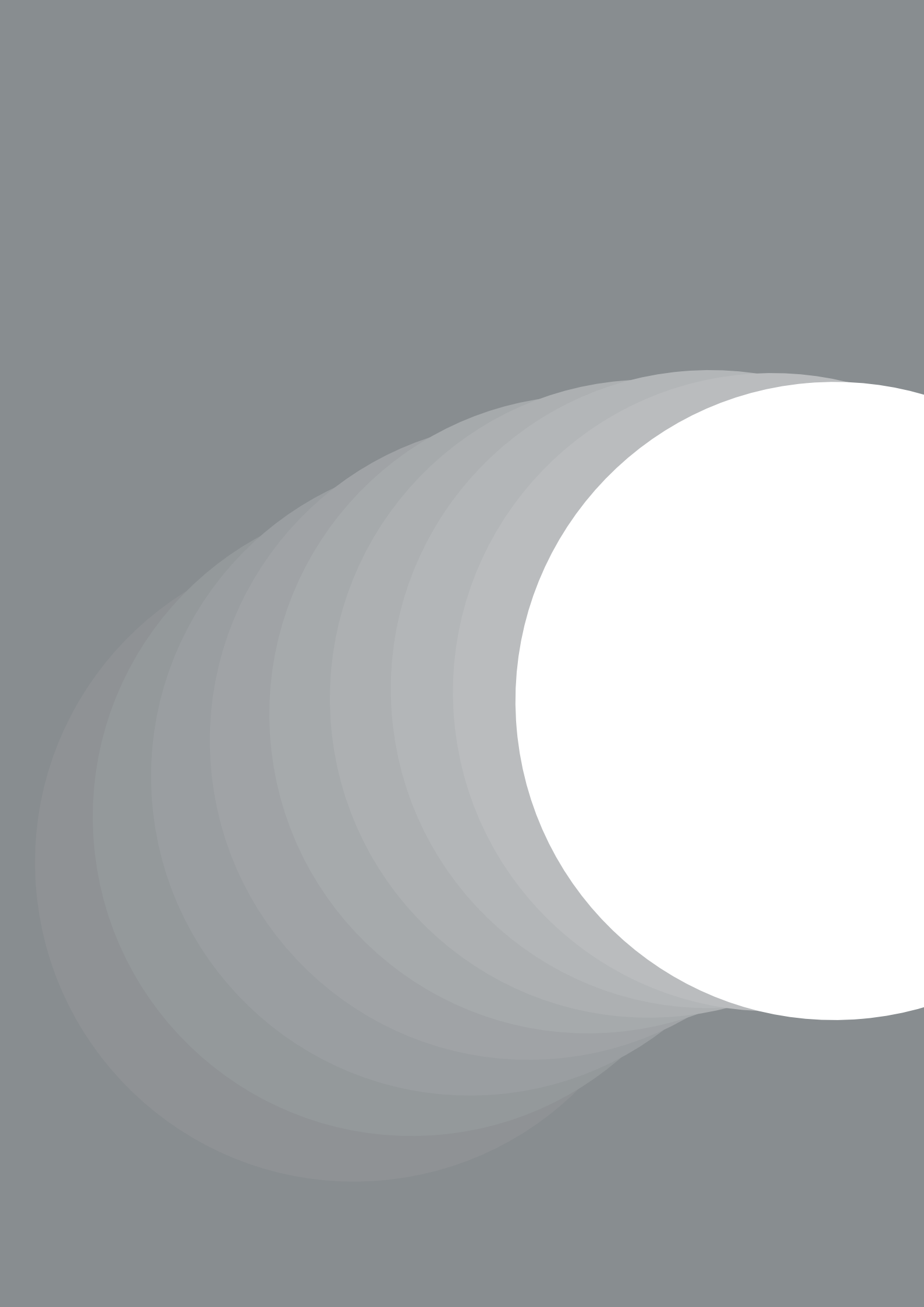


ORDER CODE	TYPE	SPECIFICATION
CAE2K0321882000	CLASSIC SLIM LAM T8	2x18W,ECG A2,RAL 9003
CAE2K0323632000	CLASSIC SLIM LAM T8	2x36W,CCG B2,RAL 9003
CAE2K0323682000	CLASSIC SLIM LAM T8	2x36W,ECG A2,RAL 9003
CAE2K0325832000	CLASSIC SLIM LAM T8	2x58W,CCG B2,RAL 9003
CAE2K0325882000	CLASSIC SLIM LAM T8	2x58W,ECG A2,RAL 9003
<b>CLASSIC SLIM LAM T5</b>		
CAE2K0211482000	CLASSIC SLIM LAM T5	1x14W,ECG A2,RAL 9003
CAE2K0212482000	CLASSIC SLIM LAM T5	1x24W,ECG A2,RAL 9003
CAE2K0212882000	CLASSIC SLIM LAM T5	1x28W,ECG A2,RAL 9003
CAE2K0213582000	CLASSIC SLIM LAM T5	1x35W,ECG A2,RAL 9003
CAE2K0214982000	CLASSIC SLIM LAM T5	1x49W,ECG A2,RAL 9003
CAE2K0215482000	CLASSIC SLIM LAM T5	1x54W,ECG A2,RAL 9003
CAE2K0218082000	CLASSIC SLIM LAM T5	1x80W,ECG A2,RAL 9003
CAE2K0221482000	CLASSIC SLIM LAM T5	2x14W,ECG A2,RAL 9003
CAE2K0222482000	CLASSIC SLIM LAM T5	2x24W,ECG A2,RAL 9003
CAE2K0222882000	CLASSIC SLIM LAM T5	2x28W,ECG A2,RAL 9003
CAE2K0223582000	CLASSIC SLIM LAM T5	2x35W,ECG A2,RAL 9003
CAE2K0224982000	CLASSIC SLIM LAM T5	2x49W,ECG A2,RAL 9003
CAE2K0225482000	CLASSIC SLIM LAM T5	2x54W,ECG A2,RAL 9003
CAE2K0228082000	CLASSIC SLIM LAM T5	2x80W,ECG A2,RAL 9003
<b>CLASSIC ASN ASYMMETRIC</b>		
<b>CLASSIC ASN ASYMMETRIC POLISHED T8</b>		
CAD520313632000	CLASSIC ASN ASYMMETRIC POLISHED T8	1x36W,CCG B2,RAL 9003
CAD520313682000	CLASSIC ASN ASYMMETRIC POLISHED T8	1x36W,ECG A2,RAL 9003
CAD520315832000	CLASSIC ASN ASYMMETRIC POLISHED T8	1x58W,CCG B2,RAL 9003
CAD520315882000	CLASSIC ASN ASYMMETRIC POLISHED T8	1x58W,ECG A2,RAL 9003
<b>CLASSIC ASN ASYMMETRIC POLISHED T5</b>		
CAD520212882000	CLASSIC ASN ASYMMETRIC POLISHED T5	1x28W,ECG A2,RAL 9003
CAD520213582000	CLASSIC ASN ASYMMETRIC POLISHED T5	1x35W,ECG A2,RAL 9003
CAD520214982000	CLASSIC ASN ASYMMETRIC POLISHED T5	1x49W,ECG A2,RAL 9003
CAD520215482000	CLASSIC ASN ASYMMETRIC POLISHED T5	1x54W,ECG A2,RAL 9003
CAD520218082000	CLASSIC ASN ASYMMETRIC POLISHED T5	1x80W,ECG A2,RAL 9003
<b>CLASSIC ASN ASYMMETRIC MAT T8</b>		
CAD530313632000	CLASSIC ASN ASYMMETRIC MAT T8	1x36W,CCG B2,RAL 9003
CAD530313682000	CLASSIC ASN ASYMMETRIC MAT T8	1x36W,ECG A2,RAL 9003
CAD530315832000	CLASSIC ASN ASYMMETRIC MAT T8	1x58W,CCG B2,RAL 9003
CAD530315882000	CLASSIC ASN ASYMMETRIC MAT T8	1x58W,ECG A2,RAL 9003
<b>CLASSIC ASN ASYMMETRIC MAT T5</b>		
CAD530212882000	CLASSIC ASN ASYMM. MAT T5	1x28W,ECG A2,RAL 9003
CAD530213582000	CLASSIC ASN ASYMM. MAT T5	1x35W,ECG A2,RAL 9003
CAD530214982000	CLASSIC ASN ASYMM. MAT T5	1x49W,ECG A2,RAL 9003
CAD530215482000	CLASSIC ASN ASYMM. MAT T5	1x54W,ECG A2,RAL 9003
CAD530218082000	CLASSIC ASN ASYMM. MAT T5	1x80W,ECG A2,RAL 9003
<b>ACCESSORIES</b>		
<b>SUSPENSION</b>		
SUS 1.25 C0/001	SUSPENSION 01	CLASSIC AS, ASN, SLIM
SUS 1.25 C0/002	SUSPENSION 02	CLASSIC AS, ASN, SLIM
SUS 1.35 C0/003	SUSPENSION 03	CLASSIC AS, ASN, SLIM
SUS 1.35 C0/006	SUSPENSION 06	CLASSIC AS, ASN, SLIM
<b>XXXXXXXXXX</b>		
<b>9 - ECG DIM 1-10V</b>		
<b>A - ECG DIM DSI</b>		
<b>B - ECG DALI</b>		











# QUADRO

## QUADRO

Svietidlá Quadro sú určené pre inštaláciu do stropov s viditeľnými T-profilmi (600x600mm a 620x620mm) a do sadrokartónových podhládov.

### KONŠTRUKCIA

**Teleso svietidla:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela, lesklá), RAL 7001 (strieborná šedá) na požiadanie.

**Mriežky:** PAR, PAR MAT

**Difúzor:** kalené pieskované sklo

Optický systém je uchytený pomocou štyroch pružín, ktoré umožňujú beznástrojovú výmenu svetelných zdrojov. Sklo (Quadro Decor) je uchytené pomocou štyroch dekoratívnych skrutiek.

### ELEKTRICKÁ VÝBAVA

Svietidlá môžu byť vybavené:

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2

**Ostatné komponenty:**

- svetelné zdroje: kompaktné žiarivky TC-L (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková trojpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- variantu svietidiel ASN je na požiadanie možné vybaviť núdzovou jednotkou s 1h autonómnou prevádzkou

### PRÍSLUŠENSTVO

- plechová inštaláčna doska umožňujúca montáž do stropov s T profilmi
- konektory umožňujúce rýchle elektrické pripojenie: 3-pólové konektory Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A
- poistné lanko zamedzujúce úplnému vypadnutiu svietidla z podhladu

## QUADRO

Quadro light fixtures are designed for mounting into T-bar ceiling grids (600 x 600 mm and 620 x 620 mm) and into plasterboard ceilings.

### CONSTRUCTION

**Housing:** sheet steel, electrostatic powder coat finish – basic shade RAL 9003 (signal white, glossy), RAL 7001 (silver grey) on request

**Louvers:** PAR, PAR MAT

**Diffuser:** hardened, sandblasted glass

The optical system is held by four clamping springs that allow easy lamp replacement. The glass (Quadro Decor) is attached using four decorative screws.

### WIRING

Light fixtures can be equipped with:

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, light fixtures are standardly compensated
- electronic control gears, standard class EEI=A2

**Other components:**

- lamps: compact fluorescent lamps TC-L (lamps must be ordered separately)
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three-pole terminal allows connecting conductors up to 2.5 mm<sup>2</sup> cross-section
- on request, the ASN variant can be equipped with an emergency unit providing 1 hour of autonomous operation

### ACCESSORIES

- metal installation plate for mounting into T-bar ceiling grids
- connectors for fast electrical connection: 3-pole connectors Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A
- a safety wire to prevent the light fixture from falling out of the lower ceiling

## QUADRO

Die Quadro-Leuchten sind zur Installation in die Decken mit sichtbaren T-Profilen (600x600mm und 620x620mm) und in die Gipskartonuntersichten bestimmt.

### KONSTRUKTION

**Leuchtenkörper:** Stahlblech, Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe - Grundton RAL 9003 (Signalweiß, glänzend), RAL 7001 (Silbergrau) auf Wunsch.

**Raster:** PAR, PAR MAT

**Diffusor:** sanglestrahltes Hartglas

Das optische System wird mit vier Federn befestigt, die Lichtquellenaustausch ohne Werkzeug ermöglichen. Das Glas (Quadro Decor) wird durch vier Dekorationsschrauben befestigt.

### ELEKTRISCHE AUSTRÜSTUNG

Die Leuchten können wie folgt ausgerüstet werden:

- mit konventionellen magnetischen Vorschaltgeräten, Standardklassen EEI=B2, Klasse EEI=B1 auf Wunsch, Leuchten sind standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, Standardklassen EEI=A2

**Andere Komponente:**

- Lichtquellen: kompakte Leuchtstofflampen TC-L (es ist notwendig die Lichtquellen extra zu bestellen)
- Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- schraubenfreie dreipolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- es ist möglich die Leuchtenvariante ASN auf Wunsch mit einer Noteinheit mit Autonombetrieb von 1 Stunde auszustatten

### ZUBEHÖR

- Installationsblechplatte, die den Einbau in die Decken mit T-Profilen ermöglicht
- Verbindungsstecker für schnellen elektrischen Anschluß: dreipolige Verbindungsstecker Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/
- ein Sicherheitsseil, das völligen Ausfall der Leuchte aus der Untersicht verhindert

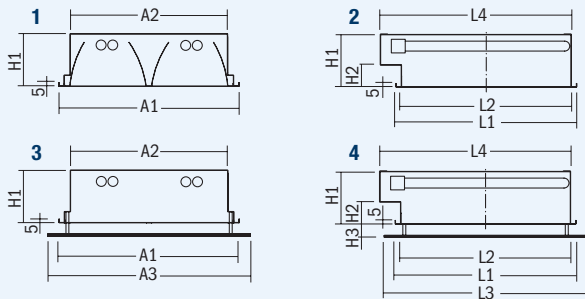
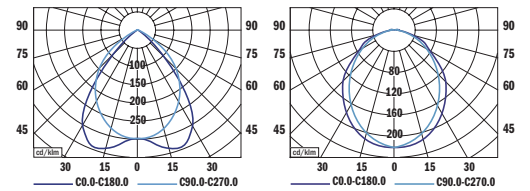


# QUADRO

## PB PAR/PAR-MAT/DECOR TC-L

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-L 2G 11	CCG E1-B2	CCG E1-B1	ECG E1-A2	F	IP 20
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QUADRO PB PAR 2x24W      QUADRO PB DECOR 2x24W

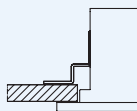


	OPTICS		POWER	LAMP	PICTURE	DIMENSIONS						HOLE		
	PAR	PAR MAT				A1	A2	L1	L2	L4	H1	H2	O1	O2
Quadro PAR	•	•	2x18	TC-L	1;2	320	296	320	296	340	90	32	305	315
Quadro PAR	•	•	2x24	TC-L	1;2	320	296	320	296	340	90	32	305	315

	OPTICS	POWER	LAMP	PICTURE	DIMENSIONS						HOLE				
	DECOR				A1	A2	A3	L1	L2	L3	L4	H1	H2	O1	O2
Quadro Decor	•	2x18	TC-L	3;4	320	296	357	320	296	357	340	90	32	305	315
Quadro Decor	•	2x24	TC-L	3;4	320	296	357	320	296	357	340	90	32	305	315

### INSTALLATION





QUADRO PB PAR

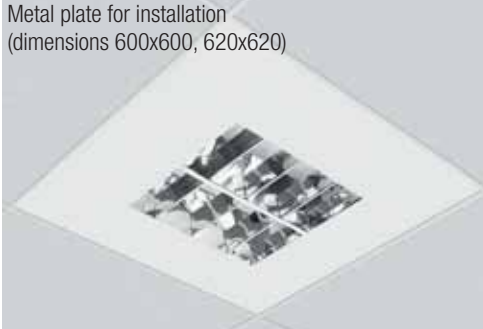
PAR



PAR-MAT



Metal plate for installation  
(dimensions 600x600, 620x620)



DECOR

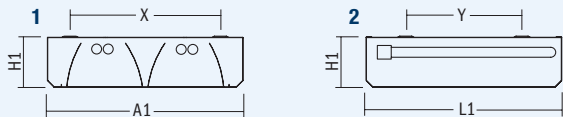
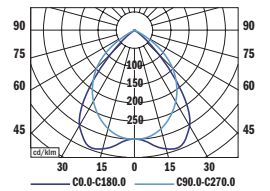


# QUADRO

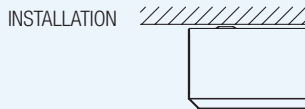
## ASN PAR/PAR-MAT TC-L

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-L 2G 11	CCG E1-B2	CCG E1-B1	CCG E1-A2	EMERGENCY	F	IP 20
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QUADRO ASN PAR 2x24W



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	PAR	PAR MAT				A1	L1	H1	X	Y
Quadro ASN	•	•	2x18	TC-L	1;2	345	345	90	265	205
Quadro ASN	•	•	2x24	TC-L	1;2	345	345	90	265	205



ORDER CODE	TYPE	SPECIFICATION	ORDER CODE	TYPE	SPECIFICATION
<b>QUADRO PB</b>			<b>ACCESSORIES</b>		
Q01111021832000	QUADRO PB PAR	2x18W,TC-L,350G,CCG B2,RAL 9003	Q0A595000002000	METAL PLATE 595x595 mm	QUADRO PB
Q01111021882000	QUADRO PB PAR	2x18W,TC-L,1100G,CCG B2,RAL 9003	Q0A620000002000	METAL PLATE 620x620 mm	QUADRO PB
Q01111022432000	QUADRO PB PAR	2x24W,TC-L,350G,CCG B2,RAL 9003	<b>QUADRO ASN</b>		
Q01111022482000	QUADRO PB PAR	2x24W,TC-L,350G,CCG B2,RAL 9003	<b>QUADRO ASN PAR</b>		
Q01121021832000	QUADRO PB PAR	2x18W,TC-L,MIR04,CCG B2,RAL 9003	Q02111021832000	QUADRO ASN PAR	2x18W,TC-L,350G,CCG B2,RAL 9003
Q01121021882000	QUADRO PB PAR	2x18W,TC-L,MIR04,CCG B2,RAL 9003	Q02111021882000	QUADRO ASN PAR	2x18W,TC-L,350G,CCG B2,RAL 9003
Q01121022432000	QUADRO PB PAR	2x24W,TC-L,MIR04,CCG B2,RAL 9003	Q02111022432000	QUADRO ASN PAR	2x24W,TC-L,350G,CCG B2,RAL 9003
Q01121022482000	QUADRO PB PAR	2x24W,TC-L,MIR04,CCG B2,RAL 9003	Q02111022482000	QUADRO ASN PAR	2x24W,TC-L,350G,CCG B2,RAL 9003
Q011D1021832000	QUADRO PB PAR-MAT	2x18W,TC-L,1100G,CCG B2,RAL 9003	Q02121021832000	QUADRO ASN PAR	2x18W,TC-L,MIR04,CCG B2,RAL 9003
Q011D1021882000	QUADRO PB PAR-MAT	2x18W,TC-L,1100G,CCG B2,RAL 9003	Q02121021882000	QUADRO ASN PAR	2x18W,TC-L,MIR04,CCG B2,RAL 9003
Q011D1022432000	QUADRO PB PAR-MAT	2x24W,TC-L,1100G,CCG B2,RAL 9003	Q02121022432000	QUADRO ASN PAR	2x24W,TC-L,MIR04,CCG B2,RAL 9003
Q011D1022482000	QUADRO PB PAR-MAT	2x24W,TC-L,1100G,CCG B2,RAL 9003	Q02121022482000	QUADRO ASN PAR	2x24W,TC-L,MIR04,CCG B2,RAL 9003
<b>QUADRO PB DECOR</b>			Q021D1021832000	QUADRO ASN PAR-MAT	2x18W,TC-L,1100G,CCG B2,RAL 9003
Q01341021832000	QUADRO PB DECOR	2x18W,TC-L, CCG B2,RAL 9003	Q021D1021882000	QUADRO ASN PAR-MAT	2x18W,TC-L,1100G,CCG B2,RAL 9003
Q01341021882000	QUADRO PB DECOR	2x18W,TC-L, ECG A2,RAL 9003	Q021D1022432000	QUADRO ASN PAR-MAT	2x24W,TC-L,1100G,CCG B2,RAL 9003
Q01341022432000	QUADRO PB DECOR	2x24W,TC-L, CCG B2,RAL 9003	Q021D1022482000	QUADRO ASN PAR-MAT	2x24W,TC-L,1100G,CCG B2,RAL 9003
Q01341022482000	QUADRO PB DECOR	2x24W,TC-L, ECG A2,RAL 9003			



QUADRO ASN PAR

PAR



RAL 9003



PAR-MAT



RAL 7001





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# INDIRECT





# INDIRECT

## INDIRECT

**Svietidlá Indirect sú určené pre inštaláciu do stropov s viditeľnými T-profilmi (600x600mm a 620x620mm), do sadrokartónových podhládov a na stropy ako prisadené svietidlá (verzia AS).**

### KONŠTRUKCIA

**Teleso svietidla:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela, polomatná), RAL 7001 (strieborná šedá) na požiadanie

**Koncovky (Indirect LG):** biely ABS

**Mriežky:** PAR, PAR MAT, PAR-V, PAR MAT-V

**Tienidlá:** vyrobené z plného (L1) alebo perforovaného (L2) plechu, povrchovo upravené rovnako ako teleso svietidla. Pre rovnomerný rozptyl svetla je pod perforovanými tienidlami vsunutá tenká polykarbonátová fólia.

**Difúzor:** kalené pieskované sklo

Optický systém je uchytený pomocou jednoduchého upínacieho zariadenia umožňujúceho beznástrojovú výmenu svetelných zdrojov. Sklo (Indirect C-G) je uchytené pomocou štyroch dekoračných skrutiek.

Blížší popis jednotlivých typov optiky je uvedený na strane 122/123, v kapitole OPTICS.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm), T8 (26 mm), kompaktné žiarivky TC-L (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>, svorkovnica je z telesa ľahko vyklopiteľná, čo uľahčuje elektrické zapojenie svietidla
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

### PRÍSLUŠENSTVO

- držiaky umožňujúce montáž do sadrokartónových podhládov (automaticky pre verziu PB)
- konektory umožňujúce rýchle elektrické pripojenie: 3-pólové konektory Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A (na požiadanie konektory ISODOM, 5-pólové konektory Wieland gesis GST 18i5, Wago Winsta 770)
- poisťné lanko zamedzujúce úplnému vypadnutiu svietidla z podhládu

## INDIRECT

**Indirect class light fixtures are designed for mounting into T-bar ceiling grids (600 x 600 mm and 620 x 620 mm), into plasterboard ceilings, and on ceilings as surface mounted light fittings (AS version).**

### CONSTRUCTION

**Housing:** sheet steel, electrostatic powder coat finish – basic shade RAL 9003 (signal white, semi matte), RAL 7001 (silver grey) on request

**Sockets (Indirect LG):** white ABS

**Louvers:** PAR, PAR MAT, PAR-V, PAR MAT-V

**Shades:** made of solid (L1) or perforated (L2) sheet metal with the same surface finish as the body. For regular light diffusion, a thin polycarbonate foil is used under the perforated shades.

**Diffuser:** hardened, sandblasted glass

The optical system is held by simple clamping equipment that allows easy lamp replacement. Glass (Indirect C-G) is attached using four decorative screws.

Further description of individual optic types is listed on the page 122/123, in section OPTICS.

### WIRING

**Light fixtures can be equipped with:**

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, light fixtures are standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic ballasts can be controlled with analogue, digital or DALI signals)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm), T8 (26 mm), compact fluorescent lamps TC-L (lamps must be ordered separately)
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three or five pole terminal allows connecting conductors up to 2,5 mm<sup>2</sup> cross-section, the connection box is easily retractable, which makes electrical connection easier
- an emergency version of these light fixtures with autonomous operation of 1 or 3 hours is available on request

### ACCESSORIES

- accessories for easy mounting of light fixtures into plasterboard ceilings (automatic for PB version)
- connectors for fast electrical connection: 3-pole connectors Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A (on request: connectors ISODOM, 5-pole connectors Wieland gesis GST 18i5, Wago Winsta 770)
- a safety wire to prevent the light fixture from falling out of the lower ceiling

## INDIRECT

**Die Indirect-Leuchten sind für den Einbau in die Decken mit sichtbaren T-Profilen (600x600mm und 620x620mm), in die Gipskartonuntersichten und in die Decken als Anbauleuchten (AS Ausführung), bestimmt.**

### KONSTRUKTION

**Leuchtenkörper:** Stahlblech, Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe - Grundton RAL 9003 (Signalweiß, halbmatt), RAL 7001 (Silbergrau) auf Wunsch.

**Endstücke (Indirect LG):** weiß ABS

**Raster:** PAR, PAR MAT, PAR-V, PAR MAT-V

**Schirme:** aus einem Voll- (L1) oder Lochblech (L2) hergestellt, mit Oberflächenbehandlung wie der Leuchtenkörper. Für eine gleichmäßige Lichtstreuung ist unter den Lochschirmen eine dünne Polykarbonatfolie eingelegt.

**Diffusor:** sandgestrahltes Hartglas

Das optische System ist durch eine einfache Einspanneinrichtung befestigt, die Lichtquellenaustausch ohne Werkzeug ermöglicht. Das Glas (Indirect C-G) wird mit vier Dekorationsschrauben befestigt.

Nähere Beschreibung von einzelnen Optiktypen ist am Seite 122/123 in OPTICS Anlage angeführt.

### ELEKTRISCHE AUSRÜSTUNG

**Die Leuchten können wie folgt ausgerüstet sein:**

- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, Klasse EEI=B1 auf Wunsch, Leuchten sind standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

**Andere Komponente:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm), T8 (26 mm), kompakte Leuchtstofflampen TC-L (Lichtquellen sind extra zu bestellen)
- Innenleiter mit einem festen Kupferkern mit Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen, die Klemmleiste ist leicht kippbar, was elektrischen Anschluß der Leuchte erleichtert
- es ist möglich, die Leuchte auf Wunsch mit Noteinheiten mit Autonombetrieb von 1 oder 3 Stunden auszustatten

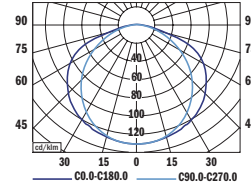
### ZUBEHÖR

- Halter, die den Einbau in die Gipskartonuntersichten ermöglichen (automatisch für die Variante PB)
- Verbindungsstecker für schnellen elektrischen Anschluss: dreipolige Verbindungsstecker Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A (Verbindungsstecker ISODOM, 5-polige Verbindungsstecker Wieland gesis GST 18i5, Wago Winsta 770 auf Wunsch)
- ein Sicherheitsseil, das völligen Ausfall der Leuchte aus der Untersicht verhindert

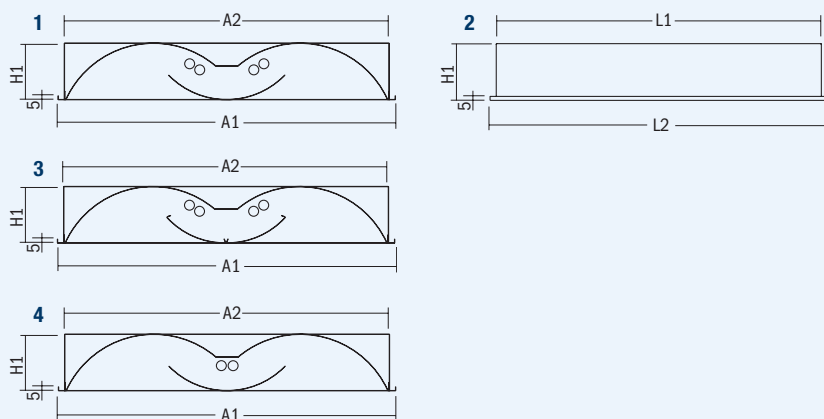
# INDIRECT

**C/C-P/C-M**  
**PV/PB**  
**TC-L**

INDIRECT C L2 2x55W



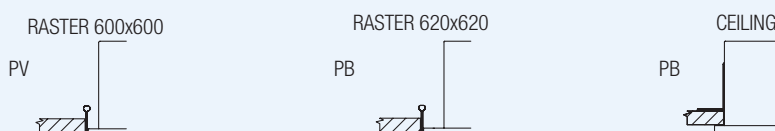
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-L 2G 11	CCG EE-B2	CCG EE-B1	ECG EE-A2	ECG EE-A1	ECG EE-A1	ECG EE-A1	EMERGENCY	F	IP 20
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	DECOR		POWER	LAMP	PICTURE	DIMENSIONS				
	L1	L2				A1	A2	L1	L2	H1
Indirect C PV	•	•	2x36	TC-L	1,2	595	573	595	573	100
Indirect C PV	•	•	2x40	TC-L	1,2	595	573	595	573	100
Indirect C PV	•	•	2x55	TC-L	1,2	595	573	595	573	100
Indirect C-P PV	•	•	2x36	TC-L	3,2	595	573	595	573	100
Indirect C-P PV	•	•	2x40	TC-L	3,2	595	573	595	573	100
Indirect C-P PV	•	•	2x55	TC-L	3,2	595	573	595	573	100
Indirect C-M PV	•	•	1x36	TC-L	4,2	595	573	595	573	100
Indirect C-M PV	•	•	1x40	TC-L	4,2	595	573	595	573	100
Indirect C-M PV	•	•	1x55	TC-L	4,2	595	573	595	573	100

	DECOR		POWER	LAMP	PICTURE	DIMENSIONS					HOLE	
	L1	L2				A1	A2	L1	L2	H1	O1	O2
Indirect C PB	•	•	2x36	TC-L	1,2	620	573	620	573	100	580	580
Indirect C PB	•	•	2x40	TC-L	1,2	620	573	620	573	100	580	580
Indirect C PB	•	•	2x55	TC-L	1,2	620	573	620	573	100	580	580
Indirect C-P PB	•	•	2x36	TC-L	3,2	620	573	620	573	100	580	580
Indirect C-P PB	•	•	2x40	TC-L	3,2	620	573	620	573	100	580	580
Indirect C-P PB	•	•	2x55	TC-L	3,2	620	573	620	573	100	580	580
Indirect C-M PB	•	•	1x36	TC-L	4,2	620	573	620	573	100	580	580
Indirect C-M PB	•	•	1x40	TC-L	4,2	620	573	620	573	100	580	580
Indirect C-M PB	•	•	1x55	TC-L	4,2	620	573	620	573	100	580	580

INSTALLATION





INDIRECT C PV L2 2x55W

C



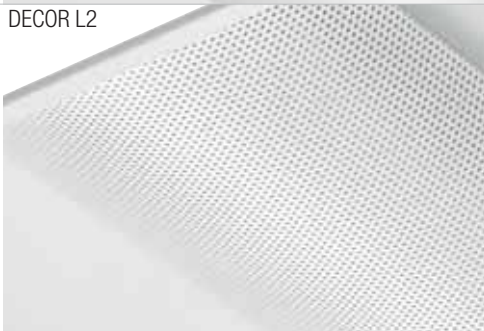
DECOR L1



C-P



DECOR L2



C-M







INDIRECT C-C PV L2 4x14W

DECOR L1



DECOR L2



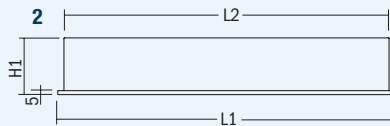
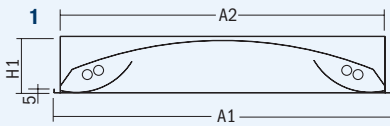
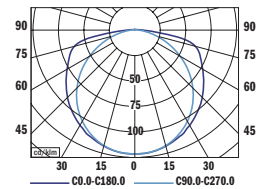


# INDIRECT

**C-S**  
**PV/PB**  
**TC-L**



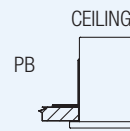
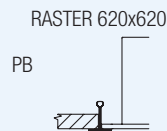
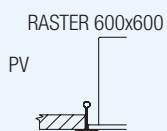
INDIRECT C-S L2 2x55W



	DECOR		POWER	LAMP	PICTURE	DIMENSIONS				
	L1	L2				A1	A2	L1	L2	H1
Indirect C-S PV	•	•	2x36	TC-L	1,2	595	573	595	573	100
Indirect C-S PV	•	•	2x40	TC-L	1,2	595	573	595	573	100
Indirect C-S PV	•	•	2x55	TC-L	1,2	595	573	595	573	100

	DECOR		POWER	LAMP	PICTURE	DIMENSIONS				HOLE		
	L1	L2				A1	A2	L1	L2	H1	O1	O2
Indirect C-S PB	•	•	2x36	TC-L	1,2	620	573	620	573	100	580	580
Indirect C-S PB	•	•	2x40	TC-L	1,2	620	573	620	573	100	580	580
Indirect C-S PB	•	•	2x55	TC-L	1,2	620	573	620	573	100	580	580

**INSTALLATION**





INDIRECT C-S PV L2 2x55W

DECOR L1



DECOR L2

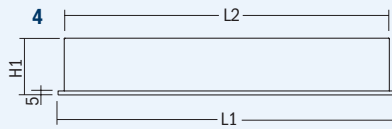
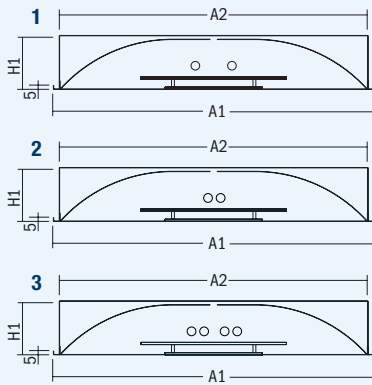
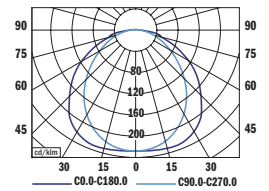


# INDIRECT

**C-G**  
**PV/PB**  
**T5**



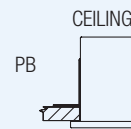
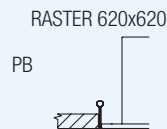
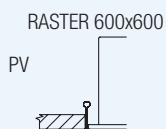
INDIRECT C-G 2x24W



	POWER	LAMP	PICTURE	DIMENSIONS				
				A1	A2	L1	L2	H1
Indirect C-G PV	2x14	T5	1;4	595	573	595	573	100
Indirect C-G PV	2x24	T5	1;4	595	573	595	573	100
Indirect C-G PV	1x40	TCL	2;4	595	573	595	573	100
Indirect C-G PV	1x55	TCL	2;4	595	573	595	573	100
Indirect C-G PV	2x40	TCL	3;4	595	573	595	573	100
Indirect C-G PV	2x55	TCL	3;4	595	573	595	573	100

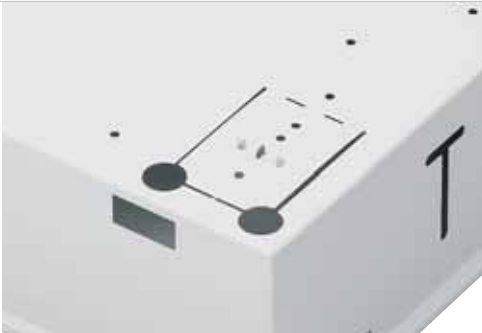
	POWER	LAMP	PICTURE	DIMENSIONS					HOLE	
				A1	A2	L1	L2	H1	O1	O2
Indirect C-G PB	2x14	T5	1;4	620	573	620	573	100	580	580
Indirect C-G PB	2x24	T5	1;4	620	573	620	573	100	580	580
Indirect C-G PB	1x40	TCL	2;4	620	573	620	573	100	580	580
Indirect C-G PB	1x55	TCL	2;4	620	573	620	573	100	580	580
Indirect C-G PB	2x40	TCL	3;4	620	573	620	573	100	580	580
Indirect C-G PB	2x55	TCL	3;4	620	573	620	573	100	580	580

INSTALLATION





INDIRECT C-G PV 2x24W

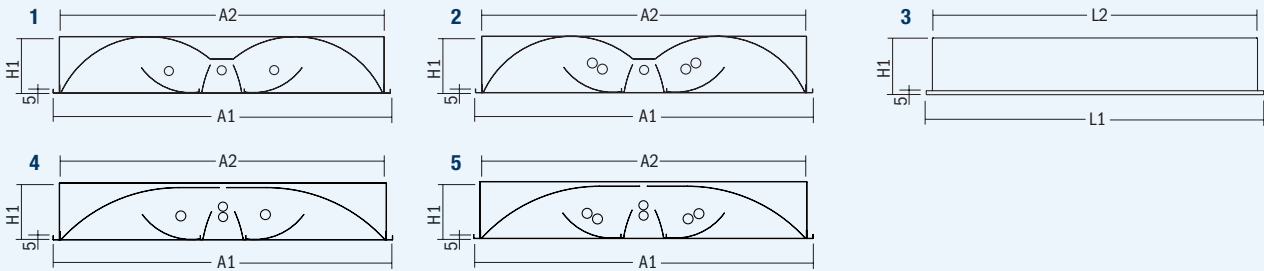
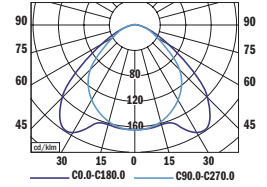


# INDIRECT

## C PAR-V PV/PB PAR-V/PAR MAT-V T5/TC-L



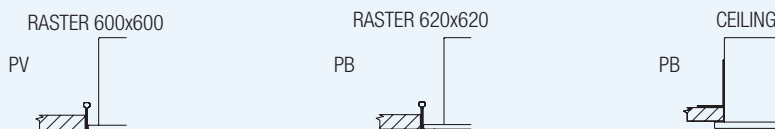
INDIRECT C-PAR T5 L2 3x14W



	OPTIC		DECOR		POWER	LAMP	PICTURE	DIMENSIONS				
	PAR-V	PAR MAT-V	L1	L2				A1	A2	L1	L2	H1
Indirect C-PAR-V PV	•	•	•	•	3x14	T5	1,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	3x24	T5	1,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x36 + 1x14	TC-L; T5	2,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x36 + 1x24	TC-L; T5	2,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x40 + 1x14	TC-L; T5	2,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x40 + 1x24	TC-L; T5	2,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x55 + 1x14	TC-L; T5	2,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x55 + 1x24	TC-L; T5	2,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x14 + 1x40	T5; TC-L	4,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x24 + 1x40	T5; TC-L	4,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x14 + 1x55	T5; TC-L	4,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x24 + 1x55	T5; TC-L	4,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x36 + 1x40	TC-L	5,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	3x40	TC-L	5,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x55 + 1x40	TC-L	5,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x36 + 1x55	TC-L	5,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	2x40 + 1x55	TC-L	5,3	595	573	595	573	100
Indirect C-PAR-V PV	•	•	•	•	3x55	TC-L	5,3	595	573	595	573	100

	OPTIC		DECOR		POWER	LAMP	PICTURE	DIMENSIONS					HOLE	
	PAR-V	PAR MAT-V	L1	L2				A1	A2	L1	L2	H1	O1	O2
Indirect C-PAR-V PB	•	•	•	•	3x14	T5	1,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	3x24	T5	1,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x36 + 1x14	TC-L; T5	2,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x36 + 1x24	TC-L; T5	2,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x40 + 1x14	TC-L; T5	2,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x40 + 1x24	TC-L; T5	2,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x55 + 1x14	TC-L; T5	2,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x55 + 1x24	TC-L; T5	2,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x14 + 1x40	T5; TC-L	4,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x24 + 1x40	T5; TC-L	4,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x14 + 1x55	T5; TC-L	4,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x24 + 1x55	T5; TC-L	4,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x36 + 1x40	TC-L	5,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	3x40	TC-L	5,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x55 + 1x40	TC-L	5,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x36 + 1x55	TC-L	5,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	2x40 + 1x55	TC-L	5,3	620	573	620	573	100	580	580
Indirect C-PAR-V PB	•	•	•	•	3x55	TC-L	5,3	620	573	620	573	100	580	580

### INSTALLATION





INDIRECT C PAR-V PV L2 2x55W+1x14W

PAR-V



PAR MAT-V



PV



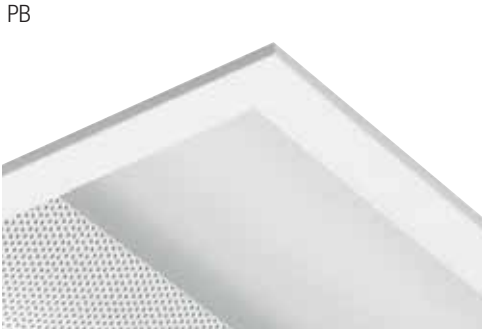
DECOR L1



DECOR L2



PB



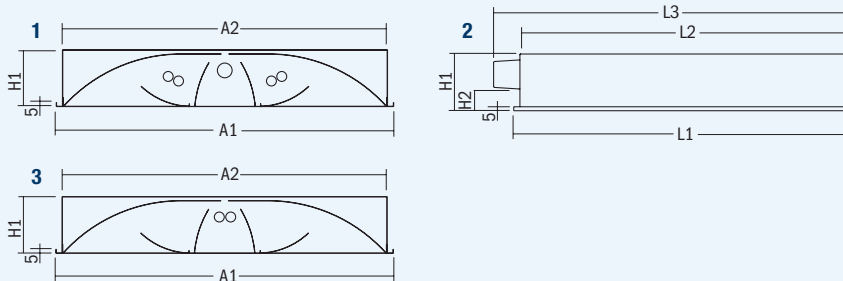
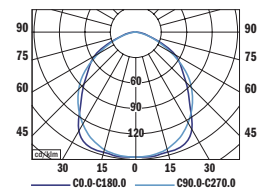


# INDIRECT

## C PAR PV/PB PAR/PAR MAT T8/TC-L

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-L 26 11	T8 G13	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP20
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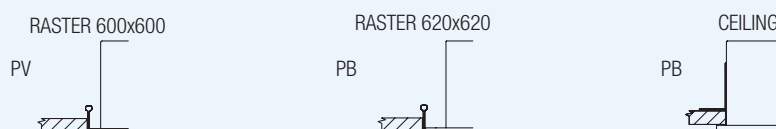
INDIRECT C-PAR T8 L2 2x55W+1x18W



	OPTIC		DECOR		POWER	LAMP	PICTURE	DIMENSIONS				H1	
	PAR	PAR MAT	L1	L2				A1	A2	L1	L2		L3
Indirect C-PAR PV T-CL T8	•	•	•	•	2x36 + 1x18	TC-L; T8	1,2	595	573	595	573	623	100
Indirect C-PAR PV T-CL T8	•	•	•	•	2x40 + 1x18	TC-L; T8	1,2	595	573	595	573	623	100
Indirect C-PAR PV T-CL T8	•	•	•	•	2x55 + 1x18	TC-L; T8	1,2	595	573	595	573	623	100
Indirect C-PAR PV T-CL	•	•	•	•	1x40	TC-L	3,2	595	573	595	573	-	100
Indirect C-PAR PV T-CL	•	•	•	•	1x55	TC-L	3,2	595	573	595	573	-	100

	OPTIC		DECOR		POWER	LAMP	PICTURE	DIMENSIONS				HOLE			
	PAR	PAR MAT	L1	L2				A1	A2	L1	L2	L3	H1	O1	O2
Indirect C-PAR PB T-CL T8	•	•	•	•	2x36 + 1x18	TC-L; T8	1,2	620	573	620	573	623	100	580	580
Indirect C-PAR PB T-CL T8	•	•	•	•	2x40 + 1x18	TC-L; T8	1,2	620	573	620	573	623	100	580	580
Indirect C-PAR PB T-CL T8	•	•	•	•	2x55 + 1x18	TC-L; T8	1,2	620	573	620	573	623	100	580	580
Indirect C-PAR PB T-CL	•	•	•	•	1x40	TC-L	3,2	620	573	620	573	-	100	580	580
Indirect C-PAR PB T-CL	•	•	•	•	1x55	TC-L	3,2	620	573	620	573	-	100	580	580

### INSTALLATION





INDIRECT C PAR T8 PV L2 2x55W+1x18W

PAR



PAR MAT



PV



DECOR L1



DECOR L2



PB

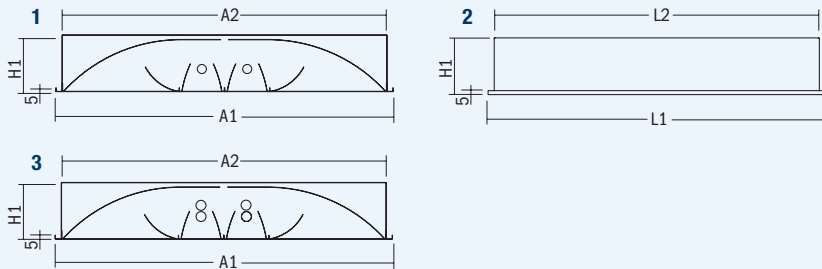
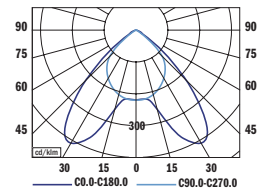


# INDIRECT

## C-D PAR-V PV/PB PAR-V/PAR MAT-V T5/TC-L



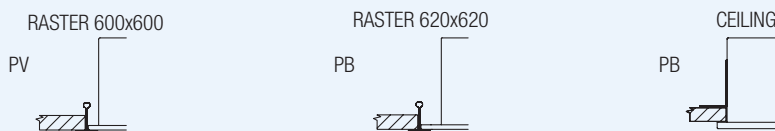
INDIRECT C-D PAR-V T5 L2 2x14W



	OPTIC		DECOR		POWER	LAMP	PICTURE	DIMENSIONS				
	PAR-V	PAR MAT-V	L1	L2				A1	A2	L1	L2	H1
Indirect C-D PAR-V PV T5	•	•	•	•	2x14	T5	1,2	595	573	595	573	100
Indirect C-D PAR-V PV T5	•	•	•	•	2x24	T5	1,2	595	573	595	573	100
Indirect C-D PAR-V PV TC-L	•	•	•	•	2x40	TC-L	3,2	595	573	595	573	100
Indirect C-D PAR-V PV TC-L	•	•	•	•	2x55	TC-L	3,2	595	573	595	573	100

	OPTIC		DECOR		POWER	LAMP	PICTURE	DIMENSIONS					HOLE	
	PAR-V	PAR MAT-V	L1	L2				A1	A2	L1	L2	H1	O1	O2
Indirect C-D PAR-V PB T5	•	•	•	•	2x14	T5	1,2	620	573	620	573	100	580	580
Indirect C-D PAR-V PB T5	•	•	•	•	2x24	T5	1,2	620	573	620	573	100	580	580
Indirect C-D PAR-V PB TC-L	•	•	•	•	2x40	TC-L	3,2	620	573	620	573	100	580	580
Indirect C-D PAR-V PB TC-L	•	•	•	•	2x55	TC-L	3,2	620	573	620	573	100	580	580

### INSTALLATION





INDIRECT C-D PAR-V T5 PV L1 2x55W

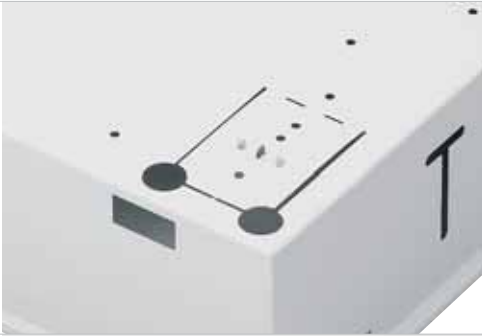
PAR-V



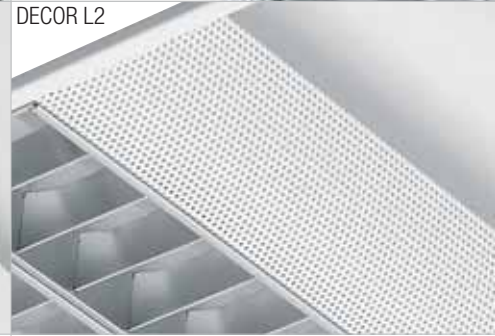
PAR MAT-V



DECOR L1



DECOR L2

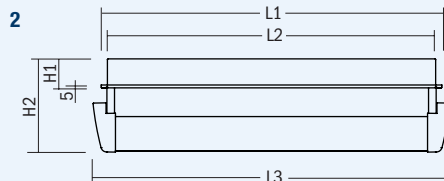
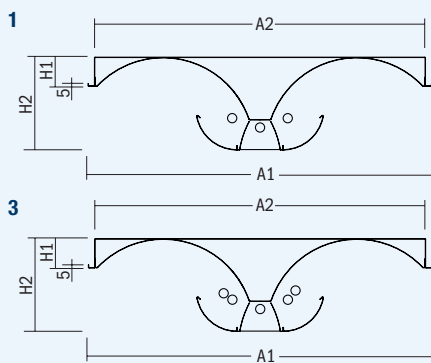
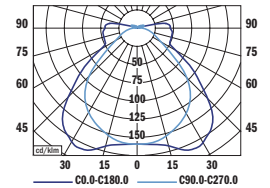


# INDIRECT

**LG**  
**PV/PB**  
**PAR-V/PAR MAT**  
**T5**



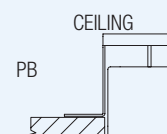
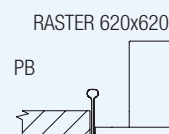
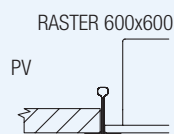
INDIRECT LG PAR-V L1 3x14W



	OPTIC		DECOR		POWER	LAMP	PICTURE	DIMENSIONS						
	PAR-V	PAR MAT-V	L1	L2				A1	A2	L1	L2	L3	H1	H2
Indirect LG PV	•	•	•	•	3x14	T5	1:2	595	573	595	573	623	50	163
Indirect LG PV	•	•	•	•	3x24	T5	1:2	595	573	595	573	623	50	163
Indirect LG PV			•	•	3x14	T5	1:2	595	573	595	573	623	50	163
Indirect LG PV			•	•	3x24	T5	1:2	595	573	595	573	623	50	163
Indirect LG PV	•	•	•	•	2x40 + 1x14	TC-L,T5	3:2	595	573	595	573	623	50	163
Indirect LG PV			•	•	2x40 + 1x14	TC-L,T5	3:2	595	573	595	573	623	50	163
Indirect LG PV	•	•	•	•	2x40 + 1x24	TC-L,T5	3:2	595	573	595	573	623	50	163
Indirect LG PV			•	•	2x40 + 1x24	TC-L,T5	3:2	595	573	595	573	623	50	163
Indirect LG PV	•	•	•	•	2x55 + 1x14	TC-L,T5	3:2	595	573	595	573	623	50	163
Indirect LG PV			•	•	2x55 + 1x14	TC-L,T5	3:2	595	573	595	573	623	50	163
Indirect LG PV	•	•	•	•	2x55 + 1x24	TC-L,T5	3:2	595	573	595	573	623	50	163
Indirect LG PV			•	•	2x55 + 1x24	TC-L,T5	3:2	595	573	595	573	623	50	163

	OPTIC		DECOR		POWER	LAMP	PICTURE	DIMENSIONS						HOLE		
	PAR-V	PAR MAT-V	L1	L2				A1	A2	L1	L2	L3	H1	H2	O1	O2
Indirect LG PB	•	•	•	•	3x14	T5	1:2	620	573	620	573	623	50	163	580	580
Indirect LG PB	•	•	•	•	3x24	T5	1:2	620	573	620	573	623	50	163	580	580
Indirect LG PB			•	•	3x14	T5	1:2	620	573	620	573	623	50	163	580	580
Indirect LG PB			•	•	3x24	T5	1:2	620	573	620	573	623	50	163	580	580
Indirect LG PB	•	•	•	•	2x40 + 1x14	TC-L,T5	3:2	620	573	620	573	623	50	163	580	580
Indirect LG PB			•	•	2x40 + 1x14	TC-L,T5	3:2	620	573	620	573	623	50	163	580	580
Indirect LG PB	•	•	•	•	2x40 + 1x24	TC-L,T5	3:2	620	573	620	573	623	50	163	580	580
Indirect LG PB			•	•	2x40 + 1x24	TC-L,T5	3:2	620	573	620	573	623	50	163	580	580
Indirect LG PB	•	•	•	•	2x55 + 1x14	TC-L,T5	3:2	620	573	620	573	623	50	163	580	580
Indirect LG PB			•	•	2x55 + 1x14	TC-L,T5	3:2	620	573	620	573	623	50	163	580	580
Indirect LG PB	•	•	•	•	2x55 + 1x24	TC-L,T5	3:2	620	573	620	573	623	50	163	580	580
Indirect LG PB			•	•	2x55 + 1x24	TC-L,T5	3:2	620	573	620	573	623	50	163	580	580

INSTALLATION





INDIRECT LG PV PAR-V

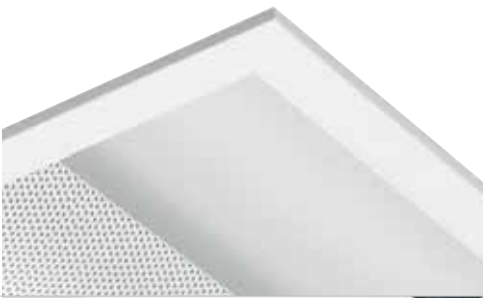
PV



LG PAR-V



PB



LG PAR MAT-V



LG









INDIRECT F-S PAR-V

F-S



F-D



F-T

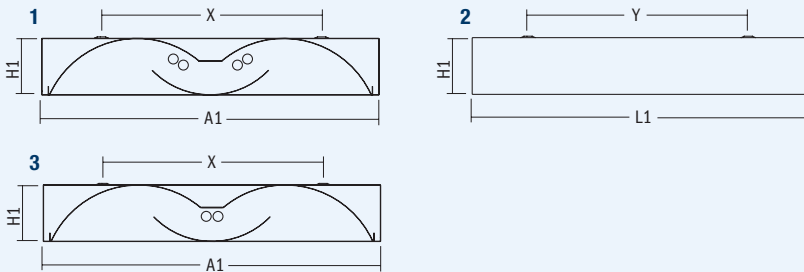
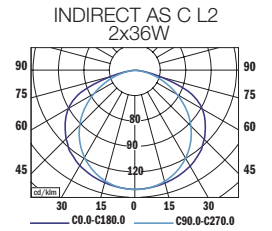


F-DU0



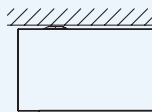
# INDIRECT

**AS**  
**C/C-P/C-M**  
**TC-L**



	DECOR		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	L1	L2				A1	L1	H1	X	Y
Indirect AS C	•	•	2x36	TC-L	1,2	620	620	100	400	400
Indirect AS C	•	•	2x40	TC-L	1,2	620	620	100	400	400
Indirect AS C	•	•	2x55	TC-L	1,2	620	620	100	400	400
Indirect AS C-P	•	•	2x36	TC-L	1,2	620	620	100	400	400
Indirect AS C-P	•	•	2x40	TC-L	1,2	620	620	100	400	400
Indirect AS C-P	•	•	2x55	TC-L	1,2	620	620	100	400	400
Indirect AS C-M	•	•	1x36	TC-L	3,2	620	620	100	400	400
Indirect AS C-M	•	•	1x40	TC-L	3,2	620	620	100	400	400
Indirect AS C-M	•	•	1x55	TC-L	3,2	620	620	100	400	400

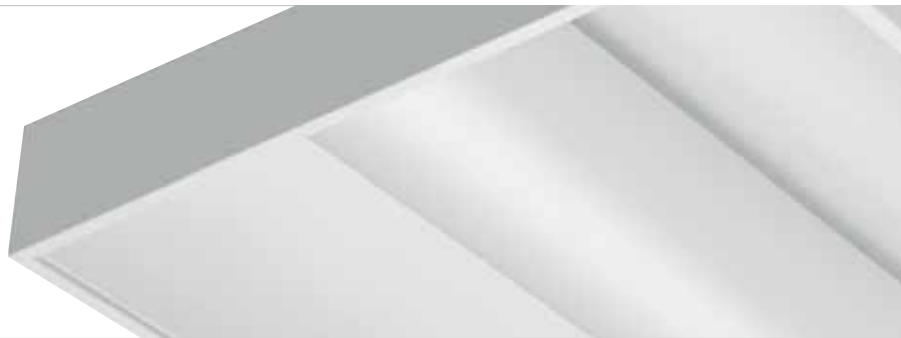
INSTALLATION





INDIRECT AS C L2 2x55W

AS C



DECOR L1

AS C-P



DECOR L2

AS C-M

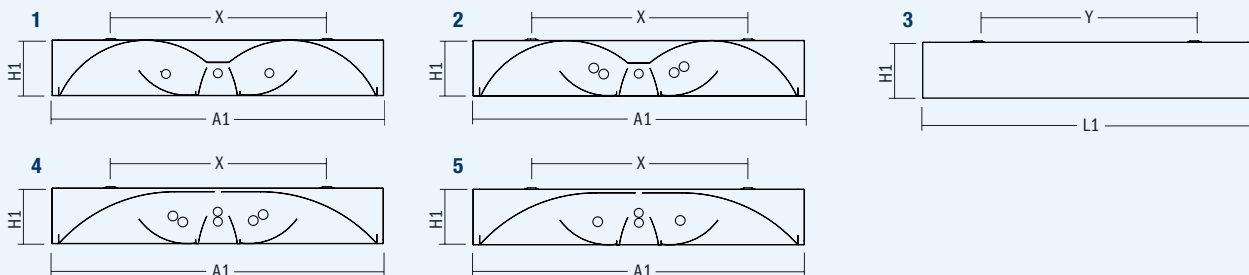
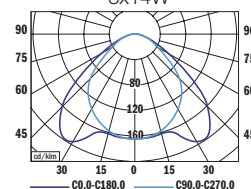


# INDIRECT

## AS C PAR-V PAR-V/PAR MAT-V T5/TC-L

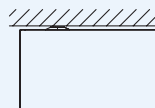


INDIRECT AS C PAR-V L2  
3x14W



	OPTIC		DECOR		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	PAR-V	PAR MAT-V	L1	L2				A1	L1	H1	X	Y
Indirect AS C-PAR-V	•	•	•	•	3x14	T5	1,3	620	620	100	400	400
Indirect AS C-PAR-V	•	•	•	•	3x24	T5	1,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x36 + 1x14	TC-L; T5	2,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x36 + 1x24	TC-L; T5	2,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x40 + 1x14	TC-L; T5	2,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x40 + 1x24	TC-L; T5	2,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x55 + 1x14	TC-L; T5	2,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x55 + 1x24	TC-L; T5	2,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x14 + 1x40	T5; TC-L	5,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x24 + 1x40	T5; TC-L	5,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x14 + 1x55	T5; TC-L	5,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x24 + 1x55	T5; TC-L	5,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x36 + 1x40	TC-L	4,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	3x40	TC-L	4,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x55 + 1x40	TC-L	4,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x36 + 1x55	TC-L	4,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	2x40 + 1x55	TC-L	4,3	620	620	100	400	400
Indirect AS C-PAR-V TCL	•	•	•	•	3x55	TC-L	4,3	620	620	100	400	400

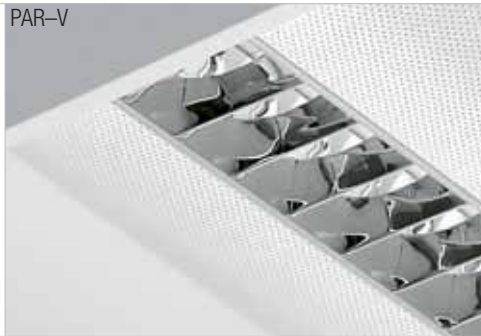
INSTALLATION





INDIRECT AS C PAR-V T5 L2 2x55W+1x14W

PAR-V



PAR MAT-V



DECOR L1



DECOR L2



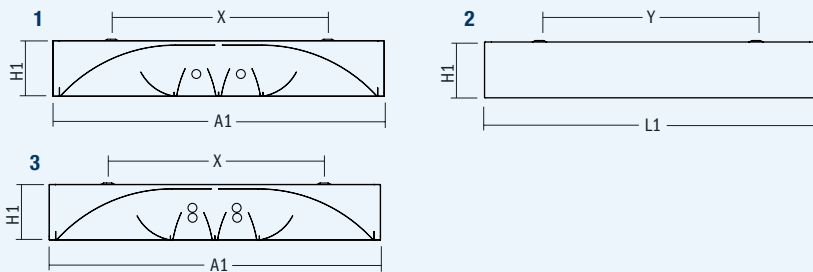
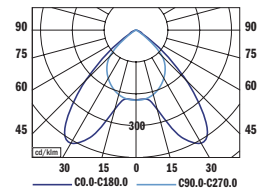


# INDIRECT

## AS C-D PAR-V PAR-V/PAR MAT-V T5/TC-L

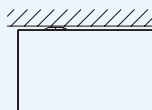


INDIRECT AS C-D PAR-V T5 L2 2x14W



	OPTIC		DECOR		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	PAR-V	PAR MAT-V	L1	L2				A1	L1	H1	X	Y
Indirect AS C-D PAR-V	•	•	•	•	2x14	T5	1;2	620	620	100	400	400
Indirect AS C-D PAR-V	•	•	•	•	2x24	T5	1;2	620	620	100	400	400
Indirect AS C-D PAR-V TC-L	•	•	•	•	2x40	TC-L	3;2	620	620	100	400	400
Indirect AS C-D PAR-V TC-L	•	•	•	•	2x55	TC-L	3;2	620	620	100	400	400

INSTALLATION





INDIRECT AS C-D PAR-V T5 PV L1 2x55W

PAR-V



PAR MAT-V

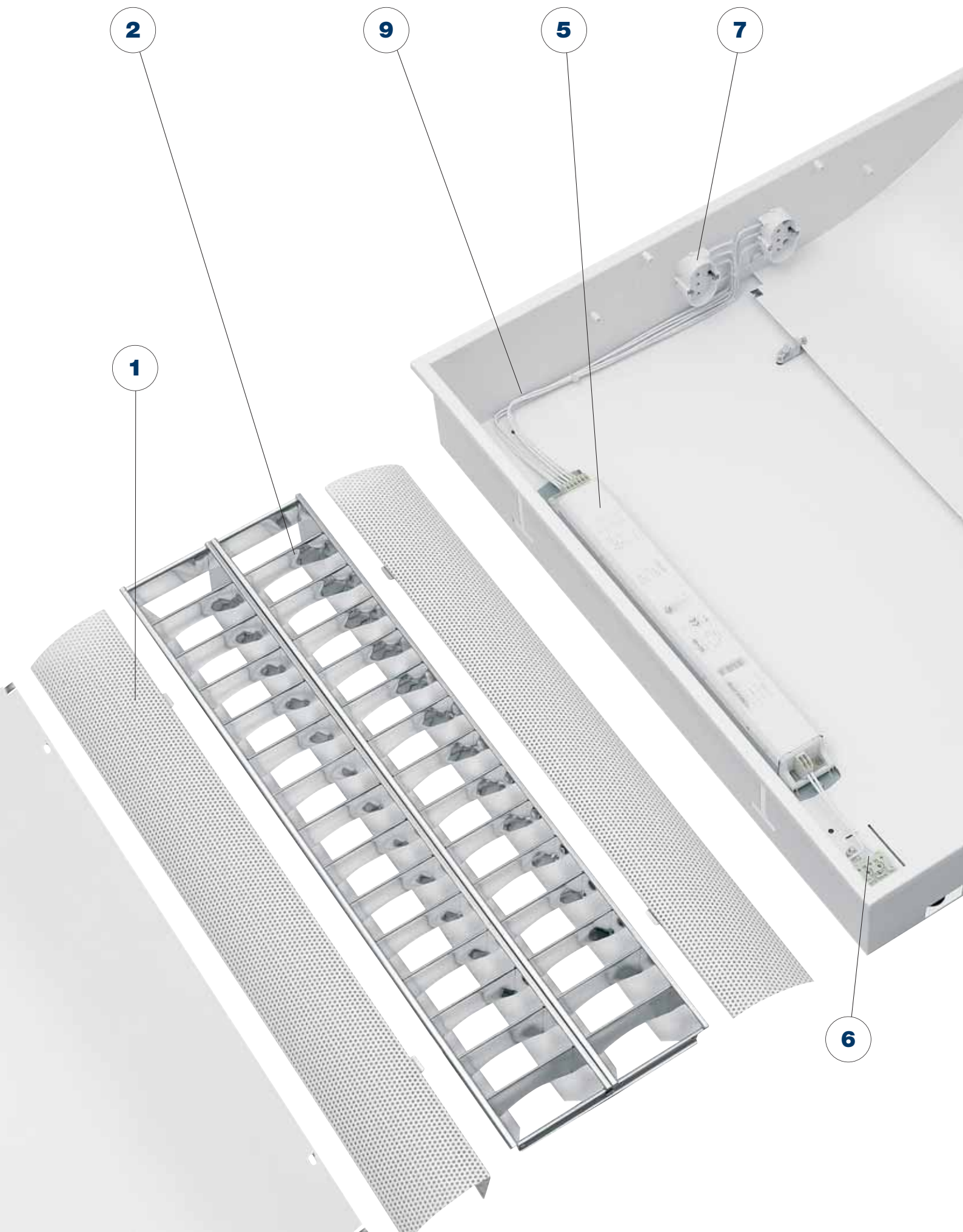


DECOR L1



DECOR L2





2

9

5

7

1

6

# INDIRECT



## **C-D PAR PV L2 TC-L ELECTRONIC CONTROL GEAR**

- 1** Tienidlo  
Shade  
Schirm
- 2** Parabolická mriežka  
Parabolic louvre  
Parabolspiegelraster
- 3** Teleso svetidla  
Housing  
Leuchtenkörper
- 4** Odrážová plocha  
Reflective surface  
Reflexions Fläche
- 5** Elektronický predradník  
Electronic ballast  
Vorschaltgeräte
- 6** Svorkovnica  
Terminal block  
Anschlussklemme
- 7** Päťica  
Lampholder  
Lampenhalter
- 8** Držiak svetelného zdroja  
Lampsupport  
Lampenstützhalter
- 9** Vodič  
Cable  
Kabel
- 10** Držiak telesa  
Housing holder  
Körperhalter

**8**



**10**

# INDIRECT

## OPTICS T5/T8/TC-L

Rad Indirect tvorí skupinu štýlových, moderných žiarivkových svietidiel, ktoré sú vhodné pre celkové osvetlenie mnohých typov interiérov. Tieto svietidlá vytvárajú pre oči veľmi príjemné, mäkké osvetlenie kombináciou priamej a odrazenej zložky svetelného toku. Svietidlá sú vyrábané s plnými alebo perforovanými tienidlami svetelných zdrojov, alebo v kombinácii s parabolickou mriežkou. Rôznymi konštrukčnými variantami svietidiel môže byť ovplyvňovaný pomer medzi priamou a nepriamou zložkou svetla. Systémy s nepriamym smerovaním svetelného toku sú vhodné všade tam, kde sa uplatní príjemné rozptýlené osvetlenie. Vďaka ich atraktívnemu vzhľadu je to tiež praktická voľba pre prestížne typy priestorov.

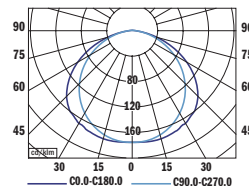
Indirect is a range of stylish, modular fluorescent fittings that are ideal for general lighting in a variety of applications. These light fixtures create a soft style of light from a combination of direct and indirect lighting. Indirect optic light fixtures are available with plain or perforated lampshades, together with parabolic louver combinations. Different amounts of direct and indirect light are provided by different fixture variants. An Indirect lighting system represents the ideal solution for all areas where diffused, comfortable lighting is necessary. It is also a practical choice for prestigious applications, thanks to its attractive, architectural appearance.

Die Indirect-Reihe bildet eine Gruppe der stilvollen, modernen Leuchtstofflampen, die für gesamten Beleuchtung von vielen Innenraumtypen geeignet sind. Diese Leuchten bilden für die Augen eine sehr angenehme weiche Beleuchtung durch die Kombination der direkten und reflektierten Komponente. Die Leuchten sind mit Voll- oder Lochschirmen der Lichtquellen, oder in der Kombination mit einem parabolischen Raster hergestellt. Durch verschiedene Konstruktionsvarianten der Leuchte kann das Verhältnis zwischen der direkten und indirekten Komponente des Lichtes beeinflusst werden. Systeme mit indirekter Richtung des Lichtstromes sind dort geeignet, wo eine angenehme zerstreute Beleuchtung zur Geltung kommt. Dank ihrem attraktiven Aussehen sind sie auch eine praktische Wahl für exklusive Arten der Räumlichkeiten.

... pure INDIRECT



INDIRECT  
C-C  
T5  
L2  
4x14W



efficiency 55%

### Glare Evaluation According to UGR

Room size	X	Y	Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
p-ceiling	70	70	50	50	30	70	70	50	50	30		
p-walls	50	30	50	30	30	70	30	50	30	30		
p-floor	20	20	20	20	20	20	20	20	20	20		
2H	2H	16.5	17.8	16.8	18.0	18.3	15.4	16.7	15.7	16.9	17.2	
	3H	17.9	19.1	18.2	19.4	19.7	16.7	18.0	17.1	18.2	18.5	
	4H	18.4	19.6	18.8	19.9	20.2	17.2	18.4	17.6	18.6	18.9	
	6H	18.8	19.8	19.1	20.1	20.5	17.5	18.6	17.9	18.9	19.2	
	8H	18.9	19.9	19.2	20.2	20.5	17.6	18.6	18.0	18.9	19.3	
	12H	18.9	19.9	19.3	20.2	20.5	17.6	18.6	18.0	18.9	19.3	
4H	2H	17.1	18.2	17.4	18.5	18.8	16.3	17.4	16.6	17.7	18.0	
	3H	18.7	19.7	19.1	20.0	20.4	17.9	18.8	18.2	19.2	19.5	
	4H	19.4	20.2	19.8	20.6	20.9	18.5	19.3	18.9	19.7	20.0	
	6H	19.8	20.6	20.2	20.9	21.3	18.8	19.6	19.3	20.0	20.4	
	8H	19.9	20.6	20.4	21.0	21.4	19.0	19.6	19.4	20.0	20.5	
	12H	20.0	20.6	20.4	21.0	21.5	19.0	19.6	19.5	20.0	20.5	
8H	4H	19.6	20.3	20.0	20.7	21.1	18.8	19.5	19.2	19.9	20.3	
	6H	20.1	20.7	20.6	21.1	21.6	19.3	19.8	19.7	20.3	20.7	
	8H	20.3	20.8	20.8	21.3	21.7	19.4	19.9	19.9	20.4	20.8	
	12H	20.4	20.8	20.9	21.3	21.8	19.5	19.9	20.0	20.4	20.9	
12H	4H	19.6	20.2	20.0	20.6	21.0	18.8	19.4	19.2	19.8	20.3	
	6H	20.2	20.7	20.6	21.1	21.6	19.3	19.8	19.8	20.3	20.7	
	8H	20.4	20.8	20.9	21.3	21.8	19.5	19.9	20.0	20.4	20.9	

variation of observer position for the luminaire distances S

S=	1.0H	+0.1/-0.1	+0.1/-0.1
	1.5H	+0.2/-0.3	+0.3/-0.4
	2.0H	+0.5/-0.7	+0.6/-0.9
Standart table	BK05		BK05
CorrectionSummhd	0.9		-0.1
corrected glare indices for 5852lm total flux			

Žiarivky v týchto typoch svietidiel sú kompletne prekryté tienidlami, vyrobenými z plného alebo perforovaného plechu. Táto verzia svietidiel Indirect zabezpečuje dostatočné množstvo vhodne odrazeného nepriameho svetla pre mäkké osvetlenie smerom nadol, zatiaľ čo svetlo nie je príliš silné na to aby oslňovalo. Druh a usporiadanie tienidiel závisí hlavne na danom prostredí a vyžadovanej intenzite osvetlenia, ale všeobecne sa dá povedať že používaním perforovaných tienidiel sa významne zvýši účinnosť svietidiel.

Fluorescent lamps in these types of light fixtures are completely covered by lampshades, made of a plain or perforated sheet. This Indirect range provides a generous amount of properly reflected indirect light for soft, downward lighting, while the light is not intense enough to create a glare. Lampshade types mostly depend on the desired lighting level and ambience, but fixture efficiency can be markedly increased by using of perforated lampshades.

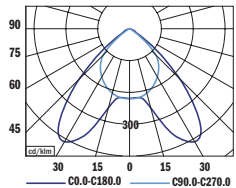
Die Leuchtstofflampen in diesen Leuchtentypen sind vollständig mit den Schirmen verdeckt, die aus dem Voll- oder Lochblech hergestellt sind. Diese Indirect-Reihe gewährleistet eine ausreichende Menge des passend reflektierten indirekten Lichtes für sanfte Beleuchtung nach unten, weil das Licht nicht zu stark ist, um zu blenden. Die Art und die Anordnung der Schirme hängen hauptsächlich von gegebener Umgebung und geforderter Intensität der Beleuchtung ab, aber man kann allgemein sagen, daß durch Verwendung der Lochschirme die Wirksamkeit der Leuchten beträchtlich erhöht werden kann.



... direct INDIRECT



INDIRECT  
C-D  
PAR-V  
L2  
2x14W

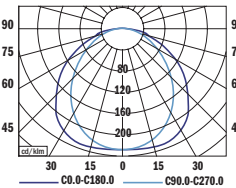


efficiency 65%

... INDIRECT difusse



INDIRECT  
C-G  
T5  
2x24W

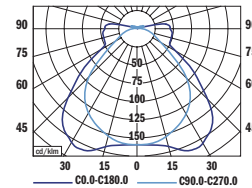


efficiency 71%

... INDIRECT LG



INDIRECT  
LG PAR-V  
L1  
3x14W



efficiency 54%

**Glare Evaluation According to UGR**

Room size	Viewing direction at right angles to lamp axis	Viewing direction parallel to lamp axis
2H	13.3 14.3 13.5 14.5 14.7	11.2 12.2 11.4 12.4 12.6
4H	13.2 14.1 13.5 14.4 14.6	11.0 12.0 11.3 12.2 12.5
8H	13.1 13.9 13.5 14.2 14.5	10.9 11.7 11.3 12.0 12.3
12H	13.0 13.8 13.4 14.1 14.4	10.9 11.6 11.2 11.9 12.3
2H	13.2 14.0 13.5 14.3 14.6	11.2 12.1 11.5 12.3 12.6
4H	13.2 13.8 13.5 14.1 14.5	11.1 11.7 11.5 12.1 12.4
8H	13.1 13.6 13.5 14.0 14.4	11.1 11.6 11.5 12.0 12.4
12H	13.0 13.5 13.5 13.9 14.3	11.0 11.5 11.5 11.9 12.3
2H	13.1 13.6 13.5 13.9 14.3	11.1 11.5 11.5 11.9 12.3
4H	13.0 13.4 13.5 13.8 14.3	11.0 11.4 11.5 11.8 12.3
8H	13.0 13.3 13.5 13.8 14.2	11.0 11.4 11.5 11.8 12.3
12H	12.9 13.2 13.4 13.7 14.2	11.0 11.3 11.5 11.7 12.2
2H	13.0 13.5 13.5 13.9 14.3	11.0 11.5 11.5 11.9 12.3
4H	13.0 13.3 13.5 13.8 14.2	11.0 11.3 11.5 11.8 12.3
8H	12.9 13.2 13.4 13.7 14.2	11.0 11.3 11.5 11.7 12.2

variation of observer position for the luminaire distances S

S=	+1.6/-3.3	+2.4/-4.2
1.5H	+3.1/-7.5	+3.9/-7.9
2.0H	+4.9/-7.5	+4.7/-8.5
Standard table	BK00	BK01
CorrectionSummand	-6.6	-8.2

corrected glare indices referring to 2294lm total luminous flux

**Glare Evaluation According to UGR**

Room size	Viewing direction at right angles to lamp axis	Viewing direction parallel to lamp axis
2H	16.3 17.7 16.6 17.9 18.1	14.7 16.0 15.0 16.3 16.5
4H	17.9 19.1 18.2 19.3 19.6	16.0 17.2 16.3 17.4 17.7
8H	18.5 19.6 18.8 19.9 20.2	16.5 17.6 16.8 17.9 18.2
12H	19.2 20.2 19.5 20.5 20.8	16.8 17.9 17.2 18.2 18.5
2H	16.9 18.0 17.2 18.3 18.6	15.6 16.8 16.0 17.0 17.3
4H	18.6 19.6 19.0 19.9 20.3	17.1 18.1 17.5 18.4 18.8
8H	19.4 20.2 19.8 20.6 20.9	17.8 18.6 18.2 19.0 19.3
12H	20.0 21.0 20.7 21.4 21.8	18.3 19.0 18.7 19.4 19.8
2H	19.6 20.5 19.9 20.8 21.1	17.0 18.0 17.4 18.3 18.6
4H	20.6 21.2 21.0 21.6 22.1	18.5 19.1 18.9 19.5 19.9
8H	20.7 21.3 21.2 21.7 22.2	19.5 19.2 19.0 19.6 20.0
2H	19.6 20.3 20.0 20.7 21.1	18.2 18.9 18.6 19.3 19.7
4H	20.7 21.3 21.1 21.7 22.1	18.8 19.4 19.3 19.8 20.3
8H	21.1 21.6 21.6 22.0 22.5	19.1 19.6 19.6 20.0 20.5
12H	21.3 21.7 21.8 22.2 22.7	19.3 19.7 19.8 20.2 20.7
2H	19.6 20.3 20.1 20.7 21.1	18.3 18.9 18.7 19.3 19.7
4H	20.7 21.2 21.2 21.7 22.2	19.0 19.5 19.5 19.9 20.4
8H	21.2 21.6 21.7 22.1 22.6	19.3 19.7 19.8 20.2 20.7

variation of observer position for the luminaire distances S

S=	+0.1/-0.1	+0.1/-0.2
1.5H	+0.2/-0.3	+0.3/-0.4
2.0H	+0.3/-0.5	+0.5/-0.8
Standard table	BK06	BK05
CorrectionSummand	-2.3	0.1

corrected glare indices for 5852lm total flux

**Glare Evaluation According to UGR**

Room size	Viewing direction at right angles to lamp axis	Viewing direction parallel to lamp axis
2H	12.6 13.8 13.0 14.2 14.6	9.5 10.7 10.0 11.1 11.5
4H	14.6 15.7 15.1 16.1 16.6	11.0 12.0 11.4 12.5 12.9
8H	16.0 17.1 16.5 17.5 18.0	11.6 12.6 12.1 13.1 13.5
12H	17.8 18.8 18.3 19.2 19.7	12.2 13.2 12.7 13.6 14.1
2H	18.9 19.8 19.4 20.2 20.7	12.5 13.4 13.0 13.9 14.4
4H	20.1 21.0 20.6 21.4 21.9	12.7 13.6 13.2 14.1 14.6
2H	12.9 13.9 13.4 14.4 14.8	10.5 11.5 11.0 11.9 12.4
4H	15.3 16.2 15.8 16.7 17.2	12.4 13.3 12.9 13.7 14.2
8H	17.0 17.8 17.6 18.3 18.9	13.3 14.1 13.8 14.6 15.1
12H	19.1 19.8 19.7 20.4 20.9	14.1 14.8 14.6 15.3 15.9
2H	20.3 21.0 20.9 21.5 22.1	14.4 15.1 15.0 15.6 16.2
4H	21.7 22.3 22.2 22.9 23.5	14.7 15.3 15.2 15.9 16.5
2H	17.4 18.1 18.0 18.6 19.2	14.5 15.2 15.1 15.7 16.3
4H	19.9 20.4 20.5 21.0 21.6	15.8 16.3 16.4 16.9 17.5
8H	21.3 21.8 21.9 22.4 23.1	16.4 16.9 17.0 17.5 18.1
12H	23.0 23.4 23.6 24.0 24.7	16.9 17.3 17.5 17.9 18.6
2H	17.5 18.1 18.1 18.6 19.3	15.0 15.6 15.6 16.2 16.8
4H	20.0 20.5 20.6 21.1 21.8	16.5 17.0 17.1 17.6 18.3
8H	21.6 22.0 22.2 22.7 23.3	17.4 17.8 18.0 18.4 19.1

variation of observer position for the luminaire distances S

S=	+0.2/-0.2	+0.2/-0.2
1.5H	+0.3/-0.4	+0.4/-0.4
2.0H	+0.4/-0.7	+0.6/-0.7
Standard table	-	BK13
CorrectionSummand	-	-6.2

corrected glare indices for 5852lm total flux

Svetidlá s parabolickou mriežkou umiestnenou v strede, kombinované s plnými alebo perforovanými plechovými tienidlami po stranách. Táto kombinovaná distribúcia svetelného toku zabezpečuje neoslňujúce osvetlenie bez veľkých kontrastov aj pre miestnosti s vysokými nárokmi pre zrakový komfort ľudí. Nízky jas mriežky spĺňa hranice európskej normy EN 12464-1 pre osvetlenie pracovísk obsahujúcich zobrazovacie jednotky - DSE (limity 200 resp. 1000 cd/m<sup>2</sup> v 65 stupňových uhloch).

This Indirect variant with a central parabolic louver for direct light, combined with plain or perforated side panels. This combined distribution provides low contrast, glare-free illumination also for areas where high visual comfort is required. The louver's low glare is in accordance with European standard EN 12464-1 for lighting workplaces equipped with display screens - DSE (limits 200 or 1000 cd/m<sup>2</sup> at 65° elevation).

Die Leuchten mit einem in der Mitte angebrachten parabolischen Raster, kombiniert mit Voll- oder Lochblechschirmen an beiden Seiten. Diese kombinierte Lichtstromverteilung gewährleistet eine nicht blendende Beleuchtung ohne große Kontraste auch für Räumlichkeiten mit hohen Ansprüchen auf den Sehkomfort. Niedrige Leuchtdichte des Rasters erfüllt die Grenzen der europäischen Norm EN 12464-1 für Beleuchtung der Arbeitsplätze, die die DSE-Bildschirmanzeigeräte enthalten (Grenzen 200 bzw. 1000 cd/m<sup>2</sup> in 65° Winkeln).

Tieto svetidlá s kombinovanou distribúciou svetelného toku predstavujú ideálne riešenie pre všetky miestnosti, kde je žiaduce príjemné nízkokontrastné difúzne osvetlenie. Optickú časť svetiel tvorí difúzor z pieskovaného skla. Tento dekoratívny prvok zabezpečuje široký uhol vyžarovania svetla a vysokú účinnosť svetiel.

This combined indirect lighting system represents the ideal solution for all areas where diffused, comfortable lighting is necessary. The optical system of these light fixtures consists of a sandblasted glass diffuser. This decorative optic provides wider beam spread and excellent fixture efficiency.

Diese Leuchten mit kombinierter Verteilung des Lichtstromes stellen eine ideale Lösung für alle Räumlichkeiten dar, wo eine angenehme diffuse Beleuchtung mit niedrigem Kontrast gewünscht ist. Einen optischen Teil der Leuchten bildet der Diffusor aus sandgestrahltem Glas. Dieses Dekorationselement gewährleistet einen breiten Winkel der Lichtausstrahlung und ausgezeichnete Leuchtenwirksamkeit.

Špeciálne navrhnutá optika svetiel podľa britského štandardu LG7 (Society of light & lighting, Lighting guide 7) zabezpečuje vyvážené osvetlenie a stimulujúce pracovné prostredie. Vysunutá optika distribuuje svetelný tok von zo svetidla takým spôsobom, že osvetlenie všetkých povrchov v miestnosti je vyvážené – 30% horizontálnej osvetlenosti je dosahovaných na strope a 50% horizontálnej osvetlenosti je dosahovaných na stenách. Na výber sú plné alebo perforované tienidlá, ktoré môžu byť skombinované s parabolickou mriežkou umiestnenou v strede. Nízky jas mriežky spĺňa hranice európskej normy EN 12464-1 pre osvetlenie pracovísk obsahujúcich zobrazovacie jednotky - DSE (limity 200 resp. 1000 cd/m<sup>2</sup> v 65 stupňových uhloch).

This specially designed optic, complying with the British standard (Society of Light & Lighting, Lighting Guide 7), provides balanced illumination of the working environment. The floating optic effectively illuminates task areas, walls and ceilings in such a manner that the illumination of all surfaces in a room is balanced – 30% of horizontal working plane illuminance on the ceiling and 50% on walls. Solid or perforated lampshades are available which can be combined with a centrally situated parabolic grid. The louver's low glare is in accordance with European standard EN 12464-1 for lighting workplaces equipped with display screens - DSE (limits 200 or 1000 cd/m<sup>2</sup> at 65° elevation).

Eine speziell entworfene Optik der Leuchten nach dem britischen Standard LG7 (Society of light & lighting, Lighting guide 7) gewährleistet eine ausgeglichene Beleuchtung und eine stimulierende Arbeitsumgebung. Eine vorgeschobene Optik verteilt den Lichtstrom aus den Leuchten auf solche Art, daß die Beleuchtung aller Oberflächen im Raum ausgeglichen ist – 30 % der horizontalen Beleuchtung wird auf der Decke erreicht und 50 % der horizontalen Beleuchtung wird an den Wänden erreicht. Zur Auswahl stehen Voll- oder Lochschirme, die mit einem in der Mitte angebrachten parabolischen Raster kombiniert werden können. Niedrige Leuchtdichte des Rasters erfüllt die Grenzen der europäischen Norm EN 12464-1 für Beleuchtung der Arbeitsplätze, die die DSE-Bildschirmanzeigeräte enthalten (Grenzen 200 bzw. 1000 cd/m<sup>2</sup> in 65° Winkeln).







ORDER CODE	TYPE	SPECIFICATION
IB2001014083000	INDIRECT AS C-M L1	1x40W,TC-L, ECG A2,RAL 9003
IB2001015583000	INDIRECT AS C-M L1	1x55W,TC-L, ECG A2,RAL 9003
IB3001013633000	INDIRECT AS C-M L2	1x36W,TC-L, CCG B2,RAL 9003
IB3001013683000	INDIRECT AS C-M L2	1x36W,TC-L, ECG A2,RAL 9003
IB3001014083000	INDIRECT AS C-M L2	1x40W,TC-L, ECG A2,RAL 9003
IB3001015583000	INDIRECT AS C-M L2	1x55W,TC-L, ECG A2,RAL 9003
<b>INDIRECT AS C-PAR-V</b>		
IBF03A03A483000	INDIRECT AS C-PAR-V L2	2x55+1x14W,TC-L T5,316G2,ECG A2,RAL 9003
<b>INDIRECT AS C-D PAR-V</b>		
IBG030221483000	INDIRECT AS C-D PAR-V L2	2x14W,T5,316G2, ECG A2,RAL 9003
IBG030222483000	INDIRECT AS C-D PAR-V L2	2x24W,T5,316G2, ECG A2,RAL 9003
IBG031025583000	INDIRECT AS C-D PAR-V L2	2x55W,TC-L,316G2, ECG A2,RAL 9003
IBG090221483000	INDIRECT AS C-D PAR-V L2	2x14W,T5,316G2, ECG A2,RAL 9003
IBG090222483000	INDIRECT AS C-D PAR-V L2	2x24W,T5,316G2, ECG A2,RAL 9003
IBG091025583000	INDIRECT AS C-D PAR-V L2	2x55W,TC-L,316G2, ECG A2,RAL 9003
<b>ACCESSORIES</b>		
<b>HOUSING HOLDER</b>		
IBZ000000000001	HOUSING HOLDER 1 (INDIRECT PB)	
<b>XXXXXXXXXXXXXXX</b>		
	9 - ECG DIM 1-10V	
	A - ECG DIM DSI	
	B - ECG DALI	
<b>XXXXXXXXXXXXXXXXXX</b>		
	EW1 - Wieland conector	
<b>XXXXXXXXXXXXXXXXXX</b>		
	02 - PAR-V (MIRO4)	









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# DOWNLIGHT



# DOWNLIGHT

## PRO

### DOWNLIGHT PRO

**Rad svetidiel Downlight PRO je určený pre vstavenie do rôznych typov podhládov. Jeho hlavné znaky sú jednoduchá montáž a nízky profil svetidla, ktorý umožňuje montáž do podhládov s výškou len 100 mm. Svetidlá Downlight PRO ponúkajú bohaté príslušenstvo, rôzne typy optických systémov, ako aj verziu s vyšším krytím.**

#### KONŠTRUKCIA

**Teleso svetidla:** šedý polykarbonát

**Reflektory:** hliníkové s rôznou povrchovou úpravou - lesklý (polished), matný (mat), fazetový (facet)

**Kryt reflektora (rad 212):** kalené sklo (pieskované alebo číre), polykarbonát (opálový, číry alebo prizmatický)

**Obruč:** hliníkový odliatok, povrchovo upravený elektrostaticky nanášanou práškovou farbou RAL 9010 (čistá biela)

**Inštalčná doska:** pozinkovaný plech, držiaky proti vytrhnutiu vodičov zo svorkovnice, dve gumené prechodky pre vodiče (možná priebežná montáž)

Uchytenie svetidla v podhlade je vyriešené prostredníctvom troch otočných polykarbonátových úchyto, nastaviteľných pre rôzne hrúbky stropu. Obruč sa ku polykarbonátovému telu uchyťava malým pootočením v troch fixačných bodoch, čo aj v prípade sklenených krytov alebo dekoratívneho príslušenstva umožňuje rýchlu beznástrojovú výmenu svetelných zdrojov. Krycie sklá sú uchytené zvnútra na obruči a utesnené silikónovým tesnením.

Bližší popis jednotlivých typov optiky je uvedený na stranách 180-183, v kapitole OPTICS.

#### ELEKTRICKÁ VÝBAVA

**Svetidlá môžu byť vybavené:**

- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: kompaktné žiarivky TC-DEL a TC-TEL (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrútková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>, svorkovnica je z telesa ľahko vyklopiteľná, čo uľahčuje elektrické zapojenie svetidla
- svetidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny, núdzová jednotka je umiestnená na špeciálnej montážnej doske mimo svetidla

#### PRÍSLUŠENSTVO

- parabolická mriežka obmedzujúca nežiadúce oslnenie
- široká ponuka dekoračných prvkov a skiel
- štandardne sú svetidlá dodávané s bezskrútkovou napichovacou svorkovnicou, na požiadanie je možné vyhotovenie s jedným alebo dvomi konektormi umožňujúcimi rýchle elektrické pripojenie: 3-pólové konektory Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A alebo jedným 5-pólovým konektorom Wieland gesis GST 18i5, Wago Winsta 770)

## DOWNLIGHT PRO

The Downlight PRO range of light fixtures is intended for installation into various ceiling types. Its main characteristics are simple installation and low fixture profile that allows installation into ceilings only 100 mm thick. Downlight PRO fixtures offer rich accessories, numerous types of optical systems, as well as version with higher ingress protection.

### CONSTRUCTION

**Housing:** grey polycarbonate

**Reflectors:** aluminium with various surface finishes – polished, matt, facet

**Reflector cover (212 range):** hardened glass (sandblasted or pure), polycarbonate (opal, pure or prismatic)

**Ring:** aluminium casting, finished with electrostatic powder coating RAL 9010 (pure white)

**Installation plate:** galvanised sheet steel, holders to prevent the conductors from loosening off the connecting box, two rubber reducing adapters for the conductors (through wiring possible)

Ceiling attachment of the light fixture is done using three revolving polycarbonate fixtures, adjustable for various ceiling widths. The ring is attached to the polycarbonate body using a small twist at the three points of fixation, which allows fast, tool-free lamp replacement even if glass covers or decorative accessories are used. The cover glass is attached to the inside of the ring and silicon-sealed.

Further description of individual optic types is listed on pages 180-183, in section OPTICS.

### WIRING

Light fixtures can be equipped with:

- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic ballasts can be controlled with analogue, digital or DALI signals)

**Other components:**

- lamps: TC-DEL and TC-TEL compact fluorescent lamps (lamps must be ordered separately)
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three or five pole terminal allows to connect conductors up to 2,5 mm<sup>2</sup> cross-section; the connection box is easily retractable making electrical connection easier
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request; the emergency version is placed on a special installation plate apart from the light fixture

### ACCESSORIES

- parabolic grid reducing unwanted glare
- wide range of decorative glass and accessories
- standard equipment: the light fixtures are delivered with screw-free connection boxes; on request, it can be delivered with one or two connectors allowing fast electrical connection: 3-pole connectors Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A or one 5-pole connector (Wieland gesis GST 18i5, Wago Winsta 770)

## DOWNLIGHT PRO

Die Downlight PRO-Leuchtenreihe ist zum Einbau in verschiedene Untersichtstypen bestimmt. Ihre Hauptmerkmale sind einfacher Einbau und niedriges Profil der Leuchte, das den Einbau in die Untersichte mit einer Höhe von 100 mm ermöglicht. Die Downlight PRO-Leuchten bieten ein breites Zubehör, verschiedene Typen von optischen Systemen und auch Ausführungen mit höher Deckung an.

### KONSTRUKTION

**Leuchtenkörper:** graues Polykarbonat

**Reflektoren:** aus Aluminium mit verschiedener Oberflächenbehandlung – glänzend (polished), matt (mat), facettiert (facet)

**Reflektordeckel (Reihe 212):** Hartglas (sandgestrahlt oder klar), Polykarbonat (mit Opal, klar oder prismatisch)

**Einfassung:** Aluminiumguß, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe RAL 9010 (reinweiß)

**Installationsplatte:** verzinktes Blech, Halter gegen Ausreißen der Leiter aus der Klemmleiste, zwei Gummidurchführungen für Leiter (möglicher durchgehender Einbau)

Leuchte werden in der Untersicht mit drei drehbaren Polykarbonatschellen befestigt, die für verschiedene Deckendicken einstellbar sind. Die Einfassung wird an Polykarbonatkörper mit kleiner Drehung in drei Fixierungspunkten befestigt, was auch im Falle der Glasdeckel oder des Dekorationszubehörs schnellen Austausch der Lichtquellen ohne Werkzeug ermöglicht. Die Deckgläser sind von innen an der Einfassung befestigt und mit Silikondichtung gedichtet.

Nähere Beschreibung von einzelnen Optiktypen ist an Seiten 180-183 in OPTICS Anlage angeführt.

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten können wie folgt ausgerüstet sein:

- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit dusternden elektronischen Vorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

**Andere Komponente:**

- Lichtquellen: kompakte Leuchtstofflampen TC-DEL und TC-TEL (die Lichtquellen sind extra zu bestellen)
- Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht, Leiter an einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen, die Klemmleiste läßt sich leicht aus der Leuchte kippen, was elektrischen Anschluß erleichtert
- Leuchte können auf Wunsch mit Noteinheiten mit Autonombetrieb von 1 oder 3 Stunden ausgestattet werden, die Noteinheit wird an einer speziellen Einbauplatte außer der Leuchte angebracht

### ZUBEHÖR

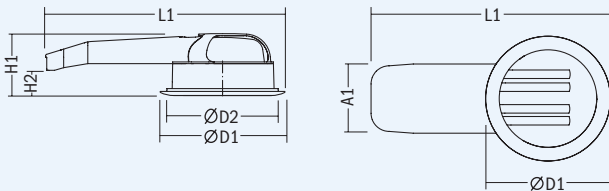
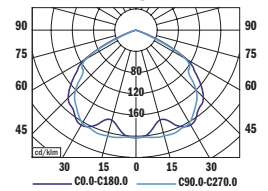
- parabolischer Raster, der unerwünschte Blendung verhindert
- breites Angebot von Dekorationseinheiten und Gläsern
- standardmäßig sind die Leuchten mit einer schraubenlosen Aufstechklemmleiste geliefert, Ausführung mit einem oder zwei Verbindungssteckern, die einen schnellen elektrischen Anschluß ermöglichen, ist auf Wunsch möglich: dreipolige Verbindungsstecker Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A oder rein fünfpoliger Verbindungsstecker Wieland gesis GST 18i5, Wago Winsta 770)

# DOWNLIGHT

## PRO 211 POLISHED/MAT/FACET/STRIP TC-DEL/TC-TEL

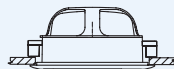
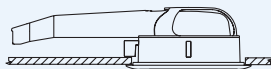


DOWNLIGHT PRO 211 POLISHED  
1x26W



	OPTIC				POWER	LAMP	DIMENSIONS				HOLE A1	Ø1	
	POLISHED	MAT	FACET	STRIP			D1	D2	L1	H1			H2
Downlight PRO 211	•	•	•	•	1x13	TC-DEL, TC-TEL	220	196	422	110	45	122	200
Downlight PRO 211	•	•	•	•	1x18	TC-DEL, TC-TEL	220	196	422	110	45	122	200
Downlight PRO 211	•	•	•	•	1x26	TC-TEL	220	196	422	110	45	122	200
Downlight PRO 211	•	•	•	•	1x32	TC-TEL	220	196	422	110	45	122	200
Downlight PRO 211	•	•	•	•	2x13	TC-DEL, TC-TEL	220	196	422	110	45	122	200
Downlight PRO 211	•	•	•	•	2x18	TC-DEL, TC-TEL	220	196	422	110	45	122	200
Downlight PRO 211	•	•	•	•	2x26	TC-TEL	220	196	422	110	45	122	200

### INSTALLATION





DOWNLIGHT PRO 211 MAT 1x26W

CROSS LOUVRE



POLISHED



MAT



STRIP



FACET







DOWNLIGHT PRO 212 OPAL PC 1x26W

OPAL PC



OPAL GL



CLEAR PC



CLEAR GL



PRISMA PC



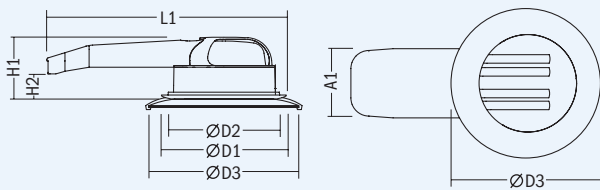
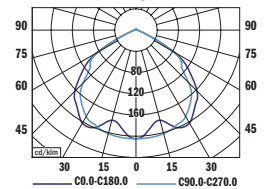


# DOWNLIGHT

## PRO 213 POLISHED/MAT/FACET TC-DEL/TC-TEL

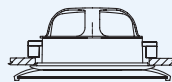
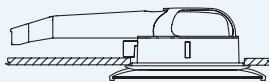


DOWNLIGHT PRO 213 POLISHED  
1x26W



	OPTIC			POWER	LAMP	DIMENSIONS			HOLE Ø1				
	POLISHED	MAT	FACET			D1	D2	D3		L1	H1	H2	A1
Downlight PRO 213	•	•	•	1x13	TC-DEL, TC-TEL	220	196	254	422	110	45	122	200
Downlight PRO 213	•	•	•	1x18	TC-DEL, TC-TEL	220	196	254	422	110	45	122	200
Downlight PRO 213	•	•	•	1x26	TC-TEL	220	196	254	422	110	45	122	200
Downlight PRO 213	•	•	•	1x32	TC-TEL	220	196	254	422	110	45	122	200
Downlight PRO 213	•	•	•	2x13	TC-DEL, TC-TEL	220	196	254	422	110	45	122	200
Downlight PRO 213	•	•	•	2x18	TC-DEL, TC-TEL	220	196	254	422	110	45	122	200
Downlight PRO 213	•	•	•	2x26	TC-TEL	220	196	254	422	110	45	122	200

### INSTALLATION



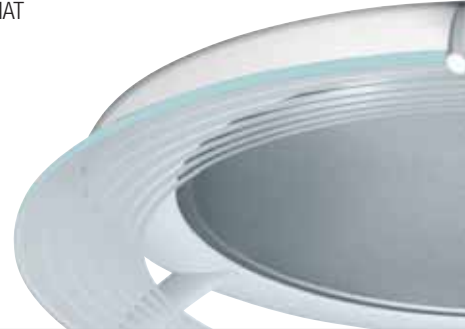


DOWNLIGHT PRO 213 POLISHED 1x26W

POLISHED



MAT



FACET



# PRO ACCESSORIES

## DOWNLIGHTPRO/TUBUS PRO

### PRO 211

PRO LOUVRE



PRO RINGLET



PRO GLASKON



## PRO 213

RING PRO 213 A



RING PRO 213 B



RING PRO 213 C



# DOWNLIGHT

## DOWNLIGHT

**Rad svietidiel Downlight 2xx je určený pre vstavanie do rôznych typov podhládov. Jeho hlavné znaky sú jednoduchá montáž a nízky profil svietidla. Svietidlá Downlight 2xx ponúkajú bohaté príslušenstvo, rôzne typy optických systémov, ako aj verziu s vyšším krytím.**

### KONŠTRUKCIA

**Teleso svietidla:** pozinkovaný plech

**Reflektory:** hliníkové s rôznou povrchovou úpravou - lesklý (polished), matný (mat), fazetový (facet), asymetrický

**Kryt reflektora:** kalené sklo - pieskované (rad 2x2, rad 2x5), číre (rad 2x5) alebo číre so vzorom (rad 242)

**Obruč:** plechový výlisok, povrchovo upravený elektrostaticky nanášanou práškovou farbou RAL 9003 (signálna biela), iná povrchová úprava – RAL 9006 (hliník biely), chrómová alebo zlatá je možná na požiadanie

**Inštaláčna doska:** pozinkovaný plech, držiaky proti vytrhnutiu vodičov zo svorkovnice, dve gumené prechodky pre vodiče (možná priebežná montáž)

Uchytenie svietidla v podhlade je vyriešené prostredníctvom dvoch plechových pružín, nastaviteľných pre rôzne hrúbky stropu. Krycie sklo (rad 2x2) a mriežka (rad 2x4) sú v svietidlách uchytené pomocou troch pružín, dekoratívne sklo (rad 2x3) a krycie sklo (rad 2x5) sú prichytené k obruči prostredníctvom troch dekoračných skrutiek, krycie sklo (rad 242) je uchytené v troch fixačných bodoch. Všetky tieto spôsoby uchytenia umožňujú rýchlu beznástrojovú výmenu svetelných zdrojov.

Bližší popis jednotlivých typov optiky je uvedený na stranách 180-183, v kapitole OPTICS.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá nie sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: kompaktné žiarivky TC-D/TC-DEL a TC-T/TC-TEL (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplôtনা odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny, núdzová jednotka je umiestnená na špeciálnej montážnej doske mimo svietidla

### PRÍSLUŠENSTVO

- široká ponuka dekoračných prvkov a skiel (bližší popis v časti Downlight and Tubus accessories)
- samostatný plechový box pre oddelené umiestnenie predradníka od svietidla (verzia separate gear box)
- štandardne sú svietidlá dodávané s bezskrutkovou napichovacou svorkovnicou, na požiadanie je možné vyhotovenie s jedným alebo dvomi konektormi umožňujúcimi rýchle elektrické pripojenie: 3-pólové konektory Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A

## DOWNLIGHT

The Downlight 2xx range of light fixtures is intended for installation into various types of ceilings. Its main characteristics are simple installation and low fixture profile. Downlight 2xx light fixtures offer rich accessories, numerous types of optical systems, as well as version with higher ingress protection.

### CONSTRUCTION

**Housing:** galvanised sheet steel

**Reflectors:** aluminium with various types of surface finishes – polished, matt, facet, asymmetrical

**Reflector cover:** hardened glass – sandblasted (2x2 range, 2x5 range), pure (2x5 range) or patterned (242 range)

**Ring:** sheet steel, electrostatic powder coat finish RAL 9003 (signal white), other finish types RAL 9006 (white aluminium), chrome or gold available on request

**Installation plate:** galvanised sheet steel, holders to prevent conductors from loosening off the connecting box, two rubber reducing adapters for the conductors (through wiring possible)

Ceiling attachment of the fixture is done using two metal springs, adjustable for various ceiling widths. The cover glass (2x2 range) and grid (2x4 range) are attached to the light fixture using three springs; the decorative glass (2x3 range) and cover glass (2x5 range) are attached to the ring using three decorative springs; the cover glass (242 range) is attached at three points of fixation. All these attachment methods allow fast and tool-free lamp replacement.

Further description of individual optic types is listed on pages 180-183, in section OPTICS.

### WIRING

Light fixtures can be equipped with:

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, light fixtures are not standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

#### Other components:

- lamps: TC-D/TC-DEL and TC-T/TC-TEL compact fluorescent lamps (lamps must be ordered separately)
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> in cross-section
- an emergency version of the light fixture with autonomous operation of 1 or 3 hours is available on request, the emergency unit is placed on a special installation plate apart from the light fixture

### ACCESSORIES

- a wide range of decorative elements and types of glass (detailed description in Downlight and Tubus Accessories chapters)
- an independent metal box for separate placement of control gear apart from the light fixture (separate gear box version)
- standard equipment: light fixtures are delivered with screwless connection boxes; on request, they can be delivered with one or two connectors allowing fast electrical connection: 3-pole connectors Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A

## DOWNLIGHT

Die Downlight 2xx-Leuchtenreihe ist zum Einbau in verschiedene Typen der Untersichte bestimmt. Ihre Hauptmerkmale sind einfacher Einbau und niedriges Leuchtpprofil. Die Leuchten Downlight 2xx bieten breites Zubehör, verschiedene Typen der optischen Systeme und auch Ausführungen mit höher Deckung an.

### KONSTRUKTION

**Leuchtenkörper:** verzinktes Blech

**Reflektoren:** aus Aluminium mit verschiedener Oberflächenbehandlung – glänzende (polished), matte (mat), facettierte (facet), asymmetrische

**Reflektordeckel:** Hartglas - sandgestrahlt (Reihe 2x2, Reihe 2x5), klar (Reihe 2x5) oder klar mit Muster (Reihe 242)

**Einfassung:** Blechpressteil, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe RAL 9003 (Signalweiß, glänzend), andere Oberflächenbehandlung – RAL 9006 (weißes Aluminium), aus Chrom oder Gold auf Wunsch

**Installationsplatte:** verzinktes Blech, Halter gegen Ausreißen der Leiter aus der Klemmleiste, zwei Gummidurchführungen für Leiter (möglicher durchgehender Einbau)

Leuchte werden mit zwei Blechfedern befestigt, die für verschiedene Deckendicken einstellbar sind. Das Deckglas (Reihe 2x2) und der Raster (Reihe 2x4) sind in den Leuchten mit drei Federn befestigt, das Dekorglas (Reihe 2x3) und das Deckglas (Reihe 2x5) werden an die Einfassung mit drei Dekorationsschrauben befestigt, das Deckglas (Reihe 242) ist in drei Fixierungspunkten befestigt. Alle diesen Arten der Befestigung ermöglichen schnellen Lichtquellen austausch ohne Werkzeug.

Nähere Beschreibung von einzelnen Optiktypen ist an Seiten 180-183 in OPTICS Anlage angeführt.

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten können wie folgt ausgerüstet sein:

- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, Klasse EEI=B1 auf Wunsch, Leuchten sind nicht standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

#### Andere Komponente:

- Lichtquellen: kompakte Leuchtstofflampen TC-D/TC-DEL und TC-T/TC-TEL (die Lichtquellen sind extra zu bestellen)
- Innenleiter mit einem festen Kupferkern mit Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- die, Leuchte können auf Wunsch mit Noteinheiten mit Autonombetrieb von 1 oder 3 Stunden ausgestattet werden, die Noteinheit ist auf einer speziellen Einbauplatte außerhalb der Leuchte angebracht

### ZUBEHÖR

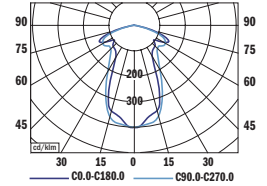
- breites Angebot an Dekorationseinheiten und Gläsern (nähere Beschreibung im Teil Downlight and Tubus accessories)
- selbständige Blechbox für abgesonderte Anbringung des Vorschaltgeräten von der Leuchte (Ausführung separate gear box)
- standardmäßig werden die Leuchten mit einer schraubenlosen Aufstechklemmleiste geliefert, die Ausführung mit einem oder zwei Verbindungssteckern für schnellen elektrischen Anschluss ist auf Wunsch möglich: dreipolige Verbindungsstecker Wieland gesis GST 18i3, Wago Winsta 770, AAG Stucchi 1601A/1602A



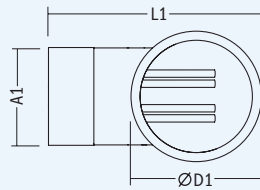
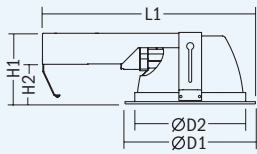
# DOWNLIGHT

## 201/211/221 POLISHED/MAT/FACET TC-D/TC-DEL/TC-TEL

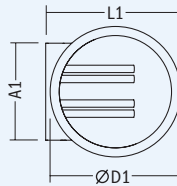
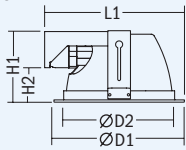
DOWNLIGHT 211 1x13W



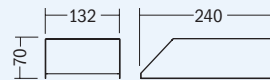
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-D G 24d	TC-DEL G 24q	TC-TEL G 24q	CCG EEI-B2	CCG EEI-B1	EDG EEI-A2	EDG EEI-A1	EDG EEI-A1	EDG EEI-A1	EDG EEI-A1	EMERGENCY	F	IP 20
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VERSION SB

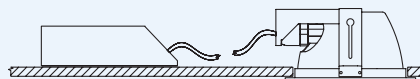
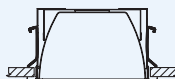
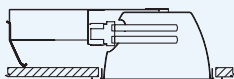


SEPARATE GEAR BOX



	OPTIC			POWER	LAMP	DIMENSIONS					HOLE Ø1		
	POLISHED	MAT	FACET			D1	D2	L1	L1/SB	H1		H2	A1
Downlight 201	•	•	•	1x13	TC-D,TC-DEL	195	155	305	212	100	44	152	175
Downlight 201	•	•	•	1x18	TC-D,TC-DEL	195	155	305	212	100	44	152	175
Downlight 201	•	•	•	1x26	TC-D,TC-DEL	195	155	305	212	100	44	152	175
Downlight 201	•	•	•	2x13	TC-D,TC-DEL	195	155	305	212	100	44	152	175
Downlight 201	•	•	•	2x18	TC-D,TC-DEL	195	155	305	212	100	44	152	175
Downlight 201	•	•	•	2x26	TC-D,TC-DEL	195	155	305	212	100	44	152	175
Downlight 211	•	•	•	1x18	TC-D,TC-DEL	230	196	359	250	126	70	172	205
Downlight 211	•	•	•	1x26	TC-D,TC-DEL	230	196	359	250	126	70	172	205
Downlight 211	•	•	•	1x32	TC-TEL	230	196	359	250	126	70	172	205
Downlight 211	•	•	•	1x42	TC-TEL	230	196	359	250	126	70	172	205
Downlight 211	•	•	•	2x18	TC-D,TC-DEL	230	196	359	250	126	70	172	205
Downlight 211	•	•	•	2x26	TC-D,TC-DEL	230	196	359	250	126	70	172	205
Downlight 211	•	•	•	2x32	TC-TEL	230	196	359	250	126	70	172	205
Downlight 221	•	•	•	1x18	TC-D,TC-DEL	267	228	378	269	128	72	172	240
Downlight 221	•	•	•	1x26	TC-D,TC-DEL	267	228	378	269	128	72	172	240
Downlight 221	•	•	•	1x32	TC-TEL	267	228	378	269	128	72	172	240
Downlight 221	•	•	•	1x42	TC-TEL	267	228	378	269	128	72	172	240
Downlight 221	•	•	•	2x18	TC-D,TC-DEL	267	228	378	269	128	72	172	240
Downlight 221	•	•	•	2x26	TC-D,TC-DEL	267	228	378	269	128	72	172	240
Downlight 221	•	•	•	2x32	TC-TEL	267	228	378	269	128	72	172	240

INSTALLATION





DOWNLIGHT 211 POLISHED 1x26W



VERSION SB



SEPARATE GEAR BOX



POLISHED



MAT



FACET



CR



BR





CONE WHITE 201  
TIP 201



CONE YELLOW 201  
TIP 201



CONE ORANGE 201  
TIP 201



CONE VIOLET 201  
TIP 201



TIP 201



CONE WHITE 211/221  
TIP 211/TIP 221



CONE GREEN 211/221  
TIP 211/TIP 221



CONE ORANGE 211/221  
TIP 211/TIP 221



CONE CHAMOIS 211/221  
TIP 211/TIP 221



CONE BLUE 211/221  
TIP 211/TIP 221



TIP 211/TIP 221

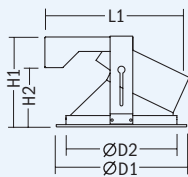
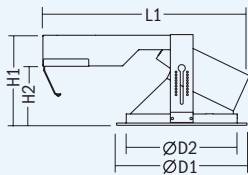
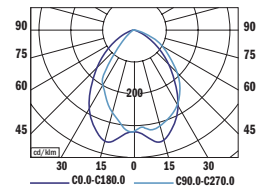


# DOWNLIGHT

## 211 ASYMMETRIC TC-D/TC-DEL



DOWNLIGHT 211 ASYMMETRIC 2x13W

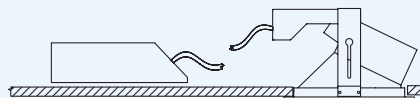
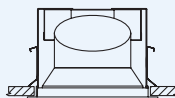
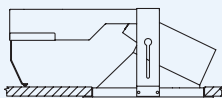


SEPARATE GEAR BOX



	OPTIC ASYMMETRIC	POWER	LAMP	DIMENSIONS							HOLE Ø1
				D1	D2	L1	L1/SB	H1	H2	A1	
Downlight 211	•	1x13	TC-D,TC-DEL	230	194	359	250	161	105	172	205
Downlight 211	•	2x13	TC-D,TC-DEL	230	194	359	250	161	105	172	205

INSTALLATION





DOWNLIGHT 211 ASYMMETRIC 2x13W

CR



BR



SEPARATE GEAR BOX

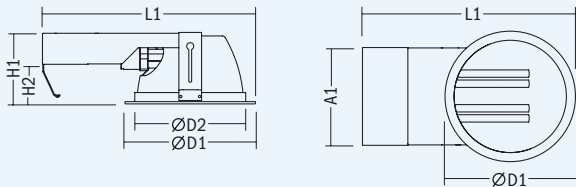
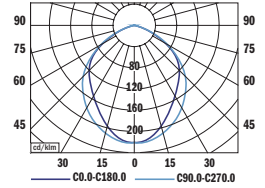




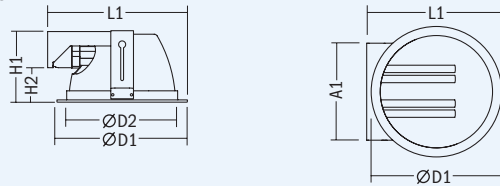
# DOWNLIGHT

**202/212/222**  
**POLISHED/MAT**  
**TC-D/TC-DEL/TC-TEL**

DOWNLIGHT 202 1x13W



VERSION SB

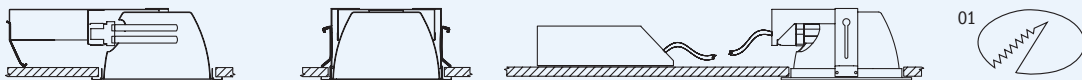


SEPARATE GEAR BOX



	OPTIC		POWER	LAMP	DIMENSIONS							HOLE Ø1
	POLISHED	MAT			D1	D2	L1	L1/SB	H1	H2	A1	
Downlight 202	•	•	1x13	TC-D,TC-DEL	195	155	305	212	110	54	152	175
Downlight 202	•	•	1x18	TC-D,TC-DEL	195	155	305	212	110	54	152	175
Downlight 202	•	•	1x26	TC-D,TC-DEL	195	155	305	212	110	54	152	175
Downlight 202	•	•	2x13	TC-D,TC-DEL	195	155	305	212	110	54	152	175
Downlight 202	•	•	2x18	TC-D,TC-DEL	195	155	305	212	110	54	152	175
Downlight 202	•	•	2x26	TC-D,TC-DEL	195	155	305	212	110	54	152	175
Downlight 212	•	•	1x18	TC-D,TC-DEL	230	196	359	250	126	70	172	205
Downlight 212	•	•	1x26	TC-D,TC-DEL	230	196	359	250	126	70	172	205
Downlight 212	•	•	2x18	TC-D,TC-DEL	230	196	359	250	126	70	172	205
Downlight 212	•	•	2x26	TC-D,TC-DEL	230	196	359	250	126	70	172	205
Downlight 222	•	•	1x18	TC-D,TC-DEL	267	228	378	269	143	87	172	240
Downlight 222	•	•	1x26	TC-D,TC-DEL	267	228	378	269	143	87	172	240
Downlight 222	•	•	1x32	TC-TEL	267	228	378	269	143	87	172	240
Downlight 222	•	•	1x42	TC-TEL	267	228	378	269	143	87	172	240
Downlight 222	•	•	2x18	TC-D,TC-DEL	267	228	378	269	143	87	172	240
Downlight 222	•	•	2x26	TC-D,TC-DEL	267	228	378	269	143	87	172	240
Downlight 222	•	•	2x32	TC-TEL	267	228	378	269	143	87	172	240

INSTALLATION





DOWNLIGHT 202 POLISHED 1x26W



POLISHED



MAT



VERSION SB



SEPARATE GEAR BOX



CR



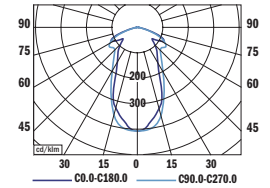
BR



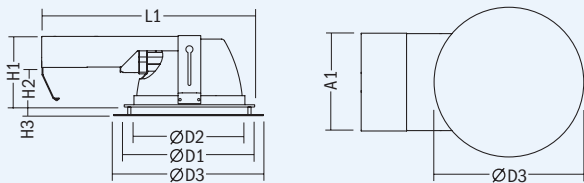
# DOWNLIGHT

## 203/213/223 POLISHED/MAT/FACET TC-D/TC-DEL/TC-TEL

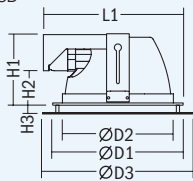
DOWNLIGHT 203 1x13W + GL9



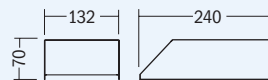
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-D G 24d	TC-DEL G 24q	TC-TEL GX24q	CCG EEI-B2	CCG EEI-B1	EDG EEI-A2	EDG EEI-A1	EDG EEI-A1	EDG EEI-A1	EMERGENCY	F	IP 20
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VERSION SB

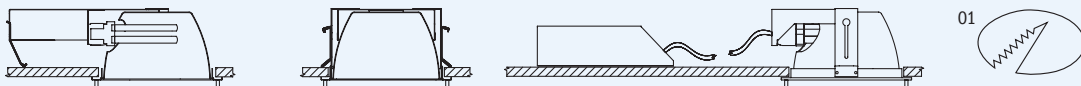


SEPARATE GEAR BOX



	OPTIC			POWER	LAMP	DIMENSIONS										HOLE Ø1
	POLISHED	MAT	FACET			D1	D2	D3	L1	L1/SB	H1	H2	H3	A1		
Downlight 203	•	•	•	1x13	TC-D,TC-DEL	195	155	242	305	212	100	44	19	152	175	
Downlight 203	•	•	•	1x18	TC-D,TC-DEL	195	155	242	305	212	100	44	19	152	175	
Downlight 203	•	•	•	1x26	TC-D,TC-DEL	195	155	242	305	212	100	44	19	152	175	
Downlight 203	•	•	•	2x13	TC-D,TC-DEL	195	155	242	305	212	100	44	19	152	175	
Downlight 203	•	•	•	2x18	TC-D,TC-DEL	195	155	242	305	212	100	44	19	152	175	
Downlight 203	•	•	•	2x26	TC-D,TC-DEL	195	155	242	305	212	100	44	19	152	175	
Downlight 213	•	•	•	1x18	TC-D,TC-DEL	230	196	276	359	250	126	70	19	172	205	
Downlight 213	•	•	•	1x26	TC-D,TC-DEL	230	196	276	359	250	126	70	19	172	205	
Downlight 213	•	•	•	1x32	TC-TEL	230	196	276	359	250	126	70	19	172	205	
Downlight 213	•	•	•	1x42	TC-TEL	230	196	276	359	250	126	70	19	172	205	
Downlight 213	•	•	•	2x18	TC-D,TC-DEL	230	196	276	359	250	126	70	19	172	205	
Downlight 213	•	•	•	2x26	TC-D,TC-DEL	230	196	276	359	250	126	70	19	172	205	
Downlight 213	•	•	•	2x32	TC-TEL	230	196	276	359	250	126	70	19	172	205	
Downlight 223	•	•	•	1x18	TC-D,TC-DEL	267	228	306	378	269	128	72	19	172	240	
Downlight 223	•	•	•	1x26	TC-D,TC-DEL	267	228	306	378	269	128	72	19	172	240	
Downlight 223	•	•	•	1x32	TC-TEL	267	228	306	378	269	128	72	19	172	240	
Downlight 223	•	•	•	1x42	TC-TEL	267	228	306	378	269	128	72	19	172	240	
Downlight 223	•	•	•	2x18	TC-D,TC-DEL	267	228	306	378	269	128	72	19	172	240	
Downlight 223	•	•	•	2x26	TC-D,TC-DEL	267	228	306	378	269	128	72	19	172	240	
Downlight 223	•	•	•	2x32	TC-TEL	267	228	306	378	269	128	72	19	172	240	

INSTALLATION





DOWNLIGHT 203 POLISHED 1x26W + GL9



VERSION SB



See DOWNLIGHT/TUBUS accessories



SEPARATE GEAR BOX

CR



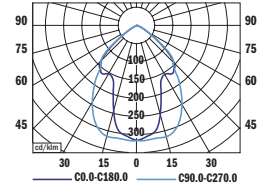
BR



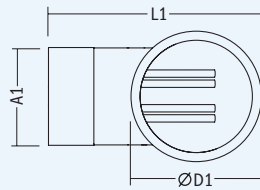
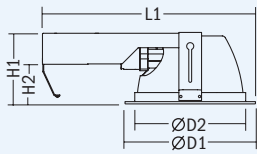
# DOWNLIGHT

## 204/214/224 TURBO LOUVRE TC-D/TC-DEL/TC-TEL

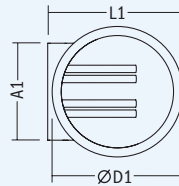
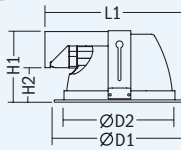
DOWNLIGHT 204 1x13W



220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-D G 24d	TC-DEL G 24q	TC-TEL GX24q	CCG EEI-B2	CCG EEI-B1	EDG EEI-A2	EDG EEI-A1	EDG EEI-A1	EDG EEI-A1	EDG EEI-A1	EMERGENCY	F	IP 20
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VERSION SB

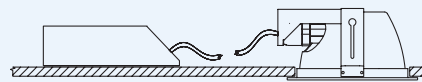
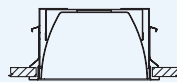
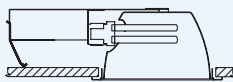


SEPARATE GEAR BOX



	OPTIC TURBO LOUVRE	POWER	LAMP	DIMENSIONS							HOLE Ø1
				D1	D2	L1	L1/SB	H1	H2	A1	
Downlight 204	•	1x13	TC-D, TC-DEL	195	155	305	212	120	64	152	175
Downlight 204	•	1x18	TC-D, TC-DEL	195	155	305	212	120	64	152	175
Downlight 204	•	1x26	TC-D, TC-DEL	195	155	305	212	120	64	152	175
Downlight 204	•	2x13	TC-D, TC-DEL	195	155	305	212	120	64	152	175
Downlight 204	•	2x18	TC-D, TC-DEL	195	155	305	212	120	64	152	175
Downlight 204	•	2x26	TC-D, TC-DEL	195	155	305	212	120	64	152	175
Downlight 214	•	1x18	TC-D, TC-DEL	230	196	359	250	145	89	172	205
Downlight 214	•	1x26	TC-D, TC-DEL	230	196	359	250	145	89	172	205
Downlight 214	•	2x18	TC-D, TC-DEL	230	196	359	250	145	89	172	205
Downlight 214	•	2x26	TC-D, TC-DEL	230	196	359	250	145	89	172	205
Downlight 224	•	1x18	TC-D, TC-DEL	267	228	390	225	160	104	172	240
Downlight 224	•	1x26	TC-D, TC-DEL	267	228	390	225	160	104	172	240
Downlight 224	•	1x32	TC-TEL	267	228	390	225	160	104	172	240
Downlight 224	•	1x42	TC-TEL	267	228	390	225	160	104	172	240
Downlight 224	•	2x18	TC-D, TC-DEL	267	228	390	225	160	104	172	240
Downlight 224	•	2x26	TC-D, TC-DEL	267	228	390	225	160	104	172	240
Downlight 224	•	2x32	TC-TEL	267	228	390	225	160	104	172	240

INSTALLATION





DOWNLIGHT 204 1x26W



VERSION SB



SEPARATE GEAR BOX



TURBO LOUVRE



CR



BR

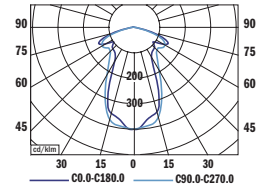




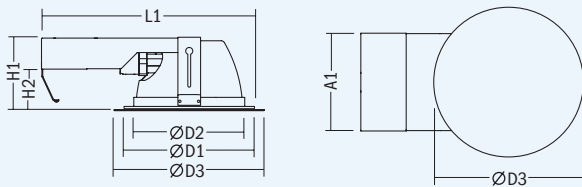
# DOWNLIGHT

## 205/215/225 POLISHED/MAT/FACET TC-D/TC-DEL/TC-TEL

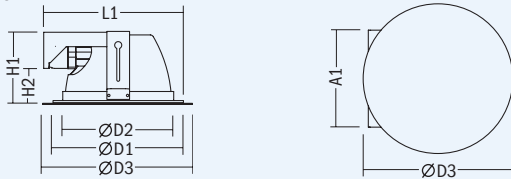
DOWNLIGHT 205 1x13W



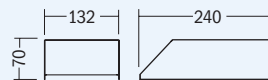
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-D G 24d	TC-DEL G 24q	TC-TEL GX24q	CCG EEI-B2	CCG EEI-B1	EDG EEI-A2	EDG EEI-A1	EDG EEI-A1	EDG EEI-A1	EDG EEI-A1	EMERGENCY	F	IP 40
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VERSION SB

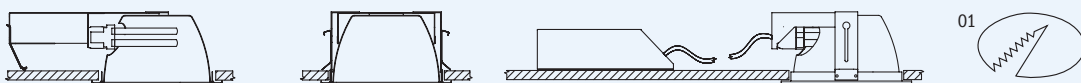


SEPARATE GEAR BOX



	OPTIC			POWER	LAMP	DIMENSIONS						HOLE Ø1		
	POLISHED	MAT	FACET			D1	D2	D3	L1	L1/SB	H1		H2	A1
Downlight 205	•	•	•	1x13	TC-D,TC-DEL	195	155	225	305	212	100	44	152	175
Downlight 205	•	•	•	1x18	TC-D,TC-DEL	195	155	225	305	212	100	44	152	175
Downlight 205	•	•	•	1x26	TC-D,TC-DEL	195	155	225	305	212	100	44	152	175
Downlight 205	•	•	•	2x13	TC-D,TC-DEL	195	155	225	305	212	100	44	152	175
Downlight 205	•	•	•	2x18	TC-D,TC-DEL	195	155	225	305	212	100	44	152	175
Downlight 205	•	•	•	2x26	TC-D,TC-DEL	195	155	225	305	212	100	44	152	175
Downlight 215	•	•	•	1x18	TC-D,TC-DEL	230	196	254	359	250	126	70	172	205
Downlight 215	•	•	•	1x26	TC-D,TC-DEL	230	196	254	359	250	126	70	172	205
Downlight 215	•	•	•	1x32	TC-TEL	230	196	254	359	250	126	70	172	205
Downlight 215	•	•	•	1x42	TC-TEL	230	196	254	359	250	126	70	172	205
Downlight 215	•	•	•	2x18	TC-D,TC-DEL	230	196	254	359	250	126	70	172	205
Downlight 215	•	•	•	2x26	TC-D,TC-DEL	230	196	254	359	250	126	70	172	205
Downlight 215	•	•	•	2x32	TC-TEL	230	196	254	359	250	126	70	172	205
Downlight 225	•	•	•	1x18	TC-D,TC-DEL	267	228	295	378	269	128	72	172	240
Downlight 225	•	•	•	1x26	TC-D,TC-DEL	267	228	295	378	269	128	72	172	240
Downlight 225	•	•	•	1x32	TC-TEL	267	228	295	378	269	128	72	172	240
Downlight 225	•	•	•	1x42	TC-TEL	267	228	295	378	269	128	72	172	240
Downlight 225	•	•	•	2x18	TC-D,TC-DEL	267	228	295	378	269	128	72	172	240
Downlight 225	•	•	•	2x26	TC-D,TC-DEL	267	228	295	378	269	128	72	172	240
Downlight 225	•	•	•	2x32	TC-TEL	267	228	295	378	269	128	72	172	240

INSTALLATION





DOWNLIGHT 205 1x26W



VERSION SB



SEPARATE GEAR BOX



CLEAR



SAND BLASTED

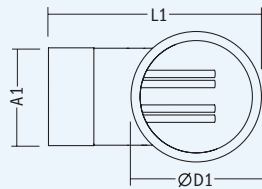
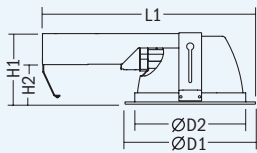
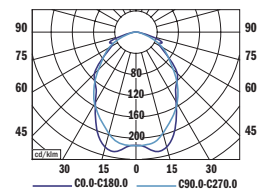


# DOWNLIGHT

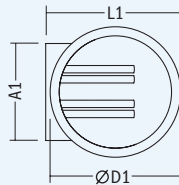
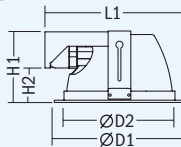
## 242 POLISHED TC-D/TC-DEL

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-D G 24d	TC-DEL G 24q	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP20
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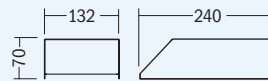
DOWNLIGHT 242 1x18W



VERSION SB

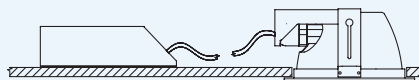
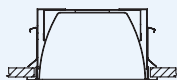
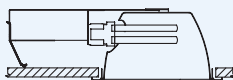


SEPARATE GEAR BOX



	OPTIC POLISHED	POWER	LAMP	DIMENSIONS							HOLE Ø1
				D1	D2	L1	L1/SB	H1	H2	A1	
Downlight 242	•	1x18	TC-D,TC-DEL	230	205	325	260	100	40	150	210
Downlight 242	•	1x26	TC-D,TC-DEL	230	205	325	260	100	40	150	210
Downlight 242	•	2x18	TC-D,TC-DEL	230	205	325	260	100	40	150	210
Downlight 242	•	2x26	TC-D,TC-DEL	230	205	325	260	100	40	150	210

INSTALLATION





DOWNLIGHT 242 1x18W



VERSION SB

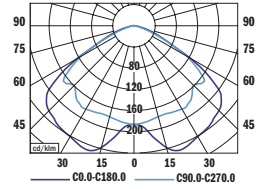


SEPARATE GEAR BOX

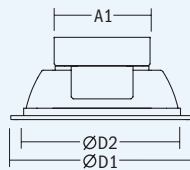
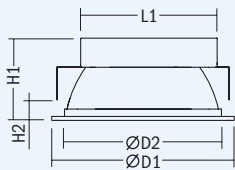


# DOWNLIGHT

DOWNLIGHT MAXI 271 2x42W



## MAXI 271 TC-TEL

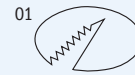
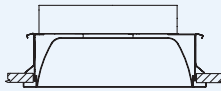


SEPARATE GEAR BOX



	OPTIC POLISHED	POWER	LAMP	D1	D2	L1	DIMENSIONS			HOLE Ø1
							H1	H2	A1	
Downlight Maxi 271	•	2x32	TC-TEL	320	277	235	145	33	186	300
Downlight Maxi 271	•	2x42	TC-TEL	320	277	235	145	33	186	300
Downlight Maxi 271	•	3x32	TC-TEL	320	277	235	145	33	186	300

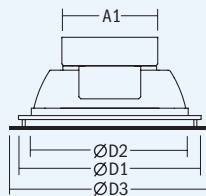
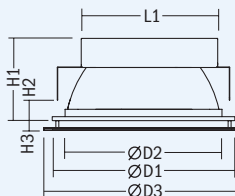
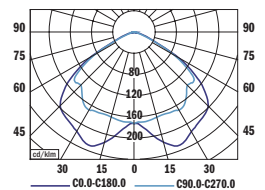
INSTALLATION



## MAXI 273 DECOR GLASS TC-TEL



DOWNLIGHT MAXI 273 2x42W+GL9

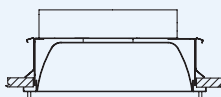


SEPARATE GEAR BOX



	OPTIC POLISHED	POWER	LAMP	D1	D2	D3	L1	DIMENSIONS			HOLE Ø1	
							H1	H2	H3	A1		
Downlight Maxi 273	•	2x32	TC-TEL	320	277	360	235	145	33	19	186	300
Downlight Maxi 273	•	2x42	TC-TEL	320	277	360	235	145	33	19	186	300
Downlight Maxi 273	•	3x32	TC-TEL	320	277	360	235	145	33	19	186	300

INSTALLATION





DOWNLIGHT MAXI 271 POLISHED

CR



BR



DOWNLIGHT MAXI 273 DECOR GLASS GL 9

GL 18



GL 20





# DOWNLIGHT

## HID

### DOWNLIGHT HID

Rad svetidiel Downlight HID je určený pre vstavenie do rôznych typov podhládov. Jeho hlavné znaky sú vysoký svetelný výkon, kompaktné rozmery, jednoduchá montáž a natáčateľný reflektor u vybraných typov. Svetidlá Downlight PRO HID sú vyrábané len vo verzii s vyšším krytím.

#### KONŠTRUKCIA

##### Teleso svetidla:

- na šedo nastriekaný (RAL 7024) hliníkový odliatok s polykarbonátovou spodnou časťou (PRO HID)
- pozinkovaný plech (rad 251)
- hliníkový odliatok (rad 252, 253, 254)

**Reflektor:** hliníkový s rôznou povrchovou úpravou - lesklý (rad PRO, 251), matný (rad 251, 252, 253, 254)

**Kryt reflektora:** kalené sklo - pieskované (rad PRO, 251, 253, 254) alebo číre (rad 252)

**Obruč:** na bielo nastriekaný hliníkový odliatok - RAL 9010 čistá biela (rad PRO, 252, 253, 254); na bielo nastriekaný plechový výlisok (rad 251)

#### PRO

Uchytenie svetidla v podhlade je vyriešené prostredníctvom troch otočných polykarbonátových úchytoch, nastaviteľných pre rôzne hrúbky stropu. Obruč sa ku polykarbonátovému telu uchyťava malým pootočením v troch fixačných bodoch, čo umožňuje rýchlu beznástrojovú výmenu svetelného zdroja. Krycie sklo je uchytené zvnútra na obruči a utesnené silikónovým tesnením.

#### 251, 252, 253, 254:

Uchytenie svetidiel v podhlade je vyriešené prostredníctvom dvoch plechových pružín, nastaviteľných pre rôzne hrúbky stropu.

Krycie sklo (251) je uchytené zvnútra na obruči a utesnené silikónovým tesnením. Rámik (251) je k telesu svetidla prichytený dvomi pružinami, obruč (253, 254) sa k hliníkovému telesu uchyťava malým pootočením vo fixačných bodoch. Všetky tieto spôsoby uchytenia umožňujú rýchlu beznástrojovú výmenu svetelných zdrojov.

Bližší popis jednotlivých typov optiky je uvedený na stranách 180-183, v kapitole OPTICS.

#### ELEKTRICKÁ VÝBAVA

Svetidlá sú napájané zo samostatného boxu s predradným príslušenstvom. Predradný box je nutné objednať zvlášť. Box môže byť vybavený:

- konvenčným magnetickým predradníkom so zapaľovačom, štandardne kompenzovaným
- elektronickým predradníkom

##### Ostatné komponenty:

- svetelné zdroje: metal-halogenidové výbojky HIT/HIT-DE (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče so spletaným medeným jadrom prierezu 0,75 mm<sup>2</sup> v silikónovej izolácii (teplotná odolnosť do 130°C)
- trojpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>

#### PRÍSLUŠENSTVO

- vodiče s konektormi (Wieland) umožňujúcimi rýchle elektrické prepojenie predradný box - svetidlo
- vodič s konektorom (Wieland, Wago) umožňujúci rýchle elektrické pripojenie predradného boxu k sieti

## DOWNLIGHT HID

The Downlight HID range of light fixtures is intended for installation into various ceiling types. Its main features include high lumen output, compact dimensions, simple installation, and a deflectable reflector in selected types. Downlight PRO HID light fittings are only manufactured in the version with higher ingress protection.

### CONSTRUCTION

#### Housing:

- grey painted (RAL 7024) aluminium casting with polycarbonate bottom section (PRO HID)
- galvanised sheet metal (251 range)
- aluminium casting (252, 253, 254 range)

**Reflector:** aluminium with various surface finishes – polished (range PRO, 251), matt (range 251, 252, 253, 254)

**Reflector cover:** hardened glass - sandblasted (PRO, 251, 253, 254 range), pure (252 range)

**Ring:** aluminium casting, electrostatic powder coat finish RAL 9010 pure white (range PRO, 252, 253, 254), white coloured sheet steel (251 range)

#### PRO:

Ceiling attachment of the light fitting is done using three revolving polycarbonate fixtures, adjustable for various ceiling widths. The ring is attached to the polycarbonate body using a small twist at the three points of fixation, which allows fast, tool-free lamp replacement. The cover glass is attached to the inside of the ring and silicon-sealed.

#### 251, 252, 253, 254:

Ceiling attachment of the light fixture is done using two metal springs, adjustable for various ceiling widths.

The cover glass (251) is attached to the inside of the ring and silicon-sealed. The ring (251) is attached to the body by two springs; the ring (253, 254) is attached to the aluminium body by a short twist at the points of fixation. All these attachment methods allow fast, tool-free lamp replacement.

Further description of individual optic types is listed on pages 180-183, in section OPTICS.

### WIRING

Light fittings are powered from an independent box with control gear accessories. The control gear box must be ordered separately. The box can be equipped with:

- conventional magnetic control gear with an ignitor, light fixtures are standardly compensated
- electronic control gear

#### Other components:

- lamps: metal-halide discharge lamps HIT/HIT-DE (lamps must be ordered separately)
- flexible copper internal conductors, silicon insulated (heat resistant up to 130°C) with 0.75 mm<sup>2</sup> cross-section
- a three-pole connector allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section

### ACCESSORIES

- conductors with connectors (Wieland) allowing fast electrical connection between the separate gear box and lighting fixture
- conductor with connectors (Wieland, Wago) allowing fast electrical connection of the separate gear to the mains

## DOWNLIGHT HID

Die Downlight HID-Leuchtenreihe ist zum Einbau in verschiedene Typen der Untersichte bestimmt. Ihre Hauptmerkmale sind hohe Lichtleistung, kompakte Abmessungen, einfacher Einbau und drehbarer Reflektor bei ausgewählten Typen. Die Downlight PRO HID-Leuchten werden nur in der Ausführung mit höher Deckung hergestellt.

### KONSTRUKTION

#### Leuchtenkörper:

- grau angespritztes (RAL 7024) Aluminiumguß mit Polykarbonat-Unterteil (PRO HID)
- verzinktes Blech (Reihe 251)
- Aluminiumguß (Reihe 252, 253, 254)

**Reflektor:** aus Aluminium mit verschiedener Oberflächenbehandlung – glänzende (Reihe PRO, 251), matte (Reihe 251, 252, 253, 254)

**Reflektordeckel:** Hartglas - sandgestrahlt (Reihe PRO, 251, 253, 254), klar (Reihe 252)

**Einfassung:** Aluminiumguß, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - RAL 9010 Reinweiß (Reihe PRO, 252, 253, 254), ein weiß aufgespritzter Blechpressteil (Reihe 251)

#### PRO:

Leuchte werden in der Untersicht mit drei drehbaren Polykarbonatschellen befestigt, die für verschiedene Deckendicken einstellbar sind. Die Einfassung wird an Polykarbonatkörper mit kleiner Drehung in drei Fixierungspunkten befestigt, was schnellen Austausch der Lichtquelle ohne Werkzeug ermöglicht. Das Deckglas wird von innen an der Einfassung befestigt und mit Silikondichtung gedichtet.

#### 251, 252, 253, 254:

Leuchten werden in der Untersicht mit zwei Blechfedern befestigt, die für verschiedene Deckendicken einstellbar sind.

Das Deckglas (251) wird von innen an der Einfassung befestigt und mit Silikondichtung gedichtet. Der Raster (251) wird zum Leuchtenkörper mit zwei Federn befestigt, die Einfassung (253, 254) wird zum Aluminiumkörper mit kleiner Drehung in Fixierungspunkten befestigt. Alle diesen Befestigungsarten ermöglichen einen schnellen Lichtquellenaustausch ohne Werkzeug.

Nähere Beschreibung von einzelnen Optiktypen ist an Seiten 180-183 in OPTICS Anlage angeführt.

### ELEKTRISCHE AUSRÜSTUNG

Leuchten werden aus einer selbständigen Box mit einem Vorschaltzubehör gespeist. Die Vorschaltbox ist extra zu bestellen. Die Box kann wie folgt ausgerüstet werden:

- mit einem konventionellen magnetischen Vorschaltgeräte mit Zündgeräte, standardmäßig kompensiert
- mit einem elektronischen Vorschaltgeräte

#### Andere Komponente:

- Lichtquellen: Metall-Halogenid-Entladungslampen HIT/HIT-DE (die Lichtquellen sind extra zu bestellen)
- Innenleiter mit einem gespleissten Kupferkern mit Durchschnitt von 0,75 mm<sup>2</sup> in einer Silikonisierung (Wärmewiderstand bis zu 130°C)
- dreipolige Klemmleiste ermöglicht die Leiter in einen Durchschnitt von max. 2,5 mm<sup>2</sup> anzuschließen

### ZUBEHÖR

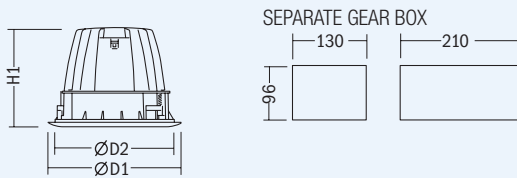
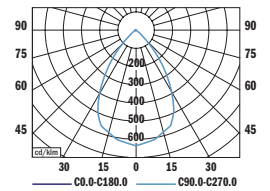
- Leiter mit Verbindungssteckern (Wieland), die schnelle elektrische Durchschaltung Vorschaltbox-Leuchte ermöglichen
- Leiter mit einem Verbindungsstecker (Wieland, Wago), der schnellen elektrischen Anschluß der Vorschaltbox zum Netz ermöglicht

# DOWNLIGHT

## PRO HID HI

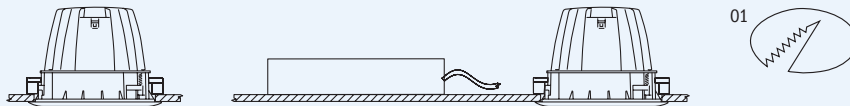


DOWNLIGHT PRO HID 1x150W



	OPTIC		POWER	LAMP	DIMENSIONS			HOLE Ø1
	NARROW	MEDIUM			D1	D2	H1	
Downlight PRO HID	•	•	1x35	HI	220	197	158	200
Downlight PRO HID	•	•	1x70	HI	220	197	158	200
Downlight PRO HID	•	•	1x150	HI	220	197	158	200

### INSTALLATION





DOWNLIGHT PRO HID

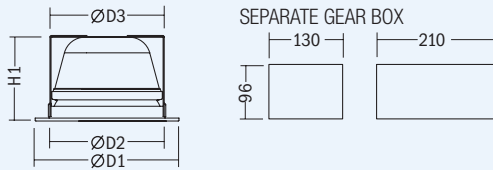
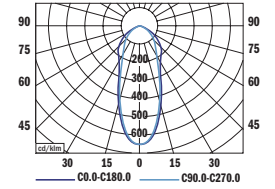


# DOWNLIGHT

## HID 251 HI

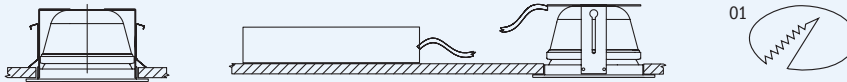
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	RX7s	G 12	CCG	ECG	F	IP 44
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DOWNLIGHT 251 1x70W HI



	OPTIC POLISHED	POWER	LAMP	DIMENSIONS				HOLE Ø1
				D1	D2	D3	H1	
Downlight 251	•	70	HI	195	156	153	110	175
Downlight 251	•	150	HI	195	156	153	110	175

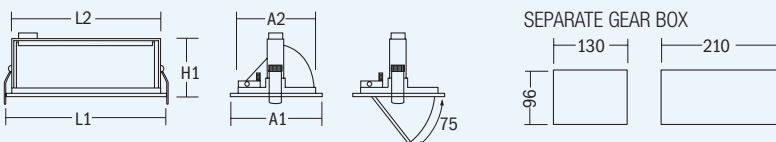
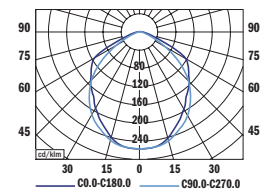
INSTALLATION



## HID 252 FLEXI HI

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	RX7s	CCG	ECG	F	IP 40
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DOWNLIGHT 252 1x70W HI



	OPTIC POLISHED	POWER	LAMP	DIMENSIONS					HOLE	
				A1	A2	L1	L2	H1	Ø1	Ø2
Downlight 252 FLEXI	•	1x70	HI	145	125	230	218	130	130	220
Downlight 252 FLEXI	•	1x150	HI	145	125	230	218	130	130	220

INSTALLATION





DOWNLIGHT 251 POLISHED

SEPARATE GEAR BOX



DOWNLIGHT 252 POLISHED



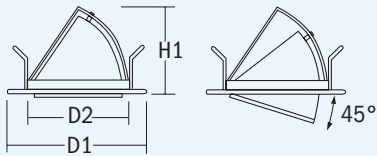
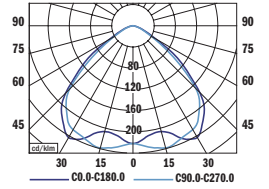


# DOWNLIGHT

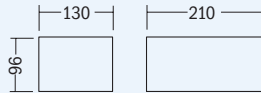
## HID 253 FLEXI HI

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	CCG	ECG	F	IP 40
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DOWNLIGHT 253 FLEXI 150W HI

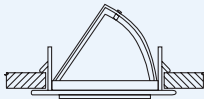


SEPARATE GEAR BOX



	OPTIC POLISHED	POWER	LAMP	DIMENSIONS			HOLE Ø1
				D1	D2	H1	
Downlight 253 FLEXI	•	1x70	HI	190	165	157	175
Downlight 253 FLEXI	•	1x150	HI	190	165	157	175

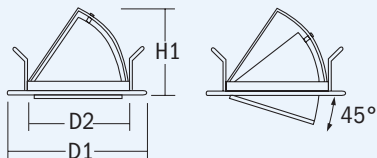
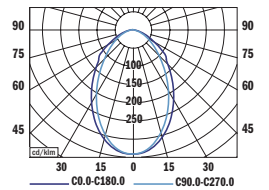
INSTALLATION



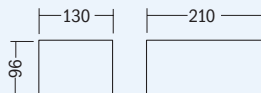
## 254 FLEXI HI

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	CCG	ECG	F	IP 40
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DOWNLIGHT 254 FLEXI 70W HI

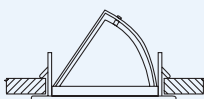


SEPARATE GEAR BOX



	OPTIC POLISHED	POWER	LAMP	DIMENSIONS			HOLE Ø1
				D1	D2	H1	
Downlight 254 FLEXI	•	1x70	HI	245	220	200	230
Downlight 254 FLEXI	•	1x150	HI	245	220	200	230

INSTALLATION





DOWNLIGHT 253 FLEXI



DOWNLIGHT 254 FLEXI

SEPARATE GEAR BOX



# DOWNLIGHT

## DOWNLIGHT S

**Rad svetidiel Downlight S dopĺňa zaužívaný rad kruhových svetidiel pre kompaktné žiarivky a je určený pre vstavenie do rôznych typov podhládov. Svetidlá Downlight S ponúkajú dve rozmerové varianty, verziu s vyšším krytím ako aj mriežku pre obmedzenie oslnenia od svetelných zdrojov.**

### KONŠTRUKCIA

**Teleso svetidla:** pozinkovaný plech

**Reflektory:** hliníkové s rôznou povrchovou úpravou - lesklý (polished), matný (mat)

**Kryt reflektora:** pieskované kalené sklo

**Rám:** plechový výlisok, povrchovo upravený elektrostaticky nanášanou práškovou farbou RAL 9003 (signálna biela), iná povrchová úprava - RAL 9006 (hliník biely), chrómová alebo zlatá je možná na požiadanie

Uchytenie svetidla v podhlade je vyriešené prostredníctvom dvoch plechových pružín, nastaviteľných pre rôzne hrúbky stropu. Štvorcový rám je k telesu svetidla prichytený dvomi drôtenými pružinami, ktoré v závislosti od verzie fixujú k svetidlu krycie sklo (rad 2x2) alebo mriežku (rad 2x4). Všetky tieto spôsoby uchytenia umožňujú rýchlu beznástrojovú výmenu svetelných zdrojov.

Bližší popis jednotlivých typov optiky je uvedený na stranách 180-183, v kapitole OPTICS.

### ELEKTRICKÁ VÝBAVA

Svetidlá sú napájané zo samostatného boxu s predradným príslušenstvom. Predradný box je nutné objednať zvlášť. Box môže byť vybavený:

- konvenčným magnetickým predradníkom, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svetidlá nie sú štandardne kompenzované
- elektronickým predradníkom, štandardne triedy EEI=A2
- stmievateľným elektronickým predradníkom, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

#### Ostatné komponenty:

- svetelné zdroje: kompaktné žiarivky TC-D/TC-DEL a TC-T/TC-TEL (svetelné zdroje je nutné objednať zvlášť)
- box pre predradník: pozinkovaný plech, držiaky proti vytrhnutiu vodičov zo svorkovnice, bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- svetidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny, núdzová jednotka je umiestnená na špeciálnej montážnej doske mimo svetidla

### PRÍSLUŠENSTVO

- samostatný plechový box pre oddelené umiestnenie predradníka od svetidla (separate gear box)
- vodič s konektorom (Wieland, Wago) umožňujúci rýchle elektrické pripojenie predradného boxu k sieti

## DOWNLIGHT S

The range of lighting fixtures Downlight S supplements the range of circular luminaires for compact fluorescent lamps and is intended for installation into various types of ceiling. Downlight S luminaires exist in two size variants, a version with a higher degree of protection, as well as a louver for reduction of lamp glare.

### CONSTRUCTION

**Housing:** galvanised sheet steel

**Reflectors:** aluminium with various types of surface finish – polished, matt

**Reflector cover:** hardened sandblasted glass

**Ring:** sheet steel, finished with electrostatic powder coating RAL 9003 (signal white), other type of finish - RAL 9006 (white aluminium), chrome or gold on request.

Attachment of the luminaire in the ceiling is done using two metal springs, adjustable for various ceiling widths. The square ring is attached to the luminaire using two wire springs which, based on version, fix cover glass (2x2 range) or grid (2x4 range) to the luminaire. All these attachment methods allow fast toolless luminaire replacement.

Further description of individual optic types is listed on pages 180-183, in section OPTICS.

### WIRING

The lighting fittings are powered from an independent box with control gear accessories. The control gear box must be ordered separately. The box can be equipped with:

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, lighting fixtures are not standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

#### Other components:

- lamps: compact fluorescent lamps TC-D/TC-DEL and TC-T/TC-TEL (light sources must be ordered separately)
- control gear box: galvanised sheet steel, conductor holders, screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- emergency version of lighting fixtures with autonomous operation 1 or 3 hours is available on request, the emergency version is placed on a special installation plate apart from the luminaire

### ACCESSORIES

- independent sheet steel box for separate placement of control gear apart from the luminaire (separate gear box)
- conductor with connector (Wieland, Wago) allowing fast electrical connection of the box to the mains

## DOWNLIGHT S

Die Downlight S-Leuchtenreihe ergänzt die gebräuchliche Reihe der Rundleuchten für kompakte Leuchtstofflampen und ist zum Einbau in verschiedene Typen der Untersichten bestimmt. Die Downlight S-Leuchten bieten zwei Maßvarianten an, eine Ausführung mit höher Deckung und auch einen Raster für Beschränkung der Blendung von den Lichtquellen.

### KONSTRUKTION

**Leuchtenkörper:** verzinktes Blech

**Reflektoren:** aus Aluminium mit verschiedener Oberflächenbehandlung – glänzende (polished), matte (mat)

**Reflektordeckel:** sandgestrahltes Hartglas

**Rahmen:** Blechpressteil, Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe RAL 9003 (Signalweiß), andere Oberflächenbehandlung – RAL 9006 (weißes Aluminium), aus Chrom oder Gold

Die Befestigung der Leuchte ist in der Untersicht mittels zwei Blechfedern gelöst, die für verschiedene Dicken der Decke einstellbar sind. Der Quadratraster ist zum Leuchtenkörper mit zwei Drahtfedern befestigt, die in Abhängigkeit von der Ausführung ein Deckglas (Reihe 2x2) oder einen Raster (Reihe 2x4) zu der Leuchte fixieren. Alle diese Arten der Befestigung ermöglichen einen schnellen Austausch der Lichtquellen ohne Werkzeug.

Nähere Beschreibung von einzelnen Optiktypen ist an Seiten 180-183 in OPTICS Anlage angeführt.

### ELEKTRISCHE AUSTRÜSTUNG

Die Leuchten sind aus einer Einzelbox mit Vorschaltzubehör gespeist. Es ist notwendig die Vorschaltbox extra zu bestellen. Die Box kann ausgerüstet sein:

- mit einem konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, die Klasse EEI=B1 auf Wunsch, die Leuchten sind nicht standardmäßig kompensiert
- mit einem elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit einem dimmbar elektronischen Vorschaltgeräten, die Klasse EEI=A1 (die Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert sein)

#### Andere Komponenten:

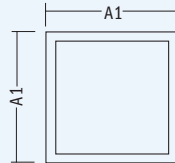
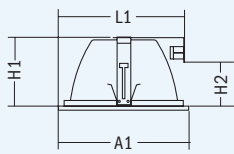
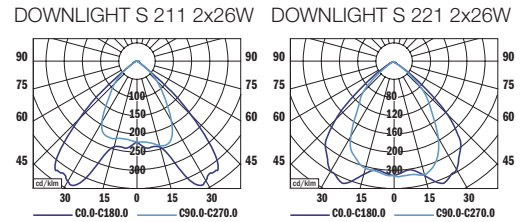
- Lichtquellen: kompakte Leuchtstofflampen TC-D/TC-DEL a TC-T/TC-TEL (es ist notwendig die Lichtquellen extra zu bestellen)
- die Box für den Vorschalt: verzinktes Blech, die Halter gegen Ausreißen der Leiter aus der Klemmleiste, eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- die Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- es ist möglich die Leuchten auf Wunsch mit Noteinheiten mit einem unabhängigen Betrieb von 1 oder 3 Stunden auszurüsten, die Noteinheit ist auf einer speziellen Einbauplatte außer der Leuchte angebracht

### ZUBEHÖR

- eine Einzelblechbox für separate Anbringung des Vorschaltgeräten von der Leuchte (separate gear box)
- ein Leiter mit einem Verbindungsstecker (Wieland, Wago), der einen schnellen elektrischen Anschluß der Vorschaltbox zum Netz ermöglicht

# DOWNLIGHT

**S**  
**211/221**  
**POLISHED/MAT**  
**TC-DEL/TC-TEL**

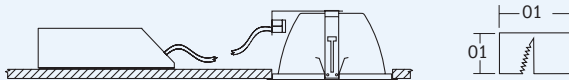


SEPARATE GEAR BOX

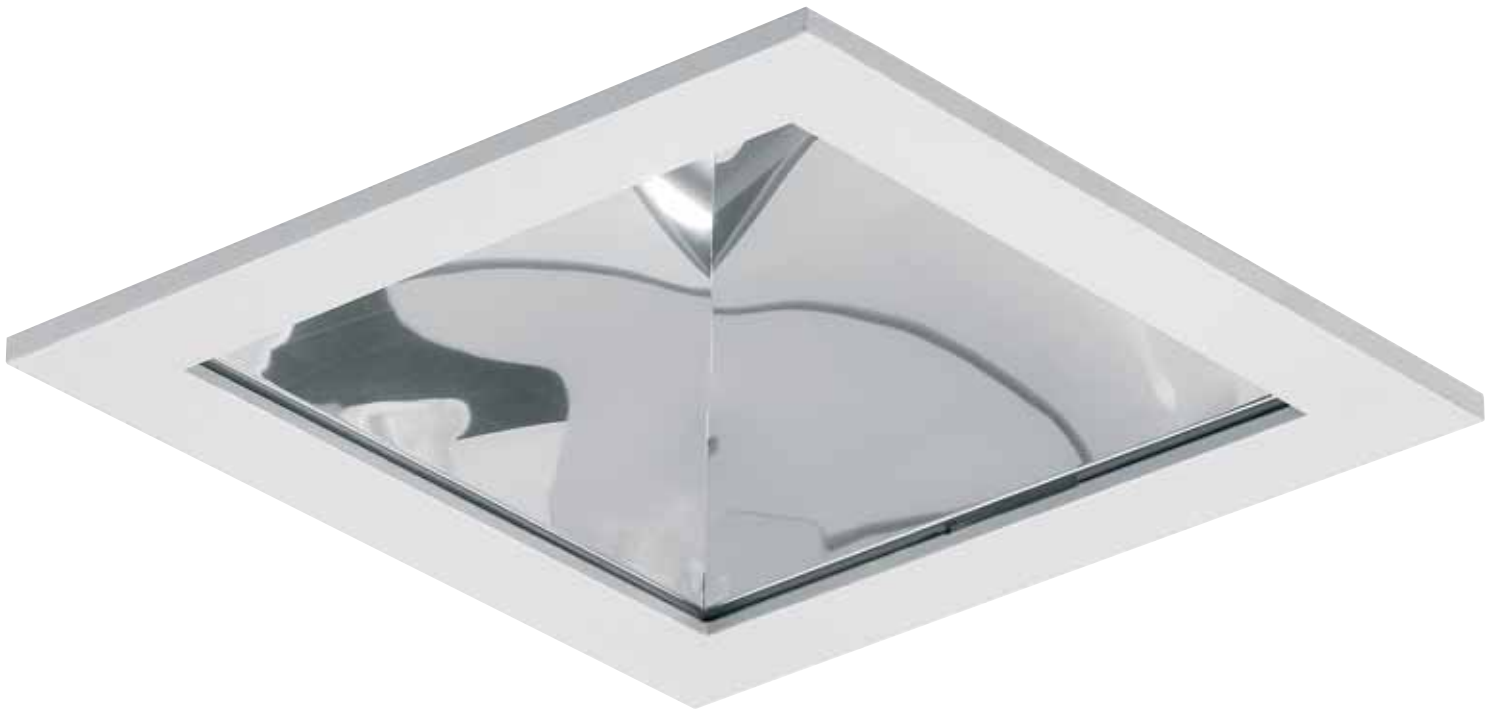


	OPTIC		POWER	LAMP	A1	DIMENSIONS			HOLE	
	POLISHED	MAT*				L1	H1	H2	O1	O2
Downlight S 211	•	•	1x13	TC-DEL	243	253	148	70	231	231*
Downlight S 211	•	•	1x18	TC-DEL	243	253	148	70	231	231*
Downlight S 211	•	•	1x26	TC-DEL	243	253	148	70	231	231*
Downlight S 211	•	•	2x13	TC-DEL	243	253	148	70	231	231*
Downlight S 211	•	•	2x18	TC-DEL	243	253	148	70	231	231*
Downlight S 211	•	•	2x26	TC-DEL	243	253	148	70	231	231*
Downlight S 221	•	•	1x18	TC-DEL	270	280	162	110	257	257
Downlight S 221	•	•	1x26	TC-DEL	270	280	162	110	257	257
Downlight S 221	•	•	1x32	TC-TEL	270	280	162	110	257	257
Downlight S 221	•	•	1x42	TC-TEL	270	280	162	110	257	257
Downlight S 221	•	•	2x18	TC-DEL	270	280	162	110	257	257
Downlight S 221	•	•	2x26	TC-DEL	270	280	162	110	257	257
Downlight S 221	•	•	2x32	TC-TEL	270	280	162	110	257	257

INSTALLATION



\* From June'08



DOWNLIGHT S 211 2x13W

POLISHED

RAL 9003

RAL 9006

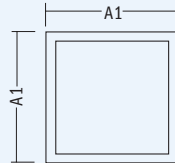
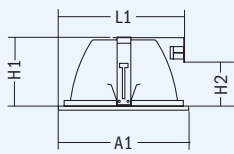
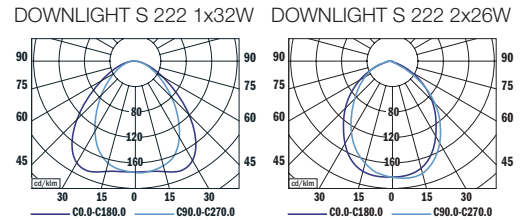
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# DOWNLIGHT

**S**  
**212/222**  
**OPAL**  
**TC-DEL/TC-TEL**

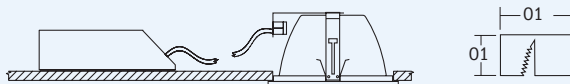


SEPARATE GEAR BOX

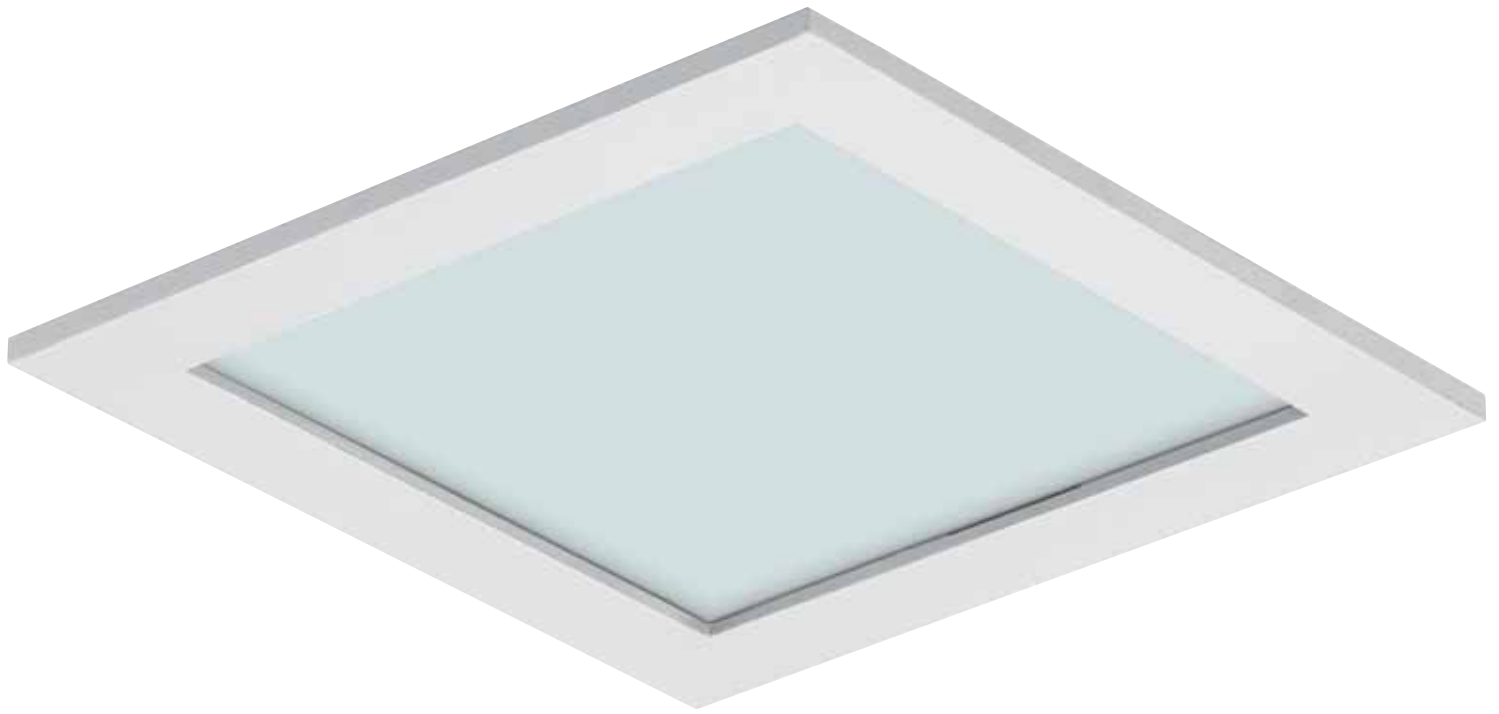


	OPTIC OPAL	POWER	LAMP	DIMENSIONS				HOLE	
				A1	L1	H1	H2	O1	O2
Downlight S 212	•	1x13	TC-DEL	243	253	148	70	231	231*
Downlight S 212	•	1x18	TC-DEL	243	253	148	70	231	231*
Downlight S 212	•	1x26	TC-DEL	243	253	148	70	231	231*
Downlight S 212	•	2x13	TC-DEL	243	253	148	70	231	231*
Downlight S 212	•	2x18	TC-DEL	243	253	148	70	231	231*
Downlight S 222	•	1x18	TC-DEL	270	280	162	110	257	257
Downlight S 222	•	1x26	TC-DEL	270	280	162	110	257	257
Downlight S 222	•	1x32	TC-TEL	270	280	162	110	257	257
Downlight S 222	•	1x42	TC-TEL	270	280	162	110	257	257
Downlight S 222	•	2x18	TC-DEL	270	280	162	110	257	257
Downlight S 222	•	2x26	TC-DEL	270	280	162	110	257	257
Downlight S 222	•	2x32	TC-TEL	270	280	162	110	257	257

INSTALLATION

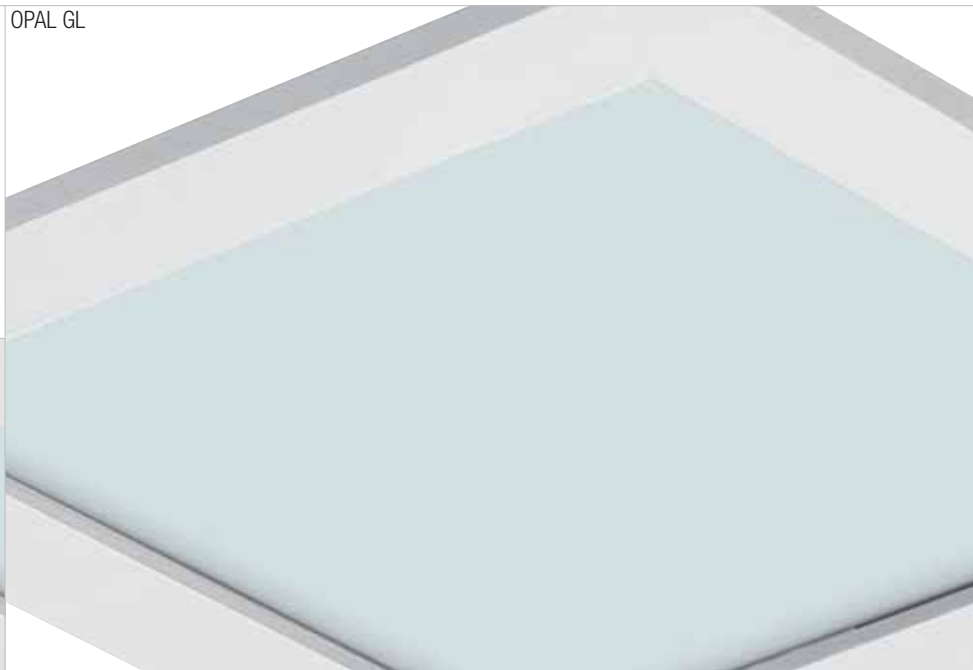


\* From June'08

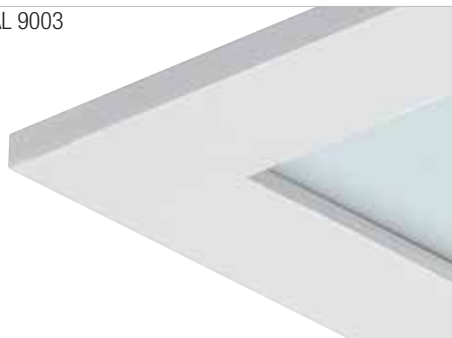


DOWNLIGHT S 222 2x26W

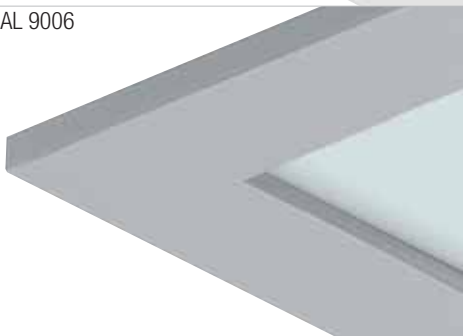
OPAL GL



RAL 9003



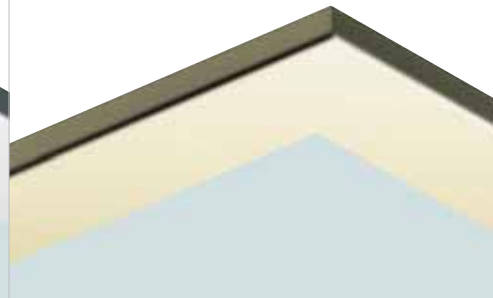
RAL 9006



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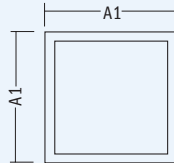
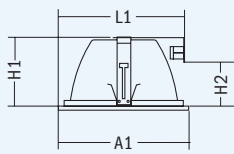
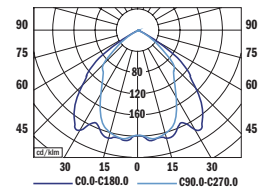


# DOWNLIGHT

## S 214/224 CROSS LOUVRE TC-DEL/TC-TEL



DOWNLIGHT S 214 2x26W

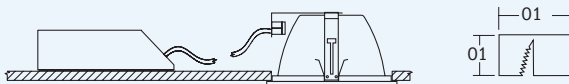


SEPARATE GEAR BOX



	OPTIC CROSS LOUVRE	POWER	LAMP	A1	DIMENSIONS			HOLE	
					L1	H1	H2	O1	O2
Downlight S 214	•	1x13	TC-DEL	243	253	148	70	231	231*
Downlight S 214	•	1x18	TC-DEL	243	253	148	70	231	231*
Downlight S 214	•	1x26	TC-DEL	243	253	148	70	231	231*
Downlight S 214	•	2x13	TC-DEL	243	253	148	70	231	231*
Downlight S 214	•	2x18	TC-DEL	243	253	148	70	231	231*
Downlight S 224	•	1x18	TC-DEL	270	280	162	110	257	257*
Downlight S 224	•	1x26	TC-DEL	270	280	162	110	257	257*
Downlight S 224	•	1x32	TC-TEL	270	280	162	110	257	257*
Downlight S 224	•	1x42	TC-TEL	270	280	162	110	257	257*
Downlight S 224	•	2x18	TC-DEL	270	280	162	110	257	257*
Downlight S 224	•	2x26	TC-DEL	270	280	162	110	257	257*
Downlight S 224	•	2x32	TC-TEL	270	279	162	110	257	257*

INSTALLATION



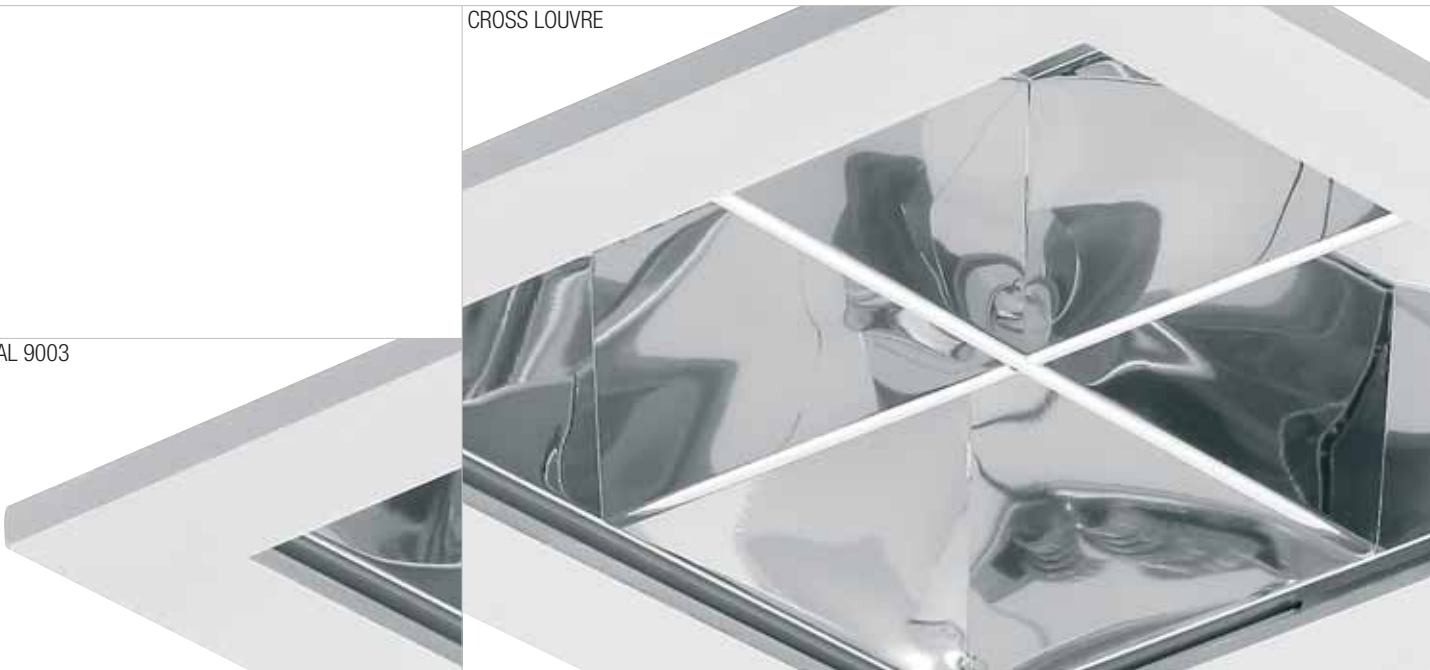
\* From June'08



DOWNLIGHT S 214 2x26W

CROSS LOUVRE

RAL 9003

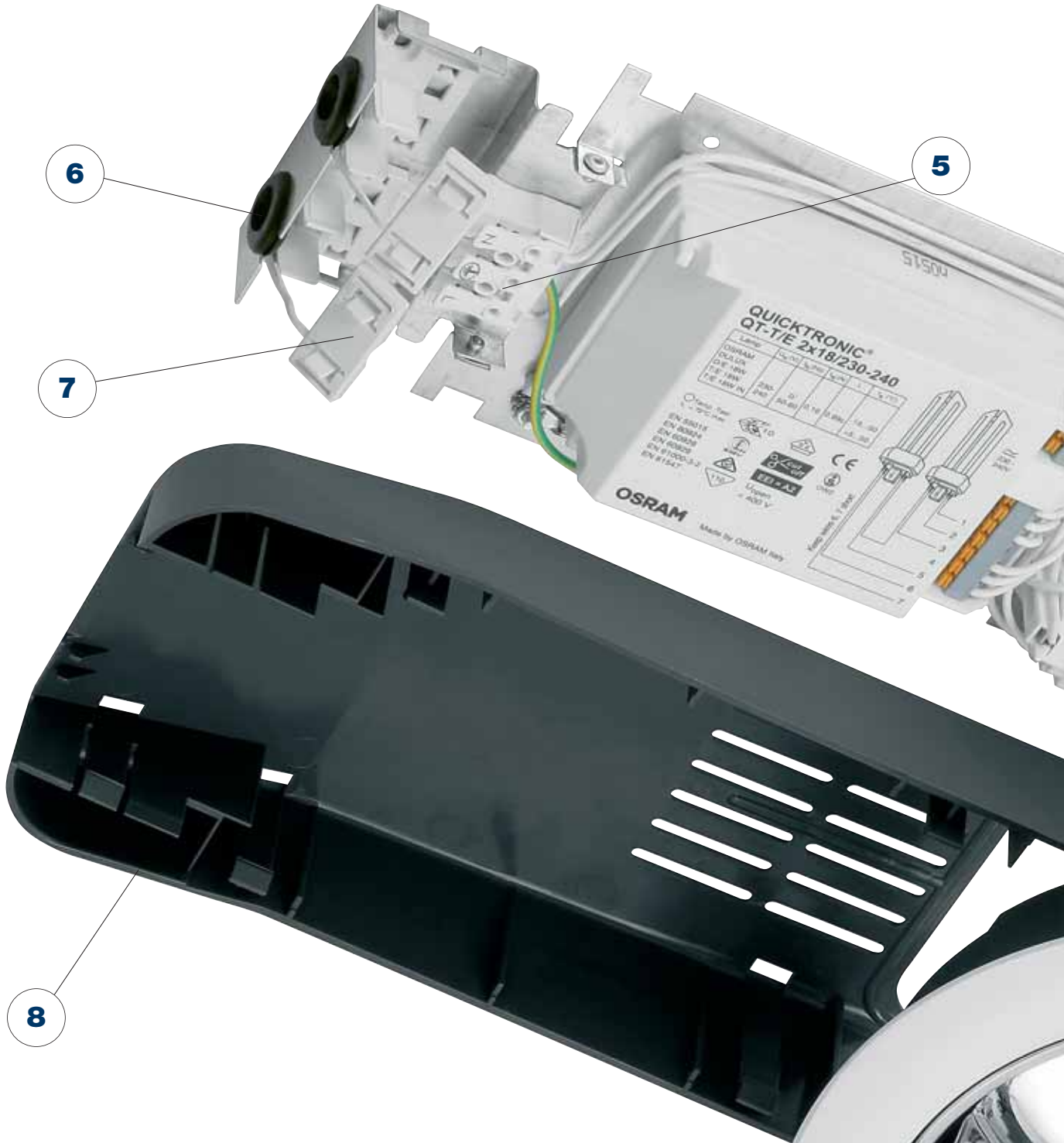


RAL 9006

CR

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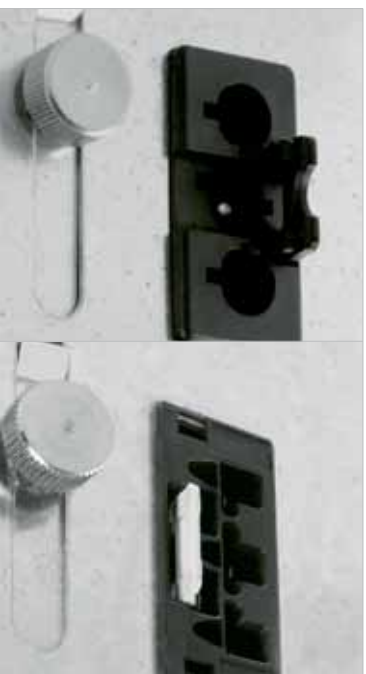
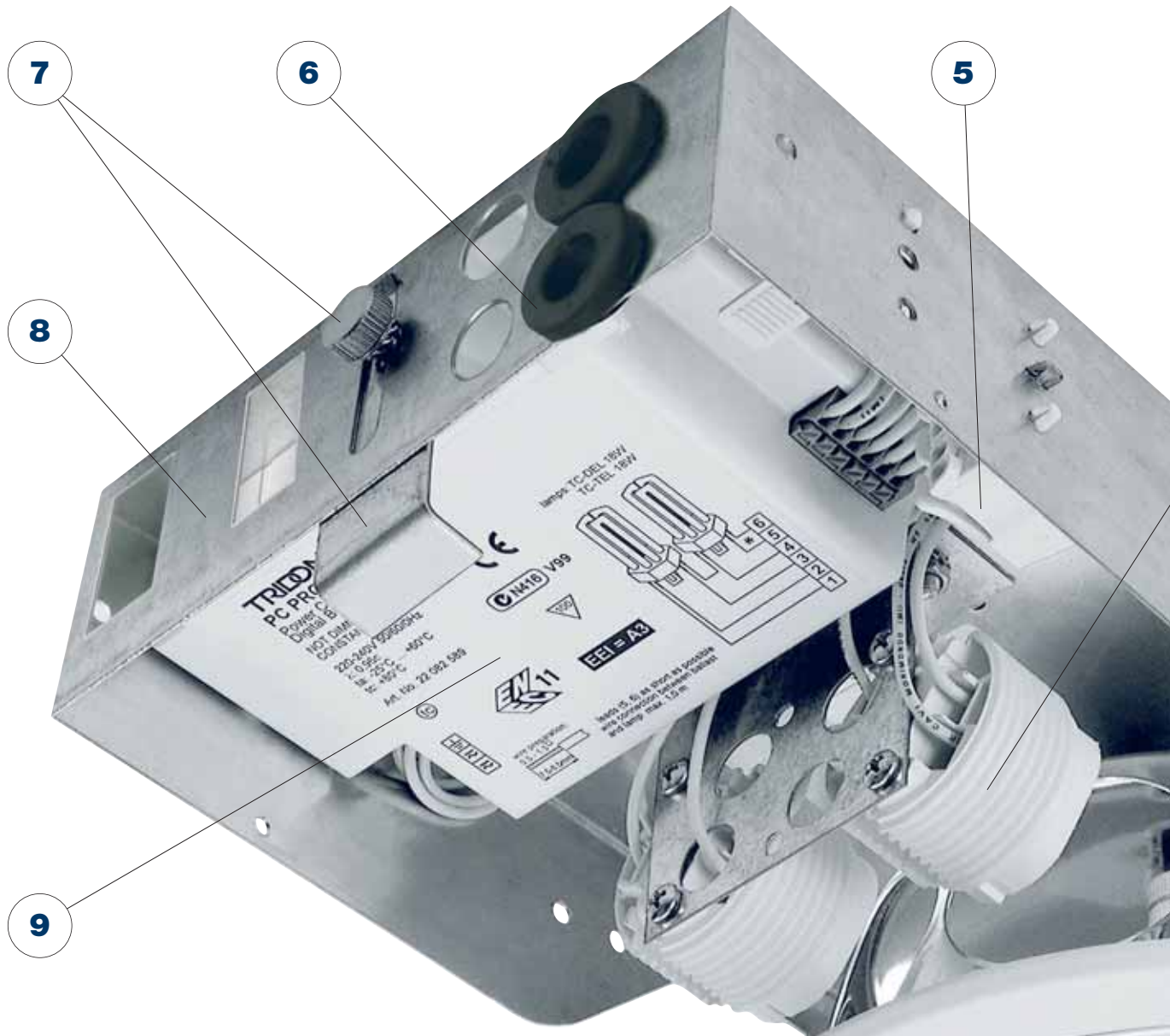
# DOWNLIGHT



## PRO L TC-TEL ELECTRONIC CONTROL GEAR

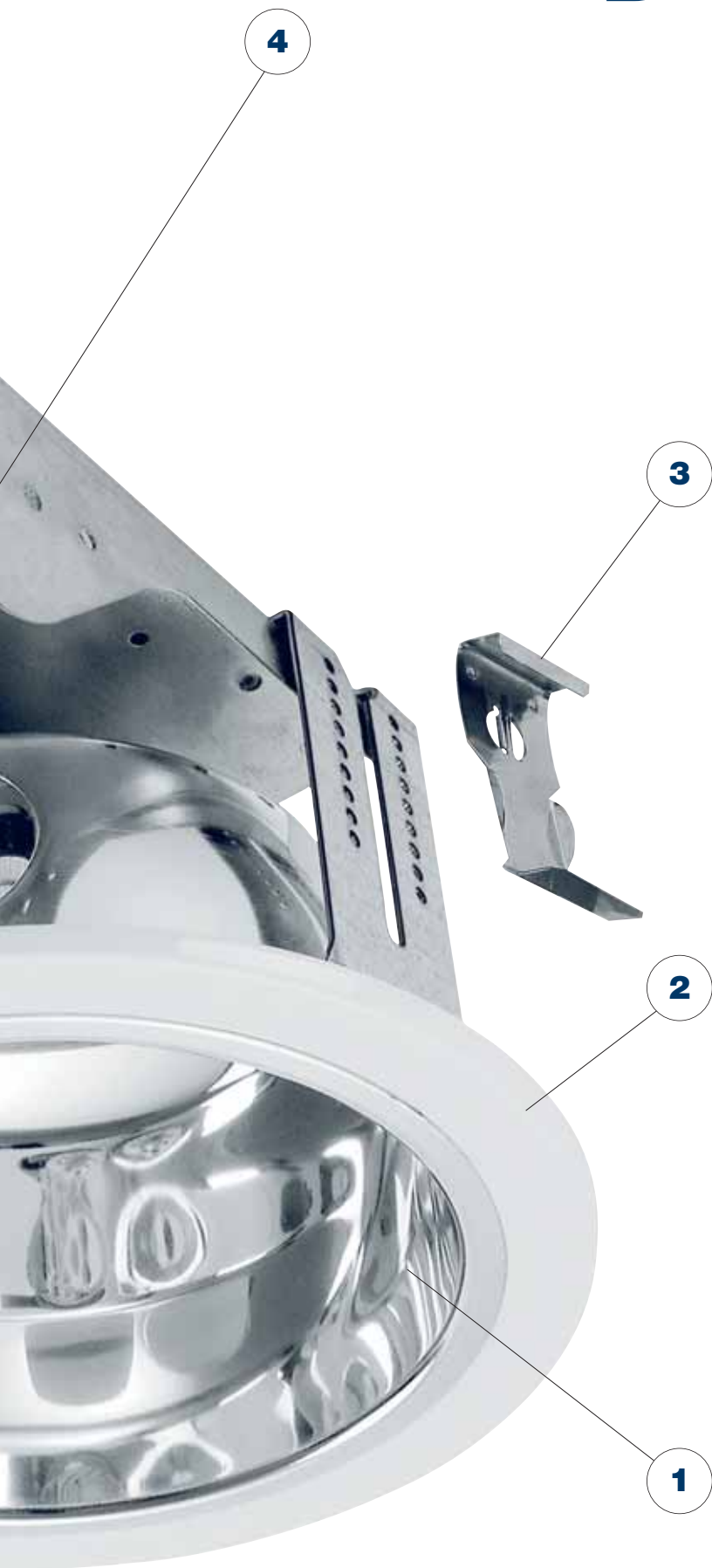
- 1** Reflektor  
Reflector  
Spiegelreflektor
- 2** Obruč  
Ring  
Gehäusering
- 3** Plastové inštalačné držiaky  
Plastic holder to ceiling grip  
Verschlussfeder aus Kunststoff
- 4** Päťica  
Lampholder  
Lampenhalter
- 5** Svorkovnica  
Terminal block  
Anschlussklemme
- 6** Prechodka  
Rubber band  
Gummiband
- 7** Držiak kábľa  
Cableholder  
Kabelhalter
- 8** Teleso svietidla  
Housing  
Leuchtenkörper
- 9** Elektronický predradník  
Electronic ballast  
Vorschaltgeräte
- 10** Konektor WIELAND  
Connector WIELAND  
WIELAND-Anschlusssteil
- 11** Konektor WAGO  
Connector WAGO  
WAGO-Anschlusssteil





# DOWNLIGHT

## 201 TC-DEL ELECTRONIC CONTROL GEAR



- 1** Reflektor  
Reflector  
Spiegelreflektor
- 2** Obruč  
Ring  
Gehäusering
- 3** Inštalčný držiak  
Holder to ceiling grip  
Verschlussfeder
- 4** Päťica  
Lampholder  
Lampenhalter
- 5** Svorkovnica s držiakom kábla  
Terminal block with cable holder  
Anschlussklemme mit Kabelhalter
- 6** Prechodka  
Rubber band  
Gummiband
- 7** Podpera  
Supporting holder  
Tragelement
- 8** Teleso svietidla  
Housing  
Leuchtenkörper
- 9** Elektronický predradník  
Electronic ballast  
Elektronische Vorschaltgeräte
- 10** Konektor WIELAND  
Connector WIELAND  
WIELAND-Anschlusssteil
- 11** Konektor WAGO  
Connector WAGO  
WAGO-Anschlusssteil

# OPTICS

## **DOWNLIGHT/TUBUS TC-D/TC-DEL/TC-T/TC-TEL/HIT/HIT-DE**

Downlighty smerujú svetelný tok smerom von z reflektorov veľmi kompaktných tvarov, ktoré sú ľahko architektonicky začleneniteľné do ľubovoľného priestoru. V ich základnej podobe distribuujú svetlo smerom nadol v úzkych či širokých zväzkoch a sú často používané pre obstarávanie celkového osvetlenia interiérov. OMS disponuje pomerne širokým radom týchto svietidiel, vyvinutých splňať požiadavky pre štýl a dizajn v dnešných obchodných či komerčných priestoroch so širokým rozsahom použitia – banky, hotely, galérie, úradné priestory, kancelárie; pre rôzne účely zvýraznenia vystavovaného tovaru či pre aplikácie vyžadujúce neoslňujúce osvetlenie. Tieto svietidlá s pomerne vysokou účinnosťou sú osadené kompaktnými žiarivkami uchytenými v horizontálnej polohe v kombinácii s lesklým, matným alebo fazeťovým reflektorom. Táto kombinácia zaručuje optimálne vlastnosti svietidla spojené s nízkou energetickou náročnosťou, atraktívnym dizajnom a výborným rozložením svetelného toku.

Rad downlightov ponúka širokú flexibilitu aj vďaka veľkému množstvu doplnkov – ako príslušenstvo sú ponúkané dekoratívne obruče, opálové sklá pre zvýšenie krytia svietidla, dekoratívne ozdobné sklá alebo mriežky zabráňujúce oslneniu.

Downlights deliver a controlled beam of light from a compact, architecturally integrated apertures. In their basic form, downlights direct light downwards in narrow or wide beams and can especially be used to produce general lighting. OMS dispose of exceptional range of downlighters developed to meet the demand for style and design in today's retail and commercial sector with a broad field of usage – banks, hotels, galleries, department stores, offices, for any display purposes and also for low glare application requirements. These efficient luminaires offer horizontal compact fluorescent lamp positioning combined with polished, matt or facet aluminium finish, ensuring optimal performance together with low energy consumption, attractive design and giving excellent light distribution.

Downlight range offers optimum flexibility from a wide range of attachment options – as accessories are available decorative rings, opal cover glass, decorative glass rings or turboraster louvres.

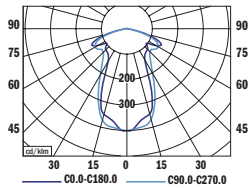
Die Downlight-Leuchten richten den Lichtstrom aus den Reflektoren der sehr kompakten Formen nach außen, die sich architektonisch in einen beliebigen Raum leicht eingliedern können. In ihrer Grundform verteilen sie das Licht in engen oder breiten Bündeln nach unten und werden oft für gesamte Beleuchtung der Innenräumen verwendet. OMS verfügt über ziemlich breite Reihe dieser Leuchten, die entwickelt wurden, um Ansprüche auf Stil und Design in heutigen Geschäfts- oder Wirtschaftsräumen mit einem breiten Anwendungsbereich zu erfüllen – Banken, Hotels, Galerien, Amtsräume, Büros; für verschiedene Zwecke der Betonung der ausgestellten Ware oder für Applikationen, die eine blendfreie Beleuchtung fordern. Diese Leuchten mit ziemlich hoher Wirksamkeit sind mit kompakten Leuchtstoffröhren bestückt, die in der horizontalen Lage in der Kombination mit einem glänzenden, matten oder facettierten Reflektor befestigt werden. Diese Kombination gewährleistet optimale Leuchteigenschaften, die mit kleinem Energieaufwand, attraktiven Design und ausgezeichneten Verteilung des Lichtstromes verbunden sind.

Die Downlight-Reihe bietet eine breite Flexibilität auch dank großem Zubehör an – als Zubehör sind Dekorationseinfassungen, Opalgläser zur Erhöhung der Leuchtendeckung, dekorative Gläser oder die, die Blendung verhindernden Raster anbieten.

BASIC OPTIC



DOWNLIGHT 201  
1x13W



efficiency 73%

Glare Evaluation According to UGR

p-ceiling		70	70	50	50	30	30	70	70	50	50	30	30
p-walls		50	30	50	30	30	30	70	30	50	30	30	30
p-floor		20	20	20	20	20	20	20	20	20	20	20	20
Room size	Viewing direction at right angles to lamp axis	Viewing direction parallel to lamp axis											
X	Y												
2H	2H	22.0	23.3	22.3	23.5	23.8	22.1	23.5	22.4	23.7	23.9		
	3H	25.3	26.6	25.7	26.8	27.1	24.7	25.9	25.0	26.2	26.4		
	4H	26.2	27.3	26.5	27.6	27.9	25.3	26.4	25.6	26.7	27.0		
	6H	26.3	27.4	26.7	27.7	28.0	25.4	26.5	25.7	26.8	27.1		
	8H	26.3	27.3	26.6	27.6	28.0	25.3	26.4	25.7	26.7	27.0		
12H	26.2	27.2	26.6	27.6	27.9	25.3	26.3	25.7	26.6	27.0			
4H	2H	23.4	24.5	23.7	24.8	25.1	23.4	24.6	23.8	24.9	25.2		
	3H	26.5	27.5	26.9	27.8	28.2	24.7	25.9	25.0	26.2	26.4		
	4H	27.4	28.3	27.8	28.6	29.0	26.5	27.4	26.9	27.8	28.1		
	6H	27.5	28.3	28.0	28.7	29.1	26.7	27.4	27.1	27.8	28.2		
	8H	27.5	28.2	28.0	28.6	29.0	26.6	27.3	27.1	27.7	28.1		
12H	27.5	28.1	27.9	28.5	29.0	26.6	27.2	27.1	27.6	28.1			
8H	4H	27.6	28.3	28.0	28.7	29.1	26.9	27.5	27.3	27.9	28.4		
	6H	27.8	28.3	28.2	28.7	29.2	27.0	27.5	27.4	28.0	28.4		
	8H	27.8	28.2	28.2	28.7	29.1	27.0	27.4	27.4	27.9	28.4		
	12H	27.7	28.1	28.2	28.6	29.1	26.0	27.3	27.4	27.8	28.3		
	12H	4H	27.6	28.2	28.0	28.6	29.0	26.8	27.5	27.3	27.9	28.3	
6H		27.8	28.2	28.2	28.7	29.1	27.0	27.4	27.5	27.9	28.4		
8H		27.7	28.1	28.2	28.6	29.1	27.0	27.3	27.4	27.8	28.3		

variation of observer position for the luminaire distances S

S=	+0.1/-0.1	+0.3/-0.3	+0.6/-0.7
1.0H			
1.5H			
2.0H			
Standart table		BK05	
CorrectionSummand			8.3

corrected glare indices for 5852lm total flux

Vstavané kruhové svietidlá pre kompaktné žiarivky s minimalistickým dizajnom, vybavené lesklým, matným alebo fazetovým reflektorom sú ideálne pre zabezpečenie celkového osvetlenia v hoteloch, recepciách, chodbách, toaletách a mnohých ďalších verejných, predajných či iných interiéroch. Táto varianta sa vyznačuje najvyššou možnou účinnosťou svietidla a s obľubou je používaná v mnohých riešeniach osvetlenia interiéroch.

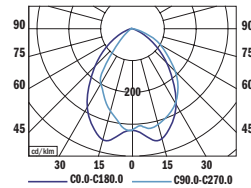
Circular recessed compact fluorescent downlight luminaire with simple design, equipped with polish, matt or faceted reflector, ideal for providing necessary and ambient lighting in hotels, reception areas, corridors, toilets and many other commercial, retail and leisure applications. This downlight variants provides clear-design lighting solutions with highest possible luminaire efficiency.

Die eingebauten Rundleuchten für kompakte Leuchtstofflampen mit einem minimalistischen Design und mit einem glänzenden, matten oder facetierten Reflektor sind ideal für Gewährleistung der gesamten Beleuchtung in Hotels, Rezeptionen, Gängen, Toiletten und in vielen anderen öffentlichen Innenräumen, Verkaufsräumen und anderen Innenräumen. Diese Variante zeichnet sich durch höchst mögliche Wirksamkeit der Leuchte aus und wird in vielen Beleuchtungsmöglichkeiten der Innenräume verwendet.

ASYMMETRIC



DOWNLIGHT 211  
ASSYMETRIC  
1x13W



efficiency 72%

Vyhotovene svietidla s asymetrickým reflektorom, navrhovaným pre osvetlenie stien, alebo zvýraznenie tovaru vystaveného na policiach v obchodných či iných priestoroch. Reflektor má asymetrické smerovanie svetelného toku predvažne do jednej strany.

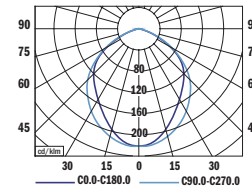
Circular recessed compact fluorescent downlight luminaires with asymmetric reflector, designed for wall washing or highlighting in retail, display and general commercial applications.

Die Ausführung der Leuchte mit einem asymmetrischen Reflektor, entworfen für die Beleuchtung der Wände oder Betonung der auf den Regalen in Geschäftsräumen oder anderen Räumen ausgestellten Ware. Der Reflektor hat asymmetrische Richtung des Lichtstromes überwiegend in eine Seite.

PROTECTIVE GLASS



DOWNLIGHT 202  
1x13W



efficiency 49%

Glare Evaluation According to UGR

p-ceiling		70	70	50	50	30	30	70	70	50	50	30	30
p-walls		50	30	50	30	30	30	70	30	50	30	30	30
p-floor		20	20	20	20	20	20	20	20	20	20	20	20
Room size	Viewing direction at right angles to lamp axis	Viewing direction parallel to lamp axis											
X	Y												
2H	2H	20.0	21.2	20.3	21.4	21.7	20.4	21.6	20.7	21.8	22.1		
	3H	20.7	21.8	21.0	22.0	22.3	21.1	22.2	21.4	22.4	22.7		
	4H	20.7	21.7	21.0	22.0	22.3	21.1	22.1	21.5	22.4	22.7		
	6H	20.6	21.6	21.0	21.9	22.2	21.1	22.0	21.4	22.3	22.6		
	8H	20.6	21.5	21.0	21.8	22.1	21.0	21.9	21.4	22.2	22.6		
12H	20.6	21.4	20.9	21.7	22.1	21.0	21.8	21.4	22.2	22.5			
4H	2H	20.5	21.5	20.8	21.8	22.1	20.8	21.8	21.1	22.1	22.4		
	3H	21.2	22.1	21.6	22.4	22.7	21.6	22.4	21.9	22.7	23.1		
	4H	21.3	22.0	21.7	22.4	22.7	21.7	22.4	22.0	22.7	23.1		
	6H	21.2	21.9	21.6	22.2	22.6	21.6	22.2	22.0	22.6	23.0		
	8H	21.2	21.8	21.6	22.2	22.6	21.6	22.1	22.0	22.5	22.9		
12H	21.2	21.7	21.6	22.1	22.5	21.5	21.8	22.0	22.5	22.9			
8H	4H	21.3	21.8	21.7	22.2	22.6	21.6	22.2	22.0	22.6	23.0		
	6H	21.2	21.6	21.6	22.0	22.5	21.6	22.0	22.0	22.5	22.9		
	8H	21.2	21.6	21.6	22.0	22.5	21.5	21.9	22.0	22.4	22.9		
	12H	21.1	21.5	21.6	21.9	22.4	21.5	21.8	22.0	22.3	22.8		
	12H	4H	21.2	21.7	21.7	22.2	22.6	21.6	22.1	22.0	22.5	22.9	
6H		21.2	21.6	21.6	22.0	22.5	21.5	21.9	22.0	22.4	22.9		
8H		21.1	21.5	21.6	21.9	22.4	21.5	21.8	22.0	22.3	22.8		

variation of observer position for the luminaire distances S

S=	+0.2/-0.3	+0.7/-0.1	+1.4/-2.4
1.0H			
1.5H			
2.0H			
Standart table	BK02	BK02	
CorrectionSummand	1.0		1.4

corrected glare indices for 5852lm total flux

Vstavané kruhové svietidlá pre kompaktné žiarivky sú uzatvorené krycím sklom, ktoré im dáva ochranu proti vniknutiu pevných predmetov a vody IP44 a chráni ich tak pred vniknutím veľmi malých predmetov a vody striekajúcej zo všetkých smerov pod úrovňou stropu. Krycie opalové sklo pri tejto variante taktiež znižuje jas kompaktných žiariviek a samotného svietidla a významnou mierou zvyšuje zrakový komfort v miestnosti. Krycie sklo je ľahko vyberateľné pre účely čistenia svietidla a výmeny svetelných zdrojov.

Circular recessed compact fluorescent downlight luminaire with close fitting cover glass giving an ingress protection of IP44, preventing the ingress of very small particles of dirt and splash proof from any angle below the ceiling line. Opal glass by this range reduces the luminance levels of the compact fluorescent lamps. The use of a diffuser reduces the luminance in the luminaire and thereby improves the visual comfort. Protective glass is easily removed for routine maintenance and lamp replacement.

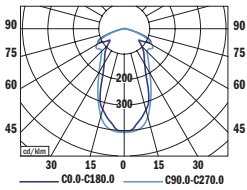
Eingebauten Rundleuchten für kompakte Leuchtstofflampen sind mit einem Deckglas geschlossen, welches ihnen Schutz IP44 vor Eindringen fester Gegenstände und Wasser leistet und damit schützt es sie gegen Eindringen von sehr kleinen Gegenständen und Wasser, welches von allen Richtungen unter der Deckenebene spritzt. Das Deckopalglas senkt bei dieser Variante auch die Leuchtdichte der kompakten Leuchtstofflampen und der Leuchte und erhöht beträchtlich den Sehkomfort im Raum. Das Deckglas läßt sich bei Reinigung der Leuchte und Austausch der Lichtquellen leicht herausnehmen.



DECORATIVE GLASS



DOWNLIGHT  
203  
1x13W  
GL\_9



efficiency 66%

Glare Evaluation According to UGR														
p-ceiling			70	70	50	50	30	70			70	50	50	30
p-walls			50	30	50	30	30	70			30	50	30	30
p-floor			20	20	20	20	20	20			20	20	20	20
Room size	X	Y	Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis						
2H	2H	27.4	18.6	17.7	18.9	19.1	18.2	19.4	18.5	19.7	19.9			
	3H	20.2	21.3	20.5	21.6	21.9	20.1	21.2	20.4	21.5	21.8			
	4H	20.7	21.8	21.1	22.1	22.4	20.5	21.6	20.8	21.8	22.1			
	6H	20.9	21.9	21.2	22.2	22.5	20.5	21.6	20.9	21.9	22.2			
	8H	20.9	21.9	21.3	22.2	22.5	20.5	21.5	20.9	21.8	22.1			
12H	20.9	21.8	21.2	22.1	22.5	20.5	21.4	20.9	21.8	22.1				
4H	2H	18.6	19.7	19.0	20.0	20.3	19.1	20.2	19.5	22.5	20.8			
	3H	21.2	22.2	21.6	22.5	22.6	21.1	22.0	21.5	22.4	22.7			
	4H	21.8	22.7	22.2	23.0	23.4	21.5	22.4	21.9	22.7	23.1			
	6H	22.0	22.8	22.5	23.1	23.5	21.6	22.4	22.1	22.9	23.1			
	8H	22.1	22.7	22.5	23.1	23.5	21.6	22.3	22.1	22.7	23.1			
12H	22.1	22.6	22.5	23.1	23.5	21.6	22.2	22.1	22.6	23.1				
8H	4H	22.0	22.7	22.4	23.0	23.5	21.7	22.4	22.2	22.8	23.2			
	6H	22.3	22.8	22.7	23.2	23.7	21.9	22.4	22.3	22.8	23.3			
	8H	22.3	22.8	22.8	23.2	23.7	21.9	22.4	22.4	22.8	23.3			
	12H	22.3	22.7	22.8	23.2	23.7	21.9	22.3	22.4	22.8	23.3			
	12H	4H	22.0	22.6	22.4	23.0	23.4	21.7	22.3	22.2	22.7	23.1		
6H		22.3	22.7	22.7	23.2	23.6	21.9	22.3	22.4	22.8	23.3			
8H		22.3	22.7	22.8	23.1	23.5	21.9	22.3	22.4	22.8	23.3			
variation of observer position for the luminaire distances S														
S=		1.0H	+0.2/-0.2					+0.2/-0.1						
	1.5H	+0.3/-1.5					+0.4/-0.4							
	2.0H	+0.8/-1.0					+1.8/-1.1							
Standart table	BK06					BK04								
Correction/Summhd	3.9					2.7								
corrected glare indices for 5852lm total flux														

Rad svetidiel downlight vybavený dekoratívnym príslušenstvom pre zatriktívnenie celkového vzhľadu svietidla a celej osvetľovacej sústavy. Dekoratívne sklo je prichytené na svietidlo prostredníctvom troch pomocných úchyto, zaisťované ozdobnými skrútkami. Pieskované dekoratívne sklá sú ideálne pre zníženie jasú kompaktných žiariviek – podobne ako ochranné opáľové sklá u radu IP44. Sú vhodné pre použitie v osvetľovacích sústavách s vyššími nárokmi na estetickosť prevedenia ako aj pre zvýšenie zrakového komfortu v miestnosti. Prídavné sklá okrem toho rozptyľujú časť svetelného toku, čo vytvára zaujímavý efekt na stropě a pomáha k zníženiu kontrastu medzi tmavým stropom a svetlou podlahou.

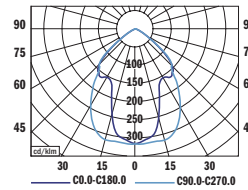
Downlights also features a range of decorative accessories to enhance the final appearance. The decorative glass is mounted via a three support pillar assembly with decorative locking screw. Sand blasted decorative glasses are ideal for reducing of glare from compact fluorescent lamps – similar as protective glasses do. It is very useful in areas where visual comfort is important. Next to decorative effect, sand blasted glasses can redirect some part of luminous flux on the ceiling to obtain interesting effect and reduce contrast between dark ceiling and bright floor.

Diese Reihe der Downlight-Leuchten ist mit einem Dekorationszubehör für Attraktivität des gesamten Aussehens der Leuchte und des ganzen Beleuchtungssystem ausgestattet. Dekorativglas ist auf die Leuchte mit drei Hilfschellen befestigt, mit Dekorationsschrauben gesichert. Sandgestrahlte dekorative Gläser sind für Leuchtdichtsenkung der kompakten Leuchtstoffröhren ideal – ähnlich wie Schutzopalgläser der Reihe IP44. Sie sind zur Anwendung in Beleuchtungssystemen mit höheren Ansprüchen auf Ästhetik der Ausführung sowie zur Erhöhung des Sehkommforts im Raum geeignet. Zusätzliche Gläser zerstreuen auch einen Teil des Lichtstromes, was einen interessanten Effekt auf der Decke bildet und den Kontrast zwischen dunkler Decke und hellem Fußboden zu vermindern hilft.

LOUVRE



DOWNLIGHT  
204  
1x13W



efficiency 49%

Glare Evaluation According to UGR														
p-ceiling			70	70	50	50	30	70			70	50	50	30
p-walls			50	30	50	30	30	70			30	50	30	30
p-floor			20	20	20	20	20	20			20	20	20	20
Room size	X	Y	Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis						
2H	2H	18.2	19.2	18.4	19.4	19.6	18.3	19.4	18.6	19.6	19.8			
	3H	18.1	19.0	18.4	19.1	19.5	18.2	19.1	18.5	19.4	19.6			
	4H	18.0	18.9	18.3	19.1	19.4	18.2	19.0	18.5	19.3	19.6			
	6H	17.9	18.7	18.3	19.0	19.3	18.1	18.9	18.4	19.2	19.5			
	8H	17.9	18.6	18.3	18.9	19.3	18.1	18.8	18.4	19.1	19.4			
12H	17.9	17.6	18.2	18.9	19.2	18.0	18.7	18.4	18.9	19.4				
4H	2H	18.1	19.0	18.4	19.2	19.5	18.3	19.1	18.6	19.4	19.7			
	3H	18.0	18.7	18.4	19.1	19.4	18.2	18.9	18.6	19.2	19.5			
	4H	18.0	18.6	18.4	18.9	19.3	18.1	18.7	18.5	19.1	19.4			
	6H	17.9	18.4	18.3	18.8	19.2	18.1	18.6	18.5	19.1	19.3			
	8H	17.9	18.3	18.3	18.7	19.1	18.0	18.5	18.5	19.0	19.3			
12H	17.8	18.3	18.3	18.7	19.1	18.0	18.4	18.4	18.8	19.2				
8H	4H	17.9	18.3	18.3	18.7	19.1	18.0	18.5	18.5	18.9	19.3			
	6H	17.8	18.2	18.2	18.6	19.0	17.9	18.3	18.4	18.8	19.2			
	8H	17.8	18.1	18.2	18.5	19.0	17.9	18.2	18.4	18.7	19.2			
	12H	17.7	18.0	18.2	18.5	19.0	17.9	18.1	18.3	18.6	19.1			
	12H	4H	17.8	18.3	18.3	18.7	19.1	18.0	18.4	18.4	18.8	19.2		
6H		17.8	18.1	18.2	18.5	19.0	17.9	18.2	18.4	18.7	19.2			
8H		17.7	18.0	18.2	18.5	19.0	17.9	18.1	18.3	18.6	19.1			
variation of observer position for the luminaire distances S														
S=		1.0H	+1.3/-2.0					+1.2/-2.3						
	1.5H	+2.3/-6.8					+2.5/-6.9							
	2.0H	+4.2/-11.5					+4.4/-11.9							
Standart table	BK00					BK00								
Correction/Summhd	-2.8					-2.6								
corrected glare indices for 5852lm total flux														

Turbo-optika je kombinácia klasického reflektora a mriežky. Hliníkové mriežky sú prídavané do svietidiel aby čo najviac zabránili priamemu oslneniu od svetelného zdroja. Toto prevedenie svietidla kombinuje maximálny zrakový komfort pre ľudí v miestnosti s čo najvyššou účinnosťou svietidiel. Mriežka je ľahko vyberateľná pre účely čistenia svietidla a výmeny svetelných zdrojov.

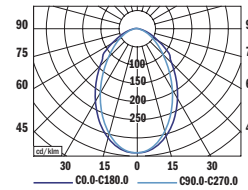
Turbo-Louvre is a combination of round reflector and louvre technology. Glare – free louvers are made of aluminium. This type of optic combines the maximum visual comfort with the maximum output ratio. The louvre is easily removed for routine maintenance and lamp replacement.

Die Turbo-Optik ist eine Kombination des klassischen Reflektors und des Rasters. Aluminiumraster werden in die Leuchten eingebaut, um eine direkte Blendung von der Lichtquelle weitmöglichst zu verhindern. Diese Ausführung der Leuchte kombiniert den maximalen Sehkommfort für Leute im Raum mit der möglichst hohen Wirksamkeit der Leuchten. Der Raster läßt sich für Reinigung der Leuchte und Austausch der Lichtquellen leicht herausnehmen.

FOR HIGH PRESSURE DISCHARGE LAMPS



DOWNLIGHT  
254  
HI  
1x70W



efficiency 49,3%

Glare Evaluation According to UGR														
p-ceiling			70	70	50	50	30	70			70	50	50	30
p-walls			50	30	50	30	30	70			30	50	30	30
p-floor			20	20	20	20	20	20			20	20	20	20
Room size	X	Y	Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis						
2H	2H	25.8	26.9	26.1	27.1	27.4	24.1	25.2	24.4	25.4	25.7			
	3H	26.7	27.7	27.0	28.0	28.2	24.9	25.9	25.2	26.1	26.4			
	4H	27.0	27.9	27.3	28.2	28.5	25.1	26.1	25.4	26.3	26.6			
	6H	27.1	28.0	27.4	28.3	28.6	25.2	26.1	25.6	26.4	26.7			
	8H	27.1	28.0	27.5	28.3	28.6	25.2	26.0	25.6	26.4	26.7			
12H	27.1	27.9	27.5	28.2	28.6	25.2	26.0	25.6	26.3	26.6				
4H	2H	26.1	27.0	26.4	27.3	27.6	24.7	25.7	25.0	25.9	26.2			
	3H	27.2	28.0	27.5	28.3	28.6	25.6	26.4	26.0	26.7	27.1			
	4H	27.5	28.2	27.9	28.6	28.9	26.0	26.7	26.3	27.0	27.3			
	6H	27.7	28.3	28.1	28.7	29.1	26.1	26.7	26.5	27.1	27.5			
	8H	27.8	28.3	28.2	28.7	29.1	26.1	26.6	26.5	27.1	27.5			
12H	27.8	28.3	28.2	28.7	29.1	26.1	26.6	26.5	27.0	27.4				
8H	4H	27.6	28.2	28.0	28.5	28.9	26.1	26.7	26.5	27.1	27.5			
	6H	27.9	28.3	28.3	28.7	29.2	26.3	26.8	26.8	27.2	27.6			
	8H	27.9	28.3	28.4	28.8	29.2	26.4	26.7	26.8	27.2	27.6			
	12H	27.9	28.3	28.4	28.7	29.2	26.3	26.7	26.8	27.1	27.5			
	12H	4H	27.6	28.1	28.0	28.5	28.9	26.1	26.6	26.6	27.0	27.4		
6H		27.8	28.2	28.3	28.7	29.1	26.3	26.7	26.8	27.2	27.6			
8H		27.9	28.2	28.4	28.7	29.2	26.4	26.7	26.9	27.2	27.7			
variation of observer position for the luminaire distances S														
S=		1.0H	+0.1/-0.2					+0.3/-0.5						
	1.5H	+0.5/-0.9					+0.6/-1.1							
	2.0H	+1.1/-1.5					+1.0/-1.8							
Standart table	BK03					BK03								
Correction/Summhd	7.7					6.1								
corrected glare indices for 5852lm total flux														

Výbojky majú oproti kompaktným žiarivkám oveľa vyšší svetelný tok, kombinovaný s vysokým merným výkonom zdrojov a dlhou životnosťou. V týchto typoch downlightov môžu byť použité posledné generácie týchto moderných svetelných zdrojov. Reflektory poskytujú prijateľný zrakový komfort vďaka dobrému smerovaniu svetelného toku a taktiež veľmi dobrú účinnosť svietidiel. Všetky typy týchto svietidiel majú telá skonštruované tak, aby spĺňali technické požiadavky kladené na prevádzku výbojkových svetelných zdrojov a zaručovali optimálne teplotné pomery vo vnútri. Svietidlá sa dajú využiť ako pri celkovom, tak pri akcentačnom osvetlení vďaka možnosti natiacania reflektora o 45° od vertikály. Natiacateľné reflektory sa dajú v prípade potreby použiť ako štandardné downlighty. Typická oblasť použitia sú predajné priestory, showrooms, múzeá či výklady obchodov.

Discharge lamps compared with compact fluorescent lamps have higher luminous flux, combined with excellent energy efficiency and long service life. In these types of downlighters can be used new generation of metal halide lamps. Reflectors combines the maximum visual comfort with the maximum light output ratio. All the directional downlighters have housings which are designed to provide optimum thermal properties according to their respective technical requirements. This system allows a multitude of possibilities for accent and display lighting by the tilting of the reflectors up to 45° off the vertical. Twistable luminaires can also be used as a conventional downlight. Typical areas of application are showroom lighting and for example in sales areas, museums or galleries.

Die Entladungslampen haben im Vergleich zu kompakten Leuchtstofflampen einen viel höheren Lichtstrom, der mit einer hohen spezifischen Leistung der Quellen und einer langen Nutzungsdauer kombiniert ist. In diesen Downlight-Typen können die letzten Generationen dieser modernen Lichtquellen verwendet werden. Die Reflektoren bieten einen angenehmen Sehkommfort dank der guten Richtung des Lichtstromes und auch eine sehr gute Leuchtwirksamkeit. Alle Typen dieser Leuchten haben ihre Körper so konstruiert, dass sie die an den Betrieb der Entladungsröhren-Lichtquellen gestellten technischen Forderungen erfüllen und optimale Temperaturverhältnisse im Inneren gewährleisten. Die Leuchten können wie bei gesamt Beleuchtung, so auch bei der Akzentbeleuchtung dank Reflektordrehen um 45° von der Vertikale verwendet werden. Die drehbaren Reflektoren können bei Bedarf als Standard-Downlights verwendet werden. Zur typischen Anwendungsbereichen







ORDER CODE	TYPE	SPECIFICATION	ORDER CODE	TYPE	SPECIFICATION
DAC441711882000	DOWNLIGHT 204	1x18W,TC-DEL, ECG A2,RAL 9003	DOWNLIGHT 211 SB	DOWNLIGHT 211 SB POLISHED	1x18W,TC-D,RAL 9003
DAC441712682000	DOWNLIGHT 204	1x26W,TC-DEL, ECG A2,RAL 9003	DAJ401311812000	DOWNLIGHT 211 SB POLISHED	1x18W,TC-D,RAL 9003
DAC441721382000	DOWNLIGHT 204	2x13W,TC-DEL, ECG A2,RAL 9003	DAJ401321812000	DOWNLIGHT 211 SB POLISHED	2x18W,TC-D,RAL 9003
DAC441721882000	DOWNLIGHT 204	2x18W,TC-DEL, ECG A2,RAL 9003	DAJ401322612000	DOWNLIGHT 211 SB POLISHED	2x26W,TC-D,RAL 9003
DAC441722682000	DOWNLIGHT 204	2x26W,TC-DEL, ECG A2,RAL 9003	DAJ401711862000	DOWNLIGHT 211 SB POLISHED	1x18W,TC-DEL,RAL 9003
DOWNLIGHT 214			DAJ401712662000	DOWNLIGHT 211 SB POLISHED	1x26W,TC-DEL,RAL 9003
DAD441311832000	DOWNLIGHT 214	1x18W,TC-D, CCG B2,RAL 9003	DAJ401721362000	DOWNLIGHT 211 SB POLISHED	2x13W,TC-DEL,RAL 9003
DAD441312632000	DOWNLIGHT 214	1x26W,TC-D, CCG B2,RAL 9003	DAJ401721862000	DOWNLIGHT 211 SB POLISHED	2x18W,TC-DEL,RAL 9003
DAD441321832000	DOWNLIGHT 214	2x18W,TC-D, CCG B2,RAL 9003	DAJ401722662000	DOWNLIGHT 211 SB POLISHED	2x26W,TC-DEL,RAL 9003
DAD44132632000	DOWNLIGHT 214	2x26W,TC-D, CCG B2,RAL 9003	DAJ401813262000	DOWNLIGHT 211 SB POLISHED	1x32W,TC-TEL,RAL 9003
DAD441711882000	DOWNLIGHT 214	1x18W,TC-DEL, ECG A2,RAL 9003	DAJ401814262000	DOWNLIGHT 211 SB POLISHED	1x42W,TC-TEL,RAL 9003
DAD441712682000	DOWNLIGHT 214	1x26W,TC-DEL, ECG A2,RAL 9003	DAJ401823262000	DOWNLIGHT 211 SB POLISHED	2x32W,TC-TEL,RAL 9003
DAD441721882000	DOWNLIGHT 214	2x18W,TC-DEL, ECG A2,RAL 9003	DOWNLIGHT 211 SB ASYM		
DAD441722682000	DOWNLIGHT 214	2x26W,TC-DEL, ECG A2,RAL 9003	DAJ451311312000	DOWNLIGHT 211 SB ASYM	1x13W,TC-D,RAL 9003
DOWNLIGHT 224			DAJ451321312000	DOWNLIGHT 211 SB ASYM	2x13W,TC-D,RAL 9003
DAE441311832000	DOWNLIGHT 224	1x18W,TC-D, CCG B2,RAL 9003	DAJ451711362000	DOWNLIGHT 211 SB ASYM	1x13W,TC-DEL,RAL 9003
DAE441312632000	DOWNLIGHT 224	1x26W,TC-D, CCG B2,RAL 9003	DAJ451721362000	DOWNLIGHT 211 SB ASYM	2x13W,TC-DEL,RAL 9003
DAE441321832000	DOWNLIGHT 224	2x18W,TC-D, CCG B2,RAL 9003	DOWNLIGHT 221 SB		
DAE44132632000	DOWNLIGHT 224	2x26W,TC-D, CCG B2,RAL 9003	DAK401311812000	DOWNLIGHT 221 SB POLISHED	1x18W,TC-D,RAL 9003
DAE441711882000	DOWNLIGHT 224	1x18W,TC-DEL, ECG A2,RAL 9003	DAK401312612000	DOWNLIGHT 221 SB POLISHED	1x26W,TC-D,RAL 9003
DAE441712682000	DOWNLIGHT 224	1x26W,TC-DEL, ECG A2,RAL 9003	DAK401321812000	DOWNLIGHT 221 SB POLISHED	2x18W,TC-D,RAL 9003
DAE441721882000	DOWNLIGHT 224	2x18W,TC-DEL, ECG A2,RAL 9003	DAK401322612000	DOWNLIGHT 221 SB POLISHED	2x26W,TC-D,RAL 9003
DAE441722682000	DOWNLIGHT 224	2x26W,TC-DEL, ECG A2,RAL 9003	DAK401711862000	DOWNLIGHT 221 SB POLISHED	1x18W,TC-DEL,RAL 9003
DAE441813282000	DOWNLIGHT 224	1x32W,TC-TEL, ECG A2,RAL 9003	DAK401712662000	DOWNLIGHT 221 SB POLISHED	1x26W,TC-DEL,RAL 9003
DAE441814282000	DOWNLIGHT 224	1x42W,TC-TEL, ECG A2,RAL 9003	DAK401721862000	DOWNLIGHT 221 SB POLISHED	2x18W,TC-DEL,RAL 9003
DAE441823282000	DOWNLIGHT 224	2x32W,TC-TEL, ECG A2,RAL 9003	DAK401722662000	DOWNLIGHT 221 SB POLISHED	2x26W,TC-DEL,RAL 9003
DOWNLIGHT 2X5			DAK401813262000	DOWNLIGHT 221 SB POLISHED	1x32W,TC-TEL,RAL 9003
DOWNLIGHT 205			DAK401814262000	DOWNLIGHT 221 SB POLISHED	1x42W,TC-TEL,RAL 9003
DAF401311332000	DOWNLIGHT 205 POLISHED	1x13W,TC-D, CCG B2,RAL 9003	DAK401823262000	DOWNLIGHT 221 SB POLISHED	2x32W,TC-TEL,RAL 9003
DAF401311832000	DOWNLIGHT 205 POLISHED	1x18W,TC-D, CCG B2,RAL 9003			
DAF401312632000	DOWNLIGHT 205 POLISHED	1x26W,TC-D, CCG B2,RAL 9003	XXXXXXXXXXXXXXX		
DAF401321832000	DOWNLIGHT 205 POLISHED	2x13W,TC-D, CCG B2,RAL 9003	41 - MAT		
DAF401321832000	DOWNLIGHT 205 POLISHED	2x18W,TC-D, CCG B2,RAL 9003	42 - FACET		
DAF401322632000	DOWNLIGHT 205 POLISHED	2x26W,TC-D, CCG B2,RAL 9003			
DAF401711382000	DOWNLIGHT 205 POLISHED	1x13W,TC-DEL, ECG A2,RAL 9003	DOWNLIGHT 2X2 SB		
DAF401711882000	DOWNLIGHT 205 POLISHED	1x18W,TC-DEL, ECG A2,RAL 9003	DOWNLIGHT 202 SB		
DAF401712682000	DOWNLIGHT 205 POLISHED	1x26W,TC-DEL, ECG A2,RAL 9003	DAL401311312000	DOWNLIGHT 202 SB POLISHED	1x13W,TC-D,RAL 9003
DAF401721382000	DOWNLIGHT 205 POLISHED	2x13W,TC-DEL, ECG A2,RAL 9003	DAL401311812000	DOWNLIGHT 202 SB POLISHED	1x18W,TC-D,RAL 9003
DAF401721882000	DOWNLIGHT 205 POLISHED	2x18W,TC-DEL, ECG A2,RAL 9003	DAL401312612000	DOWNLIGHT 202 SB POLISHED	1x26W,TC-D,RAL 9003
DAF401722682000	DOWNLIGHT 205 POLISHED	2x26W,TC-DEL, ECG A2,RAL 9003	DAL401321312000	DOWNLIGHT 202 SB POLISHED	2x13W,TC-D,RAL 9003
DOWNLIGHT 215			DAL401321812000	DOWNLIGHT 202 SB POLISHED	2x18W,TC-D,RAL 9003
DAG401311832000	DOWNLIGHT 215 POLISHED	1x18W,TC-D, CCG B2,RAL 9003	DAL401322612000	DOWNLIGHT 202 SB POLISHED	2x26W,TC-D,RAL 9003
DAG401312632000	DOWNLIGHT 215 POLISHED	1x26W,TC-D, CCG B2,RAL 9003	DAL401711362000	DOWNLIGHT 202 SB POLISHED	1x13W,TC-DEL,RAL 9003
DAG401321832000	DOWNLIGHT 215 POLISHED	2x18W,TC-D, CCG B2,RAL 9003	DAL401711862000	DOWNLIGHT 202 SB POLISHED	1x18W,TC-DEL,RAL 9003
DAG401322632000	DOWNLIGHT 215 POLISHED	2x26W,TC-D, CCG B2,RAL 9003	DAL401712662000	DOWNLIGHT 202 SB POLISHED	1x26W,TC-DEL,RAL 9003
DAG401711882000	DOWNLIGHT 215 POLISHED	1x18W,TC-DEL, ECG A2,RAL 9003	DAL401721362000	DOWNLIGHT 202 SB POLISHED	2x13W,TC-DEL,RAL 9003
DAG401712682000	DOWNLIGHT 215 POLISHED	1x26W,TC-DEL, ECG A2,RAL 9003	DAL401721862000	DOWNLIGHT 202 SB POLISHED	2x18W,TC-DEL,RAL 9003
DAG401721882000	DOWNLIGHT 215 POLISHED	2x18W,TC-DEL, ECG A2,RAL 9003	DAL401722662000	DOWNLIGHT 202 SB POLISHED	2x26W,TC-DEL,RAL 9003
DAG401722682000	DOWNLIGHT 215 POLISHED	2x26W,TC-DEL, ECG A2,RAL 9003	DOWNLIGHT 212 SB		
DAG401813282000	DOWNLIGHT 215 POLISHED	1x32W,TC-TEL, ECG A2,RAL 9003	DAM401311812000	DOWNLIGHT 212 SB POLISHED	1x18W,TC-D,RAL 9003
DAG401814282000	DOWNLIGHT 215 POLISHED	1x42W,TC-TEL, ECG A2,RAL 9003	DAM401312612000	DOWNLIGHT 212 SB POLISHED	1x26W,TC-D,RAL 9003
DAG401823282000	DOWNLIGHT 215 POLISHED	2x32W,TC-TEL, ECG A2,RAL 9003	DAM401321812000	DOWNLIGHT 212 SB POLISHED	2x18W,TC-D,RAL 9003
DOWNLIGHT 225			DAM401322612000	DOWNLIGHT 212 SB POLISHED	2x26W,TC-D,RAL 9003
DAH401311832000	DOWNLIGHT 225 POLISHED	1x18W,TC-D, CCG B2,RAL 9003	DAM401711862000	DOWNLIGHT 212 SB POLISHED	1x18W,TC-DEL,RAL 9003
DAH401312632000	DOWNLIGHT 225 POLISHED	1x26W,TC-D, CCG B2,RAL 9003	DAM401712662000	DOWNLIGHT 212 SB POLISHED	1x26W,TC-DEL,RAL 9003
DAH401321832000	DOWNLIGHT 225 POLISHED	2x18W,TC-D, CCG B2,RAL 9003	DAM401721862000	DOWNLIGHT 212 SB POLISHED	2x18W,TC-DEL,RAL 9003
DAH401322632000	DOWNLIGHT 225 POLISHED	2x26W,TC-D, CCG B2,RAL 9003	DAM401722662000	DOWNLIGHT 212 SB POLISHED	2x26W,TC-DEL,RAL 9003
DAH401711882000	DOWNLIGHT 225 POLISHED	1x18W,TC-DEL, ECG A2,RAL 9003	DAM401823262000	DOWNLIGHT 212 SB POLISHED	2x32W,TC-TEL,RAL 9003
DAH401712682000	DOWNLIGHT 225 POLISHED	1x26W,TC-DEL, ECG A2,RAL 9003	DOWNLIGHT 222 SB		
DAH401721882000	DOWNLIGHT 225 POLISHED	2x18W,TC-DEL, ECG A2,RAL 9003	DAN401311812000	DOWNLIGHT 222 SB POLISHED	1x18W,TC-D,RAL 9003
DAH401722682000	DOWNLIGHT 225 POLISHED	2x26W,TC-DEL, ECG A2,RAL 9003	DAN401312612000	DOWNLIGHT 222 SB POLISHED	1x26W,TC-D,RAL 9003
DAH401813282000	DOWNLIGHT 225 POLISHED	1x32W,TC-TEL, ECG A2,RAL 9003	DAN401321812000	DOWNLIGHT 222 SB POLISHED	2x18W,TC-D,RAL 9003
DAH401814282000	DOWNLIGHT 225 POLISHED	1x42W,TC-TEL, ECG A2,RAL 9003	DAN401322612000	DOWNLIGHT 222 SB POLISHED	2x26W,TC-D,RAL 9003
DAH401823282000	DOWNLIGHT 225 POLISHED	2x32W,TC-TEL, ECG A2,RAL 9003	DAN401711862000	DOWNLIGHT 222 SB POLISHED	1x18W,TC-DEL,RAL 9003
XXXXXXXXXXXXXXXX			DAN401712662000	DOWNLIGHT 222 SB POLISHED	1x26W,TC-DEL,RAL 9003
41 - MAT			DAN401721862000	DOWNLIGHT 222 SB POLISHED	2x18W,TC-DEL,RAL 9003
42 - FACET			DAN401722662000	DOWNLIGHT 222 SB POLISHED	2x26W,TC-DEL,RAL 9003
DOWNLIGHT 242			DAN401813262000	DOWNLIGHT 222 SB POLISHED	1x32W,TC-TEL,RAL 9003
DOWNLIGHT 242			DAN401814262000	DOWNLIGHT 222 SB POLISHED	1x42W,TC-TEL,RAL 9003
DB1401311832000	DOWNLIGHT 242 POLISHED	1x18W,TC-D,CCG B2,RAL 9003	DAN401823262000	DOWNLIGHT 222 SB POLISHED	2x32W,TC-TEL,RAL 9003
DB1401312632000	DOWNLIGHT 242 POLISHED	1x26W,TC-D,CCG B2,RAL 9003			
DB1401321832000	DOWNLIGHT 242 POLISHED	2x18W,TC-D,CCG B2,RAL 9003	XXXXXXXXXXXXXXXX		
DB1401322632000	DOWNLIGHT 242 POLISHED	2x26W,TC-D,CCG B2,RAL 9003	41 - MAT		
DB1401711882000	DOWNLIGHT 242 POLISHED	1x18W,TC-DEL,ECG A2,RAL 9003	DOWNLIGHT 2X3 SB		
DB1401712682000	DOWNLIGHT 242 POLISHED	1x26W,TC-DEL,ECG A2,RAL 9003	DOWNLIGHT 203 SB		
DB1401721882000	DOWNLIGHT 242 POLISHED	2x18W,TC-DEL,ECG A2,RAL 9003	DAO401311312000	DOWNLIGHT 203 SB POLISHED	1x13W,TC-D,RAL 9003
DB1401722682000	DOWNLIGHT 242 POLISHED	2x26W,TC-DEL,ECG A2,RAL 9003	DAO401311812000	DOWNLIGHT 203 SB POLISHED	1x18W,TC-D,RAL 9003
DOWNLIGHT 242 POLISHED			DAO401312612000	DOWNLIGHT 203 SB POLISHED	1x26W,TC-D,RAL 9003
MAXIDOWNLIGHT			DAO401321312000	DOWNLIGHT 203 SB POLISHED	2x13W,TC-D,RAL 9003
DOWNLIGHT MAXI 271			DAO401321812000	DOWNLIGHT 203 SB POLISHED	2x18W,TC-D,RAL 9003
DB2401823282000	DOWNLIGHT MAXI 271	2x32W,TC-TEL, ECG A2,RAL 9003	DAO401322612000	DOWNLIGHT 203 SB POLISHED	2x26W,TC-D,RAL 9003
DB2401824282000	DOWNLIGHT MAXI 271	2x42W,TC-TEL, ECG A2,RAL 9003	DAO401711362000	DOWNLIGHT 203 SB POLISHED	1x13W,TC-DEL,RAL 9003
DB2401833282000	DOWNLIGHT MAXI 271	3x32W,TC-TEL, ECG A2,RAL 9003	DAO401711862000	DOWNLIGHT 203 SB POLISHED	1x18W,TC-DEL,RAL 9003
DOWNLIGHT MAXI 273			DAO401712662000	DOWNLIGHT 203 SB POLISHED	1x26W,TC-DEL,RAL 9003
DB3401823282000	DOWNLIGHT MAXI 273	2x32W,TC-TEL, ECG A2,RAL 9003	DAO401721362000	DOWNLIGHT 203 SB POLISHED	2x13W,TC-DEL,RAL 9003
DB3401824282000	DOWNLIGHT MAXI 273	2x42W,TC-TEL, ECG A2,RAL 9003	DAO401721862000	DOWNLIGHT 203 SB POLISHED	2x18W,TC-DEL,RAL 9003
DB3401832682000	DOWNLIGHT MAXI 273	3x26W,TC-TEL, ECG A2,RAL 9003	DAO401722662000	DOWNLIGHT 203 SB POLISHED	2x26W,TC-DEL,RAL 9003
DB3401833282000	DOWNLIGHT MAXI 273	3x32W,TC-TEL, ECG A2,RAL 9003	DOWNLIGHT 213 SB		
DOWNLIGHT 2X2 SEPAR BOX			DOWNLIGHT 213 SB POLISHED		
DOWNLIGHT 2X1 SB			DAP401311812000	DOWNLIGHT 213 SB POLISHED	1x18W,TC-D,RAL 9003
DOWNLIGHT 201 SB			DAP401312612000	DOWNLIGHT 213 SB POLISHED	1x26W,TC-D,RAL 9003
DAI401311312000	DOWNLIGHT 201 SB POLISHED	1x13W,TC-D,RAL 9003	DAP401321812000	DOWNLIGHT 213 SB POLISHED	2x18W,TC-D,RAL 9003
DAI401311812000	DOWNLIGHT 201 SB POLISHED	1x18W,TC-D,RAL 9003	DAP401322612000	DOWNLIGHT 213 SB POLISHED	2x26W,TC-D,RAL 9003
DAI401312612000	DOWNLIGHT 201 SB POLISHED	1x26W,TC-D,RAL 9003	DAP401711862000	DOWNLIGHT 213 SB POLISHED	1x18W,TC-DEL,RAL 9003
DAI401321312000	DOWNLIGHT 201 SB POLISHED	2x13W,TC-D,RAL 9003	DAP401712662000	DOWNLIGHT 213 SB POLISHED	1x26W,TC-DEL,RAL 9003
DAI401321812000	DOWNLIGHT 201 SB POLISHED	2x18W,TC-D,RAL 9003	DAP401721862000	DOWNLIGHT 213 SB POLISHED	2x18W,TC-DEL,RAL 9003
DAI401322612000	DOWNLIGHT 201 SB POLISHED	2x26W,TC-D,RAL 9003	DAP401813262000	DOWNLIGHT 213 SB POLISHED	1x32W,TC-TEL,RAL 9003
DAI401711362000	DOWNLIGHT 201 SB POLISHED	1x13W,TC-DEL,RAL 9003	DAP401814262000	DOWNLIGHT 213 SB POLISHED	1x42W,TC-TEL,RAL 9003
DAI401711862000	DOWNLIGHT 201 SB POLISHED	1x18W,TC-DEL,RAL 9003	DAP401823262000	DOWNLIGHT 213 SB POLISHED	2x32W,TC-TEL,RAL 9003
DAI401712662000	DOWNLIGHT 201 SB POLISHED	1x26W,TC-DEL,RAL 9003	DOWNLIGHT 223 SB		
DAI401721362000	DOWNLIGHT 201 SB POLISHED	2x13W,TC-DEL,RAL 9003	DAQ401311812000	DOWNLIGHT 223 SB POLISHED	1x18W,TC-D,RAL 9003
DAI401721862000	DOWNLIGHT 201 SB POLISHED	2x18W,TC-DEL,RAL 9003	DAQ401312612000	DOWNLIGHT 223 SB POLISHED	1x26W,TC-D,RAL 9003
DAI401722662000	DOWNLIGHT 201 SB POLISHED	2x26W,TC-DEL,RAL 9003			

ORDER CODE	TYPE	SPECIFICATION
DAQ401321812000	DOWNLIGHT 223 SB POLISHED	2x18W,TC-D,RAL 9003
DAQ401322612000	DOWNLIGHT 223 SB POLISHED	2x26W,TC-D,RAL 9003
DAQ401711862000	DOWNLIGHT 223 SB POLISHED	1x18W,TC-DEL,RAL 9003
DAQ401712662000	DOWNLIGHT 223 SB POLISHED	1x26W,TC-DEL,RAL 9003
DAQ401721862000	DOWNLIGHT 223 SB POLISHED	2x18W,TC-DEL,RAL 9003
DAQ401722662000	DOWNLIGHT 223 SB POLISHED	2x26W,TC-DEL,RAL 9003
DAQ40172682000	DOWNLIGHT 223 SB POLISHED	2x26W,TC-DEL,RAL 9003
DAQ401813262000	DOWNLIGHT 223 SB POLISHED	1x32W,TC-TEL,RAL 9003
DAQ401814262000	DOWNLIGHT 223 SB POLISHED	1x42W,TC-TEL,RAL 9003
DAQ401823262000	DOWNLIGHT 223 SB POLISHED	2x32W,TC-TEL,RAL 9003

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41 - MAT

42 - FACET

DOWNLIGHT 2X4 SB		
DOWNLIGHT 204 SB		
DAR441311312000	DOWNLIGHT 204 SB	1x13W,TC-D,RAL 9003
DAR441311812000	DOWNLIGHT 204 SB	1x18W,TC-D,RAL 9003
DAR441312612000	DOWNLIGHT 204 SB	1x26W,TC-D,RAL 9003
DAR441321312000	DOWNLIGHT 204 SB	2x13W,TC-D,RAL 9003
DAR441321812000	DOWNLIGHT 204 SB	2x18W,TC-D,RAL 9003
DAR441322612000	DOWNLIGHT 204 SB	2x26W,TC-D,RAL 9003
DAR441711362000	DOWNLIGHT 204 SB	1x13W,TC-DEL,RAL 9003
DAR441711862000	DOWNLIGHT 204 SB	1x18W,TC-DEL,RAL 9003
DAR441712662000	DOWNLIGHT 204 SB	1x26W,TC-DEL,RAL 9003
DAR441721362000	DOWNLIGHT 204 SB	2x13W,TC-DEL,RAL 9003
DAR441721862000	DOWNLIGHT 204 SB	2x18W,TC-DEL,RAL 9003
DAR441722662000	DOWNLIGHT 204 SB	2x26W,TC-DEL,RAL 9003

DOWNLIGHT 214 SB		
DAS441311812000	DOWNLIGHT 214 SB	1x18W,TC-D,RAL 9003
DAS441312612000	DOWNLIGHT 214 SB	1x26W,TC-D,RAL 9003
DAS441321812000	DOWNLIGHT 214 SB	2x18W,TC-D,RAL 9003
DAS441322612000	DOWNLIGHT 214 SB	2x26W,TC-D,RAL 9003
DAS441711862000	DOWNLIGHT 214 SB	1x18W,TC-DEL,RAL 9003
DAS441712662000	DOWNLIGHT 214 SB	1x26W,TC-DEL,RAL 9003
DAS441721362000	DOWNLIGHT 214 SB	2x13W,TC-DEL,RAL 9003
DAS441722662000	DOWNLIGHT 214 SB	2x26W,TC-DEL,RAL 9003

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41 - MAT

42 - FACET

DOWNLIGHT 215 SB		
DAT441311812000	DOWNLIGHT 215 SB	1x18W,TC-D,RAL 9003
DAT441312612000	DOWNLIGHT 215 SB	1x26W,TC-D,RAL 9003
DAT441321812000	DOWNLIGHT 215 SB	2x18W,TC-D,RAL 9003
DAT441322612000	DOWNLIGHT 215 SB	2x26W,TC-D,RAL 9003
DAT441711862000	DOWNLIGHT 215 SB	1x18W,TC-DEL,RAL 9003
DAT441712662000	DOWNLIGHT 215 SB	1x26W,TC-DEL,RAL 9003
DAT441721862000	DOWNLIGHT 215 SB	2x18W,TC-DEL,RAL 9003
DAT441722662000	DOWNLIGHT 215 SB	2x26W,TC-DEL,RAL 9003
DAT441813262000	DOWNLIGHT 215 SB	1x32W,TC-TEL,RAL 9003
DAT441814262000	DOWNLIGHT 215 SB	1x42W,TC-TEL,RAL 9003
DAT441823262000	DOWNLIGHT 215 SB	2x32W,TC-TEL,RAL 9003

DOWNLIGHT 215 SB		
DAV401311812000	DOWNLIGHT 215 SB	1x18W,TC-D,RAL 9003
DAV401312612000	DOWNLIGHT 215 SB	1x26W,TC-D,RAL 9003
DAV401321812000	DOWNLIGHT 215 SB	2x18W,TC-D,RAL 9003
DAV401322612000	DOWNLIGHT 215 SB	2x26W,TC-D,RAL 9003
DAV401711862000	DOWNLIGHT 215 SB	1x18W,TC-DEL,RAL 9003
DAV401712662000	DOWNLIGHT 215 SB	1x26W,TC-DEL,RAL 9003
DAV401721862000	DOWNLIGHT 215 SB	2x18W,TC-DEL,RAL 9003
DAV401722662000	DOWNLIGHT 215 SB	2x26W,TC-DEL,RAL 9003
DAV401813262000	DOWNLIGHT 215 SB	1x32W,TC-TEL,RAL 9003
DAV401814262000	DOWNLIGHT 215 SB	1x42W,TC-TEL,RAL 9003
DAV401823262000	DOWNLIGHT 215 SB	2x32W,TC-TEL,RAL 9003

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41 - MAT

42 - FACET

DOWNLIGHT 225 SB		
DBA401311812000	DOWNLIGHT 225 SB	1x18W,TC-D,RAL 9003
DBA401312612000	DOWNLIGHT 225 SB	1x26W,TC-D,RAL 9003
DBA401321812000	DOWNLIGHT 225 SB	2x18W,TC-D,RAL 9003
DBA401322612000	DOWNLIGHT 225 SB	2x26W,TC-D,RAL 9003
DBA401711862000	DOWNLIGHT 225 SB	1x18W,TC-DEL,RAL 9003
DBA401712662000	DOWNLIGHT 225 SB	1x26W,TC-DEL,RAL 9003
DBA401721862000	DOWNLIGHT 225 SB	2x18W,TC-DEL,RAL 9003
DBA401722662000	DOWNLIGHT 225 SB	2x26W,TC-DEL,RAL 9003
DBA401813262000	DOWNLIGHT 225 SB	1x32W,TC-TEL,RAL 9003
DBA401814262000	DOWNLIGHT 225 SB	1x42W,TC-TEL,RAL 9003
DBA401823262000	DOWNLIGHT 225 SB	2x32W,TC-TEL,RAL 9003

ORDER CODE	TYPE	SPECIFICATION
DBD401311302000	DOWNLIGHT S 211 POLISHED	1x13W,TC-D,RAL 9003
DBD401311802000	DOWNLIGHT S 211 POLISHED	1x18W,TC-D,RAL 9003
DBD401312602000	DOWNLIGHT S 211 POLISHED	1x26W,TC-D,RAL 9003
DBD401321302000	DOWNLIGHT S 211 POLISHED	2x13W,TC-D,RAL 9003
DBD401321802000	DOWNLIGHT S 211 POLISHED	2x18W,TC-D,RAL 9003
DBD401322602000	DOWNLIGHT S 211 POLISHED	2x26W,TC-D,RAL 9003
DBD401711302000	DOWNLIGHT S 211 POLISHED	1x13W,TC-DEL,RAL 9003
DBD401711802000	DOWNLIGHT S 211 POLISHED	1x18W,TC-DEL,RAL 9003
DBD401712602000	DOWNLIGHT S 211 POLISHED	1x26W,TC-DEL,RAL 9003
DBD401721302000	DOWNLIGHT S 211 POLISHED	2x13W,TC-DEL,RAL 9003
DBD401721802000	DOWNLIGHT S 211 POLISHED	2x18W,TC-DEL,RAL 9003
DBD401722602000	DOWNLIGHT S 211 POLISHED	2x26W,TC-DEL,RAL 9003

DOWNLIGHT S 221		
DBE401311802000	DOWNLIGHT S 221 POLISHED	1x18W,TC-D,RAL 9003
DBE401312602000	DOWNLIGHT S 221 POLISHED	1x26W,TC-D,RAL 9003
DBE401321802000	DOWNLIGHT S 221 POLISHED	2x18W,TC-D,RAL 9003
DBE401322602000	DOWNLIGHT S 221 POLISHED	2x26W,TC-D,RAL 9003
DBE401711802000	DOWNLIGHT S 221 POLISHED	1x18W,TC-DEL,RAL 9003
DBE401712602000	DOWNLIGHT S 221 POLISHED	1x26W,TC-DEL,RAL 9003
DBE401721802000	DOWNLIGHT S 221 POLISHED	2x18W,TC-DEL,RAL 9003
DBE401722602000	DOWNLIGHT S 221 POLISHED	2x26W,TC-DEL,RAL 9003
DBE401813202000	DOWNLIGHT S 221 POLISHED	1x32W,TC-TEL,RAL 9003
DBE401814202000	DOWNLIGHT S 221 POLISHED	1x42W,TC-TEL,RAL 9003
DBE401823202000	DOWNLIGHT S 221 POLISHED	2x32W,TC-TEL,RAL 9003

DOWNLIGHT S 212		
DBF401311302000	DOWNLIGHT S 212	1x13W,TC-D,RAL 9003
DBF401311802000	DOWNLIGHT S 212	1x18W,TC-D,RAL 9003
DBF401312602000	DOWNLIGHT S 212	1x26W,TC-D,RAL 9003
DBF401321302000	DOWNLIGHT S 212	2x13W,TC-D,RAL 9003
DBF401321802000	DOWNLIGHT S 212	2x18W,TC-D,RAL 9003
DBF401322602000	DOWNLIGHT S 212	2x26W,TC-D,RAL 9003
DBF401711302000	DOWNLIGHT S 212	1x13W,TC-DEL,RAL 9003
DBF401711802000	DOWNLIGHT S 212	1x18W,TC-DEL,RAL 9003
DBF401712602000	DOWNLIGHT S 212	1x26W,TC-DEL,RAL 9003
DBF401721302000	DOWNLIGHT S 212	2x13W,TC-DEL,RAL 9003
DBF401721802000	DOWNLIGHT S 212	2x18W,TC-DEL,RAL 9003
DBF401722602000	DOWNLIGHT S 212	2x26W,TC-DEL,RAL 9003

DOWNLIGHT S 222		
DBG401311802000	DOWNLIGHT S 222	1x18W,TC-D,RAL 9003
DBG401312602000	DOWNLIGHT S 222	1x26W,TC-D,RAL 9003
DBG401321802000	DOWNLIGHT S 222	2x18W,TC-D,RAL 9003
DBG401322602000	DOWNLIGHT S 222	2x26W,TC-D,RAL 9003
DBG401711802000	DOWNLIGHT S 222	1x18W,TC-DEL,RAL 9003
DBG401712602000	DOWNLIGHT S 222	1x26W,TC-DEL,RAL 9003
DBG401721802000	DOWNLIGHT S 222	2x18W,TC-DEL,RAL 9003
DBG401722602000	DOWNLIGHT S 222	2x26W,TC-DEL,RAL 9003
DBG401813202000	DOWNLIGHT S 222	1x32W,TC-TEL,RAL 9003
DBG401814202000	DOWNLIGHT S 222	1x42W,TC-TEL,RAL 9003
DBG401823202000	DOWNLIGHT S 222	2x32W,TC-TEL,RAL 9003

DOWNLIGHT S 214		
DBH481311302000	DOWNLIGHT S 214 CROSS LOUVRE	1x13W,TC-D,RAL 9003
DBH481311802000	DOWNLIGHT S 214 CROSS LOUVRE	1x18W,TC-D,RAL 9003
DBH481312602000	DOWNLIGHT S 214 CROSS LOUVRE	1x26W,TC-D,RAL 9003
DBH481321302000	DOWNLIGHT S 214 CROSS LOUVRE	2x13W,TC-D,RAL 9003
DBH481321802000	DOWNLIGHT S 214 CROSS LOUVRE	2x18W,TC-D,RAL 9003
DBH481322602000	DOWNLIGHT S 214 CROSS LOUVRE	2x26W,TC-D,RAL 9003
DBH481711302000	DOWNLIGHT S 214 CROSS LOUVRE	1x13W,TC-DEL,RAL 9003
DBH481711802000	DOWNLIGHT S 214 CROSS LOUVRE	1x18W,TC-DEL,RAL 9003
DBH481712602000	DOWNLIGHT S 214 CROSS LOUVRE	1x26W,TC-DEL,RAL 9003
DBH481721302000	DOWNLIGHT S 214 CROSS LOUVRE	2x13W,TC-DEL,RAL 9003
DBH481721802000	DOWNLIGHT S 214 CROSS LOUVRE	2x18W,TC-DEL,RAL 9003
DBH481722602000	DOWNLIGHT S 214 CROSS LOUVRE	2x26W,TC-DEL,RAL 9003

DOWNLIGHT S 224		
DBI481311802000	DOWNLIGHT S 224 CROSS LOUVRE	1x18W,TC-D,RAL 9003
DBI481312602000	DOWNLIGHT S 224 CROSS LOUVRE	1x26W,TC-D,RAL 9003
DBI481321802000	DOWNLIGHT S 224 CROSS LOUVRE	2x18W,TC-D,RAL 9003
DBI481322602000	DOWNLIGHT S 224 CROSS LOUVRE	2x26W,TC-D,RAL 9003
DBI481711802000	DOWNLIGHT S 224 CROSS LOUVRE	1x18W,TC-DEL,RAL 9003
DBI481712602000	DOWNLIGHT S 224 CROSS LOUVRE	1x26W,TC-DEL,RAL 9003
DBI481721802000	DOWNLIGHT S 224 CROSS LOUVRE	2x18W,TC-DEL,RAL 9003
DBI481722602000	DOWNLIGHT S 224 CROSS LOUVRE	2x26W,TC-DEL,RAL 9003
DBI481813202000	DOWNLIGHT S 224 CROSS LOUVRE	1x32W,TC-TEL,RAL 9003
DBI481814202000	DOWNLIGHT S 224 CROSS LOUVRE	1x42W,TC-TEL,RAL 9003
DBI481823202000	DOWNLIGHT S 224 CROSS LOUVRE	2x32W,TC-TEL,RAL 9003

SEPARATE GEAR BOX		
DAX001311300000	DOWNLIGHT SEPARATE GEAR BOX	1x13W,TC-D,CCG B2
DAX001311800000	DOWNLIGHT SEPARATE GEAR BOX	1x18W,TC-D,CCG B2
DAX001321300000	DOWNLIGHT SEPARATE GEAR BOX	2x13W,TC-D,CCG B2
DAX001321800000	DOWNLIGHT SEPARATE GEAR BOX	2x18W,TC-D,CCG B2
DAX001322600000	DOWNLIGHT SEPARATE GEAR BOX	2x26W,TC-D,CCG B2
DAX001711300000	DOWNLIGHT SEPARATE GEAR BOX	1x13W,TC-DEL,ECG A2
DAX001711800000	DOWNLIGHT SEPARATE GEAR BOX	1x18W,TC-DEL,ECG A2
DAX001721300000	DOWNLIGHT SEPARATE GEAR BOX	2x13W,TC-DEL,ECG A2
DAX001721800000	DOWNLIGHT SEPARATE GEAR BOX	2x18W,TC-DEL,ECG A2
DAX001722600000	DOWNLIGHT SEPARATE GEAR BOX	2x26W,TC-DEL,ECG A2
DAX001823280000	DOWNLIGHT SEPARATE GEAR BOX	2x32W,TC-TEL,ECG A2

XXXXXXXXXXXXXX

9 - ECG DIM 1-10V

A - ECG DIM DSI

B - ECG DALI

XXXXXXXXXXXXXX

EW1 - Wieland connector

DOWNLIGHT PRO HID		
DB4072013500000	DOWNLIGHT PRO HID	1x35/70/150W,Hi,G12,RAL 9010

DOWNLIGHT 251		
DB4402017002ET0	DOWNLIGHT 251 POLISHED	1x70W,Hi, RX7s, RAL 9003
DB4402011K02ET0	DOWNLIGHT 251 POLISHED	1x150W,Hi, RX7s, RAL 9003



ORDER CODE	TYPE	SPECIFICATION
DB4402013502000	DOWNLIGHT 251 POLISHED	1x35/70/150W,HI, G12,RAL 9003
<b>DOWNLIGHT 252</b>		
DB5402017002000	DOWNLIGHT 252	1x70W,HI,RX 7s,RAL 9003
DB5402011K02000	DOWNLIGHT 252	1x150W,HI,RX 7s,RAL 9003
<b>DOWNLIGHT 253 FLEXI</b>		
DB6402013502000	DOWNLIGHT 253 FLEXI	1x35/70/150W,HI,G12,RAL 9003
<b>DOWNLIGHT 254 FLEXI</b>		
DB7402017002000	DOWNLIGHT 254 POLISH FLEXI	1x70W,HI,RX 7s,RAL 9003
DB7402011K02000	DOWNLIGHT 254 POLISH FLEXI	1x150W,HI,RX 7s,RAL 9003
<b>SEPARATE GEAR BOX HID</b>		
DAY002013510000	DOWNLIGHT SEPARATE GEAR BOX HID	1x35W,HI,CCG
DAY002013560000	DOWNLIGHT SEPARATE GEAR BOX HID	1x35W,HI,ECG
DAY002017010000	DOWNLIGHT SEPARATE GEAR BOX HID	1x70W,HI,CCG
DAY002017060000	DOWNLIGHT SEPARATE GEAR BOX HID	1x70W,HI,ECG
DAY002011K10000	DOWNLIGHT SEPARATE GEAR BOX HID	1x150W,HI,CCG
DAY002011K60000	DOWNLIGHT SEPARATE GEAR BOX HID	1x150W,HI,ECG





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TUBUS



# TUBUS

## TUBUS

**Svietidlá Tubus sú určené pre inštaláciu na stropy ako prisadené svietidlá. Ponúkajú bohaté príslušenstvo a rôzne typy optických systémov.**

### KONŠTRUKCIA

**Teleso svietidla:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela), iná povrchová úprava - RAL 7001 (strieborná šedá), chrómová alebo zlatá je možná na požiadanie

**Reflektor:** lesklý hliník

**Kryt reflektora (rad 292):** kalené pieskované sklo

**Obruč (rad 292):** hliníkový odliatok, povrchovo upravený elektrostaticky nanášanou práškovou farbou RAL 9003 (signálna biela)

Uchytenie svietidla na strop je vyriešené prostredníctvom držiaka v ktorom sú dva otvory pre skrutky. Obruč s krycím sklom (rad 292) sa k telu svietidla uchyťava pootočením v dvoch fixačných bodoch. Mriežka (rad 294) je v svietidlách uchytená pomocou trooch pružín, dekoratívne sklo (rad 293) je prichytené k svietidlu prostredníctvom troch dekoračných skrutiek. Tieto systémy uchytenia umožňujú rýchlu beznástrojovú výmenu svetelných zdrojov.

Bližší popis jednotlivých typov optiky je uvedený na stranách 180-183, v kapitole OPTICS.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá nie sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: kompaktné žiarivky TC-D/TC-DEL a TC-T/TC-TEL (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- svietidlá je na požiadanie možné vybaviť núdzovou jednotkou s 1 hodinovou autonómnou prevádzkou (len verzie ECG)

### PRÍSLUŠENSTVO

- široká ponuka dekoračných prvkov a skiel (bližší popis v časti Downlight and Tubus accessories)

## TUBUS

The Tubus range of light fixtures is designed for ceiling installations as surface mounted lighting fittings. It offers a wide range of accessories and various types of optical systems.

### CONSTRUCTION

**Housing:** sheet steel, electrostatic powder coat finish – basic shade RAL 9003 (signal white), other finishes - RAL 7001 (white aluminium), chrome or gold on request

**Reflector:** polished aluminium

**Reflector cover (292 range):** hardened, sandblasted glass

**Ring (292 range):** aluminium casting, electrostatic powder coat finish RAL 9003 (signal white)

Ceiling attachment of the light fixture is done using a holder containing two openings for screws. The cover glass ring (292 range) is attached to the body using a twist at the two points of fixation. The grid (294 range) is attached using three springs and the decorative glass (293 range) is attached using three decorative screws. These attachment systems allow fast, tool-free lamp replacement. Further description of individual optic types is listed on pages 180-183, in section OPTICS.

### WIRING

Light fixtures can be equipped with:

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, light fixtures are not standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

**Other components:**

- lamps: compact fluorescent lamps TC-D/TC-DEL and TC-T/TC-TEL (lamps must be ordered separately)
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> diameter
- a screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- an emergency version of light fixtures with autonomous operation of 1 hour is available on request (only EVG versions)

### ACCESSORIES

- a wide range of decorative elements and glass types (detailed description in Downlight and Tubus Accessories chapters)

## TUBUS

Die Tubus-Leuchten sind zum Einbau in die Decken als Anbauleuchten bestimmt. Sie bieten ein breites Zubehör und verschiedene Typen der optischen Systeme an.

### KONSTRUKTION

**Leuchtenkörper:** Stahlblech, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9003 (Signalweiß), andere Oberflächenbehandlung - RAL 7001 (Silbergrau), Chrom- oder Gold oberflächenbehandlung ist auf Wunsch möglich

**Reflektor:** glänzendes Aluminium

**Reflektordeckel (Reihe 292):** sandgestrahltes Hartglas

**Einfassung (Reihe 292):** Aluminiumguß, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe RAL 9003 (Signalweiß)

Leuchte werden in die Decke mit einem Halter befestigt, in dem es zwei Öffnungen für Schrauben gibt. Die Einfassung mit Deckglas (Reihe 292) wird an Leuchtenkörper mit kleiner Drehung in zwei Fixierungspunkten befestigt. Der Raster (Reihe 294) ist an die Leuchte mit drei Federn befestigt, Dekorglas (Reihe 293) ist zur Leuchte mit drei Dekorationsschrauben befestigt. Diese Befestigungssysteme ermöglichen schnellen Austausch der Lichtquellen ohne Werkzeug.

Nähere Beschreibung von einzelnen Optiktypen ist an Seiten 180-183 in OPTICS Anlage angeführt.

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten können wie folgt ausgerüstet sein:

- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, Klasse EEI=B1 auf Wunsch, Leuchten sind nicht standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

**Andere Komponente:**

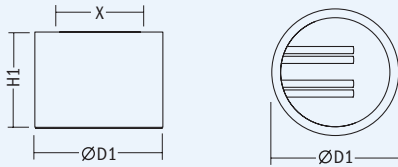
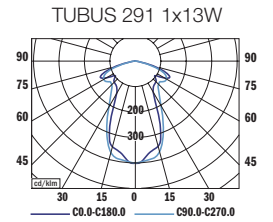
- Lichtquellen: kompakte Leuchtstofflampen TC-D/TC-DEL und TC-T/TC-TEL (die Lichtquellen sind extra zu bestellen)
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht, Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Leuchte können auf Wunsch mit einer Noteinheit mit Autonombetrieb von 1 Stunde ausgerüstet werden (nur ECG version)

### ZUBEHÖR

- ein breites Angebot von Dekorationselementen und Gläsern (eine nähere Beschreibung im Teil Downlight and Tubus accessories)

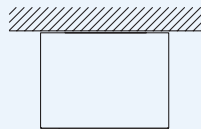
# TUBUS

## 291 TC-D/TC-DEL/TC-T/TC-TEL



	OPTIC POLISHED	POWER	LAMP	DIMENSIONS		FIXING X
				D1	H1	
Tubus 291	•	1x13	TC-D,TC-DEL	230	175	130
Tubus 291	•	1x18	TC-D,TC-DEL	230	175	130
Tubus 291	•	1x26	TC-D,TC-DEL	230	175	130
Tubus 291	•	2x13	TC-D,TC-DEL	230	175	130
Tubus 291	•	2x18	TC-D,TC-DEL	230	175	130
Tubus 291	•	2x26	TC-T,TC-TEL	230	175	130

INSTALLATION



TUBUS 291 2x13W



1x... CR



2x...

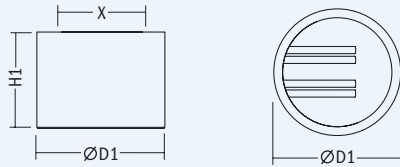
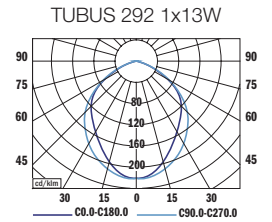


BR



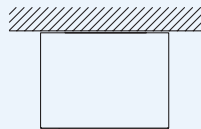
# TUBUS

## 292 TC-D/TC-DEL/TC-T/TC-TEL



	OPTIC POLISHED	POWER	LAMP	DIMENSIONS		FIXING X
				D1	H1	
Tubus 292	•	1x13	TC-D,TC-DEL	227	176	130
Tubus 292	•	1x18	TC-D,TC-DEL	227	176	130
Tubus 292	•	1x26	TC-D,TC-DEL	227	176	130
Tubus 292	•	2x13	TC-D,TC-DEL	227	176	130
Tubus 292	•	2x18	TC-D,TC-DEL	227	176	130
Tubus 292	•	2x26	TC-T,TC-TEL	227	176	130

INSTALLATION



TUBUS 292 2x13W

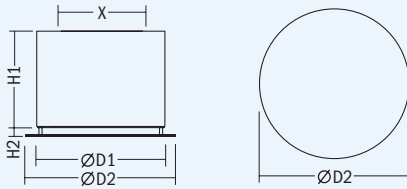
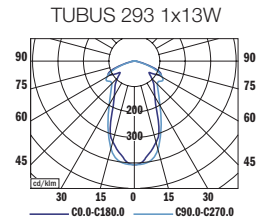




# TUBUS

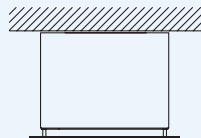
## 293 TC-D/TC-DEL/TC-T/TC-TEL

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-D G 24d	TC-DEL G 24q	TC-T GX24d	TC-TEL GX24q	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP 20
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	OPTIC POLISHED	POWER	LAMP	DIMENSIONS				FIXING X
				D1	D2	H1	H2	
Tubus 293	•	1x13	TC-D,TC-DEL	230	276	175	19	130
Tubus 293	•	1x18	TC-D,TC-DEL	230	276	175	19	130
Tubus 293	•	1x26	TC-D,TC-DEL	230	276	175	19	130
Tubus 293	•	2x13	TC-D,TC-DEL	230	276	175	19	130
Tubus 293	•	2x18	TC-D,TC-DEL	230	276	175	19	130
Tubus 293	•	2x26	TC-T,TC-TEL	230	276	175	19	130

INSTALLATION



TUBUS 293 2x13W



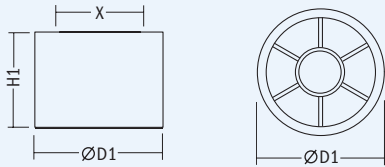
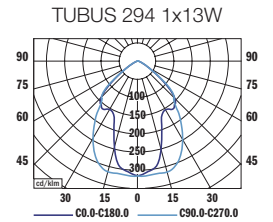
See DOWNLIGHT/TUBUS fittings



# TUBUS

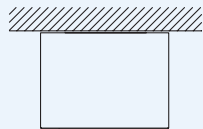
## 294 TC-D/TC-DEL/TC-T/TC-TEL

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-D G 24d	TC-DEL G 24g	TC-T GX24d	TC-TEL GX24q	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	AAAA ECG 1-10 EEI-A1	AAAA ECG 10-20 EEI-A1	AAAA ECG DALI EEI-A1	EMERGENCY	F	IP 20
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	OPTIC POLISHED	POWER	LAMP	DIMENSIONS		FIXING
				D1	H1	X
Tubus 294	•	1x13	TC-D,TC-DEL	230	175	130
Tubus 294	•	1x18	TC-D,TC-DEL	230	175	130
Tubus 294	•	1x26	TC-D,TC-DEL	230	175	130
Tubus 294	•	2x13	TC-D,TC-DEL	230	175	130
Tubus 294	•	2x18	TC-D,TC-DEL	230	175	130
Tubus 294	•	2x26	TC-T,TC-TEL	230	175	130

INSTALLATION



TUBUS 294 2x13W





1

6

4

7



# TUBUS



## 291 TC-DEL DIMMING ELECTRONIC CONTROL GEAR

- 1** Reflektor  
Reflector  
Spiegelreflektor
- 2** Teleso svetidla  
Housing  
Leuchtenkörper
- 3** Inštaláčny držiak  
Housing holder  
Körperhalter
- 4** Päťica  
Lampholder  
Lampenhalter
- 5** Svorkovnica  
Terminal block  
Anschlussklemme
- 6** Vodič  
Cable  
Kabel
- 7** Stmievateľný elektronický predradník  
Dimming electronic ballast  
Dimbare Elektronik



# TUBUS

## PRO

### TUBUS PRO

Svietidlá Tubus PRO sú určené pre inštaláciu na stropy ako prisadené svietidlá. Svetidlá Tubus PRO Pendant sú závesné svietidlá určené pre inštaláciu na lankách. Kombinácia svietidla Tubus PRO a difúzora z pieskovaného skla, pod ktorým je umiestnený ďalší svetelný zdroj, zabezpečuje priamo/nepriamu distribúciu svetelného toku a príjemný dekoratívny vzhľad svietidla.

#### KONŠTRUKCIA

**Teleso svietidla:** hliníkový výlisok, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9010 (čistá biela), RAL 9006 (biely hliník) na požiadanie

**Reflektor:** fazetový hliník

**Obruč:** hliníkový odliatok, povrchovo upravený elektrostaticky nanášanou práškovou farbou RAL 9010 (čistá biela)

**Inštaláčna doska:** pozinkovaný plech, držiaky proti vytrhnutiu vodičov zo svorkovnice, dve gumené prechodky pre vodiče (možná priebežná montáž)

**Vrchný difúzor (rad Pro Pendant):** kalené pieskované sklo

Uchytenie svietidla na strop (rad PRO) je vyriešené prostredníctvom troch otvorov na inštaláčnej doske. Obruč sa k telu svietidla uchyťava pootočením v troch fixačných bodoch. Svetidlo PRO Pendant je zavesené prostredníctvom štandardného závesného príslušenstva.

Vyhotovenie svietidla umožňuje rýchlu beznástrojovú výmenu svetelných zdrojov.

#### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- elektronickými predradníkmi pre žiarivky, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi pre žiarivky, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)
- elektronickými predradníkmi pre výbojky

**Ostatné komponenty:**

- svetelné zdroje: kompaktné žiarivky TC-TEL, metal-halogenidové výbojky HIT (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- svietidlá je na požiadanie možné vybaviť núdzovou jednotkou s 1 hodinovou autonómnou prevádzkou

#### PRÍSLUŠENSTVO

- rôzne typy pieskovaných skiel pre rad PRO Pendant
- široká ponuka dekoračných prvkov a skiel (bližší popis v časti PRO ACCESSORIES 138/139)
- široká ponuka krycích skiel identických s krycimi sklami pre svietidlo Downlight PRO 212 (strana 135)

## TUBUS PRO

The Tubus PRO range is designed for ceiling installations as surface mounted light fixtures. The Tubus PRO Pendant are pendant light fixtures designed for suspended installations on wires. The combination of the Tubus PRO light fixtures and a sandblasted glass diffuser, which covers the light source, provides direct/indirect distribution of the light beam and a convenient decorative appearance for the light fixture.

### CONSTRUCTION

**Housing:** aluminium casting, electrostatic powder coat finish – basic shade RAL 9010 (pure white), RAL 9006 (white aluminium) on request

**Reflector:** facet aluminium

**Ring:** aluminium casting, electrostatic powder coat finish RAL 9010 (pure white)

**Installation plate:** galvanised sheet metal, holders to prevent the conductors from loosening off the connection box, two rubber reducing adapters for the conductors (through wiring possible)

**Top diffuser (Pro Pendant range):** hardened, sandblasted glass

Ceiling attachment of the light fixture (PRO range) is done using three openings in the installation plate. The ring is attached to the body using a twist at the three points of fixation. The PRO Pendant light fixture is suspended using standard suspension accessories.

Construction of the light fixture allows fast, tool-free lamp replacement.

### WIRING

**Light fixtures can be equipped with:**

- electronic control gears for fluorescent lamps, standard class EEI=A2
- dimmable electronic control gears for fluorescent lamps, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)
- electronic control gears for discharge lamps

**Other components:**

- lamps: compact fluorescent lamps TC-TEL, metal-halide discharge lamps HIT (lamps must be ordered separately)
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- an emergency version of light fixtures with autonomous operation of 1 hour is available on request

### ACCESSORIES

- various types of sandblasted glass for the PRO Pendant range
- a wide range of decorative elements and glass types (detailed description in chapter PRO ACCESSORIES on page 138/139)
- a wide range of glass covers identical as for Downlight PRO 212 (page 135)

## TUBUS PRO

Die Leuchten Tubus PRO sind zum Einbau auf die Decken als Anbauleuchten bestimmt. Die Leuchten Tubus PRO Pendant sind Hängeleuchten, die zur Installation auf Seilen bestimmt sind. Kombination der Leuchte Tubus PRO und des Diffusors aus sandgestrahltem Glas, unter dem eine weitere Lichtquelle angebracht ist, gewährleistet direkte/indirekte Verteilung des Lichtstromes und angenehmes dekoratives Aussehen der Leuchte.

### KONSTRUKTION

**Leuchtenkörper:** Aluminiumpressteil, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9001 (Reinweiß), RAL 9006 (Weißaluminium) auf Wunsch

**Reflektor:** facettiertes Aluminium

**Einfassung:** Aluminiumguß, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe RAL 9010 (Reinweiß)

**Installationsplatte:** verzinktes Blech, Halter gegen Ausreißen der Leiter aus der Klemmleiste, zwei Gummidurchführungen für Leiter (möglicher durchgehender Einbau)

**Oberdiffusor (Reihe Pro Pendant):** sandgestrahltes Hartglas

Leuchte werden in die Decke (Reihe PRO) durch drei Öffnungen in der Installationsplatte befestigt. Die Einfassung wird an Leuchtenkörper mit kleiner Drehung in drei Fixierungspunkten befestigt. Die Leuchte PRO Pendant wird mit einem Standardhängezubehör angehängt.

Die Ausführung der Leuchte ermöglicht schnellen Austausch der Lichtquellen ohne Werkzeug.

### ELEKTRISCHE AUSTRÜSTUNG

**Die Leuchten können wie folgt ausgerüstet sein:**

- mit elektronischen Vorschaltgeräten für Leuchtstofflampen, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten für Leuchtstofflampen, Klasse EE1=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)
- mit elektronischen Vorschaltgeräten für Entladungslampen

**Andere Komponente:**

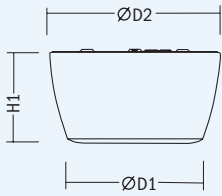
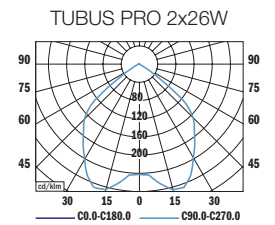
- Lichtquellen: kompakte Leuchtstofflampen TC-TEL, Metall-Halogenid-Entladungslampen HIT (die Lichtquellen sind extra zu bestellen)
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Leuchte können auf Wunsch mit einer Noteinheit mit Autonombetrieb von 1 Stunde ausgerüstet werden

### ZUBEHÖR

- verschiedene Typen der sandgestrahlten Gläser für die Reihe PRO Pendant
- ein breites Angebot von Dekorationselementen und Gläsern (eine nähere Beschreibung im Teil PRO ACCESSORIES an der Seite 138/139)
- ein breites Angebot von Schutzgläsern identisch als für Downlight PRO 212 an der Seite 135

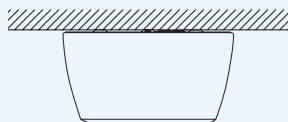
# TUBUS

## PRO FACET TC-TEL/HI



	OPTIC FACET	POWER	LAMP	DIMENSIONS		
				D1	D2	H1
Tubus PRO	•	1x18	TC-TEL	220	280	155
Tubus PRO	•	1x26	TC-TEL	220	280	155
Tubus PRO	•	1x32	TC-TEL	220	280	155
Tubus PRO	•	2x18	TC-TEL	220	280	155
Tubus PRO	•	2x26	TC-TEL	220	280	155
Tubus PRO	•	1x35	HI	220	280	155
Tubus PRO	•	1x70	HI	220	280	155

INSTALLATION



TUBUS PRO

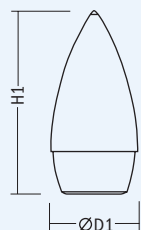
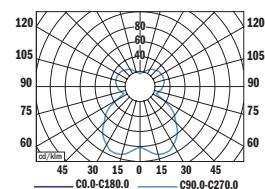


# TUBUS

## PRO PENDANT TC-TEL/HI

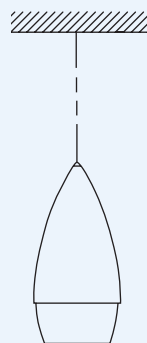


TUBUS PRO PENDANT 2x26+1x57W



	POWER	LAMP	DIMENSIONS	
			D1	H1
Tubus PRO PENDANT	1x35 + 1x57	HI + TC-TEL	292	615
Tubus PRO PENDANT	1x70 + 1x57	HI + TC-TEL	292	615
Tubus PRO PENDANT	2x26 + 1x57	TC-TEL	292	615

INSTALLATION



TUBUS PRO PENDANT





ORDER CODE	TYPE	SPECIFICATION
<b>TUBUS 291</b>		
T01401311332000	TUBUS 291 POLISHED	1x13W,TC-D, CCG B2,RAL 9003
T01401311832000	TUBUS 291 POLISHED	1x18W,TC-D, CCG B2,RAL 9003
T01401312632000	TUBUS 291 POLISHED	1x26W,TC-D, CCG B2,RAL 9003
T01401321332000	TUBUS 291 POLISHED	2x13W,TC-D, CCG B2,RAL 9003
T01401321832000	TUBUS 291 POLISHED	2x18W,TC-D, CCG B2,RAL 9003
T01401711382000	TUBUS 291 POLISHED	1x13W,TC-DEL, ECG A2,RAL 9003
T01401711882000	TUBUS 291 POLISHED	1x18W,TC-DEL, ECG A2,RAL 9003
T01401712682000	TUBUS 291 POLISHED	1x26W,TC-DEL, ECG A2,RAL 9003
T01401721382000	TUBUS 291 POLISHED	2x13W,TC-DEL, ECG A2,RAL 9003
T01401721882000	TUBUS 291 POLISHED	2x18W,TC-DEL, ECG A2,RAL 9003
T01401822682000	TUBUS 291 POLISHED	2x26W,TC-TEL, ECG A2,RAL 9003
<b>TUBUS 292</b>		
T02401311332000	TUBUS 292	1x13W,TC-D, CCG B2,RAL 9003
T02401311832000	TUBUS 292	1x18W,TC-D, CCG B2,RAL 9003
T02401312632000	TUBUS 292	1x26W,TC-D, CCG B2,RAL 9003
T02401321332000	TUBUS 292	2x13W,TC-D, CCG B2,RAL 9003
T02401321832000	TUBUS 292	2x18W,TC-D, CCG B2,RAL 9003
T02401711382000	TUBUS 292	1x13W,TC-DEL, ECG A2,RAL 9003
T02401711882000	TUBUS 292	1x18W,TC-DEL, ECG A2,RAL 9003
T02401712682000	TUBUS 292	1x26W,TC-DEL, ECG A2,RAL 9003
T02401721382000	TUBUS 292	2x13W,TC-DEL, ECG A2,RAL 9003
T02401721882000	TUBUS 292	2x18W,TC-DEL, ECG A2,RAL 9003
T02401822682000	TUBUS 292	2x26W,TC-TEL, ECG A2,RAL 9003
<b>TUBUS 293</b>		
T03401311332000	TUBUS 293	1x13W,TC-D, CCG B2,RAL 9003
T03401311832000	TUBUS 293	1x18W,TC-D, CCG B2,RAL 9003
T03401312632000	TUBUS 293	1x26W,TC-D, CCG B2,RAL 9003
T03401321332000	TUBUS 293	2x13W,TC-D, CCG B2,RAL 9003
T03401321832000	TUBUS 293	2x18W,TC-D, CCG B2,RAL 9003
T03401711382000	TUBUS 293	1x13W,TC-DEL, ECG A2,RAL 9003
T03401711882000	TUBUS 293	1x18W,TC-DEL, ECG A2,RAL 9003
T03401712682000	TUBUS 293	1x26W,TC-DEL, ECG A2,RAL 9003
T03401721382000	TUBUS 293	2x13W,TC-DEL, ECG A2,RAL 9003
T03401721882000	TUBUS 293	2x18W,TC-DEL, ECG A2,RAL 9003
T03401822682000	TUBUS 293	2x26W,TC-TEL, ECG A2,RAL 9003
<b>TUBUS 294</b>		
T04401311332000	TUBUS 294	1x13W,TC-D, CCG B2,RAL 9003
T04401311832000	TUBUS 294	1x18W,TC-D, CCG B2,RAL 9003
T04401312632000	TUBUS 294	1x26W,TC-D, CCG B2,RAL 9003
T04401321332000	TUBUS 294	2x13W,TC-D, CCG B2,RAL 9003
T04401321832000	TUBUS 294	2x18W,TC-D, CCG B2,RAL 9003
T04401711382000	TUBUS 294	1x13W,TC-DEL, ECG A2,RAL 9003
T04401711882000	TUBUS 294	1x18W,TC-DEL, ECG A2,RAL 9003
T04401712682000	TUBUS 294	1x26W,TC-DEL, ECG A2,RAL 9003
T04401721382000	TUBUS 294	2x13W,TC-DEL, ECG A2,RAL 9003
T04401721882000	TUBUS 294	2x18W,TC-DEL, ECG A2,RAL 9003
T04401822682000	TUBUS 294	2x26W,TC-TEL, ECG A2,RAL 9003
<b>TUBUS PRO 200</b>		
T0542181188B000	TUBUS PRO 200	1x18,TC-TEL,ECG A2,RAL 9010
T0542181268B000	TUBUS PRO 200	1x26,TC-TEL,ECG A2,RAL 9010
T0542181328B000	TUBUS PRO 200	1x32,TC-TEL,ECG A2,RAL 9010
T0542182188B000	TUBUS PRO 200	2x18,TC-TEL,ECG A2,RAL 9010
T0542182268B000	TUBUS PRO 200	2x26,TC-TEL,ECG A2,RAL 9010
<b>TUBUS PRO PENDANT</b>		
T0642182C009000	TUBUS PRO PENDANT	1x70W H + 1x57W TC-TEL,ECG A2,RAL 9006
T0642183B189000	TUBUS PRO PENDANT	2x26W + 1x57W,TC-TEL,ECG A2,RAL 9006
XXXXXXXXXXXXXXX		
9 - ECG DIM 1-10V		
A - ECG DIM DSI		
B - ECG DALI		









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# DOWNLIGHT TUBUS ACCESSORIES

GLASS GL 4



GLASS GL 3



GLASS GL 2



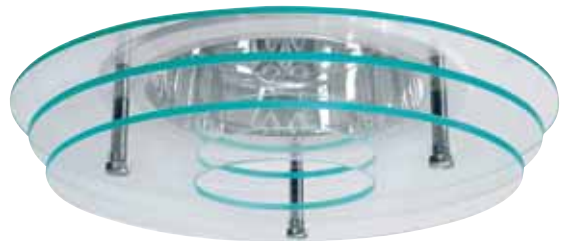
GLASS GL 1



GLASS GL 5



GLASS GL 6



GLASS GL 7



GLASS GL 8



GLASS GL 12



GLASS GL 9 (standard)



GLASS GL 13



GLASS GL 10



GLASS GL 14



GLASS GL 11



GLASS GL 15



GLASS GL 16 (screws N)





GLASS GL 17



GLASS GL 23



GLASS GL 18



GLASS GL 24



GLASS GL 19



GLASS GL 25



GLASS GL 20



GLASS GL 26 (another label on request)



GLASS GL 21



GLASS GL 27 (another label on request)



GLASS GL 22





GLASS GL 29  
(GLASS GL 29 M)



M



GLASS GL 29  
(GLASS GL 29 K)



K



GLASS GL 29  
(GLASS GL 29 N)



N



GLASS GLD





GLASS GL 4GLASS GL 30 8AMETHYST



GLASS GL 3GLASS GL 30 8BLUE



GLASS GL 30 8GREEN



GLASS GL 30 9AMETHYST



GLASS GL 30 8RED



GLASS GL 30 9BLUE



GLASS GL 30 9GREEN



GLASS GL 30 9RED



Blue

Clear

Red

Green



FORM CAN F1



FORM CAN F2



FORM CONE F3



FORM CONE F4



FORM DRUM F5



FORM DRUM F6



FORM CONE F7







RING 50 B



RING 50 R



RING 50 G



RING 50 Y



RING 100 B



RING 100 R



RING 100 G



RING 100 Y









# VARIO

## VARIO

Systém Vario je variabilný osvetľovací systém určený na závesnú montáž pomocou výškovo nastaviteľných lankových závesov. Veľká variabilnosť systému umožňuje spĺňať rôzne požiadavky na dosiahnutie kvalitného osvetlenia, či už sa jedná o hlavné alebo o akcentačné osvetlenie.

Na hliníkové profily je možné pomocou plastových boxov uchytiť svietidlá Modul EXE. Tieto svietidlá ponúkajú voľbu rôznych typov parabolických mriežok ako aj možnosť kombinácie priamo/nepriameho osvetlenia. Zvlášť efektívny nástroj na osvetľovanie stropov je mriežka TWIN so špeciálne tvarovanými pozdĺžnymi lamelami, ktoré usmerňujú svetelný tok rovnomerne smerom nahor. Trojzdrojová varianta svietidla - Vario Square, sa inštaluje pomocou štyroch výškovo nastaviteľných lankových závesov. Varianta svietidla Vario Mini ponúka dve možnosti inštalácie: nástennú (Vario Mini) a závesnú (Vario Modul Mini). Jednotlivé bunky svietidiel v systéme Vario je možné vďaka štyrom kĺbovým mechanizmom natáčať do ľubovoľného smeru. Všetky bodové svetelné zdroje sú k dispozícii v mnohých výkonových variantách a niekoľkých uhloch vyžarovania.

### KONŠTRUKCIA

**Teleso svietidla:** základ systému tvoria dva nosné hliníkové profily, povrchovo upravené elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9006 (biely hliník, jemná štruktúra)

**Koncovky hliníkových profilov:** ABS Cycolac, šedá s kovovým pigmentom

**Spojky profilov:** pozinkovaný plech

**Kĺbové spojky profilov:** ABS Cycolac, šedá s kovovým pigmentom

**Teleso svietidla (Vario Track 11/Vario Track 12/Vario Track 13):** tlakovo liaty hliník, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9006 (biely hliník, jemná štruktúra)

**Mriežky (Vario Track EXE):** lesklé alebo matné hliníkové parabolické mriežky PAR, PAR MAT, PAR DIR/INDIR, PAR MAT DIR/INDIR, TWIN

**Reflektor (Vario Track EXE):** na požiadanie prídavný vrchný reflector pre mriežky PAR (verzia REFLEX)

**Plastové predradné boxy (Vario Track):** dve šírky boxu, ABS Cycolac, šedá s kovovým pigmentom

**Rám svietidla (Vario Square):** hliníkový profil

**Predradný box (Vario Square):** plechový výlisok, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9006 (biely hliník, jemná štruktúra)

**Teleso svietidla (Vario Mini):**

**Inštalácia doska:** pozinkovaný plech, držiaky proti vytrhnutiu vodičov zo svorkovnice, dve gumené prechodky pre vodiče (možná priebežná montáž)

Hliníkové profily je možné spájať priebežne prostredníctvom spojok alebo pod rôznymi uhlami pomocou kĺbov. V hliníkových profiloch je vedená kabeláž ku svietidlám (kabeláž nie je súčasťou dodávky a je potrebné ju objednať zvlášť). Elektronické transformátory alebo predradníky sú umiestnené v plastových boxoch.

Systém Vario umožňuje rýchlu beznástrojovú výmenu všetkých používaných svetelných zdrojov. Bližší popis jednotlivých typov optík je uvedený na konci kapitoly VARIO.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- stmievateľnými T2V elektronickými transformátormi
- elektronickými predradníkmi pre výbojky
- elektronickými predradníkmi pre žiarivky, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi pre žiarivky, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: nízkonapäťové halogénové žiarovky QR 111, metal-halogenidové výbojky CDM-R111, lineárne žiarivky T5 (16mm), vysokosvietiace diódy LED-R111 (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče so spletaným medeným jadrom prierezu 1,5 mm<sup>2</sup> v silikónovej izolácii (teplotná odolnosť do 130°C)
- napájacie vodiče vedúce k plastovým predradným boxom sú ukončené rýchlosvorkami WAGO pre rýchle elektrické pripojenie vodičov prierezu max. 1,5 mm<sup>2</sup>
- svietidlá Modul EXE je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

### PRÍSLUŠENSTVO

- troj alebo päť žilové vedenie s pevným medeným jadrom prierezu 1,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C) pre možnosť priebežnej montáže v hliníkových profiloch, štandardne dĺžky 5m a 10m
- stmievače k halogénovým žiarovkám

## VARIO

The Vario system is a variable lighting system designed for pendant installation using adjustable suspension accessories. The great flexibility of the system enables it to comply with various requirements of quality lighting, whether it is intended as general lighting or accentuated lighting.

Modul EXE light fixtures can be attached to aluminium profiles using plastic boxes. These light fixtures offer the choice of various types of parabolic louvers, as well as possible combinations of direct/indirect lighting. Especially spectacular tool for ceiling lighting is the TWIN louver with specially shaped longitudinal lamellas, which direct the light beam evenly upwards. A three-source variant of the light fixture – Vario Square – is installed using four adjustable wires. The Vario Mini variant provides two installation options: wall-mounted (Vario Mini) and pendant (Vario Modul Mini). Individual light fixture cells in the Vario system can be deflected in any direction thanks to the four jointed mechanisms. All light sources are available in various output variants and several beam angles.

### CONSTRUCTION

**Housing:** the base of the system consists of two supporting aluminium profiles, with an electrostatic powder coat finish – basic shade RAL 9006 (white aluminium, fine structure)

**Aluminium profile ends:** ABS Cyclocac, grey with metal pigment

**Profile connectors:** galvanised metal

**Jointed profile connectors:** ABS Cyclocac, grey with metal pigment

**Light fixture body (Vario Track 11/Vario Track 12/Vario Track 13):** die cast aluminium, with an electrostatic powder coat finish – basic shade RAL 9006 (white aluminium, fine structure).

**Louvers (Vario Track EXE):** polished or matt aluminium parabolic louvers PAR-V, PAR MAT-V, PAR-V DIR/INDIR, PAR MAT-V DIR/INDIR and TWIN

**Reflector (Vario Track EXE):** additional top reflector for PAR louvers (REFLEX version) available on request

**Plastic boxes for control gear (Vario Track):** two widths of box, ABS Cyclocac, grey with metal pigment

**Light fixture frame (Vario Square):** aluminium profile

**Control gear box (Vario Square):** sheet steel, with an electrostatic powder coat finish – basic shade RAL 9006 (white aluminium, fine structure).

**Light fixture body (Vario Mini):**

**Installation plate:** galvanised sheet steel, holders to prevent the conductors from loosening off the connection box, two rubber reducing adapters for the conductors (through wiring possible)

Aluminium profiles can be connected using connectors or under various angles using joints. Aluminium profiles contain cabling for lamps (cabling is not part of delivery and must be ordered separately). Electronic transformers or control gears are situated in plastic boxes.

The Vario system allows fast, tool-free replacement of all used light sources. Further description of the individual types of optics is listed at the end of the VARIO section.

### WIRING

Light fixtures can be equipped with:

- dimmable 12V electronic transformers
- electronic control gears for discharge lamps
- electronic control gears for fluorescent lamps, standard class EEI=A2
- dimmable electronic control gears for fluorescent lamps, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

**Other components:**

- lamps: QR 111 low-voltage halogen lamps, CDM-R111 metal-halide discharge lamps, linear fluorescent lamps T5 (16mm), high-brightness diodes LED-R111 (light sources must be ordered separately)
- flexible copper internal conductors, silicon insulated (heat resistant up to 180°C) with 1.5 mm<sup>2</sup> cross-section
- connection conductors leading to plastic ballast boxes are finished with WAGO clamps for fast electrical connection of conductors of up to 1.5 mm<sup>2</sup> cross-section
- emergency version of Modul EXE light fixtures with autonomous operation of 1 or 3 hours is available on request

### ACCESSORIES

- PVC insulated solid copper three- or five-core conductor with 1.5 mm<sup>2</sup> diameter (heat resistant up to 90°C) for the option of through wiring in aluminium profiles, standard lengths 5m and 10m
- dimmers for halogen lamps

## VARIO

Das System Vario ist ein variables Beleuchtungssystem, das zum Hängeeinbau mit höheneinstellbaren Seilaufhängungen bestimmt ist. Große Systemvariabilität ermöglicht verschiedene Forderungen an die Erreichung der qualitätsvollen Beleuchtung zu erfüllen, ob es um Hauptbeleuchtung oder um Akzentbeleuchtung geht.

An die Aluminiumprofile können mit Kunststoffboxen die Leuchten Modul EXE befestigt werden. Diese Leuchten bieten eine Auswahl an verschiedene parabolische Raster und die Möglichkeit der Kombination direkter/indirekter Beleuchtung an. Ein besonders effektives Mittel zur Beleuchtung der Decken ist der Raster TWIN mit speziell verformten Längslamellen, die den Lichtstrom gleichmäßig nach oben richten. Eine Dreiquellvariante der Leuchte – Vario Square wird mittels vier höheneinstellbarer Seilaufhängungen installiert. Die Variante der Leuchte Vario Mini bietet zwei Möglichkeiten der Installation an: eine Wandinstallation (Vario Mini) und eine Hängeinstallation (Vario Modul Mini). Die einzelnen Zellen der Leuchten im System Vario können dank vier Gelenkgetrieben in beliebige Richtung gedreht werden. Alle punkttartigen Lichtquellen stehen in vielen Leistungsvarianten und einigen Strahlungswinkeln zur Verfügung.

### KONSTRUKTION

**Leuchtenkörper:** die Systemgrundlage bilden zwei Aluminiumtragprofile, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9006 (Weißaluminium, feine Struktur)

**Endstücke der Aluminiumprofile:** ABS Cyclocac, grau mit Metallpigment

**Verbindungen der Profile:** verzinktes Blech

**Gelenkkupplungen der Profile:** ABS Cyclocac, grau mit Metallpigment

**Leuchtenkörper (Vario Track 11/Vario Track 12/Vario Track 13):** Druckgußaluminium, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9006 (Weißaluminium, feine Struktur)

**Raster (Vario Track EXE):** glänzende oder matte parabolische Aluminiumraster PAR-V, PAR MAT-V, PAR-V DIR/INDIR, PAR MAT-V DIR/INDIR, TWIN

**Reflektor (Vario Track EXE):** ein zusätzlicher Oberreflektor für Raster PAR-V (Ausführung REFLEX) auf Wunsch

**Kunststoff-Vorschaltgeräteboxen (Vario Track):** zwei Boxbreiten, ABS Cyclocac, grau mit Metallpigment

**Leuchtenrahmen (Vario Square):** Aluminiumprofil

**Vorschaltbox (Vario Square):** Blechpressteil, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9006 (Weißaluminium, feine Struktur)

**Leuchtenkörper (Vario Mini):**

**Installationsplatte:** verzinktes Blech, Halter gegen Ausreißen der Leiter aus der Klemmleiste, zwei Gummidurchführungen für Leiter (möglicher durchgehender Einbau)

Die Aluminiumprofile können durchlaufend mit Verbindungsstücke oder unter verschiedenen Winkeln mit Gelenke verbunden werden. Die Verkabelung zu den Leuchten wird in den Aluminiumprofilen geführt (die Verkabelung ist kein Bestandteil der Lieferung und sie ist extra zu bestellen). Elektronische Transformator oder Vorschaltgeräte sind in Kunststoffboxen angebracht.

Das System Vario ermöglicht schnellen Austausch aller verwendeten Lichtquellen ohne Werkzeug. Nähere Beschreibung von einzelnen Optiktypen ist am Ende des Teil VARIO angeführt.

### ELEKTRISCHE AUSTRÜSTUNG

Die Leuchten können wie folgt ausgerüstet sein:

- mit elektronischen 12 V-Dimmertransformatoren
- mit elektronischen Vorschaltgeräten für Entladungslampen
- mit elektronischen Vorschaltgeräten für Leuchtstofflampen, standardgemäß der Klasse EEI=A2
- mit dimmbar elektronischen Vorschaltgeräten für Leuchtstofflampen, Klasse EEI=A1 (Vorschaltgeräte können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

**Andere Komponente:**

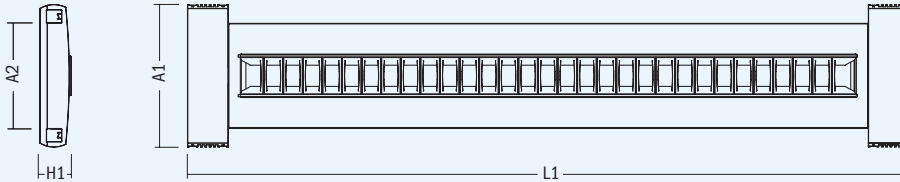
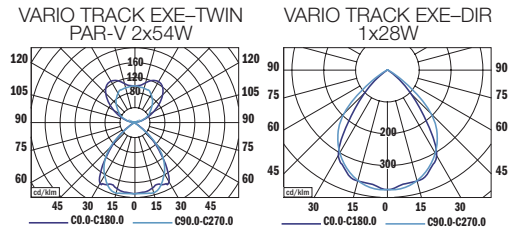
- Lichtquellen: Niederspannung-Halogenlampen QR 111, Metall-Halogenid Entladungslampen CDM-R111, lineare Leuchtstofflampen T5 (16 mm), hoch-hell Dioden LED-R111 (die Lichtquellen sind extra zu bestellen)
- nennleiter mit einem gespeistem Kupferkern mit einem Durchmesser von 1,5 mm<sup>2</sup> in einer Silikonisolierung (Wärmewiderstand bis zu 180°C)
- die zu den Kunststoff-Vorschaltboxen geführten Versorgungsleiter sind mit Schnellklemmen WAGO für schnellen Anschluß der Leiter mit einem Durchmesser von max. 1,5 mm<sup>2</sup> abgeschlossen
- die Modul EXE-Leuchten können auf Wunsch mit Noteinheiten mit Autonombetrieb von 1 oder 3 Stunden ausgerüstet werden

### ZUBEHÖR

- drei- oder fünfadriges Leitung mit festem Kupferkern mit einem Durchmesser von 1,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C) für die Möglichkeit eines durchgehenden Einbaues in Aluminiumprofilen, Standardlängen von 5m und 10m
- Dimm-Modulen zum Halogenlampen

# VARIO

## TRACK EXE/EXE TWIN PAR-V/PAR MAT-V/PAR-V REFLEX/PAR MAT-V REFLEX T5



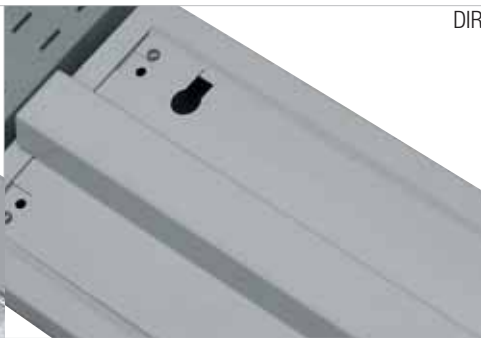
	OPTICS						POWER	LAMP	DIMENSIONS			
	PAR-V	PAR MAT-V	PAR-V REFLEX	PAR MAT-V REFLEX	PAR-V DIR/INDIR	PAR MAT-V DIR/INDIR			A1	A2	L1	H1
VARIO TRACK EXE	•	•	•	•	•	•	1x28	T5	269	200	1362	60
VARIO TRACK EXE	•	•	•	•	•	•	1x54	T5	269	200	1362	60
VARIO TRACK EXE	•	•	•	•	•	•	1x35	T5	269	200	1662	60
VARIO TRACK EXE	•	•	•	•	•	•	1x49	T5	269	200	1662	60
VARIO TRACK EXE	•	•	•	•	•	•	1x80	T5	269	200	1662	60
VARIO TRACK EXE TWIN					•	•	2x28	T5	269	200	1362	60
VARIO TRACK EXE TWIN					•	•	2x54	T5	269	200	1362	60
VARIO TRACK EXE TWIN					•	•	2x35	T5	269	200	1662	60
VARIO TRACK EXE TWIN					•	•	2x49	T5	269	200	1662	60
VARIO TRACK EXE TWIN					•	•	2x80	T5	269	200	1662	60



VARIO TRACK EXE TWIN PAR-V 2x28W



1x...



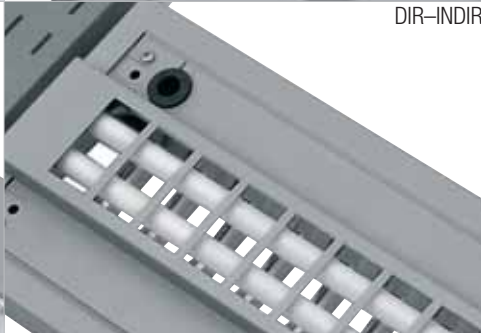
DIR



DIR-INDIR



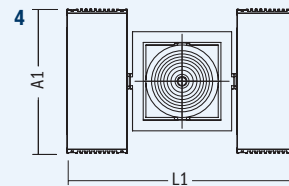
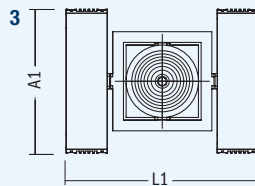
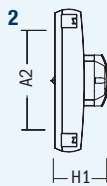
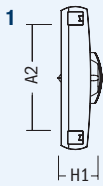
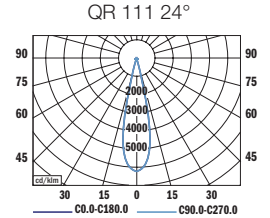
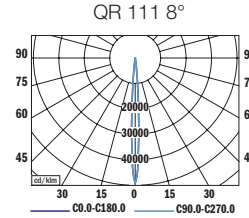
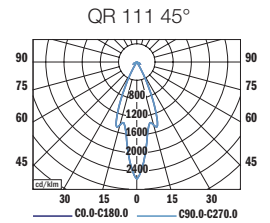
TWIN



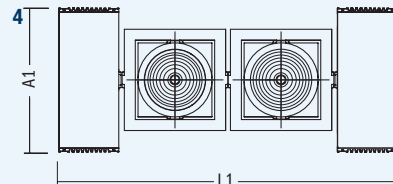
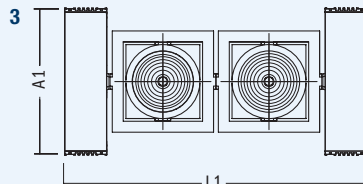
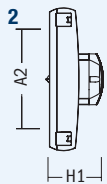
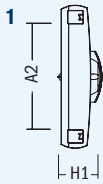
DIR-INDIR

# VARIO

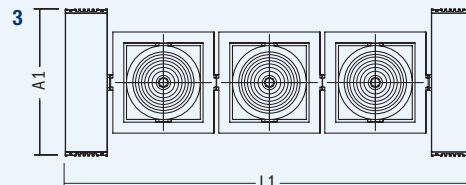
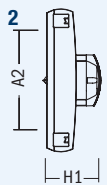
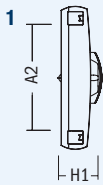
## TRACK 11/12/13 QR 111/CDM-R 111



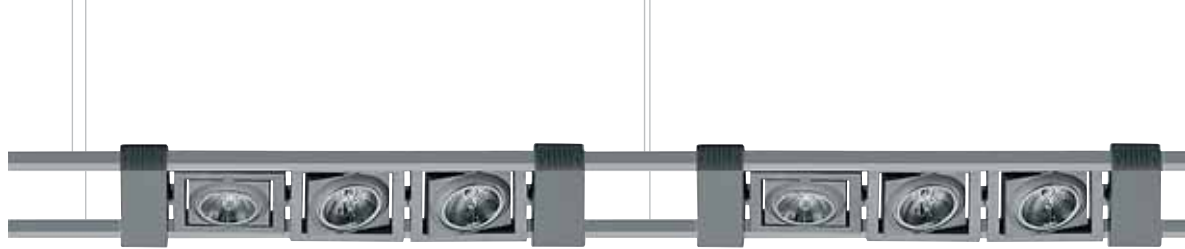
	POWER	LAMP	PICTURE	DIMENSIONS			
				A1	A2	L1	H1
VARIO TRACK 11	1x35	QR 111	1,3	269	200	359	77
VARIO TRACK 11	1x50	QR 111	1,3	269	200	359	77
VARIO TRACK 11	1x75	QR 111	1,3	269	200	359	77
VARIO TRACK 11	1x100	QR 111	1,3	269	200	359	77
VARIO TRACK 11	1x20	CDM-R111	2,3	269	200	359	102
VARIO TRACK 11	1x35	CDM-R111	2,3	269	200	359	102
VARIO TRACK 11	1x70	CDM-R111	2,4	269	200	425	102
VARIO TRACK 11	7x3	LED-R111	1,3	269	200	359	77



	POWER	LAMP	PICTURE	DIMENSIONS			
				A1	A2	L1	H1
VARIO TRACK 12	2x35	QR 111	1,3	269	200	553	77
VARIO TRACK 12	2x50	QR 111	1,3	269	200	553	77
VARIO TRACK 12	2x75	QR 111	1,3	269	200	553	77
VARIO TRACK 12	2x100	QR 111	1,3	269	200	553	77
VARIO TRACK 12	2x20	CDM-R111	2,3	269	200	553	102
VARIO TRACK 12	2x35	CDM-R111	2,3	269	200	553	102
VARIO TRACK 12	2x70	CDM-R111	2,4	269	200	620	102
VARIO TRACK 12	14x3	LED-R111	1,3	269	200	553	77



	POWER	LAMP	PICTURE	DIMENSIONS			
				A1	A2	L1	H1
VARIO TRACK 13	3x35	QR 111	1,3	269	200	746	77
VARIO TRACK 13	3x50	QR 111	1,3	269	200	746	77
VARIO TRACK 13	3x75	QR 111	1,3	269	200	746	77
VARIO TRACK 13	3x100	QR 111	1,3	269	200	746	77
VARIO TRACK 13	3x20	CDM-R111	2,3	269	200	746	102
VARIO TRACK 13	3x35	CDM-R111	2,3	269	200	746	102
VARIO TRACK 13	21x3	LED-R111	1,3	269	200	746	77



VARIO TRACK 13

13



12

QR 111



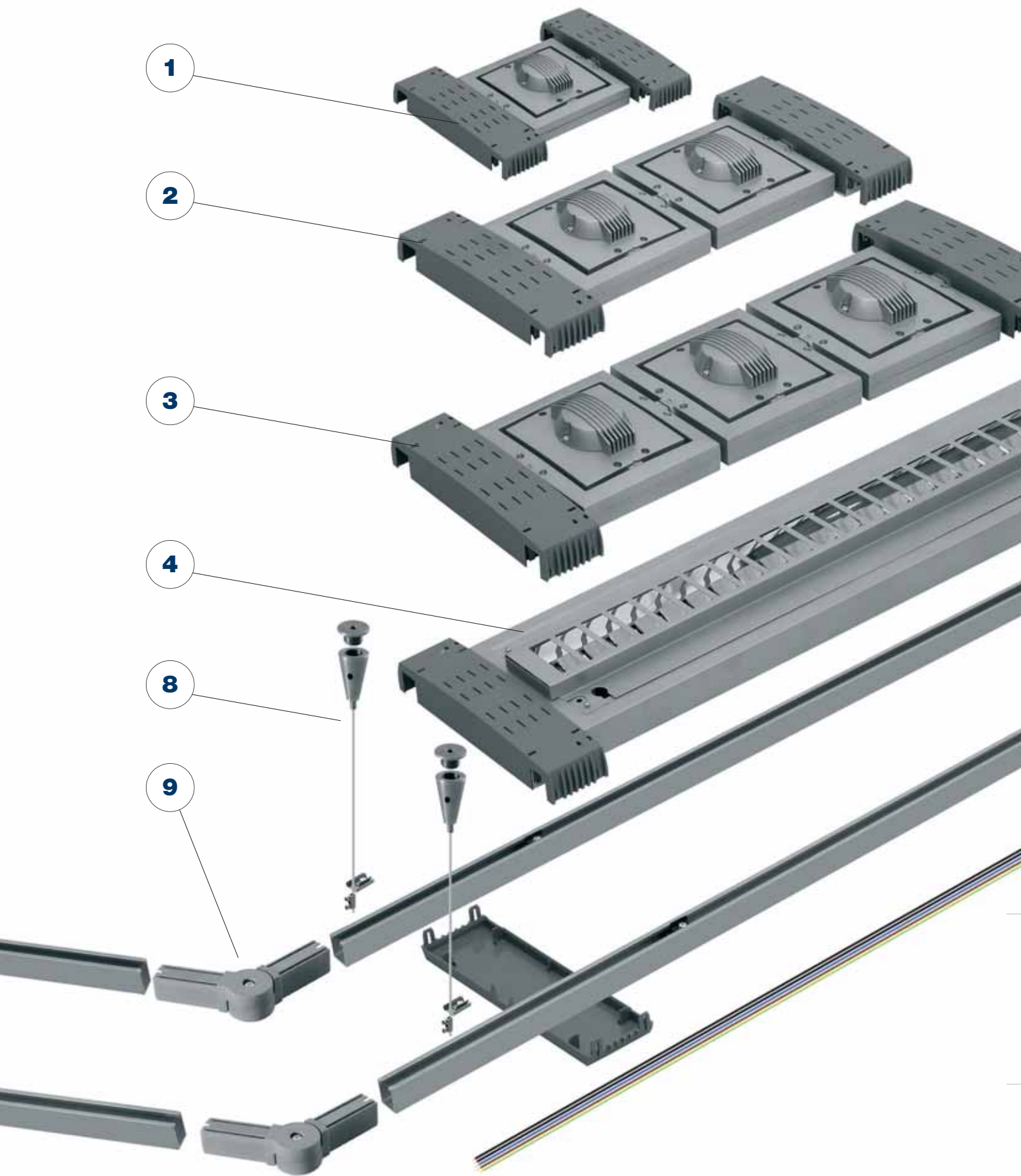
HCI-R111



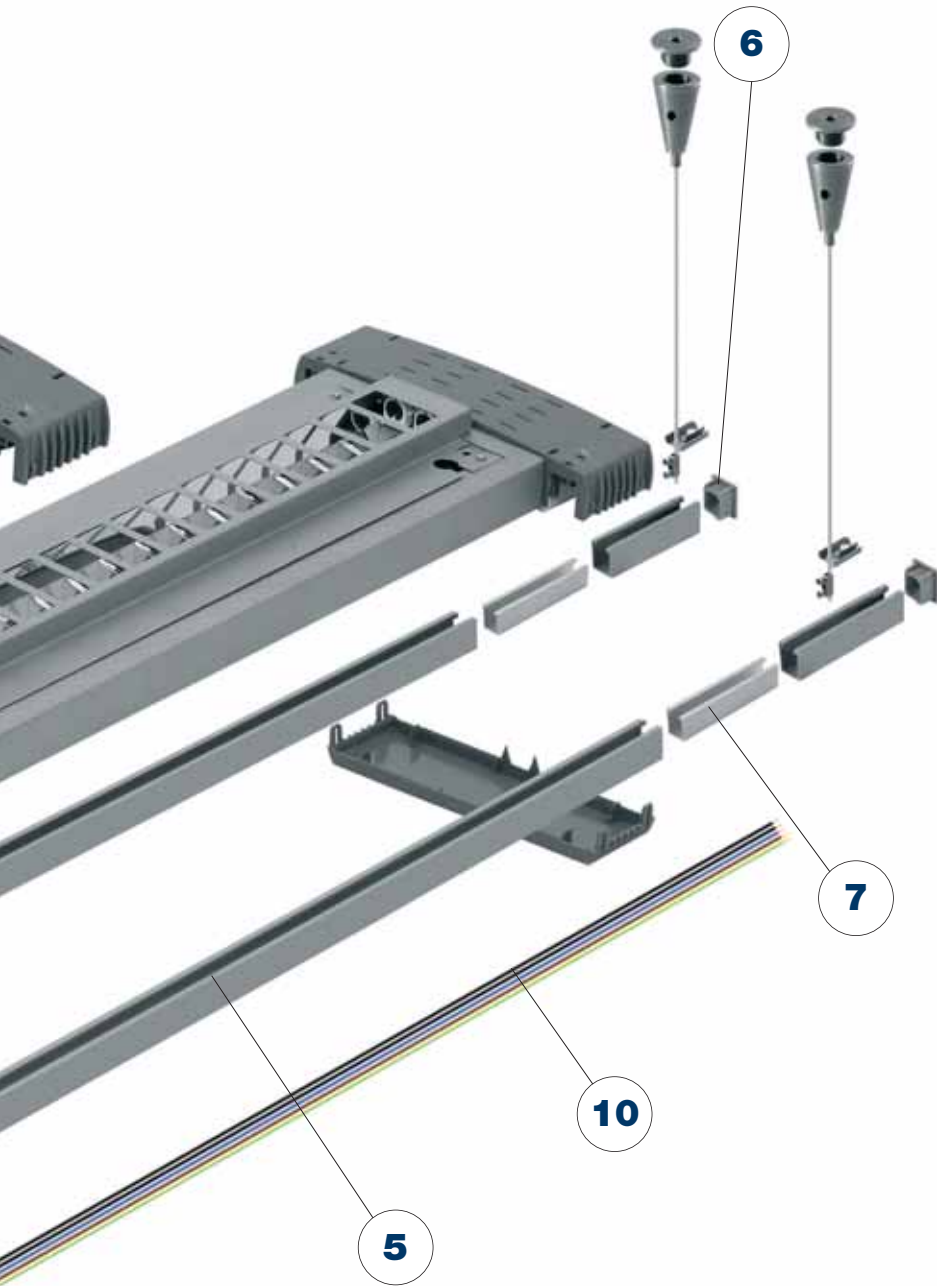
11







# VARIO



## TRACK

- 1** VARIO TRACK 11  
Teleso svietidla  
Housing  
Leuchtenkörper
- 2** VARIO TRACK 12  
Teleso svietidla  
Housing  
Leuchtenkörper
- 3** VARIO TRACK 13  
Teleso svietidla  
Housing  
Leuchtenkörper
- 4** VARIO TRACK EXE  
Teleso svietidla  
Housing  
Leuchtenkörper
- 5** VR  
Nosný profil  
Mounting rail  
Tragschienen
- 6** VRE  
Koncovka profilu  
Mounting rail end  
Tragschienen-Stimseite
- 7** VRC  
Spojka profilu  
Mounting rail connecting piece  
Tragschienen-Verbinder
- 8** VRS  
Lankový záves  
Suspension  
Aufhängemittel
- 9** VRJ  
Kĺbová spojka profilu  
Rail joint  
Gelenk-Kupplung
- 10** VCB  
Vodič  
Cable  
Kabel

VCB



VRE



VRC



VR



VRS



VRJ



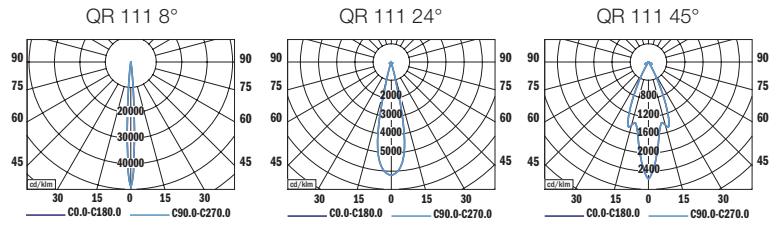
Príslušenstvo – balenie  
Accessory – packing unit  
Zubehör – verpackung

TYPE	PIECES
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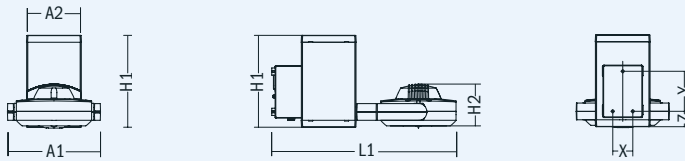
VR I - VARIO RAIL (length 1,5m)	2
VR II - VARIO RAIL (length 3m)	2
VR III - VARIO RAIL (length 4,5m)	2
VRE - VARIO RAIL END PIECE	2
VRC - VARIO RAIL CONNECTING PIECE	2
VRS - VARIO ROPE SUSPENSION	2
VRJ - VARIO RAIL JOINT	2
VCB 3 - VARIO CABLE (length 5m)	1
VCB 3 - VARIO CABLE (length 10m)	1
VCB 5 - VARIO CABLE (length 5m)	1
VCB 5 - VARIO CABLE (length 10m)	1

# VARIO

## MINI 1/2/3 QR 111/CDM-R 111



1



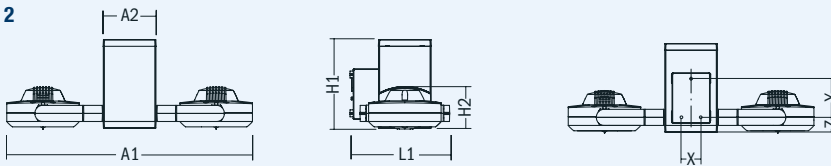
4

5



	POWER	LAMP	PICTURE	DIMENSIONS						FIXING		
				L1	A1	A2	H1	H2	X	Y	Z	
VARIO MINI 1	1x35	QR 111	1,4	331	167	98	165	75	36	72	28	
VARIO MINI 1	1x50	QR 111	1,4	331	167	98	165	75	36	72	28	
VARIO MINI 1	1x75	QR 111	1,4	331	167	98	165	75	36	72	28	
VARIO MINI 1	1x100	QR 111	1,4	331	167	98	165	75	36	72	28	
VARIO MINI 1	1x20	CDM-R 111	1,5	331	167	98	165	100	36	72	28	
VARIO MINI 1	1x35	CDM-R 111	1,5	331	167	98	165	100	36	72	28	
VARIO MINI 1	1x70	CDM-R 111	1,5	331	167	98	165	100	36	72	28	

2



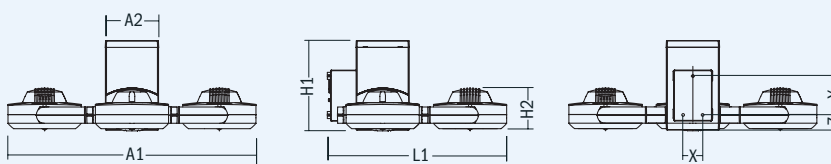
4

5



	POWER	LAMP	PICTURE	DIMENSIONS						FIXING		
				L1	A1	A2	H1	H2	X	Y	Z	
VARIO MINI 2	2x35	QR 111	2,4	186	458	98	165	75	36	72	28	
VARIO MINI 2	2x50	QR 111	2,4	186	458	98	165	75	36	72	28	
VARIO MINI 2	2x75	QR 111	2,4	186	458	98	165	75	36	72	28	
VARIO MINI 2	2x100	QR 111	2,4	186	458	98	165	75	36	72	28	
VARIO MINI 2	2x20	CDM-R 111	2,5	186	458	98	165	100	36	72	28	
VARIO MINI 2	2x35	CDM-R 111	2,5	186	458	98	165	100	36	72	28	

3



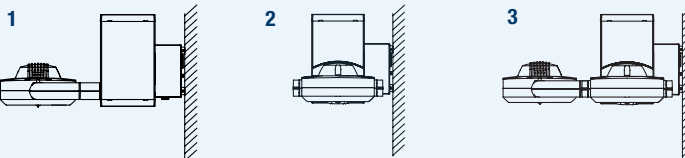
4

5



	POWER	LAMP	PICTURE	DIMENSIONS						FIXING		
				L1	A1	A2	H1	H2	X	Y	Z	
VARIO MINI 3	3x35	QR 111	3,4	331	458	98	165	75	36	72	28	
VARIO MINI 3	3x50	QR 111	3,4	331	458	98	165	75	36	72	28	
VARIO MINI 3	3x75	QR 111	3,4	331	458	98	165	75	36	72	28	
VARIO MINI 3	3x100	QR 111	3,4	331	458	98	165	75	36	72	28	
VARIO MINI 3	3x20	CDM-R 111	3,5	331	458	98	165	100	36	72	28	
VARIO MINI 3	3x35	CDM-R 111	3,5	331	458	98	165	100	36	72	28	

### INSTALLATION





VARIO MINI 1



VARIO MINI 2

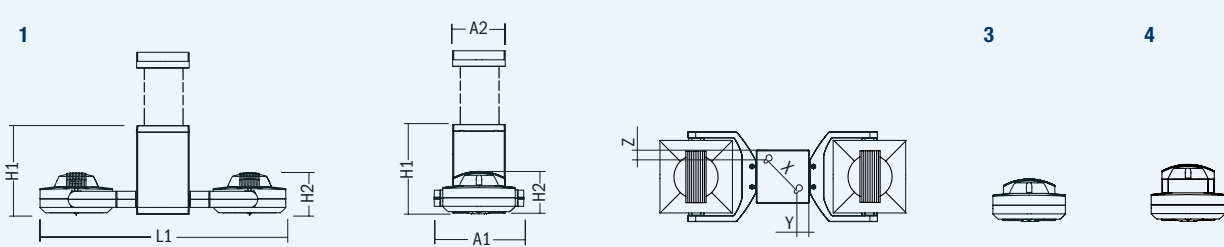
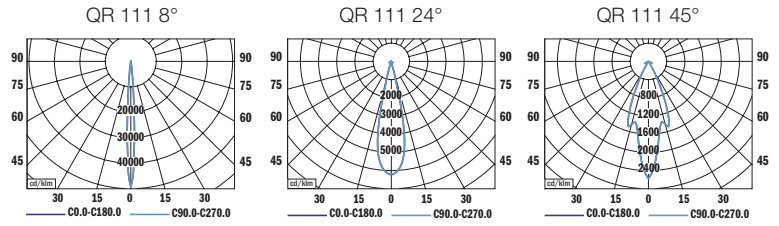


VARIO MINI 3

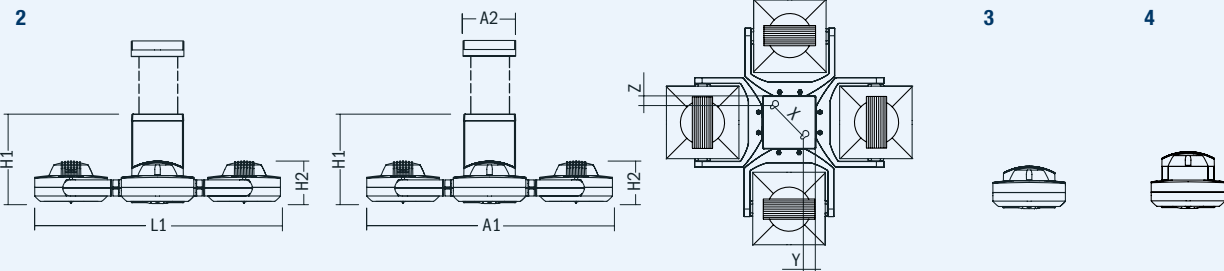


# VARIO

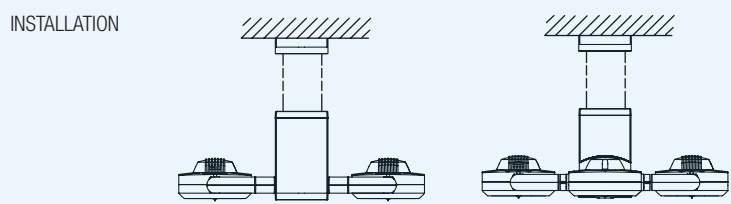
## MODUL MINI 2/4 QR 111/CDM-R 111



	POWER	LAMP	PICTURE	DIMENSIONS					FIXING		
				L1	A1	A2	H1	H2	X	Y	Z
VARIO MODUL MINI 2	2x35	QR 111	1;3	458	176	98	165	75	66	26	26
VARIO MODUL MINI 2	2x50	QR 111	1;3	458	176	98	165	75	66	26	26
VARIO MODUL MINI 2	2x75	QR 111	1;3	458	176	98	165	75	66	26	26
VARIO MODUL MINI 2	2x100	QR 111	1;3	458	176	98	165	75	66	26	26
VARIO MODUL MINI 2	2x20	CDM-R 111	1;4	458	176	98	165	100	66	26	26
VARIO MODUL MINI 2	2x35	CDM-R 111	1;4	458	176	98	165	100	66	26	26



	POWER	LAMP	PICTURE	DIMENSIONS					FIXING		
				L1	A1	A2	H1	H2	X	Y	Z
VARIO MODUL MINI 4	4x35	QR 111	2;3	458	458	98	165	75	66	26	26
VARIO MODUL MINI 4	4x50	QR 111	2;3	458	458	98	165	75	66	26	26
VARIO MODUL MINI 4	4x75	QR 111	2;3	458	458	98	165	75	66	26	26
VARIO MODUL MINI 4	4x100	QR 111	2;3	458	458	98	165	75	66	26	26
VARIO MODUL MINI 4	4x20	CDM-R 111	2;4	458	458	98	165	100	66	26	26
VARIO MODUL MINI 4	4x35	CDM-R 111	2;4	458	458	98	165	100	66	26	26







MODUL MINI 2



MODUL MINI 4



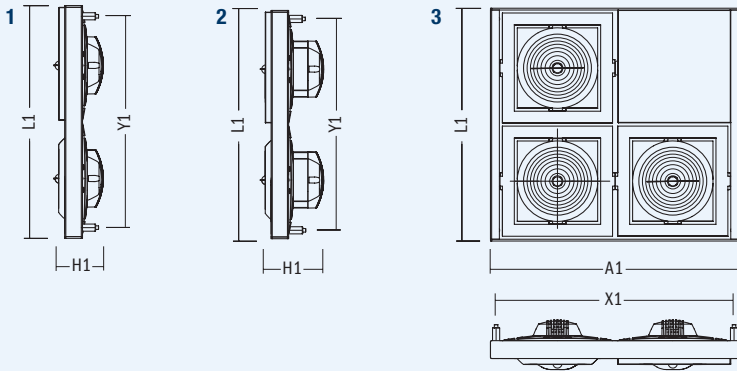
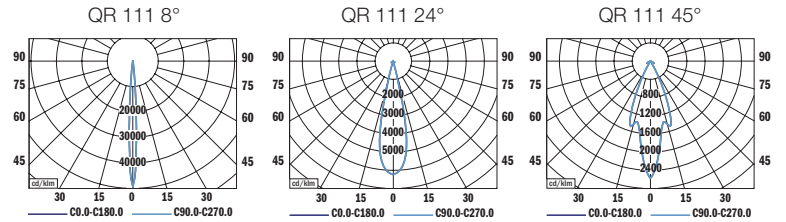


# VARIO

## SQUARE

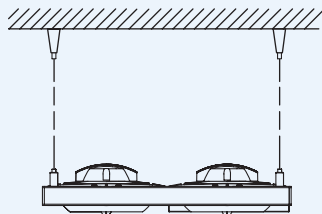
22

### QR 111/CDM-R 111/LED-R 111



	POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
				A1	L1	H1	X1	Y1
VARIO SQUARE	3x35	QR 111	1;3	420	390	77	400	360
VARIO SQUARE	3x50	QR 111	1;3	420	390	77	400	360
VARIO SQUARE	3x75	QR 111	1;3	420	390	77	400	360
VARIO SQUARE	3x100	QR 111	1;3	420	390	77	400	360
VARIO SQUARE	3x20	CDM-R111	2;3	420	390	102	400	360
VARIO SQUARE	3x35	CDM-R111	2;3	420	390	102	400	360
VARIO SQUARE	21x3	LED-R111	1;3	420	390	77	400	360

INSTALLATION





VARIO SQUARE 22

QR 111



HCI-R111



# VARIO

## OPTICS

LAMP	BEAM ANGLE (°)	LUMINOUS INTENSITY (cd)
<b>ceramic metal-halide lamp</b>		
CDM-R111 20W	10	17000
CDM-R111 20W	24	4200
CDM-R111 40W	24	2000
CDM-R111 35W	10	35000
CDM-R111 35W	24	8500
CDM-R111 35W	40	4000
CDM-R111 70W	10	50000
CDM-R111 70W	24	15000
CDM-R111 70W	40	9000
<b>low-voltage halogen lamp</b>		
QR 111 35W	4	35000
QR 111 35W	24	2500
QR 111 50W	4	40000
QR 111 50W	8	20000
QR 111 50W	24	4000
QR 111 50W	45	1400
QR 111 75W	8	30000
QR 111 75W	24	5300
QR 111 75W	45	2000
QR 111 100W	8	48000
QR 111 100W	24	8500
QR 111 100W	45	2800
<b>low-voltage halogen lamp, IRC technology</b>		
QR 111 35W IRC	8	22500
QR 111 35W IRC	24	4500
QR 111 50W IRC	8	33000
QR 111 50W IRC	24	5800
QR 111 50W IRC	45	2000
QR 111 65W IRC	8	45000
QR 111 65W IRC	24	8500
QR 111 65W IRC	45	2800

LAMP	BEAM ANGLE (°)	LUX @1m	BEAM ANGLE DESCRIPTION
<b>LED</b>			
LED-111 7x3W	13	8300	Flat narrow
LED-111 7x3W	36	1680	Flat medium
LED-111 7x3W	42	1280	Flat wide
LED-111 7x3W	60	1000	Flat super wide

Large-diameter low-voltage reflector halogen lamp



Ceramic metal-halide lamp



High Brightness LED spot - 7 x 3W, 700mA

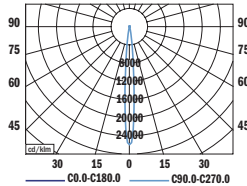


QR 111 lamps have high-purity faceted aluminum reflector with excellent focusing properties and extremely tight beam angles of as little as 4° for enormous luminous intensity so that objects can be highlighted even in bright surroundings. Each lamp has a cap for reduced glare and easy of handling. Customers with higher demands can choose halogen lamps (up to 65W) with IRC technology – these lamps offer energy savings of up to 48% compared with standard QR 111 lamps of the same brightness. Average lamp life also rise up from 3000 to 4000 hours. For better thermal conditions in luminaires, QR 111 lamps help to solve this problem – their aluminium reflector not only directs the light forwards but also the heat. Low-pressure halogen burner technology permits the lamp to be safely used in open luminaires. UV block quartz reduces fading of goods on display.

CDM-R111 metal-halide lamps provides an attractive alternative to the immensely popular QR 111 halogen display lamp. The reflector is of an attractive multi-faceted spun aluminium design and mounted at its focus is the arc tube. The glare shield cap is affixed over the top of the lamp and screens the arc tube from direct view. Beams of light can be produced which have a very sharp cutoff around the edge, and consequently the glaring intensity of the arc tube can only be seen through its reflections in the mirror, these only being visible when staring directly into the beam. The large diameter of the reflector also allows tighter beam angles to be attained with ease, permitting luminaires project their light from greater distances and be positioned out of view. A new GX8.5 cap of the twist-lock style is fitted to the lamp to facilitate replacement at end of life.

Luminous efficacy of LEDs was improved at a rapid rate, making LEDs more and more suitable for general lighting tasks. With luminous flux of 490 - 560 lumen, LED spots are interesting alternative to classic light sources. They are suitable for being built in standard QR 111 downlights. Different lens degrees are available: narrow, middle or wide beam. White LED spots are available as a standard. LED spots are available in 8+8 shades of white with colour temperatures from 2580K to 8000K. On request other LED colours are possible. Their major economic benefits are thanks to very low energy consumption, long life and practically no maintenance.

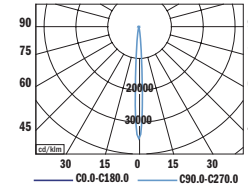
CDM-R111  
35W  
10D



distance(m)	cone diameter(m)	E(lx)
1.0	0.15	E(0°) 36401 E(CO)4.3° 18383
2.0	0.30	E(0°) 9100 E(CO)4.3° 4581
3.0	0.45	E(0°) 4045 E(CO)4.3° 2040
4.0	0.60	E(0°) 2275 E(CO)4.3° 1148
5.0	0.75	E(0°) 1456 E(CO)4.3° 735

half value angle 8.6°

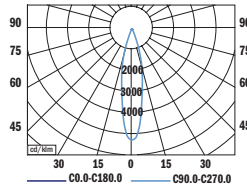
QR 111  
45W  
8D



distance(m)	cone diameter(m)	E(lx)
1.0	0.12	E(0°) 29894 E(CO)8.5° 15048
2.0	0.24	E(0°) 7474 E(CO)8.5° 3762
3.0	0.37	E(0°) 3322 E(CO)8.5° 1672
4.0	0.49	E(0°) 1868 E(CO)8.5° 941
5.0	0.62	E(0°) 1196 E(CO)8.5° 602

half value angle 7.0°

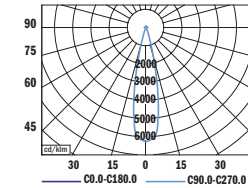
CDM-R111  
35W  
24D



distance(m)	cone diameter(m)	E(lx)
1.0	0.37	E(0°) 8358 E(CO)10.6° 4149
2.0	0.75	E(0°) 2096 E(CO)10.6° 1037
3.0	1.12	E(0°) 932 E(CO)10.6° 461
4.0	1.50	E(0°) 524 E(CO)10.6° 259
5.0	1.87	E(0°) 335 E(CO)10.6° 166

half value angle 21.2°

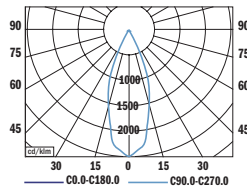
QR 111  
45W  
24D



distance(m)	cone diameter(m)	E(lx)
1.0	0.39	E(0°) 5306 E(CO)11.1° 2617
2.0	0.78	E(0°) 1327 E(CO)11.1° 654
3.0	1.18	E(0°) 590 E(CO)11.1° 291
4.0	1.57	E(0°) 332 E(CO)11.1° 164
5.0	1.96	E(0°) 212 E(CO)11.1° 105

half value angle 22.2°

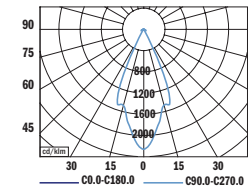
CDM-R111  
35W  
40D



distance(m)	cone diameter(m)	E(lx)
1.0	0.93	E(0°) 4450 E(CO)19.0° 2110
2.0	1.38	E(0°) 1113 E(CO)19.0° 528
3.0	2.07	E(0°) 494 E(CO)19.0° 234
4.0	2.75	E(0°) 278 E(CO)19.0° 132
5.0	3.44	E(0°) 178 E(CO)19.0° 84

half value angle 38.0°

QR 111  
45W  
45D



distance(m)	cone diameter(m)	E(lx)
1.0	0.84	E(0°) 1903 E(CO)22.7° 881
2.0	1.67	E(0°) 476 E(CO)22.7° 220
3.0	2.51	E(0°) 221 E(CO)22.7° 98
4.0	3.35	E(0°) 119 E(CO)22.7° 55
5.0	4.18	E(0°) 76 E(CO)22.7° 35

half value angle 45.4°

ORDER CODE	TYPE	SPECIFICATION	ORDER CODE	TYPE	SPECIFICATION
<b>VARIO TRACK</b>			<b>VARIO MINI 1 QR 111</b>		
<b>VARIO TRACK XX CDM-R111</b>			V060055135FA000	VARIO MINI 1 QR 111	1x35W,ET,RAL 9006s
V0100271206A000	VARIO TRACK 11 CDM-R111	1x20W,ECG,RAL 9006s	V060055150FA000	VARIO MINI 1 QR 111	1x50W,ET,RAL 9006s
V0100271356A000	VARIO TRACK 11 CDM-R111	1x35W,ECG,RAL 9006s	V060055175FA000	VARIO MINI 1 QR 111	1x75W,ET,RAL 9006s
V0100272206A000	VARIO TRACK 12 CDM-R111	2x20W,ECG,RAL 9006s	V06005511AFA000	VARIO MINI 1 QR 111	1x100W,ET,RAL 9006s
V0100273256A000	VARIO TRACK 12 CDM-R111	2x35W,ECG,RAL 9006s	<b>VARIO MINI 2</b>		
V0100273206A000	VARIO TRACK 13 CDM-R111	3x20W,ECG,RAL 9006s	<b>VARIO MINI 2 CDM-R 111</b>		
V0100273356A000	VARIO TRACK 13 CDM-R111	3x35W,ECG,RAL 9006s	V0700272206A000	VARIO MINI 2 CDM-R 111	2x20W,ECG,RAL 9006s
<b>VARIO TRACK XX QR 111</b>			V0700272356A000	VARIO MINI 2 CDM-R 111	2x35W,ECG,RAL 9006s
V010055135FA000	VARIO TRACK 11 QR 111	1x35W,ET,RAL 9006s	<b>VARIO MINI 2 QR 111</b>		
V010055150FA000	VARIO TRACK 11 QR 111	1x50W,ET,RAL 9006s	V070055235FA000	VARIO MINI 2 QR 111	2x35W,ET,RAL 9006s
V010055175FA000	VARIO TRACK 11 QR 111	1x75W,ET,RAL 9006s	V070055250FA000	VARIO MINI 2 QR 111	2x50W,ET,RAL 9006s
V01005511AFA000	VARIO TRACK 11 QR 111	1x100W,ET,RAL 9006s	V070055275FA000	VARIO MINI 2 QR 111	2x75W,ET,RAL 9006s
V010055235FA000	VARIO TRACK 12 QR 111	2x35W,ET,RAL 9006s	V07005521AFA000	VARIO MINI 2 QR 111	2x100W,ET,RAL 9006s
V010055250FA000	VARIO TRACK 12 QR 111	2x50W,ET,RAL 9006s	<b>VARIO MINI 3</b>		
V010055275FA000	VARIO TRACK 12 QR 111	2x75W,ET,RAL 9006s	<b>VARIO MINI 3 CDM-R 111</b>		
V01005521AFA000	VARIO TRACK 12 QR 111	2x100W,ET,RAL 9006s	V0800273206A000	VARIO MINI 3 CDM-R 111	3x20W,ECG,RAL 9006s
V010055335FA000	VARIO TRACK 13 QR 111	3x35W,ET,RAL 9006s	V0800273356A000	VARIO MINI 3 CDM-R 111	3x35W,ECG,RAL 9006s
V010055350FA000	VARIO TRACK 13 QR 111	3x50W,ET,RAL 9006s	<b>VARIO MINI 3 QR 111</b>		
V010055375FA000	VARIO TRACK 13 QR 111	3x75W,ET,RAL 9006s	V080055335FA000	VARIO MINI 3 QR 111	3x35W,ET,RAL 9006s
V01005531AFA000	VARIO TRACK 13 QR 111	3x100W,ET,RAL 9006s	V080055350FA000	VARIO MINI 3 QR 111	3x50W,ET,RAL 9006s
<b>VARIO TRACK XX LED 111</b>			V080055375FA000	VARIO MINI 3 QR 111	3x75W,ET,RAL 9006s
V010081121FA000	VARIO TRACK 11 LED 111	1x21W,ET,RAL 9006s	V08005531AFA000	VARIO MINI 3 QR 111	3x100W,ET,RAL 9006s
V010081221FA000	VARIO TRACK 12 LED 111	2x21W,ET,RAL 9006s	<b>VARIO MODUL MINI 2</b>		
V010081321FA000	VARIO TRACK 13 LED 111	3x21W,ET,RAL 9006s	<b>VARIO MODUL MINI 2 CDM-R 111</b>		
<b>VARIO TRACK EXE PAR-V DIR</b>			V0900272206A000	VARIO MODUL MINI 2 CDM-R 111	2x20W,ECG,RAL 9006s
V0203021288A000	VARIO TRACK EXE PAR-V DIR	1x28W,316G2,ECG A2,RAL 9006s	V0900272356A000	VARIO MODUL MINI 2 CDM-R 111	2x35W,ECG,RAL 9006s
V0203021358A000	VARIO TRACK EXE PAR-V DIR	1x35W,316G2,ECG A2,RAL 9006s	<b>VARIO MODUL MINI 2 QR 111</b>		
V0203021498A000	VARIO TRACK EXE PAR-V DIR	1x49W,316G2,ECG A2,RAL 9006s	V090055235FA000	VARIO MODUL MINI 2 QR 111	2x35W,ET,RAL 9006s
V0203021548A000	VARIO TRACK EXE PAR-V DIR	1x54W,316G2,ECG A2,RAL 9006s	V090055250FA000	VARIO MODUL MINI 2 QR 111	2x50W,ET,RAL 9006s
V0203021808A000	VARIO TRACK EXE PAR-V DIR	1x80W,316G2,ECG A2,RAL 9006s	V090055275FA000	VARIO MODUL MINI 2 QR 111	2x75W,ET,RAL 9006s
V0209021288A000	VARIO TRACK EXE PAR MAT-V DIR	1x28W,1100G,ECG A2,RAL 9006s	V09005521AFA000	VARIO MODUL MINI 2 QR 111	2x100W,ET,RAL 9006s
V0209021358A000	VARIO TRACK EXE PAR MAT-V DIR	1x35W,1100G,ECG A2,RAL 9006s	<b>VARIO MODUL MINI 4</b>		
V0209021498A000	VARIO TRACK EXE PAR MAT-V DIR	1x49W,1100G,ECG A2,RAL 9006s	<b>VARIO MODUL MINI 4 CDM-R 111</b>		
V0209021548A000	VARIO TRACK EXE PAR MAT-V DIR	1x54W,1100G,ECG A2,RAL 9006s	V0A00274206A000	VARIO MODUL MINI 4 CDM-R 111	4x20W,ECG,RAL 9006s
V0209021808A000	VARIO TRACK EXE PAR MAT-V DIR	1x80W,1100G,ECG A2,RAL 9006s	V0A00274356A000	VARIO MODUL MINI 4 CDM-R 111	4x35W,ECG,RAL 9006s
V020E021288A000	VARIO TRACK EXE PAR-V REF	1x28W,316G2,ECG A2,RAL 9006s	<b>VARIO MODUL MINI 4 QR 111</b>		
V020E021358A000	VARIO TRACK EXE PAR-V REF	1x35W,316G2,ECG A2,RAL 9006s	V0A0055435FA000	VARIO MODUL MINI 4 QR 111	4x35W,ET,RAL 9006s
V020E021498A000	VARIO TRACK EXE PAR-V REF	1x49W,316G2,ECG A2,RAL 9006s	V0A0055450FA000	VARIO MODUL MINI 4 QR 111	4x50W,ET,RAL 9006s
V020E021548A000	VARIO TRACK EXE PAR-V REF	1x54W,316G2,ECG A2,RAL 9006s	V0A0055475FA000	VARIO MODUL MINI 4 QR 111	4x75W,ET,RAL 9006s
V020E021808A000	VARIO TRACK EXE PAR-V REF	1x80W,316G2,ECG A2,RAL 9006s	V0A005541AFA000	VARIO MODUL MINI 4 QR 111	4x100W,ET,RAL 9006s
V020K021288A000	VARIO TRACK EXE PAR MAT-V REF	2x28W,1100G,ECG A2,RAL 9006s	<b>VARIO SQUARE 22</b>		
V020K021358A000	VARIO TRACK EXE PAR MAT-V REF	2x35W,1100G,ECG A2,RAL 9006s	<b>VARIO SQUARE 22 CDM-R 111</b>		
V020K021498A000	VARIO TRACK EXE PAR MAT-V REF	2x49W,1100G,ECG A2,RAL 9006s	V0500273206A000	VARIO SQUARE 22 CDM-R 111	3x20W,ECG,RAL 9006s
V020K021548A000	VARIO TRACK EXE PAR MAT-V REF	2x54W,1100G,ECG A2,RAL 9006s	V0500273356A000	VARIO SQUARE 22 CDM-R 111	3x35W,ECG,RAL 9006s
V020K021808A000	VARIO TRACK EXE PAR MAT-V REF	2x80W,1100G,ECG A2,RAL 9006s	<b>VARIO SQUARE 22 QR 111</b>		
<b>VARIO TRACK EXE PAR-V DIR-INDIR</b>			V050055335FA000	VARIO SQUARE 22 QR 111	3x35W,ET,RAL 9006s
V0303021288A000	VARIO TRACK EXE PAR-V DIR-INDIR	1x28W,316G2,ECG A2,RAL 9006s	V050055350FA000	VARIO SQUARE 22 QR 111	3x50W,ET,RAL 9006s
V0303021358A000	VARIO TRACK EXE PAR-V DIR-INDIR	1x35W,316G2,ECG A2,RAL 9006s	V050055375FA000	VARIO SQUARE 22 QR 111	3x75W,ET,RAL 9006s
V0303021498A000	VARIO TRACK EXE PAR-V DIR-INDIR	1x49W,316G2,ECG A2,RAL 9006s	V05005531AFA000	VARIO SQUARE 22 QR 111	3x100W,ET,RAL 9006s
V0303021548A000	VARIO TRACK EXE PAR-V DIR-INDIR	1x54W,316G2,ECG A2,RAL 9006s	<b>VARIO SQUARE 22 LED 111</b>		
V0303021808A000	VARIO TRACK EXE PAR-V DIR-INDIR	1x80W,316G2,ECG A2,RAL 9006s	V050081321FA000	VARIO SQUARE 22 LED 111	3x21W,ET,RAL 9006s
V0309021288A000	VARIO TRACK EXE PAR MAT-V DIR-INDIR	1x28W,1100G,ECG A2,RAL 9006s	<b>XXX</b>		
V0309021358A000	VARIO TRACK EXE PAR MAT-V DIR-INDIR	1x35W,1100G,ECG A2,RAL 9006s	02 - PAR-V (MIRO4)		
V0309021498A000	VARIO TRACK EXE PAR MAT-V DIR-INDIR	1x49W,1100G,ECG A2,RAL 9006s	0F - PAR-V REFLEX (MIRO4)		
V0309021548A000	VARIO TRACK EXE PAR MAT-V DIR-INDIR	1x54W,1100G,ECG A2,RAL 9006s	0Q - PAR-V TWIN (MIRO4)		
V0309021808A000	VARIO TRACK EXE PAR MAT-V DIR-INDIR	1x80W,1100G,ECG A2,RAL 9006s	<b>XXXXXXXXXXXX</b>		
<b>VARIO TRACK EXE TWIN PAR-V DIR-INDIR</b>			9 - ECG DIM 1-10V		
V040P022288A000	VARIO TRACK EXE TWIN PAR-V DIR-INDIR	2x28W,316G2,ECG A2,RAL 9006s	A - ECG DIM DSI		
V040P022358A000	VARIO TRACK EXE TWIN PAR-V DIR-INDIR	2x35W,316G2,ECG A2,RAL 9006s	B - ECG DALI		
V040P022498A000	VARIO TRACK EXE TWIN PAR-V DIR-INDIR	2x49W,316G2,ECG A2,RAL 9006s	<b>VARIO TRACK ACCESSORIES</b>		
V040P022548A000	VARIO TRACK EXE TWIN PAR-V DIR-INDIR	2x54W,316G2,ECG A2,RAL 9006s	<b>VARIO RAIL</b>		
V040P022808A000	VARIO TRACK EXE TWIN PAR-V DIR-INDIR	2x80W,316G2,ECG A2,RAL 9006s	VOL00000000A000 VARIO VR I (length 1,5m),9006s		
V040W022288A000	VARIO TRACK EXE TWIN PAR MAT-V DIR-INDIR	2x28W,1100G,ECG A2,RAL 9006s	VOM00000000A000 VARIO VR II (length 3m),9006s		
V040W022358A000	VARIO TRACK EXE TWIN PAR MAT-V DIR-INDIR	2x35W,1100G,ECG A2,RAL 9006s	VON00000000A000 VARIO VR III (length 4,5m),9006s		
V040W022498A000	VARIO TRACK EXE TWIN PAR MAT-V DIR-INDIR	2x49W,1100G,ECG A2,RAL 9006s	<b>VARIO CABLE</b>		
V040W022548A000	VARIO TRACK EXE TWIN PAR MAT-V DIR-INDIR	2x54W,1100G,ECG A2,RAL 9006s	VOS000000000000 VARIO VCB 3x1,5 - 5m		
V040W022808A000	VARIO TRACK EXE TWIN PAR MAT-V DIR-INDIR	2x80W,1100G,ECG A2,RAL 9006s	VOT000000000000 VARIO VCB 3x1,5 - 10m		
<b>VARIO TRACK ACCESSORIES</b>			VOU000000000000 VARIO VCB 5x1,5 - 5m		
<b>VARIO RAIL</b>			VOV000000000000 VARIO VCB 5x1,5 - 10m		
<b>VARIO RAIL END PIECE</b>			<b>VARIO RAIL CONNECTING PIECE</b>		
V0000000000A000	VARIO VRE		VOP00000000A000	VARIO VRC	
<b>VARIO RAIL JOINT</b>			<b>VARIO ROPE SUSPENSION</b>		
VOR00000000A000	VARIO VRJ		VQQ0000000A000	VARIO VRS	
<b>VARIO MINI 1</b>			<b>VARIO RAIL JOINT</b>		
<b>VARIO MINI 1 CDM-R 111</b>			<b>VARIO RAIL JOINT</b>		
V0600271206A000	VARIO MINI 1 CDM-R 111	1x20W,ECG,RAL 9006s	<b>VARIO RAIL JOINT</b>		
V0600271356A000	VARIO MINI 1 CDM-R 111	1x35W,ECG,RAL 9006s	<b>VARIO RAIL JOINT</b>		
V0600271706A000	VARIO MINI 1 CDM-R 111	1x70W,ECG,RAL 9006s	<b>VARIO RAIL JOINT</b>		











# FUTURO

## FUTURO

Svietidlá Futuro sú určené pre inštaláciu do podhládov alebo sadrokartónových stropov. Svetidlo sa vyrába v mnohých prevedeniach a ponúka viaceré varianty usporiadania svetelných zdrojov – od jednozdrojových až po štvorzdrojové, možná je kombinácia s kompaktnou žiarivkou v parabolickej mriežke uprostred. Každá halogénová žiarovka v svietidle môže byť individuálne nasmerovaná do ľubovoľného smeru.

### KONŠTRUKCIA

**Teleso svietidla:** povrchovo upravený pozinkovaný plech (šedá perleť). Držiaky halogénových žiaroviek sú hliníkové odliatky.

**Mriežky:** hliníková parabolická mriežka PAR

Na spodnej strane svietidla je zvonku upevnená skrutkovacia svorkovnica spolu s držiakom proti vytrhnutiu vodičov zo svorkovnice. Otvory pre vstup vodičov do svietidla sú opatrené plastovými prechodkami.

Uchytenie svietidla v podhlade je vyriešené prostredníctvom štyroch úchytoch, nastaviteľných pre rôzne hrúbky stropu. Beznástrojová výmena svetelných zdrojov.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- stmievateľnými 12V elektronickými transformátormi (transformátory môžu byť riadené analógovým, digitálnym alebo DALI signálom)
- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: nízkonapäťové halogénové žiarovky QR 111, kompaktné žiarivky TC – L (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- skrutkovacia svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny, núdzová jednotka je umiestnená na špeciálnej montážnej doske mimo svietidla

## FUTURO

The Futuro range of light fixtures is designed for installations into plasterboard ceilings. The light fixture is manufactured in many versions and provides various variants of light source arrangement – from single-source to four-source; the combination of a compact fluorescent lamp in a centrally located parabolic louvre is also possible. Each halogen lamp in the light fixture can be individually tilted to any direction.

### CONSTRUCTION

**Housing:** surface finished galvanised sheet steel (iridescent grey). Halogen lamp holders are from die cast aluminium.

**Louvers:** aluminium parabolic louvre PAR

Outside, on the bottom of the light fixture, there is a screw connection terminal attached together with a holder preventing the conductors from being pulled off the terminal. Conductor openings are equipped with plastic reducing adapters.

Ceiling attachment of the light fixture is done using four holders, adjustable for various ceiling widths. Tool-free replacement of light sources.

### WIRING

**Light fixtures can be equipped with:**

- dimmable 12V electronic transformers (transformers can be controlled with analogue, digital or DALI signal)
- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, light fixtures are standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

**Other components:**

- lamps: low-voltage halogen lamps QR 111, compact fluorescent lamps TC-L (lamps must be ordered separately)
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screw terminal block allows connecting conductors up to 2.5 mm<sup>2</sup> cross-section
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request, the emergency version is placed on a special installation plate apart from the light fixture

## FUTURO

Die Futuro-Leuchten sind zur Installation in die Untersichte oder Gipskartondecken bestimmt. Die Leuchten werden in vielen Ausführungen hergestellt und bieten mehrere Varianten der Anordnung von Lichtquellen – von Einquell- bis zur Vierquellenanordnung an, auch die Kombination mit einer kompakten Leuchtstoffröhre in einem parabolischen Raster in der Mitte ist möglich. Jede Halogenlampe in der Leuchte kann individuell in beliebige Richtung gerichtet sein.

### KONSTRUKTION

**Leuchtenkörper:** verzinktes Blech mit Oberflächenbehandlung (graues Perlmutter). Halter der Halogenlampen sind aus Aluminiumguss

**Raster:** parabolischer Aluminiumraster PAR

An der Unterseite der Leuchte ist eine Schraubklemmleiste von außen zusammen mit einem Halter gegen Ausreißen der Leiter aus der Klemmleiste befestigt. Die Öffnungen für die Einführung der Leiter in die Leuchte sind mit Kunststoffdurchführungen versehen.

Leuchte werden in der Untersicht ist mit vier Schellen befestigt, die für verschiedene Deckendicken einstellbar sind. Der Austausch der Lichtquellen erfolgt ohne Werkzeug.

### ELEKTRISCHE AUSRÜSTUNG

**Die Leuchten können wie folgt ausgerüstet sein:**

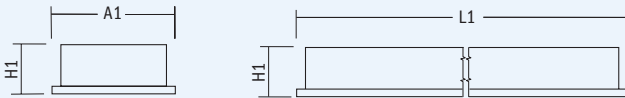
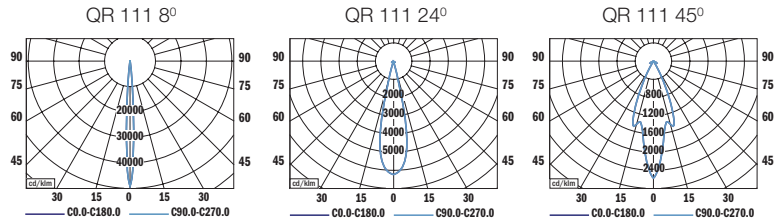
- mit elektronischen Dimmertransformatoren 12 V (Transformatoren können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)
- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, Klasse EEI=B1 auf Wunsch, Leuchten sind standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschalter können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

**Andere Komponente:**

- Lichtquellen: Niederspannung-Halogenlampen QR 111, kompakte Leuchtstofflampen TC-L (die Lichtquellen sind extra zu bestellen)
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine Schraubklemmleiste ermöglicht Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Leuchten können auf Wunsch mit Noteinheiten mit Autonombetrieb von 1 oder 3 Stunden ausgerüstet werden, die Noteinheit ist an einer speziellen Einbauplatte außer der Leuchte angebracht

# FUTURO

## 11/12/13/14/22 QR 111



	OPTIC QR111	POWER	LAMP	DIMENSIONS					HOLE	
				A1	A2	L1	L2	H1	O1	O2
Futuro 11	•	1x35	QR111	202	170	202	170	90	175	175
Futuro 11	•	1x50	QR111	202	170	202	170	90	175	175
Futuro 11	•	1x75	QR111	202	170	202	170	90	175	175
Futuro 11	•	1x100	QR111	202	170	202	170	90	175	175
Futuro 12	•	2x35	QR111	202	170	384	350	90	175	355
Futuro 12	•	2x50	QR111	202	170	384	350	90	175	355
Futuro 12	•	2x75	QR111	202	170	384	350	90	175	355
Futuro 12	•	2x100	QR111	202	170	384	350	90	175	355
Futuro 13	•	3x35	QR111	202	170	565	530	90	175	535
Futuro 13	•	3x50	QR111	202	170	565	530	90	175	535
Futuro 13	•	3x75	QR111	202	170	565	530	90	175	535
Futuro 13	•	3x100	QR111	202	170	565	530	90	175	535
Futuro 14	•	4x35	QR111	202	170	750	715	90	175	720
Futuro 14	•	4x50	QR111	202	170	750	715	90	175	720
Futuro 14	•	4x75	QR111	202	170	750	715	90	175	720
Futuro 14	•	4x100	QR111	202	170	750	715	90	175	720
Futuro 22	•	4x35	QR111	385	350	385	350	90	355	355
Futuro 22	•	4x50	QR111	385	350	385	350	90	355	355
Futuro 22	•	4x75	QR111	385	350	385	350	90	355	355
Futuro 22	•	4x100	QR111	385	350	385	350	90	355	355

INSTALLATION





FUTURO 22 4x35W

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13



12



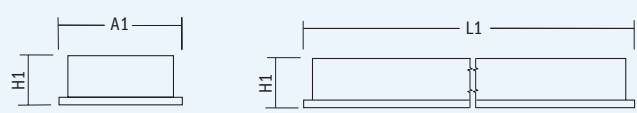
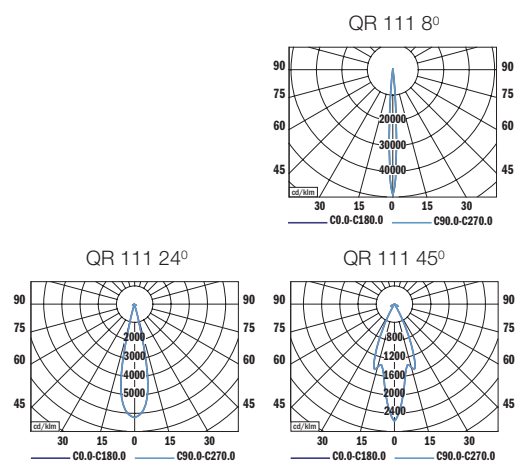
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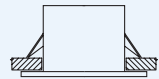
# FUTURO

## PAR QR 111/TC-L



	OPTIC		POWER	LAMP	DIMENSIONS				HOLE		
	PAR	QR111			A1	A2	L1	L2	H1	O1	O2
Futuro PAR	•	•	1x36 + 2x35	TC-L; QR111	180	160	815	790	120	165	795
Futuro PAR	•	•	1x36 + 2x50	TC-L; QR111	180	160	815	790	120	165	795
Futuro PAR	•	•	1x40 + 2x35	TC-L; QR111	180	160	910	885	120	165	890
Futuro PAR	•	•	1x40 + 2x50	TC-L; QR111	180	160	910	885	120	165	890
Futuro PAR	•	•	1x55 + 2x35	TC-L; QR111	180	160	910	885	120	165	890
Futuro PAR	•	•	1x55 + 2x50	TC-L; QR111	180	160	910	885	120	165	890

INSTALLATION





FUTURO PAR



ORDER CODE	TYPE	SPECIFICATION
<b>FUTURO</b>		
F01005500008000	FUTURO 11 QR-111	1x35,50,75,100W,RAL 9006
F02005500008000	FUTURO 12 QR-111	2x35,50,75,100W,RAL 9006
F03005500008000	FUTURO 13 QR-111	3x35,50,75,100W,RAL 9006
F04005500008000	FUTURO 14 QR-111	4x35,50,75,100W,RAL 9006
F05005500008000	FUTURO 22 QR-111	4x35,50,75,100W,RAL 9006
<b>TRANSFORMER</b>		
ET-12V-60W	ELECTRONIC TRANSFORMER 60W	
ET-12V-105W	ELECTRONIC TRANSFORMER 105W	
ET-12V-150W	ELECTRONIC TRANSFORMER 150W	
<b>FUTURO PAR</b>		
F0610A23A9K8000	FUTURO PAR TC-L+QR111	1x36+2x35W, ET+CCG,RAL 9006
F0610A23A9L8000	FUTURO PAR TC-L+QR111	1x36+2x35W, ET+ECG,RAL 9006
F0610A23AAK8000	FUTURO PAR TC-L+QR111	1x36+2x50W, ET+CCG,RAL 9006
F0610A23AAL8000	FUTURO PAR TC-L+QR111	1x36+2x50W, ET+ECG,RAL 9006
F0610A23ABL8000	FUTURO PAR TC-L+QR111	1x40+2x35W, ET+ECG,RAL 9006
F0610A23ACL8000	FUTURO PAR TC-L+QR111	1x40+2x50W, ET+ECG,RAL 9006
F0610A23ADL8000	FUTURO PAR TC-L+QR111	1x55+2x35W, ET+ECG,RAL 9006
F0610A23AEL8000	FUTURO PAR TC-L+QR111	1x55+2x50W, ET+ECG,RAL 9006







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AVANT





# AVANT

## AVANT

**Závesné svietidlá nekonvenčného dizajnu s vynikajúcimi technickými vlastnosťami. Avant ponúka rozličné možnosti kombinácie optických systémov ako aj možnosť priebežnej montáže.**

### KONŠTRUKCIA

**Teleso svietidla:** extrudovaný hliník, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9006 (biely hliník, jemná štruktúra)

**Koncovky svietidla:** hliníkový odliatok

V hliníkových koncovkách svietidiel je umiestnený mechanizmus umožňujúci zmenu dĺžky lankového závesu svietidla. V každej hliníkovej koncovke je otvor pre vstup napájacieho kábla, krytý dekoratívnou plastovou koncovkou. Koncovky sú k telesu svietidla prichytené sponou z nerezovej ocele.

**Mriežky:** lesklá alebo matná hliníková parabolická mriežka PAR-V/PAR MAT-V

**Difúzory:** číre (PMMA) alebo opálové (acryl-satiné PMMA) prevedenie

**Reflektory:** symetrický alebo asymetrický hliníkový reflektor

**Koncovky difúzorov:** číre (PC) alebo opálové (SMMA) prevedenie

**Koncovky reflektorov:** šedé (ABS) alebo číre (SMMA) prevedenie (číre len pre asymetrický reflektor)

**Nosná doska:** extrudovaný hliník. Doska sa nasúva do drážky telesa svietidla. Všetky elektrické komponenty sú umiestnené na plechovej inštaláčnej doske uchytenej na nosnej doske svietidla.

Difúzory a reflektory doplnené o plastové koncovky sú uchytené v drážke hliníkoveho telesa svietidla. Plastové koncovky optického príslušenstva sú k reflektorom dotlačené pružinami ktoré sú schované v hliníkových koncovkách svietidiel. Parabolická mriežka je vsadená do priehľadného difúzora, ktorý ju chráni pred znečistením a zjednodušuje údržbu svietidla. Uchytenie optického systému umožňuje jednoduchý prístup do svietidla a beznástrojovú výmenu svetelných zdrojov. Pri použití inej koncovky svietidla je možné zapájať svietidlá AVANT za sebou do línie. Pri tejto variante prídubnú na inštaláčnu dosku v svietidle konektory umožňujúce rýchle spájanie jednotlivých svietidiel do priebežnej montáže.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- elektronickými predradníkmi, štandardne triedy EEL=A2
- stmievateľnými elektronickými predradníkmi, trieda EEL=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm), svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- 7-pólové konektory WAGO umožňujúce rýchle elektrické spojenie pri priebežnej montáži
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny (3h prevádzka nie je v ponuke pre 80W verzie a pre asymetrický reflektor)

## AVANT

**Pendant light fixtures with an unconventional design and excellent technical properties, Avant offers various options for combination of optical systems, as well as the possibility of continuous installation.**

### CONSTRUCTION

**Housing:** extruded aluminium, electrostatic powder coat finish – basic shade RAL 9006 (white aluminium, fine structure).

**Light fixture end caps:** aluminium casting

Aluminium end cap of the light fixture contain mechanisms allowing changes to the length of the light fixture wire. Each aluminium ending has an opening for a power cable, covered by a decorative plastic cover. The end caps are attached to the body using stainless steel fasteners.

**Louvers:** polished or matt aluminium parabolic louvre PAR-V/PAR MAT-V

**Diffuser:** pure (PMMA) or opal (acrylic-satin PMMA) finish

**Reflectors:** symmetrical or asymmetrical aluminium reflector

**Diffuser end caps:** pure (PC) or opal (SMMA) finish

**Reflector end caps:** grey (ABS) or pure (SMMA) finish (pure finish only for asymmetrical reflector)

**Carrying plate:** extruded aluminium. The plate is placed into the light fixture body groove. All electrical components are situated on the metal installation plate connected to the carrying plate.

Diffusers and reflectors equipped with plastic covers are attached to the aluminium body groove. Optical accessory plastic end caps are pushed to the reflectors by springs hidden in the aluminium endings. The parabolic louvre is placed into the transparent diffuser protecting it from dirt, which makes maintenance of the light fixture easier. Attachment of the optical system allows simple access to the light fixture and tool-free lamp replacement.

If another end cap of the light fixture is used, AVANT light fixtures can be connected in a line. In this case the installation plate includes connectors allowing fast connection of individual light fixtures in a continuous installation.

### WIRING

**Light fixtures can be equipped with:**

- electronic control gear, standard class EEI=A2
- dimmable electronic control gear, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm), lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless five pole terminal allows connecting conductors up to 2.5 mm<sup>2</sup> cross-section
- 7-pole WAGO connectors allowing fast electrical connection in continuous installations
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request (3hr operation is not available for 80W versions or for asymmetrical reflectors)

## AVANT

**Hängeleuchten mit unkonventionellen Design und ausgezeichneten technischen Eigenschaften. Avant bietet verschiedene Möglichkeiten der optischen Systeme und durchgehendes Einbauen an.**

### KONSTRUKTION

**Leuchtenkörper:** extrudiertes Aluminium, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9006 (Weißaluminium, feine Struktur)

**Endstücke der Leuchte:** Aluminiumguß

In den Aluminiumendstücken der Leuchte ist ein Mechanismus angebracht, der Änderung der Seilaufhängungslänge der Leuchte ermöglicht. In jedem Aluminiumendstück gibt es eine Öffnung für die Einführung des Speisekabels, zugedeckt mit einem dekorativen Kunststoffendstück. Die Endstücke sind am Leuchtenkörper mit einer Schelle aus rostfreiem Stahl befestigt.

**Raster:** ein glänzender oder matter parabolischer Aluminiumraster PAR-V/PAR MAT-V

**Diffusoren:** klare (PMMA) Ausführung oder Opalausführung (acryl-satiné PMMA)

**Reflektoren:** ein symmetrischer oder asymmetrischer Aluminiumreflektor

**Endstücke der Diffusoren:** klare Ausführung (PC) oder Opalausführung (SMMA)

**Endstücke der Reflektoren:** graue (ABS) oder klare (SMMA) Ausführung (klar nur für den asymmetrischen Reflektor)

**Tragplatte:** extrudiertes Aluminium. Die Platte wird in die Rille des Leuchtenkörpers eingesteckt. Alle elektrischen Komponente sind an der Blechinstallationsplatte angebracht, die an der Tragplatte der Leuchte befestigt ist.

Die Diffusoren und Reflektoren mit Kunststoffendstücken sind in der Rille des Aluminiumkörpers der Leuchte befestigt. Die Kunststoffendstücke des optischen Zubehörs werden an Reflektoren mit Federn angedrückt, die in den Aluminiumendstücken der Leuchten versteckt sind. Der parabolische Raster ist im durchsichtigen Diffusor angebracht, der ihn vor Verschmutzung schützt und Wartung der Leuchte vereinfacht. Die Befestigung des optischen Systems ermöglicht einen einfachen Zugang zur Leuchte und Austausch der Lichtquellen ohne Werkzeug.

Bei Verwendung eines anderen Endstückes der Leuchte können die Leuchten AVANT in einer Linie hintereinandergeschaltet werden. Bei dieser Variante wird die Installationsplatte in der Leuchte um Verbindungsstecker ergänzt, die schnelle Verbindung von einzelnen Leuchten in den durchgehenden Einbau ermöglichen.

### ELEKTRISCHE AUSRÜSTUNG

**Die Leuchten können wie folgt ausgerüstet sein:**

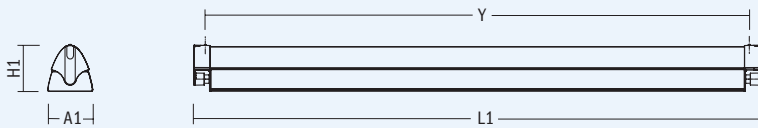
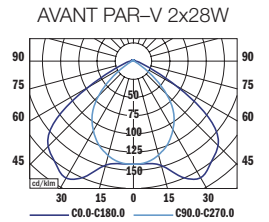
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten für Leuchtstofflampen, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

**Andere Komponente:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm), die Lichtquellen sind extra zu bestellen
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie fünfpolige Klemmleiste ermöglicht, die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- siebenpolige Verbindungsstecker WAGO, die einen schnellen elektrischen Anschluß beim durchgehenden Einbau ermöglichen
- Leuchte können auf Wunsch mit Noteinheiten mit einem unabhängigen Betrieb von 1 oder 3 Stunden ausgerüstet werden (ein 3 Stunden-Betrieb ist für die Ausführung von 80W und für den asymmetrischen Reflektor nicht im Angebot)

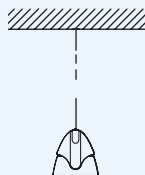
# AVANT

## PAR-V PAR-V/PAR MAT-V T5



	OPTIC		POWER	DIMENSIONS			FIXING Y
	PAR-V	PAR MAT-V		A1	L1	H1	
AVANT PAR-V	•	•	1x28	99	1250	104	1200
AVANT PAR-V	•	•	1x54	99	1250	104	1200
AVANT PAR-V	•	•	1x35	99	1550	104	1500
AVANT PAR-V	•	•	1x49	99	1550	104	1500
AVANT PAR-V	•	•	1x80	99	1550	104	1500
AVANT PAR-V	•	•	2x28	99	1250	104	1200
AVANT PAR-V	•	•	2x54	99	1250	104	1200
AVANT PAR-V	•	•	2x35	99	1550	104	1500
AVANT PAR-V	•	•	2x49	99	1550	104	1500

INSTALLATION





AVANT PAR-V 2x28W

PAR-V



PAR MAT-V

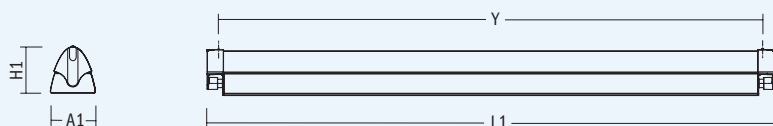
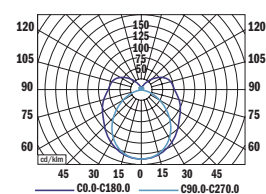


# AVANT

## OPAL T5

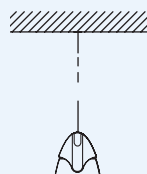


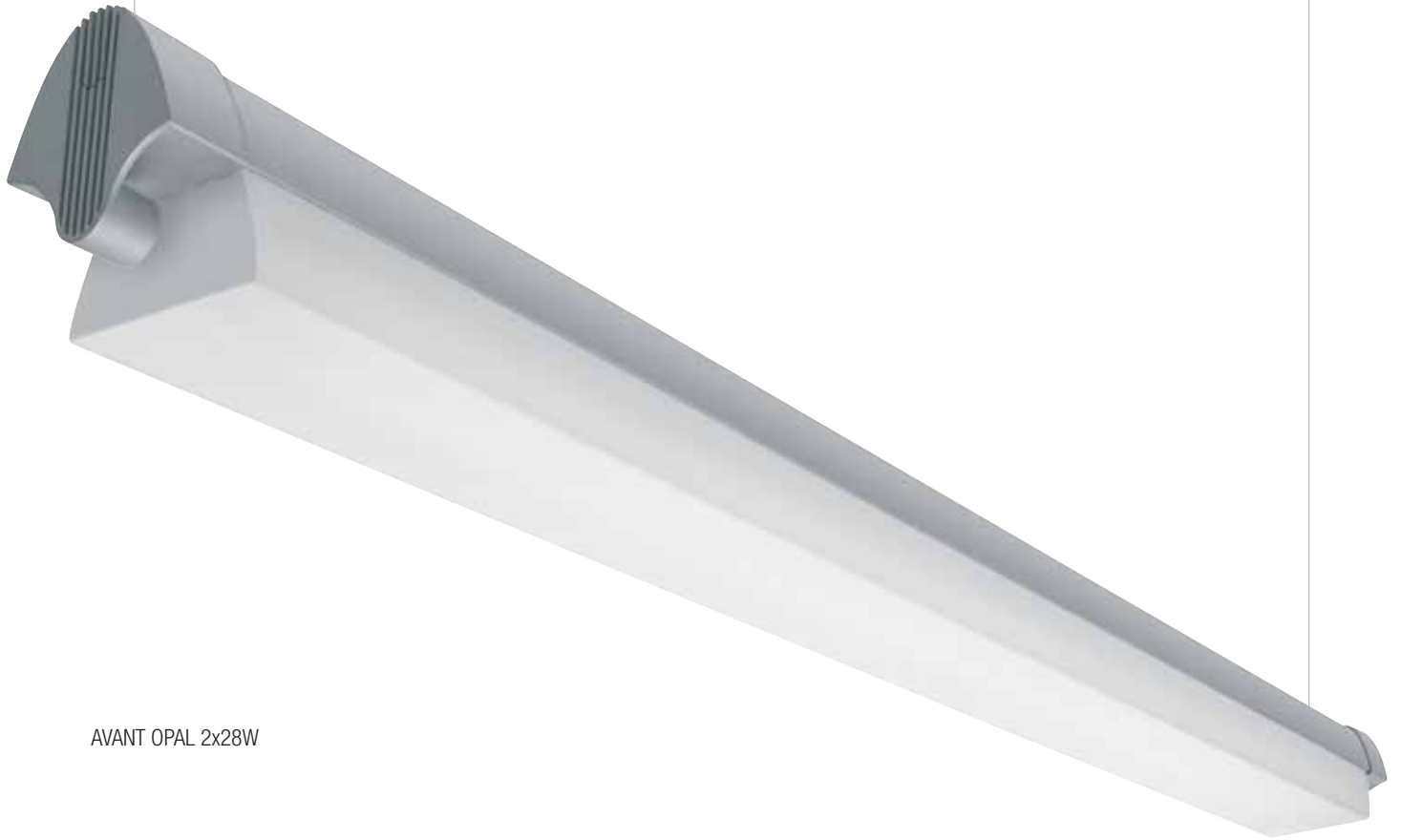
AVANT OPAL 2x28W



	OPTIC OPAL	POWER	DIMENSIONS			FIXING Y
			A1	L1	H1	
AVANT OPAL	•	1x28	99	1250	104	1200
AVANT OPAL	•	1x54	99	1250	104	1200
AVANT OPAL	•	1x35	99	1550	104	1500
AVANT OPAL	•	1x49	99	1550	104	1500
AVANT OPAL	•	1x80	99	1550	104	1500
AVANT OPAL	•	2x28	99	1250	104	1200
AVANT OPAL	•	2x54	99	1250	104	1200
AVANT OPAL	•	2x35	99	1550	104	1500
AVANT OPAL	•	2x49	99	1550	104	1500

INSTALLATION





AVANT OPAL 2x28W

AVANT OPAL 2x28W



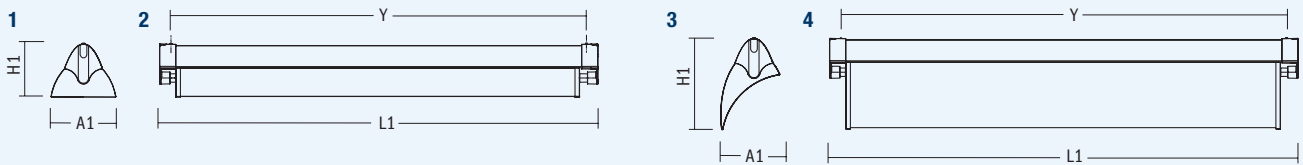
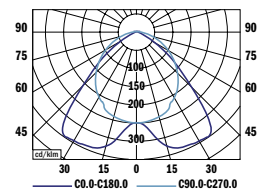


# AVANT

## AL SYMMETRIC/ASYMMETRIC T5

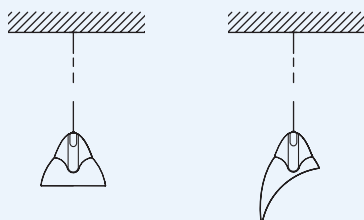


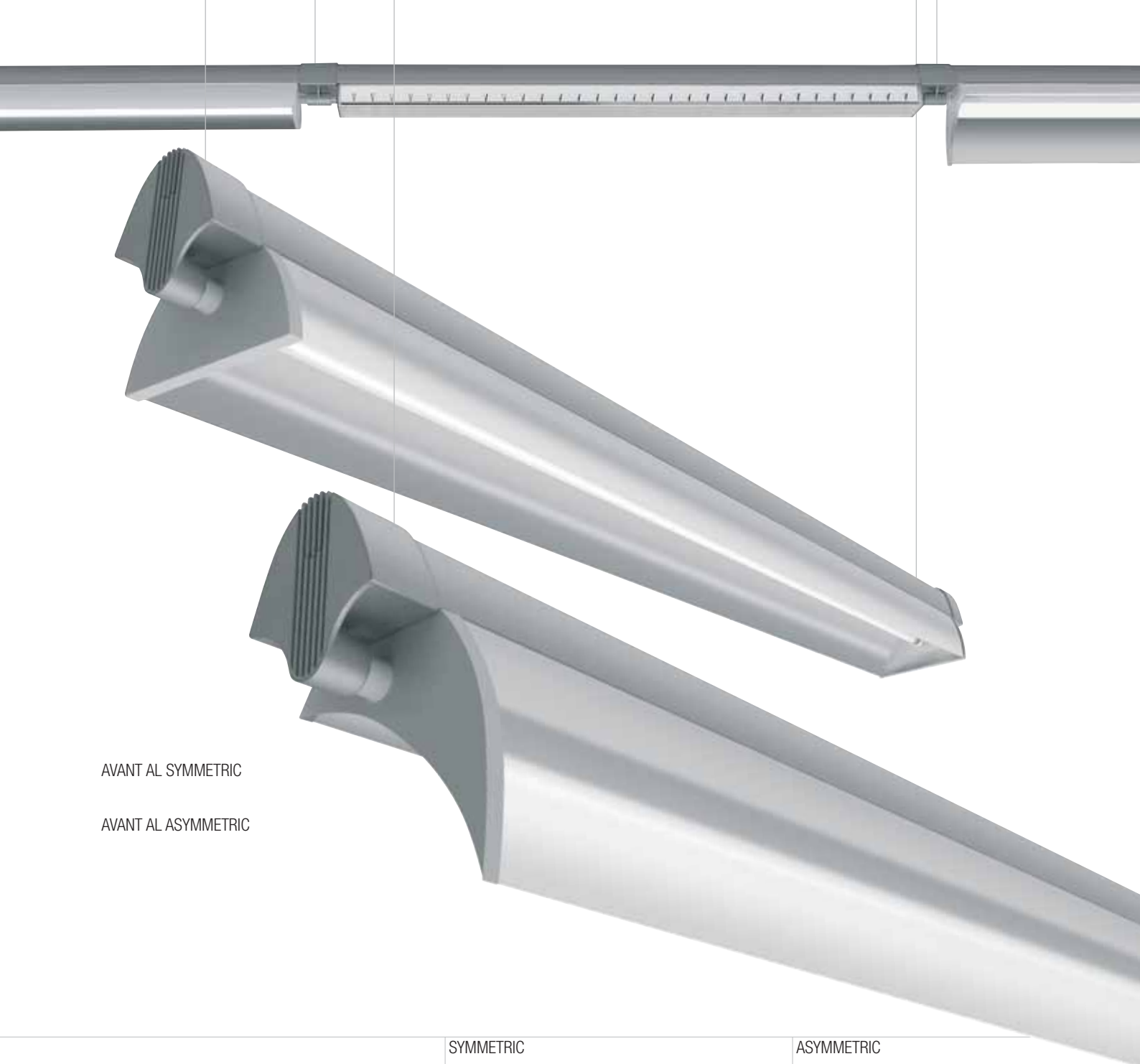
AVANT AL SYMMETRIC 2x28W



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING
	SYMMETRIC	ASYMMETRIC				A1	L1	H1	
AVANT AL	•		1x28	T5	1;2	143	1250	120	1200
AVANT AL	•		1x54	T5	1;2	143	1250	120	1200
AVANT AL	•		1x35	T5	1;2	143	1550	120	1500
AVANT AL	•		1x49	T5	1;2	143	1550	120	1500
AVANT AL	•		1x80	T5	1;2	143	1550	120	1500
AVANT AL	•		2x28	T5	1;2	143	1250	120	1200
AVANT AL	•		2x54	T5	1;2	143	1250	120	1200
AVANT AL	•		2x35	T5	1;2	143	1550	120	1500
AVANT AL	•		2x49	T5	1;2	143	1550	120	1500
AVANT AL		•	1x28	T5	3;4	130	1250	203	1200
AVANT AL		•	1x54	T5	3;4	130	1250	203	1200
AVANT AL		•	1x35	T5	3;4	130	1550	203	1500
AVANT AL		•	1x49	T5	3;4	130	1550	203	1500
AVANT AL		•	1x80	T5	3;4	130	1550	203	1500
AVANT AL		•	2x28	T5	3;4	130	1250	203	1200
AVANT AL		•	2x54	T5	3;4	130	1250	203	1200
AVANT AL		•	2x35	T5	3;4	130	1550	203	1500
AVANT AL		•	2x49	T5	3;4	130	1550	203	1500

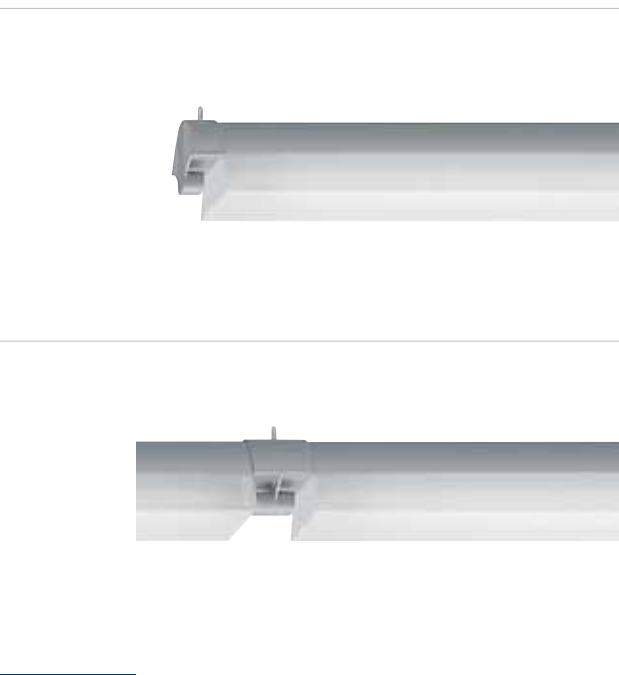
INSTALLATION





AVANT AL SYMMETRIC

AVANT AL ASYMMETRIC



SYMMETRIC



ASYMMETRIC







- 1** Teleso svetidla  
Housing  
Leuchtenkörper
- 2** Hliníková koncovka  
Aluminium ending  
Profilendstück aus Aluminium
- 3** Doska s elektroinštaláciou  
Gear tray  
Geräteplatte
- 4** Parabolická mriežka  
Parabolic louvre  
Parabolspiegelraster
- 5** Opálový profil  
Opal profile  
Opales Profil
- 6** Opálová koncovka  
Opal ending  
Profilendstück aus Opal
- 7** Číry plastový profil  
Transparent plastic profile  
Transparentes Profil aus Plastic
- 8** Číra plastová koncovka  
Transparent plastic ending  
Transparentes Profilendstück aus Plastic
- 9** Hliníkový symetrický reflektor  
Aluminium reflector - symmetric  
Symmetrische Reflektor aus Aluminium
- 10** Reflektorová koncovka symetrická  
Reflector symmetric plastic ending  
Reflektorendstück aus Plastic
- 11** Hliníkový asymetrický reflektor  
Aluminium reflector - asymmetric  
Asymmetrische Reflektor aus Aluminium
- 12** Reflektorová koncovka asymetrická  
Reflector asymmetric plastic ending  
Reflektorendstück aus Plastic

ORDER CODE	TYPE	SPECIFICATION
<b>AVANT PAR</b>		
<b>AVANT PAR</b>		
A02030212889000	AVANT PAR-V	1x28W, 316G2, ECG A2, RAL 9006
A02030213589000	AVANT PAR-V	1x35W, 316G2, ECG A2, RAL 9006
A02030214989000	AVANT PAR-V	1x49W, 316G2, ECG A2, RAL 9006
A02030215489000	AVANT PAR-V	1x54W, 316G2, ECG A2, RAL 9006
A02030218089000	AVANT PAR-V	1x80W, 316G2, ECG A2, RAL 9006
A02030222889000	AVANT PAR-V	2x28W, 316G2, ECG A2, RAL 9006
A02030223589000	AVANT PAR-V	2x35W, 316G2, ECG A2, RAL 9006
A02030224989000	AVANT PAR-V	2x49W, 316G2, ECG A2, RAL 9006
A02030225489000	AVANT PAR-V	2x54W, 316G2, ECG A2, RAL 9006
A02020212889000	AVANT PAR-V	1x28W, MIRO4, ECG A2, RAL 9006
A02020213589000	AVANT PAR-V	1x35W, MIRO4, ECG A2, RAL 9006
A02020214989000	AVANT PAR-V	1x49W, MIRO4, ECG A2, RAL 9006
A02020215489000	AVANT PAR-V	1x54W, MIRO4, ECG A2, RAL 9006
A02020218089000	AVANT PAR-V	1x80W, MIRO4, ECG A2, RAL 9006
A02020222889000	AVANT PAR-V	2x28W, MIRO4, ECG A2, RAL 9006
A02020223589000	AVANT PAR-V	2x35W, MIRO4, ECG A2, RAL 9006
A02020224989000	AVANT PAR-V	2x49W, MIRO4, ECG A2, RAL 9006
A02020225489000	AVANT PAR-V	2x54W, MIRO4, ECG A2, RAL 9006
<b>AVANT PAR MAT</b>		
A02090212889000	AVANT PAR MAT-V	1x28W, 1100G, ECG A2, RAL 9006
A02090213589000	AVANT PAR MAT-V	1x35W, 1100G, ECG A2, RAL 9006
A02090214989000	AVANT PAR MAT-V	1x49W, 1100G, ECG A2, RAL 9006
A02090215489000	AVANT PAR MAT-V	1x54W, 1100G, ECG A2, RAL 9006
A02090218089000	AVANT PAR MAT-V	1x80W, 1100G, ECG A2, RAL 9006
A02090222889000	AVANT PAR MAT-V	2x28W, 1100G, ECG A2, RAL 9006
A02090223589000	AVANT PAR MAT-V	2x35W, 1100G, ECG A2, RAL 9006
A02090224989000	AVANT PAR MAT-V	2x49W, 1100G, ECG A2, RAL 9006
A02090225489000	AVANT PAR MAT-V	2x54W, 1100G, ECG A2, RAL 9006
<b>AVANT OPAL</b>		
<b>AVANT OPAL</b>		
A01300212889000	AVANT OPAL	1x28W, ECG A2, RAL 9006
A01300213589000	AVANT OPAL	1x35W, ECG A2, RAL 9006
A01300214989000	AVANT OPAL	1x49W, ECG A2, RAL 9006
A01300215489000	AVANT OPAL	1x54W, ECG A2, RAL 9006
A01300218089000	AVANT OPAL	1x80W, ECG A2, RAL 9006
A01300222889000	AVANT OPAL	2x28W, ECG A2, RAL 9006
A01300223589000	AVANT OPAL	2x35W, ECG A2, RAL 9006
A01300224989000	AVANT OPAL	2x49W, ECG A2, RAL 9006
A01300225489000	AVANT OPAL	2x54W, ECG A2, RAL 9006
<b>AVANT AL</b>		
<b>AVANT AL SYMMETRIC</b>		
A03500212889000	AVANT AL SYMMETRIC	1x28W, ECG A2, RAL 9006
A03500213589000	AVANT AL SYMMETRIC	1x35W, ECG A2, RAL 9006
A03500214989000	AVANT AL SYMMETRIC	1x49W, ECG A2, RAL 9006
A03500215489000	AVANT AL SYMMETRIC	1x54W, ECG A2, RAL 9006
A03500218089000	AVANT AL SYMMETRIC	1x80W, ECG A2, RAL 9006
A03500222889000	AVANT AL SYMMETRIC	2x28W, ECG A2, RAL 9006
A03500223589000	AVANT AL SYMMETRIC	2x35W, ECG A2, RAL 9006
A03500224989000	AVANT AL SYMMETRIC	2x49W, ECG A2, RAL 9006
A03500225489000	AVANT AL SYMMETRIC	2x54W, ECG A2, RAL 9006
A03500228089000	AVANT AL SYMMETRIC	2x80W, ECG A2, RAL 9006
<b>AVANT AL ASYMMETRIC</b>		
A03510212889000	AVANT AL ASYMMETRIC	1x28W, ECG A2, RAL 9006
A03510213589000	AVANT AL ASYMMETRIC	1x35W, ECG A2, RAL 9006
A03510214989000	AVANT AL ASYMMETRIC	1x49W, ECG A2, RAL 9006
A03510215489000	AVANT AL ASYMMETRIC	1x54W, ECG A2, RAL 9006
A03510218089000	AVANT AL ASYMMETRIC	1x80W, ECG A2, RAL 9006
A03510222889000	AVANT AL ASYMMETRIC	2x28W, ECG A2, RAL 9006
A03510223589000	AVANT AL ASYMMETRIC	2x35W, ECG A2, RAL 9006
A03510224989000	AVANT AL ASYMMETRIC	1x49W, ECG A2, RAL 9006
A03510225489000	AVANT AL ASYMMETRIC	2x54W, ECG A2, RAL 9006
A03510228089000	AVANT AL ASYMMETRIC	2x80W, ECG A2, RAL 9006
<b>ACCESSORIES</b>		
<b>SUSPENSION</b>		
SUS 1.35 C0/024	SUSPENSION 24	AVANT
SUS 1.35 C0/025	SUSPENSION 25	AVANT

XXXXXXXXXX

9 - ECG DIM 1-10V

A - ECG DIM DSI

B - ECG DALI













# MODUL

## ESO

### MODUL ESO

**Trojžiarivkové svietidlo MODUL ESO predstavuje typického zástupcu kancelárskeho svietidla s veľmi nízkym profilom. Najväčšou výhodou svietidiel Modul je možnosť kombinácie priameho a nepriameho osvetlenia. Svietidlá sa montujú ako závesné pomocou závesného príslušenstva.**

#### KONŠTRUKCIA

**Teleso svietidla:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela), RAL 9006 (biely hliník) na požiadanie

**Mriežky:** hliníkové parabolické mriežky PAR-V, PAR MAT-V

**Reflektor:** na požiadanie možno všetky verzie doplniť o prídavné reflektory – jeden pre strednú žiarivku v parabolickej mriežke a dva pod žiarivky svietiace na strop (verzia REF)

**Difúzory (ESO G):** dve verzie kaleného pieskovaného skla – celé opieskované (sanded) alebo s vynechaným opieskovaním v strede pod mriežkou (clear)

Sklo je prichytené ku svietidlu prostredníctvom dekoračných skrutiek.

Pre výmenu strednej žiarivky je potrebné odstrániť vrchný plechový kryt nad mriežkou uchytený dvomi skrutkami. K zvyšným dvom žiarivkám je voľný prístup zvrchu.

Bližší popis jednotlivých typov optiky je uvedený na strane 316/317, v kapitole OPTICS.

Modul ESO je v ponuke aj s prevažne nepriamou vyžarovacou charakteristikou – verzia S. Perforovaný spodný plech v tejto verzii prepustí časť svetelného toku smerom dole, väčšina svetelného toku je však vrchnými reflektormi usmernená v širokom zväzku smerom nahor. Kvôli údržbe je vrch svietidla prekrytý priehľadným plastovým krytom, výmena žiariviek je možná po jeho odstránení.

#### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- elektronickými predradníkmi, štandardne triedy EEI=A2
  - stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)
- Svietidlá sú štandardne vybavené dvomi elektronickými predradníkmi, ktoré môžu byť na požiadanie zapojené pre samostatné ovládanie priamej a nepriamej zložky svetelného toku.

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- držiaky proti vytrhnutiu vodičov zo svorkovnice, gumená prechodka pre napájací kábel
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

#### PRÍSLUŠENSTVO

- lankový vypínač
- rôzne typy závesného príslušenstva
- kombinovaný senzor (detektor prítomnosti + snímač denného osvetlenia + infračervený prijímač na diaľkové ovládanie) vsadený do telesa svietidla

## MODUL ESO

The MODUL ESO three-lamp light fixture represents a typical office light fitting with a very low profile. The greatest advantage of the Modul range is the possibility to combine direct and indirect lighting. The light fixtures are mounted as pendant using suspension accessories.

### CONSTRUCTION

**Housing:** steel sheet, electrostatic powder coat finish – basic shade RAL 9003 (signal white), RAL 9006 (white aluminium) on request

**Louvers:** aluminium parabolic louvers PAR-V, PAR MAT-V

**Reflector:** all versions are possible to be equipped with additional reflectors on request – one for central fluorescent lamp located in the parabolic louver and two under the fluorescent lamps, which illuminate the ceiling (REF version)

**Diffusers (ESO G):** two versions of hardened, sandblasted glass – completely sanded or without sandblasting centred below the louver (clear) Glass is attached to the light fixture using decorative screws.

To replace the middle lamp, it is necessary to remove the top metal cover above the grid, attached by two screws. The other two lamps are accessible from above.

Further description of individual optic types is listed on the page 316/317, in section OPTICS.

Modul ESO is offered also with mostly indirect lighting characteristics – S version. The perforated bottom sheet in this version transfers the part of the luminous flux down, but the most of the light will be directed by upper reflectors in a wide beam upwards. The top of the lamp is covered with transparent plastic cover due to maintenance, the fluorescent lamps can be replaced after removing of the cover.

### WIRING

Light fixtures can be equipped with:

- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

Light fixtures are equipped with two electronic control gears as a standard, they can be pre-wired for independent control of direct and indirect part of luminous flux on request.

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- holders to prevent conductors from detaching from the terminal block, a rubber reducer for power cable
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request

### ACCESSORIES

- pull switch
- various types of suspension accessories
- combined sensor (motion detector + daylight sensor + infrared receiver for remote control) embedded in the body

## MODUL ESO

Die Dreileuchtstoffröhrenleuchte MODUL ESO stellt einen typischen Vertreter der Büroleuchten mit sehr niedrigem Profil dar. Der größte Vorteil der Leuchten Modul ist die Möglichkeit der Kombination direkter und indirekter Beleuchtung. Die Leuchten werden als Hängeleuchten mit Hängezubehör eingebaut.

### KONSTRUKTION

**Leuchtenkörper:** Stahlblech, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9003 (Signalweiß), RAL 9006 (Weißaluminium) auf Wunsch

**Raster:** parabolische Aluminiumraster PAR-V, PAR MAT-V

**Reflektor:** es ist möglich auf Wunsch alle Ausführungen mit Zusatzreflektoren zu ergänzen – mit einem für die Mittelleuchtstofflampe im parabolischen Raster und mit zwei unter die auf die Decke leuchtenden Leuchtstofflampen (Ausführung REF).

**Diffusoren (ESO G):** zwei Ausführungen von sandgestrahltem Glas – ganz sandgestrahlt (sanded) oder ohne Sandstrahlung unter dem Raster (clear) Das Glas ist zur Leuchte mittels der Dekorationsschrauben befestigt.

Für den Austausch der mittleren Leuchtstoffröhre ist der über den Raster mit Schrauben befestigte obere Blechdeckel zu beseitigen. Freier Zugang zu restlichen Leuchtstoffröhren ist von oben möglich.

Nähere Beschreibung von einzelnen Optiktypen ist am Seite 316/317 in OPTICS Anlage angeführt.

Modul ESO ist im Angebot auch mit einer überwiegend indirekten Charakteristik – Ausführung S. Das Lochunterblech in dieser Ausführung läßt einen Teil des Lichtstromes nach unten durch, der Großteil des Lichtstromes ist jedoch mit Oberreflektoren in einem breiten Bündel nach oben gerichtet. Wegen der Wartung ist der Leuchtendeckel mit einem durchsichtigen Kunststoffdeckel verdeckt, der Leuchtstofflampenwechsel ist nach seiner Beseitigung möglich.

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten können wie folgt ausgerüstet sein:

- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

Die Leuchten sind standardmäßig mit zwei elektronischen Vorschaltgeräten ausgerüstet, die für selbständige Steuerung direkter und indirekter Komponente des Lichtstromes auf Wunsch angeschlossen werden können.

**Andere Komponente:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm) - die Lichtquellen sind extra zu bestellen
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Halter gegen Ausreißen der Leiter aus der Klemmleiste, eine Gummidurchführung für Speisekabel
- die Leuchten können auf Wunsch mit Noteinheiten mit einem Autonombetrieb von 1 oder 3 Stunden ausgerüstet werden

### ZUBEHÖR

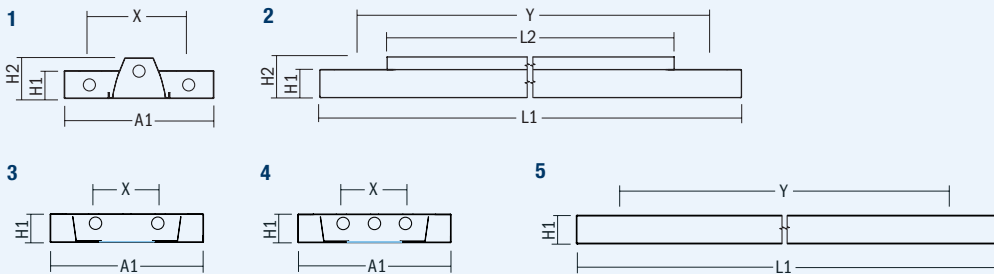
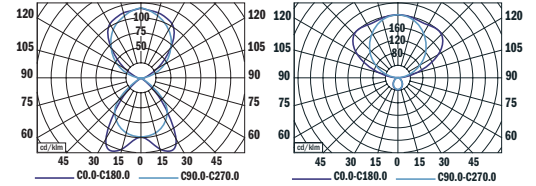
- Seilschalter
- Verschiedene Typen des Hängezubehörs
- kombinierter Sensor (Anwesenheitsdetektor + Aufnehmer der täglichen Beleuchtung + Infrarotempfänger mit Fernsteuerung), der im Leuchtenkörper angebracht ist

# MODUL

## ESO PAR-V/PAR MAT-V/PAR-V REFLEX/PAR MAT-V REFLEX T5

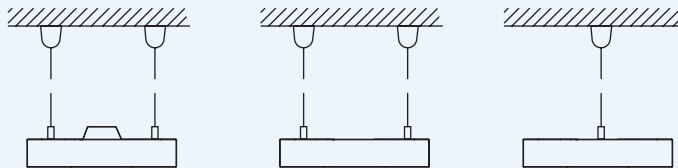
MODUL ESO PAR-V 3x28W

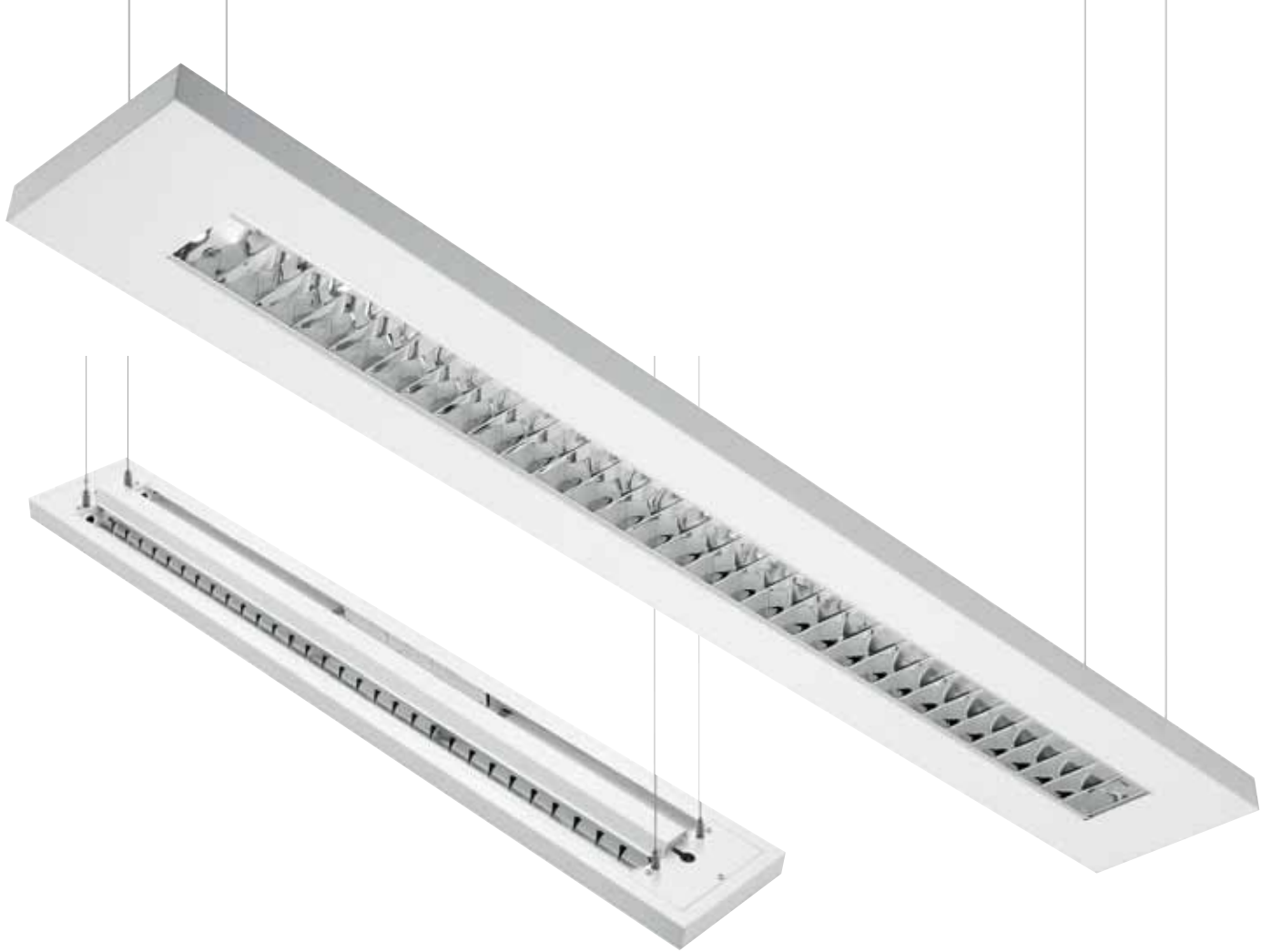
MODUL ESO S 2x28W



	OPTIC					POWER	LAMP	PICTURE	DIMENSIONS				FIXING		
	PAR-V	PAR MAT-V	PAR-V REF	PAR MAT-V REF	S				A1	L1	L2	H1	H2	X	Y
Modul ESO	•	•	•	•		3x28	T5	1,2	198	1370	1190	38	63	86	1192
Modul ESO	•	•	•	•		3x35	T5	1,2	198	1670	1490	38	63	86	1492
Modul ESO	•	•	•	•		3x49	T5	1,2	198	1670	1490	38	63	86	1492
Modul ESO	•	•	•	•		3x54	T5	1,2	198	1370	1190	38	63	86	1192
Modul ESO	•	•	•	•		1x28+2x28	T5	1,2	198	1370	1190	38	63	86	1192
Modul ESO	•	•	•	•		1x28+2x54	T5	1,2	198	1370	1190	38	63	86	1192
Modul ESO	•	•	•	•		1x35+2x35	T5	1,2	198	1670	1490	38	63	86	1492
Modul ESO	•	•	•	•		1x35+2x49	T5	1,2	198	1670	1490	38	63	86	1492
Modul ESO	•	•	•	•		1x49+2x49	T5	1,2	198	1670	1490	38	63	86	1492
Modul ESO	•	•	•	•		1x49+2x35	T5	1,2	198	1670	1490	38	63	86	1492
Modul ESO	•	•	•	•		1x54+2x54	T5	1,2	198	1370	1190	38	63	86	1192
Modul ESO	•	•	•	•		1x54+2x28	T5	1,2	198	1370	1190	38	63	86	1192
Modul ESO					•	2x28	T5	3,5	198	1370	-	38	-	86	1199
Modul ESO					•	2x54	T5	3,5	198	1370	-	38	-	86	1199
Modul ESO					•	2x35	T5	3,5	198	1670	-	38	-	86	1499
Modul ESO					•	2x49	T5	3,5	198	1670	-	38	-	86	1499
Modul ESO					•	2x80	T5	3,5	198	1670	-	38	-	86	1499
Modul ESO					•	3x28	T5	4,5	198	1370	-	38	-	86	1199
Modul ESO					•	3x54	T5	4,5	198	1370	-	38	-	86	1199
Modul ESO					•	3x35	T5	4,5	198	1670	-	38	-	86	1499
Modul ESO					•	3x49	T5	4,5	198	1670	-	38	-	86	1499
Modul ESO					•	3x80	T5	4,5	198	1670	-	38	-	86	1499

### INSTALLATION





MODUL ESO PAR-V 3x28W

ESO sensor



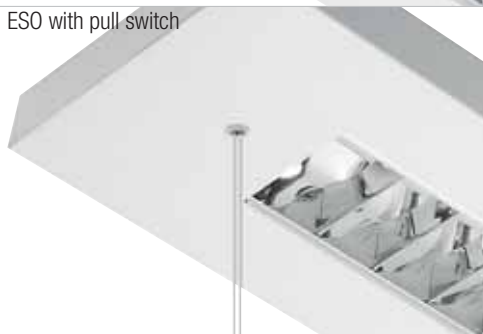
PAR-V



PAR-V REF



ESO with pull switch



PAR MAT-V



PAR MAT-V REF



pull switch detail





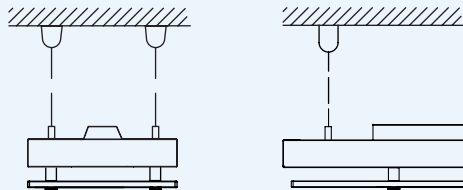
# MODUL

## ESO G CLEAR/SANDED PAR-V/PAR MAT-V/PAR-V REFLEX/PAR MAT-V REFLEX T5



	OPTIC				POWER	LAMP	DIMENSIONS					FIXING	
	PAR-V	PAR MAT-V	PAR-V REF	PAR MAT-V REF			A1	L1	L2	H1	H2	X	Y
Modul ESO G CLEAR	•	•	•	•	3x28	T5	198	1370	1190	83	38	86	1192
Modul ESO G CLEAR	•	•	•	•	3x35	T5	198	1670	1490	83	38	86	1492
Modul ESO G CLEAR	•	•	•	•	3x49	T5	198	1670	1490	83	38	86	1492
Modul ESO G CLEAR	•	•	•	•	3x54	T5	198	1370	1190	83	38	86	1192
Modul ESO G CLEAR	•	•	•	•	1x28+2x28	T5	198	1370	1190	83	38	86	1192
Modul ESO G CLEAR	•	•	•	•	1x28+2x54	T5	198	1370	1190	83	38	86	1192
Modul ESO G CLEAR	•	•	•	•	1x35+2x35	T5	198	1670	1490	83	38	86	1492
Modul ESO G CLEAR	•	•	•	•	1x35+2x49	T5	198	1670	1490	83	38	86	1492
Modul ESO G CLEAR	•	•	•	•	1x49+2x49	T5	198	1670	1490	83	38	86	1492
Modul ESO G CLEAR	•	•	•	•	1x49+2x35	T5	198	1670	1490	83	38	86	1492
Modul ESO G CLEAR	•	•	•	•	1x54+2x54	T5	198	1370	1190	83	38	86	1192
Modul ESO G CLEAR	•	•	•	•	1x54+2x28	T5	198	1370	1190	83	38	86	1192
Modul ESO G CLEAR	•	•	•	•	1x54+2x54	T5	198	1370	1190	83	38	86	1192
Modul ESO G CLEAR	•	•	•	•	1x54+2x28	T5	198	1370	1190	83	38	86	1192
Modul ESO G SANDED	•				3x28	T5	198	1370	1190	83	38	86	1192
Modul ESO G SANDED	•				3x35	T5	198	1670	1490	83	38	86	1492
Modul ESO G SANDED	•				3x49	T5	198	1670	1490	83	38	86	1492
Modul ESO G SANDED	•				3x54	T5	198	1370	1190	83	38	86	1192
Modul ESO G SANDED	•				1x28+2x28	T5	198	1370	1190	83	38	86	1192
Modul ESO G SANDED	•				1x28+2x54	T5	198	1370	1190	83	38	86	1192
Modul ESO G SANDED	•				1x35+2x35	T5	198	1670	1490	83	38	86	1492
Modul ESO G SANDED	•				1x35+2x49	T5	198	1670	1490	83	38	86	1492
Modul ESO G SANDED	•				1x49+2x49	T5	198	1670	1490	83	38	86	1492
Modul ESO G SANDED	•				1x49+2x35	T5	198	1670	1490	83	38	86	1492
Modul ESO G SANDED	•				1x54+2x54	T5	198	1370	1190	83	38	86	1192
Modul ESO G SANDED	•				1x54+2x28	T5	198	1370	1190	83	38	86	1192

INSTALLATION





MODUL ESO G CLEAR PAR-V 3x28W

CLEAR



SANDED



# MODUL

## EXE

### MODUL EXE

Jedno alebo dvojžiariarkové svietidlo MODUL EXE predstavuje typického zástupcu kancelárskeho svietidla s veľmi nízkym profilom. V závislosti od varianty poskytuje priamu alebo priamo/nepriamu distribúciu svetelného toku. Zvlášť efektívny nástroj na osvetľovanie stropov je mriežka TWIN so špeciálne tvarovanými pozdĺžnymi lamelami, ktoré usmerňujú svetelný tok rovnomerne smerom nahor. Svietidlá sa montujú ako závesné pomocou závesného príslušenstva.

#### KONŠTRUKCIA

**Teleso svietidla:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela), RAL 9006 (biely hliník) na požiadanie. Vrchný plech s otvormi nad žiarivkami pre DIR/INDIR verzie.

**Mriežky:** hliníkové parabolické mriežky PAR-V, PAR MAT-V, TWIN

**Reflektor:** pre všetky mriežky PAR na požiadanie prídavný vrchný reflektor (verzia REF)

Pre výmenu žiaroviek je potrebné odstrániť vrchný plech svietidla uchytený štyrmi skrutkami. Bližší popis jednotlivých typov optiky je uvedený na strane 316/317, v kapitole OPTICS.

#### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- elektronickými predradníkmi, štandardne triedy EEI=A2
  - stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)
- Na požiadanie môžu byť svietidlá vybavené dvomi elektronickými predradníkmi pre samostatné ovládanie priamej a nepriamej zložky svetelného toku.

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- držiaky proti vytrhnutiu vodičov zo svorkovnice, gumená prechodka pre napájací kábel
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

#### PRÍSLUŠENSTVO

- lankový vypínač
- rôzne typy závesného príslušenstva
- kombinovaný senzor (detektor prítomnosti + snímač denného osvetlenia + infračervený prijímač na diaľkové ovládanie) vsadený do telesa svietidla

## MODUL EXE

**MODUL EXE one- or two-lamp light fixtures represent typical office light fittings with a very low profile. Depending on the variant, it provides direct or direct/indirect luminous flux distribution. An especially spectacular tool for ceiling illumination is the TWIN louver with specially shaped longitudinal lamellas that direct the light beam evenly upwards. The light fixtures are mounted as a pendant using suspension accessories.**

### CONSTRUCTION

**Housing:** steel sheet, electrostatic powder coat finish – basic shade RAL 9003 (signal white), RAL 9006 (white aluminium) on request; top sheet with perforations above the lamps for DIR/INDIR versions.

**Louvers:** aluminium parabolic louvers PAR-V, PAR MAT-V, TWIN

**Reflector:** additional top reflector (REF version) for all PAR louvers available on request

To replace lamps, it is necessary to remove the top metal cover, attached by four screws.

Further description of individual optic types is listed on the page 316/317, in section OPTICS.

### WIRING

**Light fixtures can be equipped with:**

- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

Light fixtures can be equipped with two electronic control gears for independent control of the direct and indirect part of the luminous flux on request.

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- holders to prevent conductors from detaching from the terminal block, a rubber reducer for power cable
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request

### ACCESSORIES

- pull switch
- various types of suspension accessories
- combined sensor (motion detector + daylight sensor + infrared receiver for remote control) embedded in the body

## MODUL EXE

**Eine Ein- oder Zweileuchtstoffröhrenleuchte MODUL EXE stellt einen typischen Vertreter der Büroleuchten mit sehr niedrigem Profil dar. Abhängig von der Variante bietet sie eine direkte oder direkte/indirekte Verteilung des Lichtstromes. Ein besonders effektives Mittel zur Beleuchtung der Decken ist der Raster TWIN mit speziell verformten Längslamellen, die den Lichtstrom gleichmäßig nach oben richten. Die Leuchten werden als Hängeleuchten mit Hängezubehör eingebaut.**

### KONSTRUKTION

**Leuchtenkörper:** Stahlblech, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9003 (Signalweiß), RAL 9006 (Weißaluminium) auf Wunsch

Oberblech mit Öffnungen über den Leuchtstoffröhren für Ausführungen DIR/INDIR

**Raster:** parabolische Aluminiumraster PAR-V, PAR MAT-V, TWIN

**Reflektor:** für alle Raster PAR ein zusätzlicher Oberreflektor (Ausführung REF) auf Wunsch

Für den Austausch der Leuchtstoffröhren ist es notwendig, das mit vier Schrauben befestigte Oberblech der Leuchte zu beseitigen.

Nähere Beschreibung von einzelnen Optiktypen ist am Seite 316/317 in OPTICS Anlage angeführt.

### ELEKTRISCHE AUSRÜSTUNG

**Die Leuchten können wie folgt ausgerüstet sein:**

- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert sein)

Die Leuchten können mit zwei elektronischen Vorschaltgeräten für selbständige Steuerung direkter und indirekter Komponente des Lichtstromes auf Wunsch ausgerüstet werden.

**Andere Komponente:**

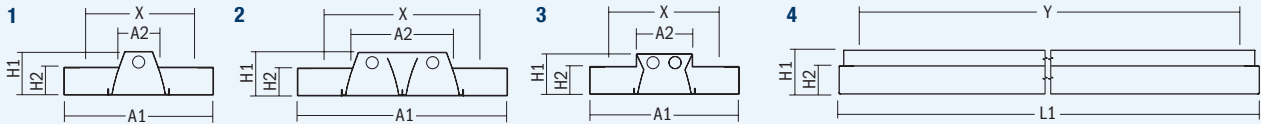
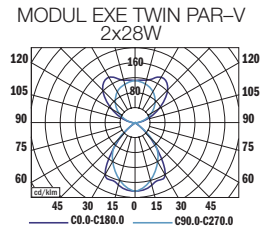
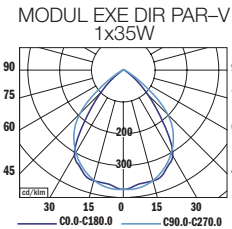
- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm) - die Lichtquellen sind extra zu bestellen
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht, Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Halter gegen Ausreißen der Leiter aus der Klemmleiste, eine Gummidurchführung für Speisekabel
- Leuchten können auf Wunsch mit Noteinheiten mit Autonombetrieb von 1 oder 3 Stunden ausgerüstet werden

### ZUBEHÖR

- Seilschalter
- Verschiedene Typen des Hängezubehörs
- kombinierter Sensor (Anwesenheitsdetektor + Aufnehmer der täglichen Beleuchtung + Infrarotempfänger mit Fernsteuerung), der im Leuchtenkörper angebracht ist

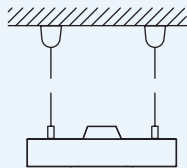
# MODUL

## EXE/EXE TWIN DIR/DIR-INDIR PAR-V/PAR MAT-V/PAR-V REFLEX/PAR MAT-V REFLEX T5



	OPTIC						POWER	LAMP	PICTURE	DIMENSIONS				FIXING		
	PAR-V	PAR MAT-V	PAR-V REF	PAR MAT-V REF	PAR DIR/INDIR	PAR MAT DIR/INDIR				A1	A2	L1	H1	H2	X	Y
Modul EXE	•	•	•	•	•	•	1x28	T5	1;4	198	52	1208	58	39	106	1144
Modul EXE	•	•	•	•	•	•	1x54	T5	1;4	198	52	1208	58	39	106	1144
Modul EXE	•	•	•	•	•	•	1x35	T5	1;4	198	52	1508	58	39	106	1444
Modul EXE	•	•	•	•	•	•	1x49	T5	1;4	198	52	1508	58	39	106	1444
Modul EXE	•	•	•	•	•	•	1x80	T5	1;4	198	52	1508	58	39	106	1444
Modul EXE	•	•	•	•	•	•	2x28	T5	2;4	278	132	1208	58	39	186	1144
Modul EXE	•	•	•	•	•	•	2x54	T5	2;4	278	132	1208	58	39	186	1144
Modul EXE	•	•	•	•	•	•	2x35	T5	2;4	278	132	1508	58	39	186	1444
Modul EXE	•	•	•	•	•	•	2x49	T5	2;4	278	132	1508	58	39	186	1444
Modul EXE	•	•	•	•	•	•	2x80	T5	2;4	278	132	1508	58	39	186	1444
Modul EXE-TWIN					•	•	2x28	T5	3;4	198	77	1208	58	39	106	1144
Modul EXE-TWIN					•	•	2x54	T5	3;4	198	77	1208	58	39	106	1144
Modul EXE-TWIN					•	•	2x35	T5	3;4	198	77	1508	58	39	106	1444
Modul EXE-TWIN					•	•	2x49	T5	3;4	198	77	1508	58	39	106	1444
Modul EXE-TWIN					•	•	2x80	T5	3;4	198	77	1508	58	39	106	1444

INSTALLATION





MODUL EXE DIR PAR-V 2x28W

EXE sensor



1x...



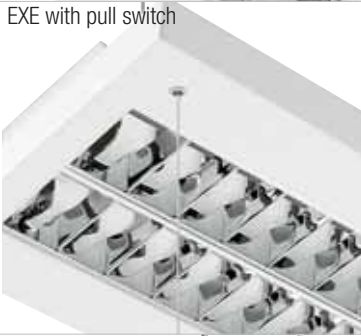
DIR



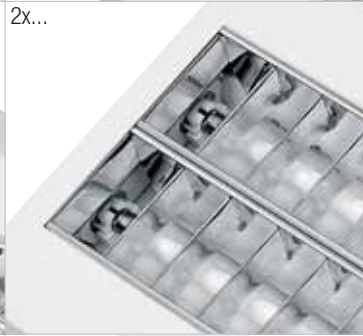
DIR-INDIR



EXE with pull switch



2x...



DIR



DIR-INDIR



pull switch detail



2xTWIN



TWIN DIR-INDIR





# MODUL

## GAMMA

### MODUL GAMMA

Trojžiarivkové svietidlo MODUL GAMMA je ďalšie z radu kancelárskych svietidiel s veľmi nízkym profilom, ponúkajúce kombináciu priameho a nepriameho osvetlenia. Svietidlá sa montujú ako závesné pomocou závesného príslušenstva.

#### KONŠTRUKCIA

**Teleso svietidla:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela), RAL 9006 (biely hliník) na požiadanie. Pre rovnomerný rozptyl svetla je pod perforovanými tienidlom (verzia GAMMA S) vsunutá tenká polykarbonátová fólia.

**Mriežky:** hliníkové parabolické mriežky PAR-V, PAR MAT-V

Pre výmenu strednej žiarivky je potrebné pre obidve verzie svietidla dať dole vrchný plech uchytený dvomi dekoračnými skrutkami. Bližší popis jednotlivých typov optiky je uvedený na strane 316/317, v kapitole OPTICS.

#### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- elektronickými predradníkmi, štandardne triedy EEI=A2
  - stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)
- Na požiadanie môžu byť svietidlá vybavené dvomi elektronickými predradníkmi pre samostatné ovládanie priamej a nepriamej zložky svetelného toku (verzia GAMMA PAR).

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- držiaky proti vytrhnutiu vodičov zo svorkovnice, gumená prechodka pre napájací kábel
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

#### PRÍSLUŠENSTVO

- lankový vypínač
- rôzne typy závesného príslušenstva

## MODUL GAMMA

The **MODUL GAMMA three-lamp light fitting** is another product from the range of office light fixtures with a very low profile, offering a combination of direct and indirect lighting. The light fixtures are mounted as a pendant using suspension accessories.

### CONSTRUCTION

**Housing:** steel sheet, electrostatic powder coat finish – basic shade RAL 9003 (signal white), RAL 9006 (white aluminium) on request. For regular light diffusion, a thin polycarbonate foil is used under the perforated shade (GAMMA S version).

**Louvers:** aluminium parabolic grids PAR-V, PAR MAT-V

To replace the middle lamp in both versions, it is necessary to remove the top metal cover attached by two decorative screws. Further description of individual optic types is listed on the page 316/317, in section OPTICS.

### WIRING

Light fixtures can be equipped with:

- an electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

The light fixtures can be equipped with two electronic control gears for independent control of the direct and indirect part of the luminous flux on request (GAMMA PAR version).

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- holders to prevent conductors from detaching from the terminal block, a rubber reducer for power cable
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request

### ACCESSORIES

- wire switch
- various types of pendant accessories

## MODUL GAMMA

Die **Dreileuchtstoffröhrenleuchte MODUL GAMMA** ist die nächste Leuchte aus der Reihe der Büroleuchten mit sehr niedrigem Profil, die die Kombination direkter oder indirekter Beleuchtung anbietet. Die Leuchten werden als Hängeleuchten mit Hängezubehör eingebaut.

### KONSTRUKTION

**Leuchtenkörper:** Stahlblech, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9003 (Signalweiß), RAL 9006 (Weißaluminium) auf Wunsch

Für eine gleichmäßige Lichtstreuung ist unter dem Lochschirm (Ausführung GAMMA S) eine dünne Polykarbonatfolie eingelegt.

**Raster:** parabolische Aluminiumraster PAR-V, PAR MAT-V

Für Austausch der mittleren Leuchtstoffröhre ist es für beide Ausführungen notwendig, das durch Dekorationsschrauben befestigte Oberblech zu beseitigen.

Nähere Beschreibung von einzelnen Optiktypen ist am Seite 316/317 in OPTICS Anlage angeführt.

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten können wie folgt ausgerüstet sein:

- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

Die Leuchten können mit zwei elektronischen Vorschaltgeräten für selbständige Steuerung direkter und indirekter Komponente des Lichtstromes (Ausführung GAMMA PAR) auf Wunsch ausgerüstet werden.

**Andere Komponente:**

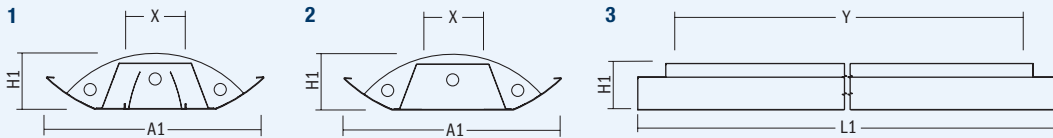
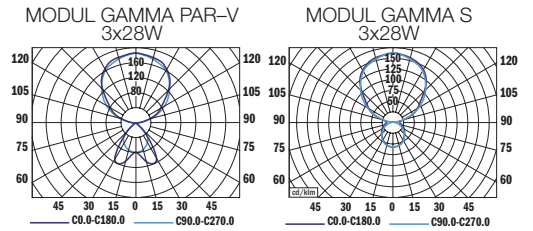
- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm) - die Lichtquellen sind extra zu bestellen
- Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht, Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Halter gegen Ausreißen der Leiter aus der Klemmleiste, eine Gummidurchführung für Speisekabel
- Leuchten können auf Wunsch mit Noteinheiten mit Autonombetrieb von 1 oder 3 Stunden ausgerüstet werden

### ZUBEHÖR

- Seilschalter
- Verschiedene Typen des Hängezubehörs

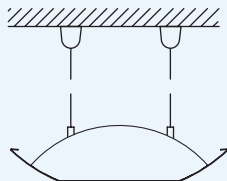
# MODUL

## GAMMA PAR-V/PAR MAT-V/S T5



	OPTIC			POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	PAR-V	PAR MAT-V	S				A1	L1	H1	X	Y
Modul GAMMA	•	•		3x28	T5	1;3	285	1250	65	80	1130
Modul GAMMA	•	•		3x35	T5	1;3	285	1550	65	80	1430
Modul GAMMA	•	•		3x49	T5	1;3	285	1550	65	80	1430
Modul GAMMA	•	•		3x54	T5	1;3	285	1250	65	80	1130
Modul GAMMA	•	•		1x28+2x28	T5	1;3	285	1250	65	80	1130
Modul GAMMA	•	•		1x28+2x54	T5	1;3	285	1250	65	80	1130
Modul GAMMA	•	•		1x35+2x35	T5	1;3	285	1550	65	80	1430
Modul GAMMA	•	•		1x35+2x49	T5	1;3	285	1550	65	80	1430
Modul GAMMA	•	•		1x49+2x49	T5	1;3	285	1550	65	80	1430
Modul GAMMA	•	•		1x49+2x35	T5	1;3	285	1550	65	80	1430
Modul GAMMA	•	•		1x54+2x54	T5	1;3	285	1250	65	80	1130
Modul GAMMA	•	•		1x54+2x28	T5	1;3	285	1250	65	80	1130
Modul GAMMA			•	3x28	T5	2;3	285	1250	65	80	1130
Modul GAMMA			•	3x35	T5	2;3	285	1550	65	80	1430
Modul GAMMA			•	3x49	T5	2;3	285	1550	65	80	1430
Modul GAMMA			•	3x54	T5	2;3	285	1250	65	80	1130

INSTALLATION





MODUL GAMMA PAR-V 3x28W

PAR-V



GAMA with pull switch



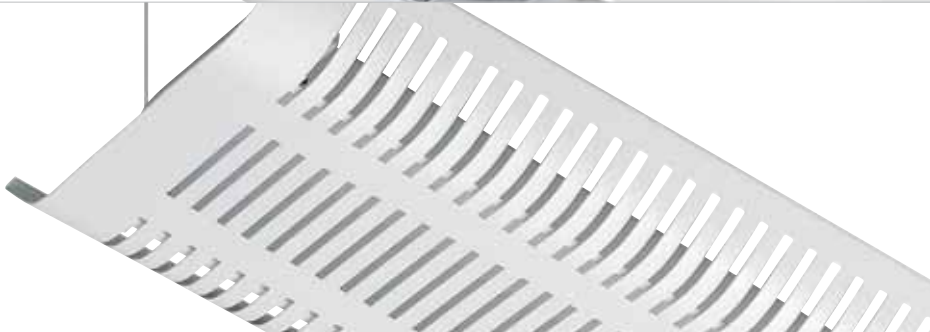
PAR MAT-V



pull switch detail



S



# MODUL

## DA

### MODUL DA

Hliníkové svietidlá MODUL DA s možnosťou voľby dvoch alebo troch žiarivek v sebe spájajú moderný dizajn a kombináciu priameho a nepriameho osvetlenia. MODUL DA ponúka možnosť rozšírenia o prídavný reflektor pre oddelené ovládanie týchto dvoch zložiek a väčší svetelný výkon. Pre rovnomerný rozptyl svetla, zvýšenie krytia a jednoduchšiu údržbu svietidla je vrchná časť svietidla prekrytá prieladným plastovým difúzorom. Svietidlá sa montujú ako závesné pomocou rôznych typov závesného príslušenstva.

#### KONŠTRUKCIA

**Teleso svietidla:** extrudovaný hliník, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela), RAL 9006 (biely hliník, jemná štruktúra).

**Mriežky:** hliníkové parabolické mriežky PAR-V, PAR MAT-V

**Reflektor:** na požiadanie prídavný vrchný reflektor (verzia REF)

**Difúzor:** priehľadný vrúbkovaný PMMA

Mriežka je v svietidle uchytená pomocou pružín, vrchný difúzor je uchytený v drážke telesa svietidla - toto riešenie umožňuje jednoduchý prístup do svietidla a beznástrojovú výmenu svetelných zdrojov.

Bližší popis jednotlivých typov optiky je uvedený na strane 316/317, v kapitole OPTICS.

#### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- elektronickými predradníkmi, štandardne triedy EEL=A2
- stmievateľnými elektronickými predradníkmi, trieda EEL=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

Na požiadanie môžu byť svietidlá vybavené dvomi elektronickými predradníkmi pre samostatné ovládanie priamej a nepriamej zložky svetelného toku (verzia DA PAR REFLEX).

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- držiaky proti vytrhnutiu vodičov zo svorkovnice, gumená prechodka pre napájací kábel
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

#### PRÍSLUŠENSTVO

- lankový vypínač
- rôzne typy závesného príslušenstva

## MODUL DA

**MODUL DA aluminium light fittings, with the optional choice of two or three fluorescent lamps, combine modern design and a combination of direct and indirect illumination. MODUL DA provides the possibility of enhancement with an additional reflector for separate control of these two components and higher fixture efficiency. To keep the light beam even, increase coverage and simplify maintenance of the light fixture, the top part of it is covered with a transparent plastic diffuser. The light fixtures are mounted as a pendant using various types of accessories.**

### CONSTRUCTION

**Housing:** extruded aluminium, electrostatic powder coat finish – basic shade RAL 9003 (signal white), basic shade RAL 9006 (white aluminium, fine structure).

**Louvers:** aluminium parabolic louvers PAR-V, PAR MAT-V

**Reflector:** additional top reflector (REF version) available on request

**Diffuser:** transparent, notched PMMA

The louver in the light fixture is attached using springs; the top diffuser is attached to the light fixture body groove – this solution allows easy access to the light fixture and tool-free lamp replacement.

Further description of individual optic types is listed on the page 316/317, in section OPTICS.

### WIRING

**Light fixtures can be equipped with:**

- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

Light fixtures can be equipped with two electronic control gears for independent control of the direct and indirect part of the luminous flux on request (DA PAR REFLEX version).

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> diameter
- a screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- holders to prevent pulling off of conductors from the terminal block, a rubber reducer for the power cable
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request

### ACCESSORIES

- pull switch
- various types of suspension accessories

## MODUL DA

**Die Aluminiumleuchten MODUL DA, mit der Möglichkeit von zwei oder drei Leuchtstoffröhren, verbinden ein modernes Design mit der Kombination direkter und indirekter Beleuchtung. MODUL DA bietet die Möglichkeit der Ergänzung um einen Zusatzreflektor für getrennte Steuerung dieser zwei Komponenten und auch eine höhere Lichtleistung an. Für gleichmäßige Lichtstreuung, Erhöhung der Deckung und einfachere Wartung der Leuchte ist der Oberteil der Leuchte mit einem durchsichtigen Kunststoffdiffusor verdeckt. Die Leuchten werden als Hängeleuchten mittels verschiedener Typen vom Hängezubehör eingebaut.**

### KONSTRUKTION

**Leuchtenkörper:** extrudiertes Aluminium, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9003 (Signalweiß), RAL 9006 (Weißaluminium, feine Struktur).

**Raster:** parabolische Aluminiumraster PAR-V, PAR MAT-V

**Reflektor:** ein zusätzlicher Oberreflektor (Ausführung REF) auf Wunsch

**Diffusor:** durchsichtiger, zackiger PMMA

Der Raster ist in der Leuchte mit Federn befestigt, der Oberdiffusor ist in der Rille des Leuchtenkörpers befestigt – diese Lösung ermöglicht einen einfachen Zugang in die Leuchte und einen Austausch der Lichtquellen ohne Werkzeug.

Nähere Beschreibung von einzelnen Optiktypen ist am Seite 316/317 in OPTICS Anlage angeführt.

### ELEKTRISCHE AUSTRÜSTUNG

**Die Leuchten können wie folgt ausgerüstet sein:**

- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

Die Leuchten können auf Wunsch mit zwei elektronischen Vorschaltgeräten für selbständige Steuerung direkter und indirekter Komponente des Lichtstromes (Ausführung DA PAR REFLEX) ausgerüstet werden.

**Andere Komponente:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm) - die Lichtquellen sind extra zu bestellen
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Halter gegen Ausreißen der Leiter aus der Klemmleiste, eine Gummidurchführung für Speisekabel
- die Leuchten können auf Wunsch mit Noteinheiten mit Autonombetrieb von 1 oder 3 Stunden ausgerüstet werden

### ZUBEHÖR

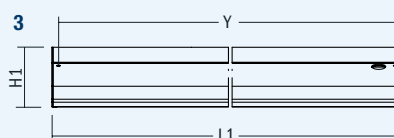
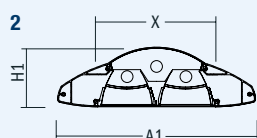
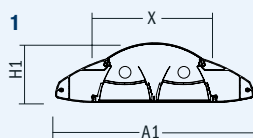
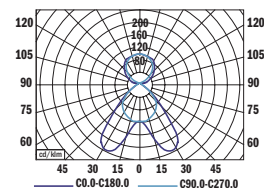
- Seilschalter
- Verschiedene Typen des Hängezubehörs



# MODUL

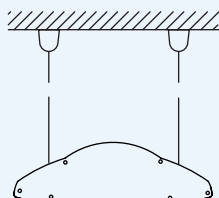
## DA PAR-V/PAR MAT-V/PAR-V REF/PAR MAT-V REF T5

MODUL DA PAR-V REF T5 3x28W



	OPTIC				POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	PAR-V	PAR MAT-V	PAR-V REF	PAR MAT-V REF				A1	L1	H1	X	Y
Modul DA PAR-V	•	•			2x14	T5	1,3	356	697	109	255	677
Modul DA PAR-V	•	•			2x24	T5	1,3	356	697	109	255	677
Modul DA PAR-V	•	•			2x28	T5	1,3	356	1306	109	255	1286
Modul DA PAR-V	•	•			2x54	T5	1,3	356	1306	109	255	1286
Modul DA PAR-V	•	•			2x35	T5	1,3	356	1610	109	255	1590
Modul DA PAR-V	•	•			2x49	T5	1,3	356	1610	109	255	1590
Modul DA PAR-V	•	•			2x80	T5	1,3	356	1610	109	255	1590
Modul DA PAR-V REF			•	•	2x14+1x14	T5	2,3	270	594	81	153	576
Modul DA PAR-V REF			•	•	2x14+1x24	T5	2,3	270	594	81	153	576
Modul DA PAR-V REF			•	•	2x24+1x14	T5	2,3	270	594	81	153	576
Modul DA PAR-V REF			•	•	2x24+1x24	T5	2,3	270	594	81	153	576
Modul DA PAR-V REF			•	•	2x28+1x28	T5	2,3	270	1192	81	153	1174
Modul DA PAR-V REF			•	•	2x28+1x54	T5	2,3	270	1192	81	153	1174
Modul DA PAR-V REF			•	•	2x54+1x28	T5	2,3	270	1192	81	153	1174
Modul DA PAR-V REF			•	•	2x54+1x54	T5	2,3	270	1192	81	153	1174
Modul DA PAR-V REF			•	•	2x35+1x35	T5	2,3	270	1492	81	153	1474
Modul DA PAR-V REF			•	•	2x35+1x49	T5	2,3	270	1492	81	153	1474
Modul DA PAR-V REF			•	•	2x35+1x80	T5	2,3	270	1492	81	153	1474
Modul DA PAR-V REF			•	•	2x49+1x35	T5	2,3	270	1492	81	153	1474
Modul DA PAR-V REF			•	•	2x49+1x49	T5	2,3	270	1492	81	153	1474
Modul DA PAR-V REF			•	•	2x49+1x80	T5	2,3	270	1492	81	153	1474
Modul DA PAR-V REF			•	•	2x80+1x35	T5	2,3	270	1492	81	153	1474
Modul DA PAR-V REF			•	•	2x80+1x49	T5	2,3	270	1492	81	153	1474
Modul DA PAR-V REF			•	•	2x80+1x80	T5	2,3	270	1492	81	153	1474

INSTALLATION





MODUL DA PAR-V 3x28W

PAR-V REFLEX



DA with pull switch



PAR-V



pull switch detail



# MODUL

## EN

### MODUL EN

Elegantné svietidlá s nízkym hliníkovým profilom ponúkajú na výber niekoľko typov optických systémov. Ich výhodou je kombinácia priameho a nepriameho smerovania svetelného toku. Uplatnenie nájdu nielen pri riešení celkového osvetlenia, ale aj v aplikáciach vyžadujúcich dynamické osvetlenie alebo miešenie farieb. Veľkou výhodou pre všetky ponúkané varianty je možnosť ich priebežného zapojenia do dlhej neprerušovanej línie (verzia EN LINE). Pre zvýšenie krytia a jednoduchú údržbu svietidla je vrchná časť svietidla uzavretá priehľadným plastovým krytom. Svietidlá sa montujú ako závesné pomocou rôznych typov závesného príslušenstva.

#### KONŠTRUKCIA

**Teleso svietidla:** extrudované hliníkové profily, povrchovo upravené anodizovaním (prírodný hliníkový vzhľad)

**Koncovky svietidiel:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9007 (šedý hliník - mikroštruktúra)

**Mriežky:** hliníkové parabolické mriežky PAR-V, PAR MAT-V

**Difúzory:** polykarbonát s dvomi typmi mikroprizmatickej úpravy – LDP a CDP

Kvôli rovnomernejšiemu rozptylu svetla a zabráneniu pohľadu na jednotlivé žiarivky sa voliteľne nad difúzor môže pridať tenká polykarbonátová fólia (verzia DIF).

**Vrchný kryt:** priehľadný plast (PMMA)

Mriežky sú v svietidle uchytené pomocou pružín, vrchný kryt optiky je uchytený v drážke telesa svietidla – toto riešenie umožňuje jednoduchý prístup do svietidla a bez-nástrojovú výmenu svetelných zdrojov.

Bližší popis jednotlivých typov optiky je uvedený na strane 316/317, v kapitole OPTICS.

#### EN LINE

Pre verziu EN LINE sú použité iné koncovky svietidiel a jednotlivé svietidlá sú navzájom pevne pospájané prostredníctvom plechových spojok, povrchovo upravených v RAL 9007 (šedý hliník - mikroštruktúra). V koncovkách svietidiel sú otvory opatrené gumenými prechodkami. Vnútri svietidiel je pripravená kabeláž 3x1,5mm<sup>2</sup> alebo 5x1,5mm<sup>2</sup>, spolu s bezskrutkovými svorkovnicami umožňujúcimi rýchle priebežné prepojenie svietidiel. Svietidlá sú zavesené za spojky.

#### ELEKTRICKÁ VÝBAVA

Svietidlá môžu byť vybavené:

- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

Pre simuláciu priebehu denného osvetlenia, alebo pre potreby farebného miešania, môže byť varianta svietidiel PRISMA vybavená dvomi alebo tromi elektronickými predradníkmi, pre samostatné riadenie každej žiarivky (viac informácií v technickej prílohe).

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- gumená prechodka pre napájací kábel
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

#### PRÍSLUŠENSTVO

- rôzne typy závesného príslušenstva

## MODUL EN

These elegant light fixtures with low aluminium profiles provide several types of optical systems. Their advantage is the combination of direct and indirect light beam regulation. They can be used not only as general lighting, but also in applications requiring dynamic lighting or mixed colours. One great advantage of all offered variants is the possibility to connect them into a long uninterrupted line (EN LINE version). To increase coverage and simplify maintenance of the light fixture, a transparent plastic cover encloses the top section. The light fixtures are mounted as a pendant using various types of accessories.

### CONSTRUCTION

**Housing:** extruded aluminium profiles, anodised surface finish (natural aluminium appearance)

**Light fixture ends:** sheet steel, electrostatic powder coat finish – basic shade RAL 9007 (grey aluminium - microstructure)

**Louvers:** aluminium parabolic louvers PAR-V, PAR MAT-V

**Diffuser:** polycarbonate with two types of microprismatic finish – LDP and CDP

To make light diffusion more even and prevent individual lamps from being visible, the diffuser can be equipped with a thin polycarbonate foil over it (DIF version).

**Top cover:** transparent plastic (PMMA)

Louvers in the light fixture are attached using springs, the top optic cover is attached to the light fixture body groove – this solution allows easy access to the light fixture and tool-free lamp replacement.

Further description of individual optic types is listed on the page 316/317, in section OPTICS.

### EN LINE

The EN LINE version includes different fixture ends and individual light fixtures are tightly interconnected using metal connectors, surface finished in RAL 9007 (grey aluminium - microstructure). The endings contain openings equipped with rubber reducers. Inside the light fixture, cables 3x1,5mm<sup>2</sup> or 5x1,5mm<sup>2</sup> are located, together with screw-free connection boxes allowing fast interconnection of light fixtures. The light fixtures are suspended on connectors.

### WIRING

Light fixtures can be equipped with:

- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

To simulate daily light conditions or to mix colours, the PRISMA variant can be equipped with two or three electronic ballasts for independent control of each fluorescent lamp (for more information see technical appendix).

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screw-free three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- a rubber reducer for power cable
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request

### ACCESSORIES

- various types of suspension accessories

## MODUL EN

Elegante Leuchten mit einem niedrigen Aluminiumprofil bieten einige Typen optischer Systeme zur Auswahl. Ihr Vorteil ist die Kombination direkter und indirekter Richtung des Lichtstromes. Sie kommen nicht nur bei der Lösung der ganzen Beleuchtung, sondern auch in Anwendungen, die dynamische Lösung oder Farbgemisch erfordern, zur Geltung. Ein großer Vorteil für alle angebotenen Varianten ist die Möglichkeit ihrer durchlaufenden Einschaltung in lange kontinuierliche Linie (Ausführung EN LINE). Um Deckung und einfache Wartung der Leuchte zu erhöhen, ist der Oberteil der Leuchte mit einem durchsichtigen Kunststoffdeckel geschlossen. Die Leuchten werden als Hängeleuchten mit verschiedenen Typen des Hängezubehörs eingebaut.

### KONSTRUKTION

**Leuchtenkörper:** extrudierte Aluminiumprofile, Oberflächenbehandlung mit Anodisierung (natürliches Aluminiumaussehen)

**Leuchtenendstücke:** Stahlblech, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9007 (Graualuminium – Mikrostruktur)

**Raster:** parabolische Aluminiumraster PAR-V, PAR MAT-V

**Diffusoren:** Polycarbonat mit zwei Arten von prismatischer Gestaltung – LDP und CDP

Wegen der gleichmäßigeren Lichtstreuung und der Vorbeugung des Blicks auf einzelne Leuchtstoffröhren kann eine dünne Polycarbonatfolie (Ausführung DIF) über den Diffusor wahlfrei zugegeben werden.

**Oberdeckel:** durchsichtiger Kunststoff (PMMA)

Die Raster sind in der Leuchte mit Federn befestigt, der Oberdeckel der Optik ist in der Rille des Leuchtenkörpers befestigt – diese Lösung ermöglicht einfachen Zugang in die Leuchte und Austausch der Lichtquellen ohne Werkzeug.

Nähere Beschreibung von einzelnen Optiktypen ist am Seite 316/317 in OPTICS Anlage angeführt.

### EN LINE

Für die Ausführung von EN LINE werden andere Endstücke der Leuchten angewendet und die einzelnen Leuchten werden mit Blechverbindungsstücke einander verbunden, mit RAL 9007 (Graualuminium – Mikrostruktur)-Oberflächenbehandlung. In den Leuchtenendstücken sind die Öffnungen mit Gummidurchführungen versehen. Innerhalb der Leuchten ist die Verkabelung 3x1,5 mm<sup>2</sup> oder 5x1,5 mm<sup>2</sup> zusammen mit schraubenfreien Klemmleisten vorbereitet, die schnelle durchgehende Durchschaltung der Leuchten ermöglichen. Die Leuchten werden mit Verbindungsstücke aufgehängt.

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten können wie folgt ausgerüstet sein:

- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

Für die Simulation der Tagesbeleuchtung oder bei Bedarf der Farbmischung kann die Variante der Leuchten PRISMA mit zwei oder drei elektronischen Vorschaltgeräten für selbständige Steuerung jeder Leuchtstofflampe ausgerüstet werden (mehrere Informationen in technischer Anlage).

**Andere Komponente:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm) - die Lichtquellen sind extra zu bestellen
- Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Gummidurchführung für Speisekabel
- die Leuchten können auf Wunsch mit Noteinheiten mit einem unabhängigen Betrieb von 1 oder 3 Stunden ausgerüstet werden

### ZUBEHÖR

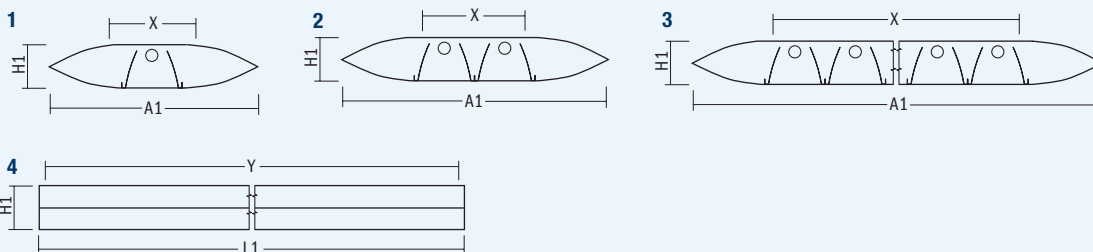
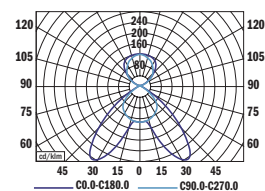
- verschiedene Typen von Hängezubehör

# MODUL

## EN PAR-V/PAR MAT-V T5

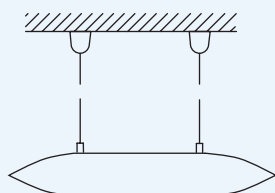


MODUL EN PAR-V 2X28W



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	PAR-V	PAR MAT-V				A1	L1	H1	X	Y
Modul EN PAR-V	•	•	1x28	T5	1,4	250	1188	55	62	1159
Modul EN PAR-V	•	•	1x54	T5	1,4	250	1188	55	62	1159
Modul EN PAR-V	•	•	1x35	T5	1,4	250	1488	55	62	1459
Modul EN PAR-V	•	•	1x49	T5	1,4	250	1488	55	62	1459
Modul EN PAR-V	•	•	1x80	T5	1,4	250	1488	55	62	1459
Modul EN PAR-V	•	•	2x28	T5	2,4	330	1188	55	142	1159
Modul EN PAR-V	•	•	2x54	T5	2,4	330	1188	55	142	1159
Modul EN PAR-V	•	•	2x35	T5	2,4	330	1488	55	142	1459
Modul EN PAR-V	•	•	2x49	T5	2,4	330	1488	55	142	1459
Modul EN PAR-V	•	•	2x80	T5	2,4	330	1488	55	142	1459
Modul EN PAR-V	•	•	4x14	T5	3,4	570	590	55	373	485
Modul EN PAR-V	•	•	4x24	T5	3,4	570	590	55	373	485

INSTALLATION







MODUL EN PAR-V 2x28W

1x...



2x...



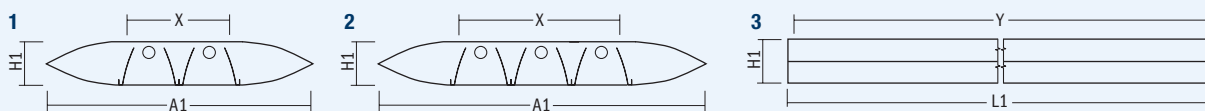
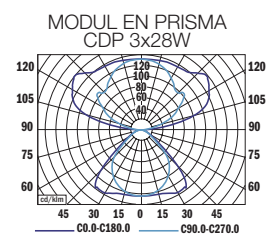
4x...





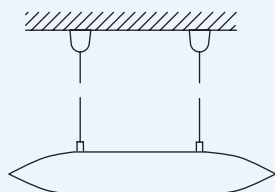
# MODUL

## EN PRISMA LDP/CDP/CDP DIF T5



	OPTIC			POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
	LDP	CDP	CDP DIF				A1	L1	H1	X	Y
Modul EN PRISMA	•	•	•	2x28	T5	1;3	330	1188	55	142	1159
Modul EN PRISMA	•	•	•	2x54	T5	1;3	330	1188	55	142	1159
Modul EN PRISMA	•	•	•	2x35	T5	1;3	330	1488	55	142	1459
Modul EN PRISMA	•	•	•	2x49	T5	1;3	330	1488	55	142	1459
Modul EN PRISMA	•	•	•	2x80	T5	1;3	330	1488	55	142	1459
Modul EN PRISMA	•	•	•	3x28	T5	2;3	390	1188	55	201	1159
Modul EN PRISMA	•	•	•	3x35	T5	2;3	390	1488	55	201	1459

INSTALLATION





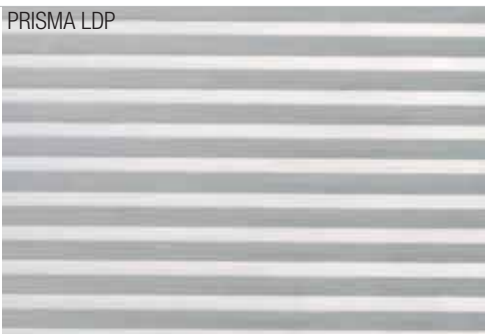
MODUL EN PRISMA CDP 3x28W

2x...



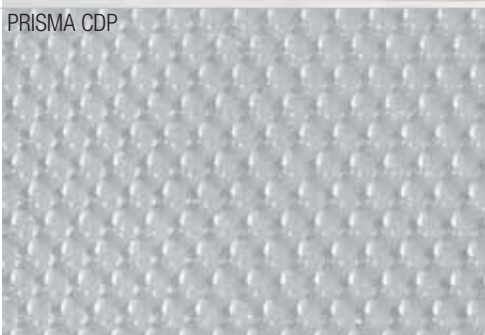
PRISMA LDP

3x...



PRISMA CDP

RGB



# MODUL

## LAMBDA

### MODUL LAMBDA

Svietidlá minimalistického dizajnu s nízkym profilom, ponúkajúce v závislosti od varianty buď priame, alebo kombináciu priameho a nepriameho smerovania svetelného toku. Pre dosiahnutie vysokého svetelného výkonu z kompaktných rozmerov svietidla poskytujú možnosť umiestnenia dvoch žiaroviek v jednej parabolickej mriežke. Veľkou výhodou pre všetky ponúkané varianty je možnosť ich priebežného zapojenia do dlhej neprerušovanej línie (verzia LAMBDA LINE). Svetidlá sa montujú buď ako závesné pomocou rôznych typov závesného príslušenstva alebo ako prisadené.

#### KONŠTRUKCIA

**Teleso svietidla:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9007 (šedý hliník - mikroštruktúra), RAL 9003 (signálna biela) na požiadanie. Vrchný plech s otvormi nad žiarivkami pre DIR/INDIR verzie.

**Mriežky:** hliníkové parabolické mriežky PAR-V, PAR MAT-V

**Reflektor (Lambda DIR):** hliníkový reflektor zakrývajúce vrchné otvory

Mriežka je v svietidle uchytená pomocou pružín, ktoré umožňujú beznástrojovú výmenu svetelného zdroja. Bližší popis jednotlivých typov optiky je uvedený na strane 316/317, v kapitole OPTICS.

#### LAMBDA LINE

Vo verzii LAMBDA LINE sú jednotlivé svietidlá navzájom pevne pospájané prostredníctvom plechových spojok, povrchovo upravených v RAL 9007 (šedý hliník - mikroštruktúra). V bočniciach svietidiel sú otvory opatrené gumenými prechodkami. Vnútri svietidiel je pripravená kabeláž 3x1,5mm<sup>2</sup> alebo 5x1,5mm<sup>2</sup>, spolu s bezskrutkovými svorkovnicami umožňujúcimi rýchle priebežné prepojenie svietidiel. Svetidlá sú zavesené za spojky.

#### ELEKTRICKÁ VÝBAVA

Svietidlá môžu byť vybavené:

- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- držiaky proti vytrhnutiu vodičov zo svorkovnice, gumená prechodka pre napájací kábel
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

#### PRÍSLUŠENSTVO

- lankový vypínač
- rôzne typy závesného príslušenstva

## MODUL LAMBDA

**Minimalist designed light fixtures with a low profile, offering – depending on the variant – either a direct or a combination of direct and indirect distribution of luminous flux; to achieve high fixture efficiency with the compact dimensions of the light fixture, they provide the option to put two fluorescent lamps into one parabolic louver. One great advantage of all offered variants is the possibility to connect them into a long uninterrupted line (LAMBDA LINE version). The light fixtures are mounted either as a pendant using various types of accessories or as a surface mounted.**

### CONSTRUCTION

**Housing:** sheet steel, electrostatic powder coat finish – basic shade RAL 9007 (grey aluminium - microstructure), RAL 9003 (signal white) on request. Top sheet with perforations above the lamps for DIR/INDIR versions

**Louvers:** aluminium parabolic louvers PAR-V, PAR MAT-V

**Reflector (Lambda DIR):** aluminium reflector covering the top openings

The grid is attached using springs that allow easy lamp changes.

Further description of individual optic types is listed on the page 316/317, in section OPTICS.

### LAMBDA LINE

In the LAMBDA LINE version, individual light fixtures are tightly interconnected using metal connectors, surface finished in RAL 9007 (grey aluminium - microstructure). Sideboards contain openings equipped with rubber reducers. Inside the light fixtures are cables 3x1,5mm<sup>2</sup> or 5x1,5mm<sup>2</sup>, together with screw-free connection terminals allowing fast interconnection of light fixtures. The light fixtures are suspended on connectors.

### WIRING

**Light fixtures can be equipped with:**

- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three or five pole connector allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- holders to prevent conductors from detaching from the terminals, rubber reducer for power cable
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request

### ACCESSORIES

- pull switch
- various types of suspension accessories

## MODUL LAMBDA

**Leuchten des minimalistischen Designs mit niedrigem Profil, die in der Abhängigkeit von der Variante eine direkte oder eine Kombination von direkter und indirekter Richtung des Lichtstromes anbieten. Um hohe Lichtleistung von kompakten Abmessungen der Leuchte zu erreichen, bieten sie Möglichkeit, zwei Leuchtstoffröhren in einem parabolischen Raster anzubringen. Ein großer Vorteil für alle angebotenen Varianten ist die Möglichkeit ihrer durchgehenden Einschaltung in eine lange nicht unterbrochene Linie (Ausführung LAMBDA LINE). Die Leuchten werden als Hängeleuchten mittels verschiedener Typen des Hängezubehörs oder als Anbauleuchten eingebaut.**

### KONSTRUKTION

**Leuchtenkörper:** Stahlblech, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9007 (Graualuminium - Mikrostruktur), RAL 9003 (Signalweiß) auf Wunsch. Das Oberblech mit Öffnungen über den Leuchtstoffröhren für Ausführungen DIR/INDIR.

**Raster:** parabolische Aluminiumraster PAR-V, PAR MAT-V

**Reflektor (Lambda DIR):** Aluminiumreflektor, der die Oberöffnungen deckt

Der Raster ist an der Leuchte mit Federn befestigt, die Austausch der Lichtquelle ohne Werkzeug ermöglichen.

Nähere Beschreibung von einzelnen Optiktypen ist am Seite 316/317 in OPTICS Anlage angeführt.

### LAMBDA LINE

In der Ausführung LAMBDA LINE sind die einzelnen Leuchten mit Blechverbindungsstücke einander verbunden, mit Oberflächenbehandlung RAL 9007 (Graualuminium – Mikrostruktur). In den Seitenteilen der Leuchten sind die Öffnungen mit Gummidurchführungen versehen. In den Leuchten ist die Verkabelung 3x1,5 mm<sup>2</sup> oder 5x1,5 mm<sup>2</sup> zusammen mit schraubenfreien Klemmleisten vorbereitet, die eine schnelle durchgehende Durchschaltung der Leuchten ermöglichen. Leuchten sind mit Verbindungsstücke aufgehängt.

### ELEKTRISCHE AUSRÜSTUNG

**Die Leuchten können wie folgt ausgerüstet sein:**

- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

**Andere Komponente:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm) - die Lichtquellen sind extra zu bestellen
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Halter gegen Ausreißen der Leiter aus der Klemmleiste, eine Gummidurchführung für Speisekabel
- Leuchte können auf Wunsch mit Noteinheiten mit Autonombetrieb von 1 oder 3 Stunden ausgerüstet werden

### ZUBEHÖR

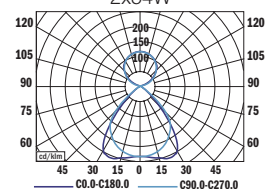
- Seilschalter
- Verschiedene Typen des Hängezubehörs

# MODUL

## LAMBDA PAR-V/PAR MAT-V DIR/DIR-INDIR T5

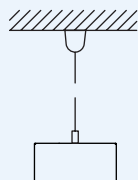


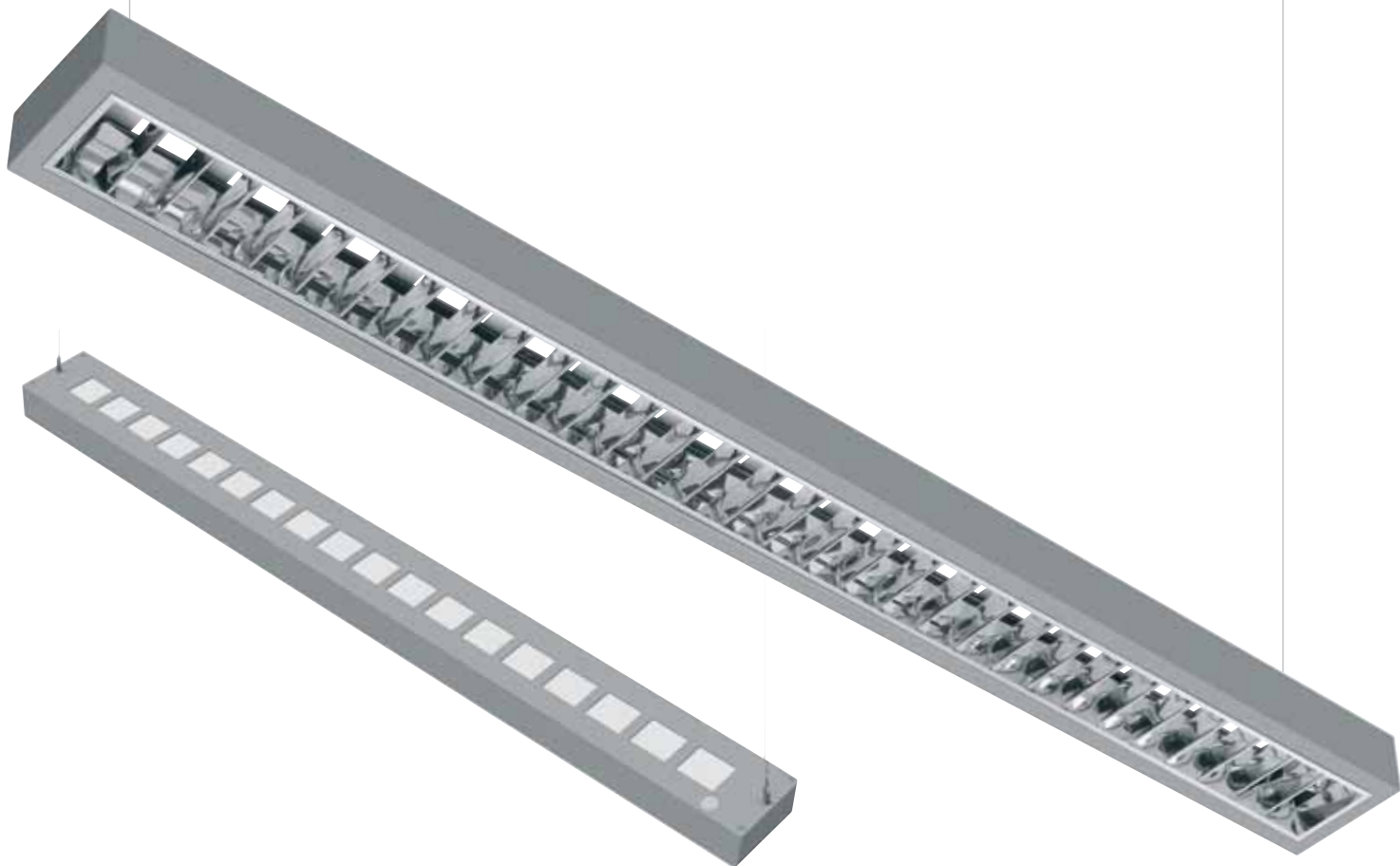
MODUL LAMBDA PAR-V DIR-INDIR  
2x54W



	OPTICS				POWER	LAMP	DIMENSIONS			FIXING Y
	PAR-V DIR	PAR MAT-V DIR	PAR-V DIR-INDIR	PAR MAT-V DIR-INDIR			A1	L1	H1	
Modul LAMBDA	•	•	•	•	1x28	T5	118	1206	58	1105
Modul LAMBDA	•	•	•	•	1x54	T5	118	1206	58	1105
Modul LAMBDA	•	•	•	•	1x35	T5	118	1506	58	1405
Modul LAMBDA	•	•	•	•	1x49	T5	118	1506	58	1405
Modul LAMBDA	•	•	•	•	1x80	T5	118	1506	58	1405
Modul LAMBDA	•	•	•	•	2x28	T5	118	1206	58	1105
Modul LAMBDA	•	•	•	•	2x54	T5	118	1206	58	1105
Modul LAMBDA	•	•	•	•	2x35	T5	118	1506	58	1405
Modul LAMBDA	•	•	•	•	2x49	T5	118	1506	58	1405
Modul LAMBDA	•	•	•	•	2x80	T5	118	1506	58	1405

INSTALLATION





MODUL LAMBDA PAR-V DIR-INDIR 2x54W

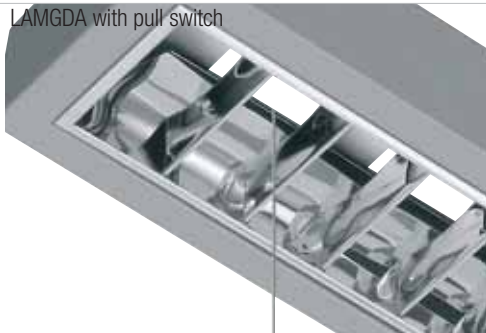
PAR-V



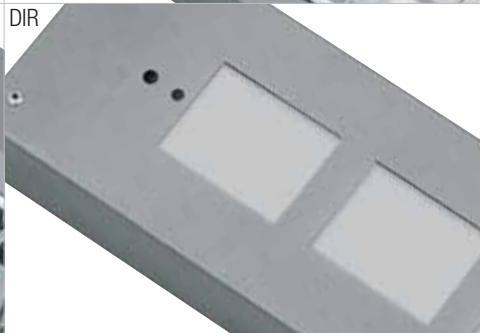
PAR MAT-V



LAMGDA with pull switch



DIR



DIR-INDIR



pull switch detail





# MODUL

## QUARK

### MODUL QUARK

Svietidlo moderného dizajnu založené na poslednom trende v osvetľovacej technike - mikroprizmatickom materiále difúzora. Modul Quark sa vyznačuje čistými líniami a extrémne nízkym profilom svietidla 40mm. Difúzor poskytuje mäkké neoslnivé osvetlenie, bez odrazov na obrazovkách, čo rozširuje použitie svietidla aj pre kancelárie s počítačovými obrazovkami (DSE). Quark nájde uplatnenie nielen pri riešení celkového osvetlenia, ale aj v aplikáciach vyžadujúcich dynamické osvetlenie (simuláciu priebehu denného osvetlenia prostredníctvom miešania rozdielnych teplôt bielych žiariviek). Svetidlá sa montujú ako závesné pomocou závesného príslušenstva.

#### KONŠTRUKCIA

**Teleso svietidla:** kombinácia extrudovaných hliníkových profilov a oceleového plechu, časti sú povrchovo upravené elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9007 (šedý hliník – jemná štruktúra).

**Difúzor:** polykarbonátová mikroprizma, verzia CDP a CDP DIF

Kvôli rovnomernejšiemu rozptylu svetla a zabráneniu pohľadu na jednotlivé žiarivky sa voľiteľne nad difúzor môže pridať tenká polykarbonátová fólia (verzia DIF).

**Reflektor:** vrchná hliníková odrazová plocha štandardne pre všetky verzie

Difúzor je k vrchnej časti svietidla uchytený prostredníctvom štyroch pružín a pre jednoduchšiu údržbu zaistený dvomi lankami. Pre prístup do svietidla sa difúzor bežnástrojovo odklopí.

Bližší popis jednotlivých typov optiky je uvedený na strane 316/317, v kapitole OPTICS.

#### ELEKTRICKÁ VÝBAVA

Svietidlá môžu byť vybavené:

- elektronickými predradníkmi, štandardne triedy EEI=A2
  - stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)
- Pre simuláciu priebehu denného osvetlenia, alebo pre potreby farebného miešania, môžu byť svietidlá vybavené dvomi elektronickými predradníkmi pre samostatné riadenie každej žiarivky (viac informácií v technickej prílohe).

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- držiaky proti vytrhnutiu vodičov zo svorkovnice, gumená prechodka pre napájací kábel

## MODUL QUARK

A modern design luminaire based on the latest trend in lighting technology – microprismatic diffuser material. Quark is characterised by plain lines and extremely low profile of the luminaire 40 mm. The diffuser provides soft pleasant light with no reflections on screens, which enhances the possible use of the luminaire also for offices with computer screens (DSE). Quark can be used not only as general lighting, but also in applications requiring dynamic lighting (simulation of the daylight course using the mixing of various white lamp temperatures). The luminaires are mounted as pendant using suspension accessories.

### CONSTRUCTION

**Housing:** combination of extruded aluminium profiles and steel sheet, finished with electrostatic powder coating – basic shade RAL 9007 (grey aluminium – fine structure).

**Diffuser:** polycarbonate microprism, version CDP and CDP DIF

To make light diffusion more even and prevent individual lamps from being visible, the diffuser can be equipped with a thin polycarbonate foil over it (DIF version).

**Reflector:** top aluminium reflecting surface standard for all versions

The diffuser is attached to the top part of the luminaire using four springs and secured by two wires for simple maintenance. To access the luminaire, uncover the diffuser with no tools necessary.

Further description of individual optic types is listed on the page 316/317, in section OPTICS.

### WIRING

Lighting fixtures can be equipped with:

- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

To simulate daily light conditions or to mix colours, the luminaires can be equipped with two electronic control gears for independent control of each fluorescent lamp (for more information see technical appendix).

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- holders to prevent pulling off of conductors from the connecting box, rubber reducer for power cable

## MODUL QUARK

Die Leuchte eines modernen Designs, die auf dem letzten Trend in der Beleuchtungstechnik gegründet ist – auf einem mikroprismatischen Material des Diffusors. Modul Quark zeichnet sich durch reine Linien und ein extrem niedriges Profil der Leuchte von 40 mm aus. Der Diffusor bietet eine weiche blendfreie Beleuchtung, ohne Reflexionen an Bildschirmen, was die Anwendung der Leuchte auch für Büros mit PC-Bildschirmen (DSE) erweitert. Quark kommt nicht nur bei der Lösung von gesamter Beleuchtung zur Geltung, sondern auch in Applikationen, die eine dynamische Beleuchtung erfordern (die Simulation der Tagesbeleuchtung mittels der Mischung von verschiedenen Temperaturen der weißen Leuchtstoffröhren). Die Leuchten werden als Hängeleuchten mittels des Hängezubehörs eingebaut.

### KONSTRUKTION

**Leuchtenkörper:** Kombination der extrudierten Aluminiumprofile und des Stahlblechs, die Teile haben die Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe - Grundton RAL 9007 (graues Aluminium – feine Struktur)

**Diffusor:** Polycarbonat-Mikroprisma, Ausführung CDP und CDP DIF

Wegen der gleichmäßigeren Lichtstreuung und der Vorbeugung des Blicks auf einzelne Leuchtstoffröhren kann eine dünne Polycarbonatfolie (Ausführung DIF) über den Diffusor wahlfrei zugegeben werden.

**Reflektor:** eine obere Reflexionsaluminiumfläche standardmäßig für alle Ausführungen

Der Diffusor ist zum oberen Teil der Leuchte durch vier Federn befestigt und für eine einfachere Wartung mit zwei Seilen gesichert. Zum Zugang in die Leuchte wird der Diffusor ohne Werkzeug aufgeklappt.

Nähere Beschreibung von einzelnen Optiktypen ist am Seite 316/317 in OPTICS Anlage angeführt.

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten können ausgerüstet sein:

- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit dimmbar elektronischen Vorschaltgeräten, die Klasse EEI=A1 (die Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert sein)

Für die Simulation der Tagesbeleuchtung oder im Bedarfsfall der Farbmischung können die Leuchten mit zwei elektronischen Vorschaltern für eine separate Steuerung jeder Leuchtstoffröhre ausgerüstet sein (mehr Informationen in technischer Anlage).

**Andere Komponenten:**

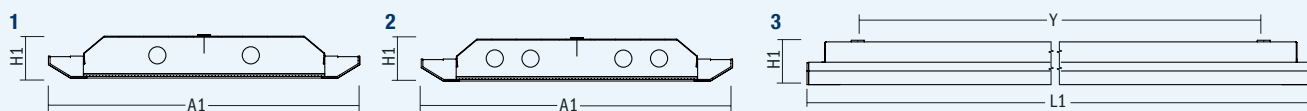
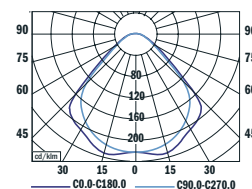
- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm) - es ist notwendig die Lichtquellen extra zu bestellen
- die Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- die Halter gegen Ausreißen der Leiter aus der Klemmleiste, eine Gummidurchführung für Speisekabel

# MODUL

## QUARK CDP/CDP DIF T5

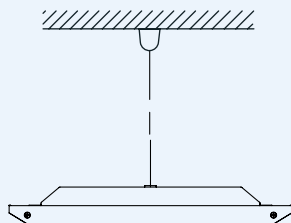


MODUL QUARK CDP DIF 4x54W



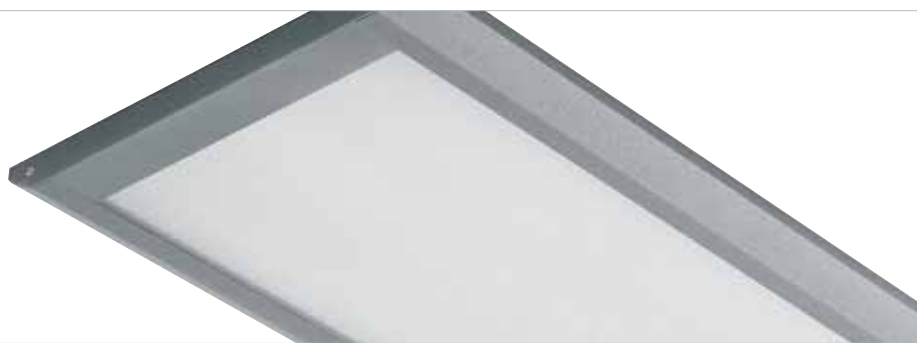
	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
	CDP	CDP DIF				A1	L1	H1	
MODUL QUARK	•	•	2x28	T5	1;3	291	1218	40	1125
MODUL QUARK	•	•	2x54	T5	1;3	291	1218	40	1125
MODUL QUARK	•	•	2x35	T5	1;2	291	1518	40	1425
MODUL QUARK	•	•	2x49	T5	1;3	291	1518	40	1425
MODUL QUARK	•	•	2x80	T5	1;3	291	1518	40	1425
MODUL QUARK	•	•	4x28	T5	2;3	291	1218	40	1125
MODUL QUARK	•	•	4x35	T5	2;3	291	1518	40	1425

INSTALLATION





MODUL QUARK CDP DIF



# MODUL

## RENDO

### MODUL RENDO

Svietidlo moderného dizajnu založené na poslednom trende v osvetľovacej technike - mikroprizmickom materiále difúzora. Vďaka priesvitnému vrchnému difúзору ponúka kombinovanú distribúciu svetelného toku priamo dole s nepriamym osvetlením stropu. Modul Rendo sa vyznačuje moderným dizajnom a nízkym profilom svietidla 46mm. Difúzor poskytuje mäkké neoslňivé osvetlenie, bez odrazov na obrazovkách, čo rozširuje použitie svietidla aj pre kancelárie s počítačovými obrazovkami (DSE). Rendo nájde uplatnenie nielen pri riešení celkového osvetlenia, ale aj v aplikáciách vyžadujúcich dynamické osvetlenie (simuláciu priebehu denného osvetlenia prostredníctvom miešania rozdielnych teplôt bielych žiariviek). Svetidlá sa montujú ako závesné pomocou závesného príslušenstva.

#### KONŠTRUKCIA

**Teleso svietidla:** kombinácia extrudovaných hliníkových profilov a oceľového plechu, časti sú povrchovo upravené elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9007 (šedý hliník – jemná štruktúra)

**Vrchný difúzor:** číry polykarbonát v prizmatickom prevedení

**Spodný difúzor:** polykarbonátová mikroprizma, verzia LDP, CDP a CDP DIF

Kvôli rovnomernejšiemu rozptylu svetla a zabráneniu pohľadu na jednotlivé žiarivky sa voliteľne nad difúzor môže pridať tenká polykarbonátová fólia (verzia DIF).

**Koncovky svietidla:** polykarbonát, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9007 (šedý hliník – jemná štruktúra)

Pre prístup do svietidla a výmenu žiariviek sa vrchný difúzor beznástrojovo vyberie z drážky telesa svietidla.

Bližší popis jednotlivých typov optiky je uvedený na strane 316/317, v kapitole OPTICS.

#### ELEKTRICKÁ VÝBAVA

Svietidlá môžu byť vybavené:

- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

Pre simuláciu priebehu denného osvetlenia, alebo pre potreby farebného miešania, môžu byť svietidlá vybavené dvomi elektronickými predradníkmi pre samostatné riadenie každej žiarivky (viac informácií v technickej prílohe).

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová (samostatne 3+2) svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- držiaky proti vytrhnutiu vodičov zo svorkovnice, gumená prechodka pre napájací kábel

## MODUL RENDO

A modern design luminaire based on the latest trend in luminaire technology – microprismatic diffuser material. Thanks to a translucent top diffuser, it offers combined luminous flux distribution in a downward direction with indirect illumination of ceiling. Rendo is characterised by modern design and low profile of the luminaire 46mm. The diffuser provides soft pleasant light with no reflections on screens, which enhances the possible use of the luminaire also for offices with computer screens (DSE). Rendo can be used not only as general lighting, but also in applications requiring dynamic lighting (simulation of the daylight course using the mixing of various white lamp temperatures). The luminaires are mounted as pendant using suspension accessories.

### CONSTRUCTION

**Housing:** combination of extruded aluminium profiles and steel sheet, finished with electrostatic powder coating – basic shade RAL 9007 (grey aluminium – fine structure)

**Top diffuser:** pure polycarbonate in prismatic shape

**Bottom diffuser:** polycarbonate microprism, version LDP, CDP and CDP DIF

To make light diffusion more even and prevent individual lamps from being visible, the diffuser can be equipped with a thin polycarbonate foil over it (DIF version).

**Luminaire endings:** polycarbonate, finished with electrostatic powder coating – basic shade RAL 9007 (grey aluminium – fine structure)

To access the luminaire and replace fluorescent lamps, pull out the top diffuser from the luminaire body groove with no tools necessary.

Further description of individual optic types is listed on the page 316/317, in section OPTICS.

### WIRING

**Lighting fixtures can be equipped with:**

- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

To simulate daily light conditions or to mix colours, the luminaires can be equipped with two electronic control gears for independent control of each fluorescent lamp (for more information see technical appendix).

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- screwless three or five pole terminal (independent 3+2) allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- holders to prevent pulling off of conductors from the connecting box, rubber reducer for power cable

## MODUL RENDO

Die Leuchte eines modernen Designs, die auf dem letzten Trend in der Beleuchtungstechnik gegründet ist – auf einem mikroprismatischen Material des Diffusors. Dank einem durchsichtigen Diffusor bietet sie die Lichtverteilung gerade nach unten mit einer indirekten Beleuchtung der Decke an. Modul Rendo zeichnet sich durch modernes Design und niedriges Profil der Leuchte von 46 mm aus. Der Diffusor bietet eine weiche blendfreie Beleuchtung, ohne Reflexionen an Bildschirmen, was die Anwendung der Leuchte auch für Büros mit PC-Bildschirmen (DSE) erweitert. Rendo kommt nicht nur bei der Lösung von gesamter Beleuchtung zur Geltung, sondern auch in Applikationen, die eine dynamische Beleuchtung erfordern (die Simulation der Tagesbeleuchtung mittels der Mischung von verschiedenen Temperaturen der weißen Leuchtstoffröhren). Die Leuchten werden als Hängeleuchten mittels des Hängezubehörs eingebaut.

### KONSTRUKTION

**Leuchtenkörper:** Kombination der extrudierten Aluminiumprofile und des Stahlblechs, die Teile haben die Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe - Grundton RAL 9007 (graues Aluminium – feine Struktur)

**Oberdiffusor:** reines Polycarbonat in prismatischer Ausführung

**Unterdiffusor:** Polycarbonat-Mikroprisma, Ausführung LDP, CDP und CDP DIF

Wegen der gleichmäßigeren Lichtstreuung und der Vorbeugung des Blicks auf einzelne Leuchtstoffröhren kann eine dünne Polycarbonatfolie (Ausführung DIF) über den Diffusor wahlfrei zugegeben werden.

**Endstücke der Leuchte:** Polycarbonat mit Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe - Grundton RAL 9007 (graues Aluminium – feine Struktur)

Zum Zugang in die Leuchte und zum Austausch der Leuchtstoffröhren wird der Diffusor aus der Rille des Leuchtenkörpers ohne Werkzeug herausgenommen.

Nähere Beschreibung von einzelnen Optiktypen ist am Seite 316/317 in OPTICS Anlage angeführt.

### ELEKTRISCHE AUSTRÜSTUNG

**Die Leuchten können ausgerüstet sein:**

- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit dimmbar elektronischen Vorschaltgeräten, die Klasse EEI=A1 (die Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert sein)

Für die Simulation der Tagesbeleuchtung oder im Bedarfsfall der Farbmischung können die Leuchten mit zwei elektronischen Vorschaltern für eine separate Steuerung jeder Leuchtstoffröhre ausgerüstet sein (mehr Informationen in technischer Anlage).

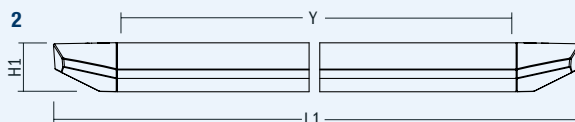
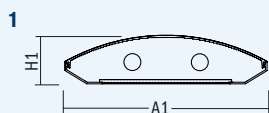
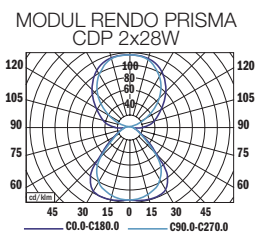
**Andere Komponenten:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm) - es ist notwendig die Lichtquellen extra zu bestellen
- die Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige (selbständig 3+2) Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- die Halter gegen Ausreißen der Leiter aus der Klemmleiste, eine Gummidurchführung für Speisekabel



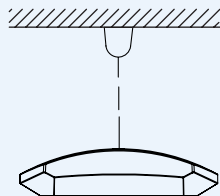
# MODUL

## RENDO LDP/CDP/CDP DIF T5



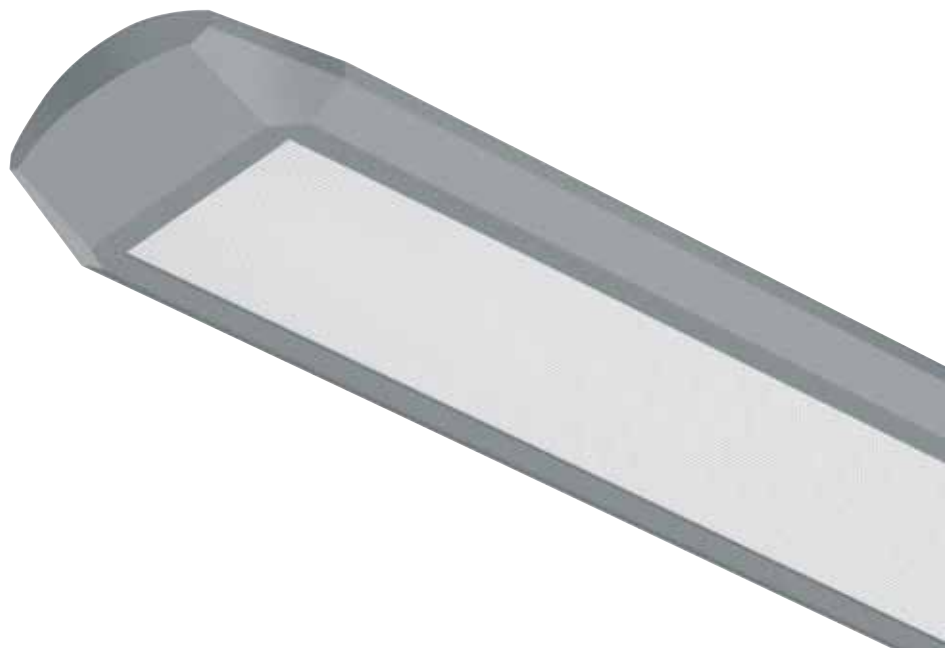
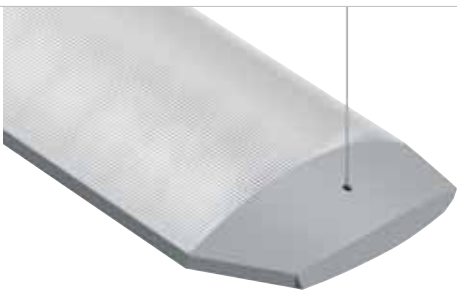
	OPTIC			POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
	LDP	CDP	CDP DIFF				A1	L1	H1	
Modul RENDO	•	•	•	2x28	T5	1;2	191	1270	46	1205
Modul RENDO	•	•	•	2x54	T5	1;2	191	1270	46	1205
Modul RENDO	•	•	•	2x35	T5	1;2	191	1570	46	1505
Modul RENDO	•	•	•	2x49	T5	1;2	191	1570	46	1505

INSTALLATION





MODUL RENDO CDP DIF



# MODUL

## KA

### MODUL KA

Dvojžiarivkové svietidlá ponúkajúce tri typy optických systémov. Hlavnou výhodou pre všetky ponúkané varianty je možnosť ich priebežného zapojenia do dlhej neprerušovanej línie alebo spájanie viacerých svietidiel v ľubovoľných uhloch pomocou kruhových kĺbových mechanizmov. Svietidlá sa montujú ako prisadené alebo závesné pomocou závesného príslušenstva.

#### KONŠTRUKCIA

**Teleso svietidla:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela), RAL 7001 (strieborná šedá) na požiadanie.

**Mriežky:** pokovovaná (LA) alebo biela (LB) polykarbonátová mriežka

**Difúzor:** priesvitný polykarbonát

**Reflektor:** vrchný hliníkový reflektor štandardne pre všetky verzie

**Koncovky:** biely ABS

Optické príslušenstvo sa zo svietidla jednoducho vyberie vytiahnutím zospodu - výmena žiaroviek je rýchla a beznástrojová.

#### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm), T8 (26 mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- gumená prechodka pre napájací kábel
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 hodina

#### PRÍSLUŠENSTVO

- biela kruhová univerzálna spojka (ABS) umožňuje rýchle vloženie dvoch alebo viacerých držiakov svietidiel ktoré sú nastaviteľné v 3600
- spojky svietidiel pre spájanie do línie

## MODUL KA

**Two-lamp luminaires offering three types of optical systems. Main advantage of all offered variants is the possibility to connect them into a long uninterrupted line or interconnection of various luminaires in random angles using round joint mechanisms. The luminaires are mounted as surface or pendant using suspension accessories.**

### CONSTRUCTION

**Housing:** sheet steel, finished with electrostatic powder coating – basic shade RAL 9003 (signal white), RAL 7001 (silver grey) on request.

**Louvers:** metal coated (LA) or white (LB) polycarbonate grid

**Diffuser:** transparent polycarbonate

**Reflector:** top aluminium reflector standard for all versions

**Endings:** white ABS

Optical accessories are pulled out of the luminaire simply from underneath – lamp replacement is fast and toolless.

### WIRING

**Lighting fixtures can be equipped with:**

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, lighting fixtures are standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm), T8 (26 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- screwless three or five pole connector allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- rubber reducer for power cable
- emergency version of lighting fixtures with autonomous operation 1 hour is available on request

### ACCESSORIES

- white round universal connector (ABS) allows fast installation of two or more luminaire holders which are 360° adjustable
- luminaire connectors for connecting in a line

## MODUL KA

**Die Leuchten mit zwei Leuchtstoffröhren bieten drei Typen der optischen Systeme an. Der Hauptvorteil für alle angebotenen Varianten ist die Möglichkeit ihrer durchlaufenden Einschaltung in eine nicht unterbrochene Linie oder die Verbindung der mehreren Leuchten in beliebigen Winkeln mittels der kreisförmigen Gelenkmechanismen. Die Leuchten werden als Anbauleuchten oder Hängeleuchten mittels des Hängezubehörs eingebaut.**

### KONSTRUKTION

**Leuchtenkörper:** Stahlblech, Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe - Grundton RAL 9003 (Signalweiß), RAL 7001 (Silbergrau) auf Wunsch

**Raster:** ein metallisierter (LA) oder weißer (LB) Polykarbonatraster

**Diffusor:** ein durchsichtiges Polykarbonat

**Reflektor:** ein Oberaluminiumreflektor standardmäßig für alle Ausführungen

**Endstücke:** weißes ABS

Das optische Zubehör wird aus der Leuchte einfach durch Ausziehen von unten herausgenommen – der Austausch der Leuchtstoffröhren ist schnell und ohne Werkzeug.

### ELEKTRISCHE AUSTRÜSTUNG

**Die Leuchten können ausgerüstet sein:**

- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, die Klasse EEI=B1 auf Wunsch, die Leuchten sind standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit dimmbar elektronischen Vorschaltgeräten, die Klasse EEI=A1 (die Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert sein)

**Andere Komponenten:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm), T8 (26 mm) - es ist notwendig die Lichtquellen extra zu bestellen
- die Innenleiter mit einem festen Kupferkern mit einem Durchschnitt von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchschnitt von max. 2,5 mm<sup>2</sup> anzuschließen
- eine Gummidurchführung für Speisekabel
- es ist möglich die Leuchte auf Wunsch mit Noteinheiten mit einem unabhängigen Betrieb von 1 Stunde auszurüsten

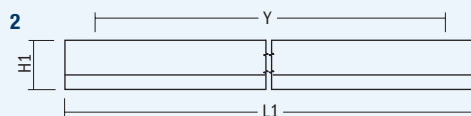
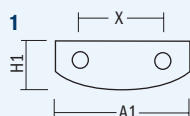
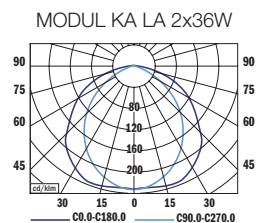
### ZUBEHÖR

- ein weißes kreisförmiges universales Verbindungsstück (ABS) ermöglicht ein schnelles Einlegen von zwei oder mehreren Haltern, die in 360° einstellbar sind
- die Verbindungsstücke der Leuchten zur Einschaltung in die Linie

# MODUL

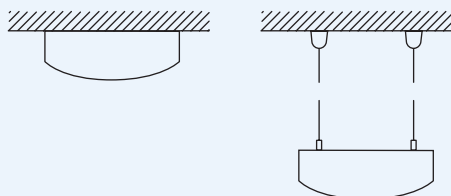
## KA LA/LB/PRISMA T8/T5

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T5 G5	T8 G13	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP 20	IP 40
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	LA	OPTIC		PRISMA	POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
		LB						A1	L1	H1	X	Y
Modul KA	•	•	•		2x14	T5	1;2	182	720	60	92	400
Modul KA	•	•	•		2x24	T5	1;2	182	720	60	92	400
Modul KA	•	•	•		2x28	T5	1;2	182	1310	60	92	800
Modul KA	•	•	•		2x35	T5	1;2	182	1610	60	92	1000
Modul KA	•	•	•		2x49	T5	1;2	182	1610	60	92	1000
Modul KA	•	•	•		2x54	T5	1;2	182	1310	60	92	800
Modul KA	•	•	•		2x80	T5	1;2	182	1610	60	92	1000
Modul KA	•	•	•		2x18	T8	1;2	182	720	60	92	400
Modul KA	•	•	•		2x36	T8	1;2	182	1310	60	92	800
Modul KA	•	•	•		2x58	T8	1;2	182	1610	60	92	1000

INSTALLATION

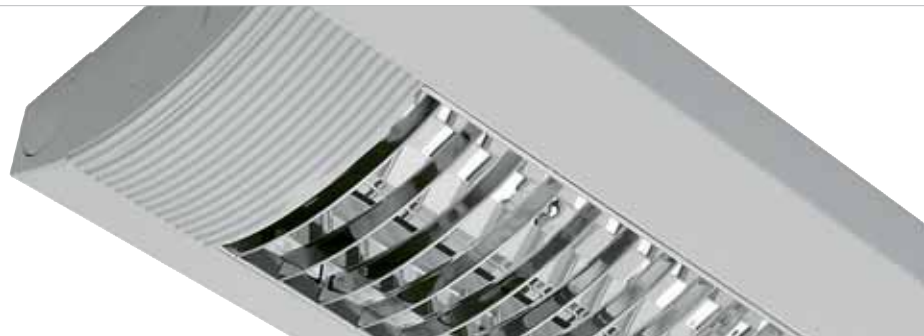




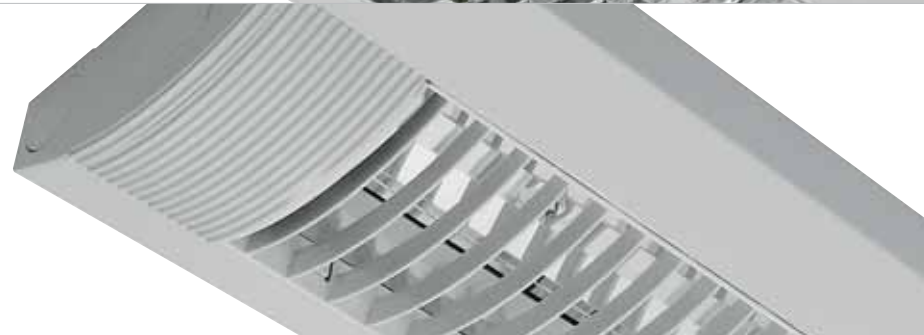
MODUL KA LA 2x36W



LA



LB



SUSPENSION

PRISMA





# MODUL

## AAZ/AA

### MODUL AAZ/AA

Svietidlo MODUL AA sa vyrába v dvoch variantách – ako závesné (Modul AAZ) alebo ako nástenné (Modul AA). Vďaka svojej konštrukcii je v ponuke len s priamo/nepriamou vyžarovacou charakteristikou.

#### KONŠTRUKCIA

**Teleso svietidla:** perforovaný oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela). Koncovky svietidla z plného plechu, povrchovo upravené tou istou farbou. Pre rovnomerný rozptyl svetla je pod perforovanými plechom vsunutá tenká polykarbonátová fólia.

**Difúzor:** vyrobený z PMMA v prizmatickom prevedení

Svietidlo umožňuje beznástrojovú výmenu svetelných zdrojov - po odstránení difúzora položeného na vrchu svietidla.

#### ELEKTRICKÁ VÝBAVA

Svietidlá môžu byť vybavené:

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm), T8 (26 mm), kompaktné žiarivky TC-L (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>

#### PRÍSLUŠENSTVO

rôzne typy závesného príslušenstva

## MODUL AAZ/AA

The MODUL AA lighting fitting is manufactured in two variants – pendant (Modul AAZ) or wall-mounted (Modul AA). Thanks to its construction, it is offered only with direct/indirect light characteristics.

### CONSTRUCTION

**Housing:** perforated sheet steel, electrostatic powder coat finish – basic shade RAL 9003 (signal white). Ends are made of solid sheet metal, surface finished in the same colour. For regular light diffusion, a thin polycarbonate foil is used under the perforated sheet.

**Diffuser:** made of PMMA in a prismatic finish

The light fixture allows for tool-free lamp replacement– after the diffuser on top of the light fixture is removed.

### WIRING

Light fixtures can be equipped with:

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, light fixtures are standardly compensated
- electronic control gear, standard class EEI=A2
- dimmable electronic control gear, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm), T8 (26 mm), compact fluorescent lamps TC-L (lamps must be ordered separately)
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section

### ACCESSORIES

- various types of suspension accessories

## MODUL AAZ/AA

Die Leuchte MODUL AA wird in zwei Varianten hergestellt – als Hängeleuchte (Modul AAZ) oder als Wandleuchte (Modul AA). Dank ihrer Konstruktion ist sie im Angebot nur mit direkter/indirekter Strahlungscharakteristik.

### KONSTRUKTION

**Leuchtenkörper:** Lochstahlblech, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9003 (Signalweiß). Die Endstücke der Leuchte sind aus Vollblech. Oberflächenbehandlung mit derselben Farbe. Für eine gleichmäßige Lichtstreuung ist unter dem Lochblech eine dünne Polykarbonatfolie eingelegt.

**Diffusor:** in prismatischer Ausführung, hergestellt aus PMMA

Die Leuchte ermöglicht einen Austausch der Lichtquellen ohne Werkzeug – gemäß der Beseitigung des auf der Leuchte angebrachten Diffusors

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten können wie folgt ausgerüstet sein:

- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, Klasse EEI=B1 auf Wunsch, Leuchten sind standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit dimmbar elektronischen Vorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

**Andere Komponente:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm), T8 (26 mm), kompakte Leuchtstofflampen TC-L (die Lichtquellen sind extra zu bestellen)
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen

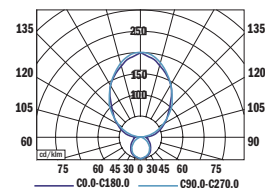
### ZUBEHÖR

verschiedene Typen des Hängezubehörs

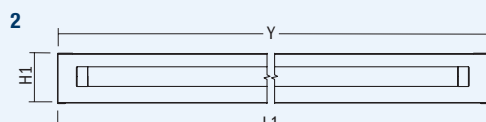
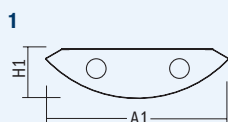
# MODUL

## AAZ/AA T8/T5/TC-L

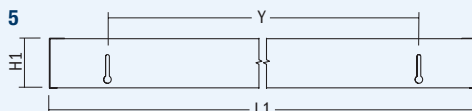
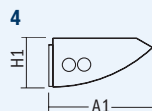
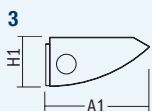
MODUL AAZ T8 2x36W



220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T5 G5	T8 G13	TC-L 2G 11	CCG EEI-B2	CCG EEI-B1	AAA EEI-A2	AAA EEI-A1	AAA EEI-A1	AAA EEI-A1	AAA EEI-A1	EMERGENCY	F	IP 20
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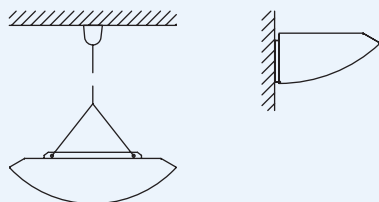


	POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
				A1	L1	H1	
Modul AAZ	2x36	T8	1;2	245	1260	65	1260
Modul AAZ	2x58	T8	1;2	245	1555	65	1555
Modul AAZ	2x28	T5	1;2	245	1260	65	1260
Modul AAZ	2x35	T5	1;2	245	1555	65	1555
Modul AAZ	2x49	T5	1;2	245	1555	65	1555



	POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
				A1	L1	H1	
Modul AA	1x18	T8	3;5	135	645	65	490
Modul AA	1x36	T8	3;5	135	1255	65	1095
Modul AA	1x58	T5	3;5	135	1555	65	1392
Modul AA	1x14	T5	3;5	135	645	65	490
Modul AA	1x28	T5	3;5	135	1255	65	1095
Modul AA	1x35	T5	3;5	135	1555	65	1392
Modul AA	1x49	T5	3;5	135	1555	65	1392
Modul AA	1x54	T5	3;5	135	1255	65	1095
Modul AA	1x80	T5	3;5	135	1555	65	1392
Modul AA	2x40	TC-L	4;5	135	1255	65	1095
Modul AA	2x55	TC-L	4;5	135	1255	65	1095

INSTALLATION





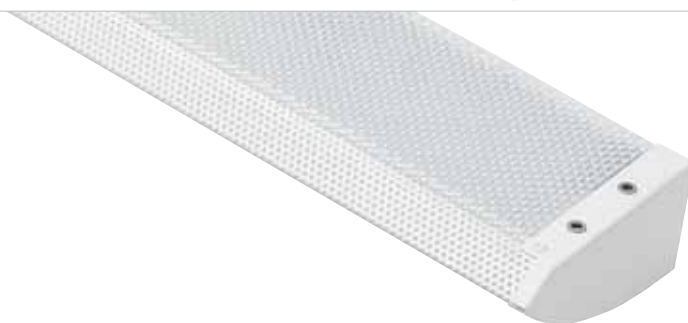
MODUL AAZ 2x36W

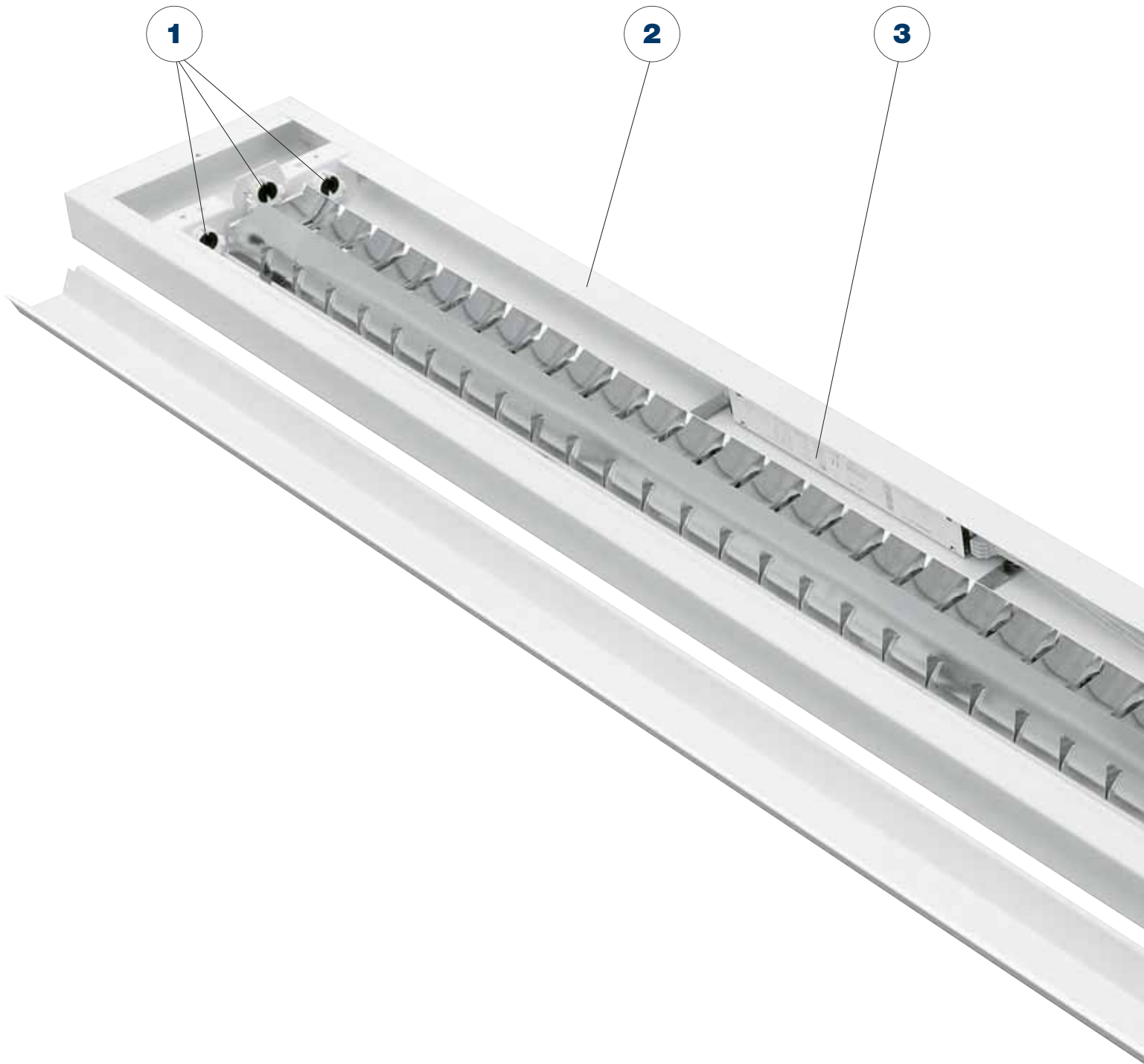
MODUL AA 1x36W

AAZ



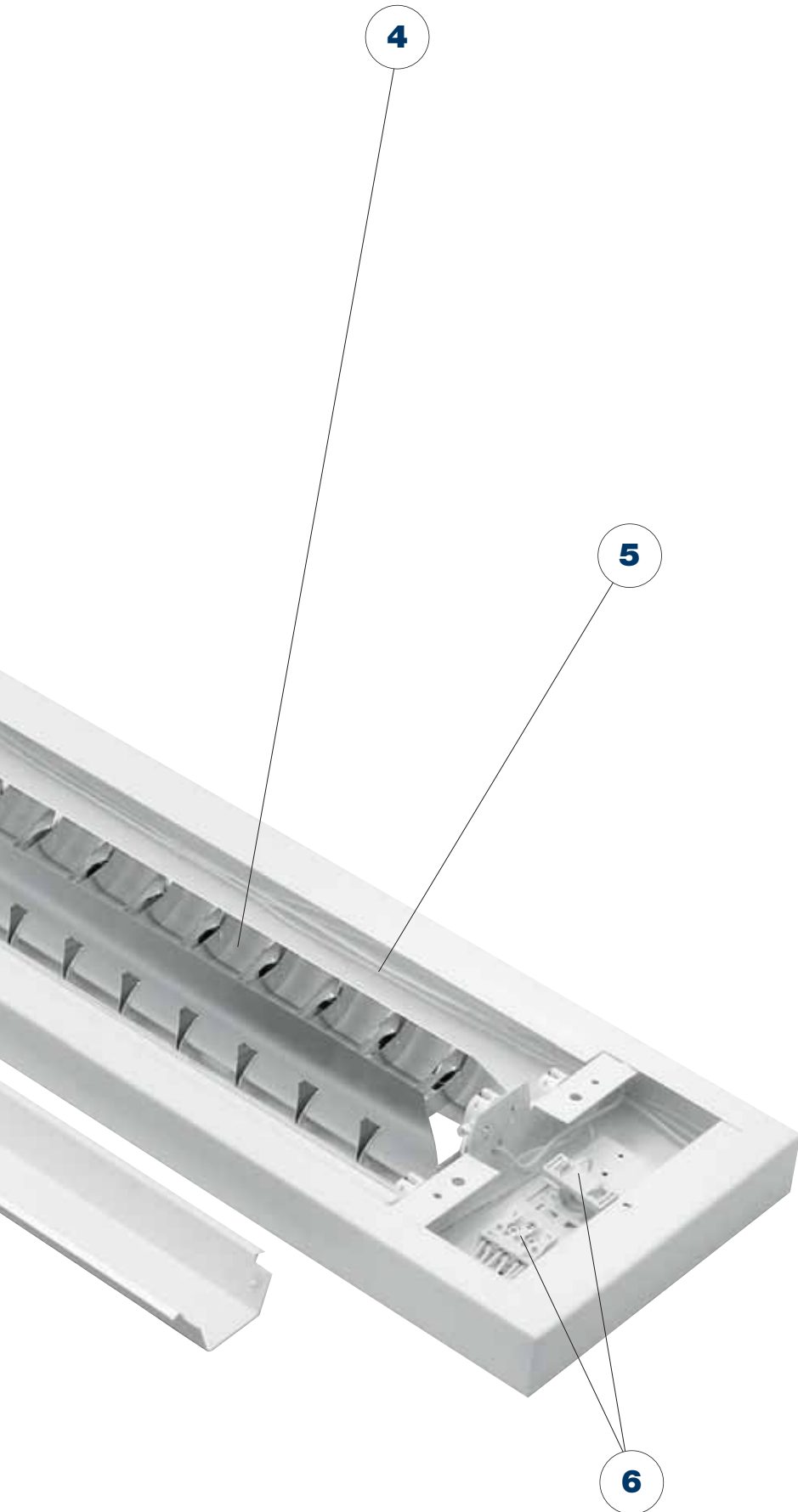
AA





# MODUL

## ESO ELECTRONIC CONTROL GEAR



- 1** Parabolická mriežka  
Parabolic louvre  
Parabolspiegelraster
- 2** Teleso svetidla  
Housing  
Leuchtenkörper
- 3** Elektronický predradník  
Electronic ballast  
Vorschaltgeräte
- 4** Päťica  
Lampholder  
Lampenhalter
- 5** Vodič  
Cable  
Kabel
- 6** Svorkovnica  
Terminal block  
Anschlussklemme



# MODUL

## OPTICS

### OPIS

Štýlové žiarivkové svietidlá smerujúce svetelný tok buď smerom dole, nepriamo odrazom od stropu miestnosti alebo kombináciou týchto dvoch spôsobov (priamo/odrazom). Pre požadovaný nepriamy rozptyl svetla od stropu potrebujú dostatočnú vzdialenosť medzi svietidlom a stropom miestnosti. Najväčšou výhodou svietidiel Modul je práve možnosť kombinácie priameho a nepriameho osvetlenia. Táto kombinácia dokáže potlačiť ostro ohraničené prechody medzi svetlom a tieňom, vznikajúce na stenách miestností pri používaní mriežkových svietidiel, ktoré prísne rozdeľujú svetelný tok smerom dole v predpísaných uhloch. Pre vyhovujúce osvetlenie, spĺňajúce nároky ľudí pre zrakovú pohodu, zrakový výkon a v neposlednom rade taktiež bezpečnosť, je vhodné dodržiavať odporúčania pre osvetľovanie stien a stropov miestností. Odporúčania hovoria, že priemerná osvetlenosť stien nad pracovnou rovinou by mala byť najmenej 50% priemernej osvetlenosti horizontálnej pracovnej roviny a priemerná osvetlenosť stropu by mala byť aspoň 30% priemernej horizontálnej osvetlenosti pracovnej plochy. Vhodným rozmiestnením svietidiel Modul môžu byť tieto odporúčania ľahko splnené.

### Oddelené riadenie žiariviek

Výhodou Modulov je možnosť navolenia si jedného z troch svietiacich režimov: priamy, nepriamy a kombinovaný. Táto možnosť je možná len v prípade oddeleného ovládania žiariviek v svietidle. Použitím takéhoto ovládania dokážeme v jednej miestnosti vytvoriť rozličné atmosféry – v závislosti od toho, či jedna, dve alebo všetky tri žiarivky budú zapnuté. Týmto spôsobom sa dá ľahko regulovať množstvo priameho alebo nepriameho osvetlenia. Regulácia môže ešte viac vyniknúť použitím stmievateľných predradnikov.

### MRIEŽKY PAR-V, PAR MAT-V

Parabolická mriežka s priečnymi lamelami taktiež parabolického tvaru, vyrobená z lešteného alebo matného anodizovaného hliníka s ohľadom na vysokú účinnosť a presné smerovanie svetelného toku. Vďaka dvojito-zakrivenému parabolickému tvaru je ideálna pre využitie v miestnostiach s počítačmi, kde je kladený dôraz na vysoký zrakový výkon. Svetelný tok napomáha smerovať vysoká kvalita použitého hliníka s viac ako 95% odrazivosťou (MIRO). Tento typ mriežok zabezpečuje najvyššiu zrakovú pohodu za obrazovkami počítačov vďaka presnému obmedzeniu rušivého osvetlenia od monitorov a samotných svetelných zdrojov. Nízky jas mriežky spĺňa hranice európskej normy EN 12464-1 pre osvetlenie pracovísk obsahujúcich zobrazovacie jednotky - DSE (limity 200 resp. 1000 cd/m<sup>2</sup> v 65 stupňových uhloch). Hliník: Alanod 316G2, MIRO 4 (extra bright), MIRO 5 (difúzy), MIRO 7 (matt), MIRO85 (erotex) Účinnosť svietiel môže byť zvýšená pridaním vrchnej odrazovej plochy nad žiarivky (verzia REFLEX).

### DESCRIPTION

This stylish suspended fluorescent luminaires can distribute light directly down, indirectly by reflecting off the ceiling, or a combination (direct/indirect). Moduls, of course, require additional ceiling height for clearance and for adequate light spread on the ceiling. The biggest advantage of Modul luminaires is the possibility of combining direct and indirect lighting. It can completely eliminate the dark and gloomy effect that can be created by „categorised“ louvres, including the sharp wall cut off and bright scalloping. For the suitable lit environment that satisfies the human need for visual comfort, visual performance and safety is good to follow new recommendations for wall and ceiling illuminance. They say that the average wall illuminance above the working plane should be at least 50% of the average horizontal illuminance on the working plane and the ceiling average illuminance should be at least 30% of the average horizontal illuminance on the working plane. With using of Modul luminaires these recommendations can be easily fulfilled.

### Separate control of fluorescent lamps

Another big advantage of suspended luminaires is that they can work in three modes: direct, indirect and combined. This is possible by choosing of separate controlling of fluorescent lamps. This feature allows to create three different atmospheres by one lighting installation – it depends if one, two or three fluorescent tubes are turned on. Different amount of direct and indirect light is therefore easy adjustable. This feature can be even more intensive together with dimmable control gears.

### PAR-V, PAR MAT-V LOUVERS

Double parabolic louvre with parabolic crossblades made of polished or matt anodised aluminium with respect to high efficiency and precise direction of the light beam. Thanks to the double-curved parabola is ideal for use in rooms with computers, where good visual comfort is required. The light output is optimised by high quality of aluminium which has reflectance exceeding 95% (MIRO). This type of louvre provides the highest visual comfort at the computer screen due to exact glare evaluation of reflections from monitors and light sources themselves. Low glare of the louvre is in accordance with European standard EN 12464-1 for lighting of workplaces equipped with display screens - DSE (limits 200 or 1000 cd/m<sup>2</sup> at 65° elevation). Aluminium: Alanod 316G2, MIRO 4 (extra bright), MIRO 5 (diffus), MIRO 7 (matt), MIRO85 (erotex) Luminous efficiency can be increased by adding a top reflex surface above the lamps (REFLEX version).

### BESCHREIBUNG

Stilvolle Leuchtstofflampen-Leuchten, die den Lichtstrom entweder nach unten, indirekt mit der Reflexion von der Decke des Raums, oder mit der Kombination von diesen zwei Arten (direkt/mit Reflexion) richten. Für die geforderte indirekte Lichtstreuung benötigen sie einen ausreichenden Abstand zwischen der Leuchte und der Decke des Raums. Der größte Vorteil der Leuchten Modul ist diese Möglichkeit der Kombination der direkten und indirekten Beleuchtung. Diese Kombination kann die scharf begrenzten Übergänge zwischen dem Licht und dem Schatten unterdrücken, die auf den Wänden der Räume beim Einsatz der Rasterleuchten entstehen, die den Lichtstrom nach unten in vorgeschriebenen Winkeln teilen. Für entsprechende Beleuchtung, die Ansprüche der Leute auf den Sehkomfort, die Sehleistung und nicht zuletzt auf die Sicherheit erfüllt, ist es geeignet, die Empfehlungen für Beleuchtung von Wänden und Decken der Räume einzuhalten. Die Empfehlungen sagen, daß eine durchschnittliche Beleuchtungsstärke der Wände über der Arbeitsebene sollte mindestens 50 % der durchschnittlichen Beleuchtungsstärke der horizontalen Arbeitsebene sein und eine durchschnittliche Beleuchtungsstärke der Decke sollte mindestens 30 % der durchschnittlichen horizontalen Beleuchtungsstärke der Arbeitsfläche sein. Durch entsprechende Anbringung der Leuchten Modul können diese Empfehlungen leicht erfüllt werden.

### Getrennte Steuerung der Leuchtstofflampen

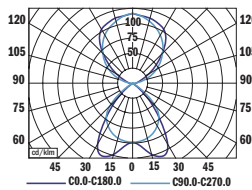
Der Vorteil der Leuchten Modul ist die Möglichkeit der Vorgabe eines aus drei Leuchtmodi: direktes, indirektes und kombiniertes. Diese Möglichkeit ist nur im Fall der getrennten Steuerung der Leuchtstofflampen in der Leuchte möglich. Durch den Einsatz von dieser Steuerung können wir in einem Raum verschiedene Atmosphären bilden – abhängig davon, ob eine, zwei oder drei Leuchtstofflampen eingeschaltet sein werden. Auf diese Art kann die Menge der direkten oder indirekten Beleuchtung leicht reguliert werden. Die Regulierung kann sich durch den Einsatz der dinstennden Vorschalter abheben.

### RASTER PAR-V, PAR MAT-V

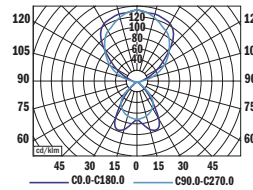
Ein parabolischer Raster mit Querlamellen der parabolischen Form, der aus poliertem oder mattem anodisiertem Aluminium mit Rücksicht auf die hohe Wirksamkeit und genaue Richtung des Lichtstromes hergestellt ist. Dank der doppel-gekrümmten parabolischen Form ist er zum Einsatz in Räumen mit PC ideal, wo eine hohe Sehleistung hervorgehoben ist. Die hohe Qualität des verwendeten Aluminiums mit der Reflexionsfähigkeit von mehr als 95 % (MIRO) hilft den Lichtstrom zu richten. Dieser Typ der Raster sichert den höchsten Sehkomfort hinter den PC-Bildschirmen dank der genauen Beschränkung der störenden Blendung von Monitoren und einzelnen Lichtquellen. Eine niedrige Leuchtdichte des Rasters erfüllt die Grenzen der europäischen Norm EN 12464-1 für Beleuchtung der Arbeitsplätze, die die DSE-Bildschirmanzeigeräte enthalten (Grenzen 200 bzw. 1000 cd/m<sup>2</sup> in 65° Winkeln). Aluminium: Alanod 316G2, MIRO 4 (extra bright), MIRO 5 (diffus), MIRO 7 (matt), MIRO85 (erotex) Die Wirksamkeit der Leuchten kann mit der Zugabe der oberen Reflexionsfläche über die Leuchtstoffröhren (Ausführung REFLEX) erhöht werden.



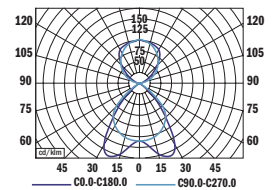
MODUL ESO  
3x28W



MODUL ESO  
1x28+2x54W



MODUL ESO  
1x54+2x28W



### MIKROPRIZMATICKÉ DIFÚZORY

Súčasný trend v svetelnej technike – špeciálne difúzory s mikroprizmatickou štruktúrou. Primárne sú určené ako náhrada parabolických mriežok, pričom ponúkajú veľmi podobné vlastnosti, no môžu sa používať aj v špeciálnych aplikáciách pre farebné miešanie svetla. Pre rad MODUL sú v ponuke dve základné verzie týchto difúzorov, určené pre obmedzenie rušivého oslnenia pre kancelárske priestory:

### MICROPRISMATIC DIFFUSERS

The newest trend in lighting technology – special diffusers with microprismatic structure. They are primarily designed to substitute parabolic louvers, while offering very similar properties; however, they can be used also in special applications for mixing of colour lighting. The MODUL range offers two basic versions of these diffusers, designed to reduce glare in office applications:

### MICROPRISMATIC DIFFUSERS

Der gegenwärtige Trend in der Lichttechnik – spezielle Diffusoren mit einer mikroprismatischen Struktur. Sie sind primär als Ersatz der parabolischen Raster bestimmt, wobei sehr ähnliche Eigenschaften anbieten, und sie können auch in speziellen Applikationen für farbige Mischung des Lichts angewendet werden. Für die MODUL-Reihe sind zwei Grundauführungen dieser Diffusoren im Angebot, die für die Beschränkung der störenden Blendung in Büroräumen bestimmt sind:

Linear de-glaring system, LDP



Táto prizma s čiarovou mikroštruktúrou ponúka vynikajúce optické vlastnosti a zároveň rieši problém oslnenia. Obmedzenie oslnenia v priechom smere na svetidlo je dosahované špeciálnym symetrickým tvarom prizmy. Obmedzenie oslnenia v pozdĺžnom smere na svetidlo je zaistené efektom celkového odrazu pozdĺž tvarovanej štruktúry prizmy. Lineárna prizmatická štruktúra LDP je priehľadná a vytvára dvojitý obraz žiariviek, čím znižuje konečný jas svetidla. Navyše, za uhlom pohľadu väčším ako 60° nie sú jednotlivé žiarivky viditeľné, čím sa dosiahne úplné potlačenie oslnenia od svetidla.

This linear prismatic microstructure astonishes by its outstanding optical brilliance and potential in solving de-glaring problems. De-glaring in the direction perpendicular to the prisms is reached by the special symmetric shape of the prism. De-glaring in the direction along the prism is performed by total-reflection effects along the shaped prism structure.

The linear prismatic structure LDP is highly transparent and generates a double image of the fluorescent lamp, what results in a reduced luminance. Furthermore the lamps are invisible beyond a viewing angle of 60°. This is equal to a complete de-glaring of the lighting.

Dieses Prisma mit einer Linien-Mikrostruktur bietet ausgezeichnete optische Eigenschaften an und löst auch das Problem der Blendung. Die Beschränkung der Blendung in der Querrichtung auf die Leuchte ist mit einer speziellen symmetrischen Form des Prismas erreicht. Die Beschränkung der Blendung in der Längsrichtung auf die Leuchte ist mit dem Effekt der Gesamreflexion entlang der formgestalteten Struktur des Prismas gesichert.

Lineare prismatische Struktur LDP ist durchsichtig und bildet ein Doppelbild der Leuchtstofflampen, womit sie die Endleuchtdichte der Leuchte senkt. Darüber hinaus sind die einzelnen Leuchtstoffröhren hinter dem mehr als 60° größeren Ansichtswinkel nicht sichtbar, womit die völlige Unterdrückung der Blendung von der Leuchte erreicht wird.

Conical de-glaring prism, CDP

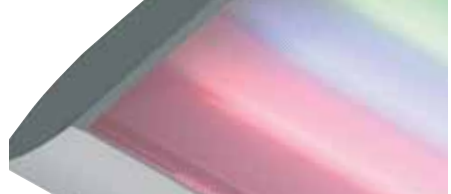


Rotačne-symetrické obmedzenie oslnenia je dosahované presne navrhnutým tvarom kužeľov. Prizma CDP ponúka kompletne konštantné obmedzenie oslnenia vo všetkých smeroch pohľadu. Pri zapnutom svetidle značne znižuje jas svietiacej plochy, difúzor zabezpečuje opalový efekt plochy.

Rotation symmetric de-glaring is achieved by computer determined shape of the cone. A completely constant de-glaring in all angles of the plane is offered by the micro-comb CDP prisms. Their effect in lightings is rather opal and reduces luminance considerably, as well in not de-glared areas.

Eine rotationsymmetrische Beschränkung der Blendung ist mit einer genau entworfenen Form der Kegel erreicht. Das Prisma CDP bietet eine vollständig konstante Beschränkung der Blendung in allen Richtungen der Ansicht an. Bei der eingeschalteten Leuchte senkt es wesentlich die Leuchtdichte der leuchtenden Fläche, der Diffusor sichert einen Opaleffekt der Fläche.

RGB



Použitie mikroprizmatických difúzorov vo svetidlách je obzvlášť všestranný nástroj; zabezpečujú miešanie farieb použitím farebných T5 žiariviek, alebo simuláciu priebehu denného osvetlenia použitím bielych žiariviek s rozdielnou teplotou chromatickosti ako denná, biela a teplo biela. Každé svetidlo obsahuje tri elektronické predradníky - jeden pre každú žiarivku. Najlepší spôsob ako ich ovládať je použitím DALI signálu. Špeciálny difúzor používajúci mikroprizmatickú technológiu zabezpečí pri výstupe zo svetidla optimálne zmiešavanie farieb.

The prismatic versions of these luminaires are particularly versatile lighting tools: they offer colourmixing using coloured RGB T5 fluorescent lamps or daylight simulation using white T5 fluorescent lamps with different temperatures like daylight, cool white and warm white. Three electronic control gears, one for each lamp, are contained within the luminaire. The best way how to control them is via DALI signal. A special diffuser using microprism technology ensures the optimum mixture of the three primary colours as the light is emitted from the luminaire.

Der Einsatz der mikroprismatischen Diffusoren in den Leuchten ist ein besonders allseitiges Instrument: sie sichern die Mischung der Farben durch den Einsatz von den Leuchtstoffröhren T5 oder mit der Simulation der Tagesbeleuchtung durch den Einsatz der weißen Leuchtstofflampen mit verschiedener Temperatur der Chrominanz als Tagesleuchtstoffröhre, weiße und warme weiße Leuchtstoffröhre. Jede Leuchte enthält drei elektronische Vorschalter – ein für jede Leuchtstoffröhre. Die beste Art ihrer Steuerung ist die Verwendung des DALI-Signals. Ein spezieller Diffusor, der die mikroprismatische Technologie verwendet, sichert bei dem Ausgang aus der Leuchte eine optimale Mischung der Farben.





ORDER CODE	TYPE	SPECIFICATION
ME409022887000	MODUL EXE PAR-V DIR-INDIR TWIN-M	2x28W,1100G,ECG A2,RAL 9003
ME4090223587000	MODUL EXE PAR-V DIR-INDIR TWIN-M	2x35W,1100G,ECG A2,RAL 9003
ME4090224987000	MODUL EXE PAR-V DIR-INDIR TWIN-M	2x49W,1100G,ECG A2,RAL 9003
ME4090225487000	MODUL EXE PAR-V DIR-INDIR TWIN-M	2x54W,1100G,ECG A2,RAL 9003
ME4090228087000	MODUL EXE PAR-V DIR-INDIR TWIN-M	2x80W,1100G,ECG A2,RAL 9003
<b>ACCESSORIES</b>		
<b>SUSPENSION</b>		
SUS 1.25 C0/001	SUSPENSION 01	MODUL EXE
SUS 1.25 C0/002	SUSPENSION 02	MODUL EXE
SUS 1.35 C0/003	SUSPENSION 03	MODUL EXE
SUS 1.35 C0/006	SUSPENSION 06	MODUL EXE
SUS 1.25 C0/011	SUSPENSION 11	MODUL EXE
SUS 1.25 C0/012	SUSPENSION 12	MODUL EXE

XXXXXXXXXXXXXXXX		
<b>02 - PAR-V (MIRO4)</b>		
<b>0E - PAR-V REFLEX (316G2)</b>		
<b>0F - PAR-V REFLEX (MIRO4)</b>		
<b>0K - PAR MAT-V REFLEX (1100G)</b>		

<b>MODUL GAMMA</b>		
<b>MODUL GAMMA PAR-V</b>		
MG0030232882000	MODUL GAMMA PAR-V	3x28W,316G2,ECG A2,RAL 9003
MG0030233582000	MODUL GAMMA PAR-V	3x35W,316G2,ECG A2,RAL 9003
MG0030234982000	MODUL GAMMA PAR-V	3x49W,316G2,ECG A2,RAL 9003
MG0030235482000	MODUL GAMMA PAR-V	3x54W,316G2,ECG A2,RAL 9003
MG003023AF82000	MODUL GAMMA PAR-V	1x28+2x28W,316G2,ECG A2,RAL 9003
MG003023AG82000	MODUL GAMMA PAR-V	1x28+2x54W,316G2,ECG A2,RAL 9003
MG003023AH82000	MODUL GAMMA PAR-V	1x35+2x35W,316G2,ECG A2,RAL 9003
MG003023AI82000	MODUL GAMMA PAR-V	1x35+2x49W,316G2,ECG A2,RAL 9003
MG003023AJ82000	MODUL GAMMA PAR-V	1x49+2x49W,316G2,ECG A2,RAL 9003
MG003023AK82000	MODUL GAMMA PAR-V	1x49+2x35W,316G2,ECG A2,RAL 9003
MG003023AL82000	MODUL GAMMA PAR-V	1x54+2x54W,316G2,ECG A2,RAL 9003
MG003023AM82000	MODUL GAMMA PAR-V	1x54+2x28W,316G2,ECG A2,RAL 9003
MG0090232882000	MODUL GAMMA PAR MAT-V	3x28W,1100G,ECG A2,RAL 9003
MG0090233582000	MODUL GAMMA PAR MAT-V	3x35W,1100G,ECG A2,RAL 9003
MG0090234982000	MODUL GAMMA PAR MAT-V	3x49W,1100G,ECG A2,RAL 9003
MG0090235482000	MODUL GAMMA PAR MAT-V	3x54W,1100G,ECG A2,RAL 9003
MG009023AF82000	MODUL GAMMA PAR MAT-V	1x28+2x28W,1100G,ECG A2,RAL 9003
MG009023AG82000	MODUL GAMMA PAR MAT-V	1x28+2x54W,1100G,ECG A2,RAL 9003
MG009023AH82000	MODUL GAMMA PAR MAT-V	1x35+2x35W,1100G,ECG A2,RAL 9003
MG009023AI82000	MODUL GAMMA PAR MAT-V	1x35+2x49W,1100G,ECG A2,RAL 9003
MG009023AJ82000	MODUL GAMMA PAR MAT-V	1x49+2x49W,1100G,ECG A2,RAL 9003
MG009023AK82000	MODUL GAMMA PAR MAT-V	1x49+2x35W,1100G,ECG A2,RAL 9003
MG009023AL82000	MODUL GAMMA PAR MAT-V	1x54+2x54W,1100G,ECG A2,RAL 9003
MG009023AM82000	MODUL GAMMA PAR MAT-V	1x54+2x28W,1100G,ECG A2,RAL 9003

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<b>02 - PAR-V (MIRO4)</b>		

<b>MODUL GAMMA S</b>		
MG1000232882000	MODUL GAMMA S	3x28W,ECG A2,RAL 9003
MG1000233582000	MODUL GAMMA S	3x35W,ECG A2,RAL 9003
MG1000234982000	MODUL GAMMA S	3x49W,ECG A2,RAL 9003
MG1000235482000	MODUL GAMMA S	3x54W,ECG A2,RAL 9003

<b>ACCESSORIES</b>		
<b>SUSPENSION</b>		
SUS 1.25 C0/001	SUSPENSION 01	MODUL GAMMA
SUS 1.25 C0/002	SUSPENSION 02	MODUL GAMMA
SUS 1.35 C0/003	SUSPENSION 03	MODUL GAMMA
SUS 1.35 C0/006	SUSPENSION 06	MODUL GAMMA
SUS 1.25 C0/011	SUSPENSION 11	MODUL GAMMA
SUS 1.25 C0/012	SUSPENSION 12	MODUL GAMMA

<b>MODUL DA</b>		
<b>MODUL DA PAR-V</b>		
MD1030221482000	MODUL DA PAR-V	2x14W,316G2,ECG A2,RAL 9003
MD1030222482000	MODUL DA PAR-V	2x24W,316G2,ECG A2,RAL 9003
MD1030222882000	MODUL DA PAR-V	2x28W,316G2,ECG A2,RAL 9003
MD1030223582000	MODUL DA PAR-V	2x35W,316G2,ECG A2,RAL 9003
MD1030224982000	MODUL DA PAR-V	2x49W,316G2,ECG A2,RAL 9003
MD1030225482000	MODUL DA PAR-V	2x54W,316G2,ECG A2,RAL 9003
MD1030228082000	MODUL DA PAR-V	2x80W,316G2,ECG A2,RAL 9003
MD1090221482000	MODUL DA PAR MAT-V	2x14W,1100G,ECG A2,RAL 9003
MD1090222482000	MODUL DA PAR MAT-V	2x24W,1100G,ECG A2,RAL 9003
MD1090223582000	MODUL DA PAR MAT-V	2x35W,1100G,ECG A2,RAL 9003
MD1090224982000	MODUL DA PAR MAT-V	2x49W,1100G,ECG A2,RAL 9003
MD1090225482000	MODUL DA PAR MAT-V	2x54W,1100G,ECG A2,RAL 9003
MD1090228082000	MODUL DA PAR MAT-V	2x80W,1100G,ECG A2,RAL 9003
MD20E0231482000	MODUL DA PAR-V REF	3x14W,316G2,ECG A2,RAL 9003
MD20E0232482000	MODUL DA PAR-V REF	3x24W,316G2,ECG A2,RAL 9003
MD20E0233582000	MODUL DA PAR-V REF	3x35W,316G2,ECG A2,RAL 9003
MD20E0234982000	MODUL DA PAR-V REF	3x49W,316G2,ECG A2,RAL 9003
MD20E023AN82000	MODUL DA PAR-V REF	2x14+1x14W,316G2,ECG A2,RAL 9003
MD20E023AO82000	MODUL DA PAR-V REF	2x14+1x24W,316G2,ECG A2,RAL 9003
MD20E023AP82000	MODUL DA PAR-V REF	2x24+1x14W,316G2,ECG A2,RAL 9003
MD20E023AO82000	MODUL DA PAR-V REF	2x28+1x28W,316G2,ECG A2,RAL 9003
MD20E023AR82000	MODUL DA PAR-V REF	2x28+1x54W,316G2,ECG A2,RAL 9003
MD20E023AS82000	MODUL DA PAR-V REF	2x54+1x54W,316G2,ECG A2,RAL 9003
MD20E023AT82000	MODUL DA PAR-V REF	2x35+1x35W,316G2,ECG A2,RAL 9003
MD20E023AU82000	MODUL DA PAR-V REF	2x35+1x49W,316G2,ECG A2,RAL 9003
MD20E023AV82000	MODUL DA PAR-V REF	2x49+1x35W,316G2,ECG A2,RAL 9003
MD20E023AW82000	MODUL DA PAR-V REF	2x49+1x49W,316G2,ECG A2,RAL 9003
MD20K0231482000	MODUL DA PAR MAT-V REF	3x14W,1100G,ECG A2,RAL 9003
MD20K0232482000	MODUL DA PAR MAT-V REF	3x24W,1100G,ECG A2,RAL 9003
MD20K0233582000	MODUL DA PAR MAT-V REF	3x35W,1100G,ECG A2,RAL 9003
MD20K023AN82000	MODUL DA PAR MAT-V REF	2x14+1x14W,1100G,ECG A2,RAL 9003
MD20K023AO82000	MODUL DA PAR MAT-V REF	2x14+1x24W,1100G,ECG A2,RAL 9003
MD20K023AP82000	MODUL DA PAR MAT-V REF	2x24+1x14W,1100G,ECG A2,RAL 9003
MD20K023AO82000	MODUL DA PAR MAT-V REF	2x28+1x28W,1100G,ECG A2,RAL 9003
MD20K023AR82000	MODUL DA PAR MAT-V REF	2x28+1x54W,1100G,ECG A2,RAL 9003
MD20K023AS82000	MODUL DA PAR MAT-V REF	2x54+1x54W,1100G,ECG A2,RAL 9003
MD20K023AT82000	MODUL DA PAR MAT-V REF	2x35+1x35W,1100G,ECG A2,RAL 9003

ORDER CODE	TYPE	SPECIFICATION
MD20K023AU82000	MODUL DA PAR MAT-V REF	2x35+1x49W,1100G,ECG A2,RAL 9003
MD20K023AV82000	MODUL DA PAR MAT-V REF	2x49+1x35W,1100G,ECG A2,RAL 9003
MD20K023AW82000	MODUL DA PAR MAT-V REF	2x49+1x49W,1100G,ECG A2,RAL 9003

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<b>02 - PAR-V (MIRO4)</b>		
<b>0F - PAR-V REFLEX (MIRO4)</b>		

<b>ACCESSORIES</b>		
<b>SUSPENSION</b>		
SUS 1.35 C0/026	SUSPENSION 26	MODUL DA
SUS 1.35 C0/027	SUSPENSION 27	MODUL DA

<b>MODUL EN</b>		
<b>MODUL EN PAR-V</b>		
ME003021288C000	MODUL EN PAR-V	1x28W,316G2,ECG A2,RAL 9007
ME003021358C000	MODUL EN PAR-V	1x35W,316G2,ECG A2,RAL 9007
ME003021498C000	MODUL EN PAR-V	1x49W,316G2,ECG A2,RAL 9007
ME003021548C000	MODUL EN PAR-V	1x54W,316G2,ECG A2,RAL 9007
ME003021808C000	MODUL EN PAR-V	1x80W,316G2,ECG A2,RAL 9007
ME003022288C000	MODUL EN PAR-V	2x28W,316G2,ECG A2,RAL 9007
ME003022358C000	MODUL EN PAR-V	2x35W,316G2,ECG A2,RAL 9007
ME003022498C000	MODUL EN PAR-V	2x49W,316G2,ECG A2,RAL 9007
ME003022548C000	MODUL EN PAR-V	2x54W,316G2,ECG A2,RAL 9007
ME009021288C000	MODUL EN PAR MAT-V	1x28W,1100G,ECG A2,RAL 9007
ME009021358C000	MODUL EN PAR MAT-V	1x35W,1100G,ECG A2,RAL 9007
ME009021498C000	MODUL EN PAR MAT-V	1x49W,1100G,ECG A2,RAL 9007
ME009021548C000	MODUL EN PAR MAT-V	1x54W,1100G,ECG A2,RAL 9007
ME009021808C000	MODUL EN PAR MAT-V	1x80W,1100G,ECG A2,RAL 9007
ME009022288C000	MODUL EN PAR MAT-V	2x28W,1100G,ECG A2,RAL 9007
ME009022358C000	MODUL EN PAR MAT-V	2x35W,1100G,ECG A2,RAL 9007
ME009022498C000	MODUL EN PAR MAT-V	2x49W,1100G,ECG A2,RAL 9007
ME009022548C000	MODUL EN PAR MAT-V	2x54W,1100G,ECG A2,RAL 9007
ME009022808C000	MODUL EN PAR MAT-V	2x80W,1100G,ECG A2,RAL 9007
ME009024148C000	MODUL EN PAR MAT-V	4x14W,1100G,ECG A2,RAL 9007
ME009024248C000	MODUL EN PAR MAT-V	4x24W,1100G,ECG A2,RAL 9007

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<b>02 - PAR-V (MIRO4)</b>		

<b>MODUL EN MICRO PRISMA LDP</b>		
ME03J022288C000	MODUL EN MICRO PRISMA LDP	2x28W,ECG A2,RAL 9007
ME03J022358C000	MODUL EN MICRO PRISMA LDP	2x35W,ECG A2,RAL 9007
ME03J022498C000	MODUL EN MICRO PRISMA LDP	2x49W,ECG A2,RAL 9007
ME03J022548C000	MODUL EN MICRO PRISMA LDP	2x54W,ECG A2,RAL 9007
ME03J022808C000	MODUL EN MICRO PRISMA LDP	2x80W,ECG A2,RAL 9007
ME03J022288C000	MODUL EN MICRO PRISMA LDP	3x28W,ECG A2,RAL 9007
ME03J022358C000	MODUL EN MICRO PRISMA LDP	3x35W,ECG A2,RAL 9007

<b>MODUL EN MICRO PRISMA CDP</b>		
ME03K022288C000	MODUL EN MICRO PRISMA CDP	2x28W,ECG A2,RAL 9007
ME03K022358C000	MODUL EN MICRO PRISMA CDP	2x35W,ECG A2,RAL 9007
ME03K022498C000	MODUL EN MICRO PRISMA CDP	2x49W,ECG A2,RAL 9007
ME03K022548C000	MODUL EN MICRO PRISMA CDP	2x54W,ECG A2,RAL 9007
ME03K022808C000	MODUL EN MICRO PRISMA CDP	2x80W,ECG A2,RAL 9007
ME03K022288C000	MODUL EN MICRO PRISMA CDP	3x28W,ECG A2,RAL 9007
ME03K023358C000	MODUL EN MICRO PRISMA CDP	3x35W,ECG A2,RAL 9007

<b>MODUL EN MICRO PRISMA CDP DIFF</b>		
ME03L022288C000	MODUL EN MICRO PRISMA CDP DIFF	2x28W,ECG A2,RAL 9007
ME03L022358C000	MODUL EN MICRO PRISMA CDP DIFF	2x35W,ECG A2,RAL 9007
ME03L022498C000	MODUL EN MICRO PRISMA CDP DIFF	2x49W,ECG A2,RAL 9007
ME03L022548C000	MODUL EN MICRO PRISMA CDP DIFF	2x54W,ECG A2,RAL 9007
ME03L022808C000	MODUL EN MICRO PRISMA CDP DIFF	2x80W,ECG A2,RAL 9007
ME03L023288C000	MODUL EN MICRO PRISMA CDP DIFF	3x28W,ECG A2,RAL 9007
ME03L023358C000	MODUL EN MICRO PRISMA CDP DIFF	3x35W,ECG A2,RAL 9007

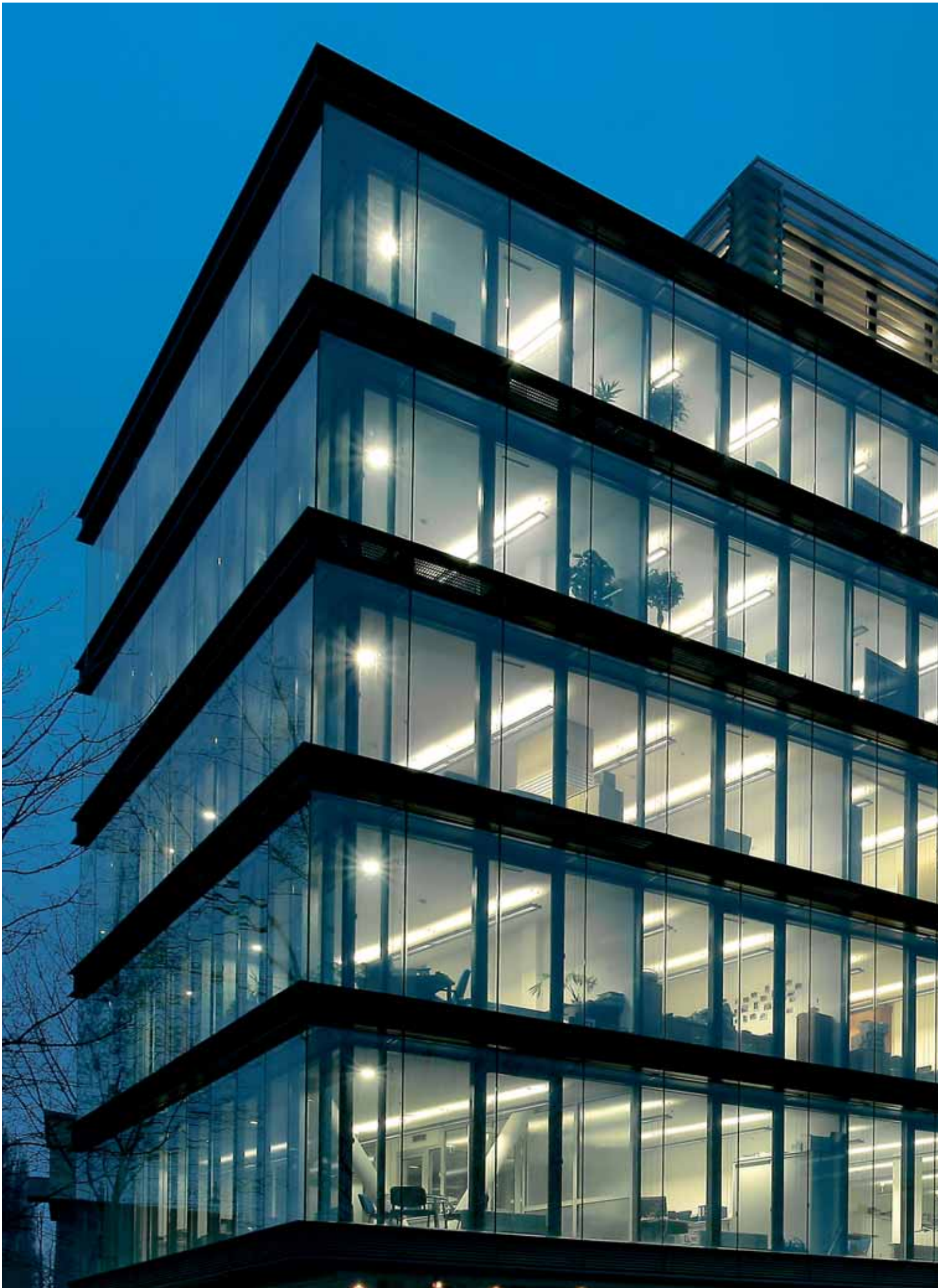
<b>ACCESSORIES</b>		
<b>SUSPENSION</b>		
SUS 1.25 C0/001	SUSPENSION 01	MODUL EN 1x...2x..., 3x...
SUS 1.25 C0/002	SUSPENSION 02	MODUL EN 1x...2x..., 3x...
SUS 1.35 C0/003	SUSPENSION 03	MODUL EN 1x...2x..., 3x...
SUS 1.35 C0/006	SUSPENSION 06	MODUL EN 1x...2x..., 3x...
SUS 1.25 C0/011	SUSPENSION 11	MODUL EN 2x...
SUS 1.25 C0/012	SUSPENSION 12	MODUL EN 2x...
SUS 1.35 C0/014	SUSPENSION 14	MODUL EN 1x...
SUS 1.35 C0/015	SUSPENSION 15	MODUL EN 1x...

<b>MODUL LAMBDA</b>		
<b>MODUL LAMBDA DIR PAR-V</b>		
ML002021288C000	MODUL LAMBDA DIR PAR-V	1x28W,MIRO4,ECG A2,RAL 9007
ML002021358C000	MODUL LAMBDA DIR PAR-V	1x35W,MIRO4,ECG A2,RAL 9007
ML002021498C000	MODUL LAMBDA DIR PAR-V	1x49W,MIRO4,ECG A2,RAL 9007
ML002021548C000	MODUL LAMBDA DIR PAR-V	1x54W,MIRO4,ECG A2,RAL 9007
ML002021808C000	MODUL LAMBDA DIR PAR-V	1x80W,MIRO4,ECG A2,RAL 9007
ML002022288C000	MODUL LAMBDA DIR PAR-V	2x28W,MIRO4,ECG A2,RAL 9007
ML002022358C000	MODUL LAMBDA DIR PAR-V	2x35W,MIRO4,ECG A2,RAL 9007
ML002022498C000	MODUL LAMBDA DIR PAR-V	2x49W,MIRO4,ECG A2,RAL 9007
ML002022548C000	MODUL LAMBDA DIR PAR-V	2x54W,MIRO4,ECG A2,RAL 9007
ML002022808C000	MODUL LAMBDA DIR PAR-V	2x80W,MIRO4,ECG A2,RAL 9007
ML00A021288C000	MODUL LAMBDA DIR PAR MAT-V	1x28W,MIRO5,ECG A2,RAL 9007
ML00A021358C000	MODUL LAMBDA DIR PAR MAT-V	1x35W,MIRO5,ECG A2,RAL 9007
ML00A021498C000	MODUL LAMBDA DIR PAR MAT-V	1x49W,MIRO5,ECG A2,RAL 9007
ML00A021548C000	MODUL LAMBDA DIR PAR MAT-V	1x54W,MIRO5,ECG A2,RAL 9007
ML00A021808C000	MODUL LAMBDA DIR PAR MAT-V	1x80W,MIRO5,ECG A2,RAL 9007
ML00A022288C000	MODUL LAMBDA DIR PAR MAT-V	2x28W,MIRO5,ECG A2,RAL 9007
ML00A022358C000	MODUL LAMBDA DIR PAR MAT-V	2x35W,MIRO5,ECG A2,RAL 9007
ML00A022498C000	MODUL LAMBDA DIR PAR MAT-V	2x49W,MIRO5,ECG A2,RAL 9007
ML00A022548C000	MODUL LAMBDA DIR PAR MAT-V	2x54W,MIRO5,ECG A2,RAL 9007
ML00A022808C000	MODUL LAMBDA DIR PAR MAT-V	2x80W,MIRO5,ECG A2,RAL 9007

<b>MODUL LAMBDA DIR-INDIR PAR-V</b>		
ML102021288C000	MODUL LAMBDA DIR-INDIR PAR-V	1x28W,MIRO4,ECG A2,RAL 9007
ML102021358C000	MODUL LAMBDA DIR-INDIR PAR-V	1x35W,MIRO4,ECG A2,RAL 9007
ML102021498C000		

ORDER CODE	TYPE	SPECIFICATION	ORDER CODE	TYPE	SPECIFICATION
ML102022498C000	MODUL LAMBDA DIR-INDIR PAR-V	2x49W,MIRO4,ECG A2,RAL 9007	<b>ACCESSORIES</b>		
ML102022548C000	MODUL LAMBDA DIR-INDIR PAR-V	2x54W,MIRO4,ECG A2,RAL 9007	<b>SUSPENSION</b>		
ML102022808C000	MODUL LAMBDA DIR-INDIR PAR-V	2x80W,MIRO4,ECG A2,RAL 9007	SUS 1.5 C0/028	SUSPENSION 28	MODUL KA
ML10A021288C000	MODUL LAMBDA DIR-INDIR PAR MAT-V	1x28W,MIRO5,ECG A2,RAL 9007	SUS 1.5 E0/029	SUSPENSION 29	MODUL KA
ML10A021358C000	MODUL LAMBDA DIR-INDIR PAR MAT-V	1x35W,MIRO5,ECG A2,RAL 9007	<b>MODUL AAZ</b>		
ML10A021498C000	MODUL LAMBDA DIR-INDIR PAR MAT-V	1x49W,MIRO5,ECG A2,RAL 9007	MA0000222882000	MODUL AAZ T5	2x28W,ECG A2,RAL 9003
ML10A021548C000	MODUL LAMBDA DIR-INDIR PAR MAT-V	1x54W,MIRO5,ECG A2,RAL 9007	MA0000223582000	MODUL AAZ T5	2x35W,ECG A2,RAL 9003
ML10A021808C000	MODUL LAMBDA DIR-INDIR PAR MAT-V	1x80W,MIRO5,ECG A2,RAL 9007	MA0000224982000	MODUL AAZ T5	2x49W,ECG A2,RAL 9003
ML10A022288C000	MODUL LAMBDA DIR-INDIR PAR MAT-V	2x28W,MIRO5,ECG A2,RAL 9007	MA0000323632000	MODUL AAZ T8	2x36W,CCG B2,RAL 9003
ML10A022358C000	MODUL LAMBDA DIR-INDIR PAR MAT-V	2x35W,MIRO5,ECG A2,RAL 9007	MA0000323682000	MODUL AAZ T8	2x36W,ECG A2,RAL 9003
ML10A022498C000	MODUL LAMBDA DIR-INDIR PAR MAT-V	2x49W,MIRO5,ECG A2,RAL 9007	MA0000325832000	MODUL AAZ T8	2x58W,CCG B2,RAL 9003
ML10A022548C000	MODUL LAMBDA DIR-INDIR PAR MAT-V	2x54W,MIRO5,ECG A2,RAL 9007	MA0000325882000	MODUL AAZ T8	2x58W,ECG A2,RAL 9003
ML10A022808C000	MODUL LAMBDA DIR-INDIR PAR MAT-V	2x80W,MIRO5,ECG A2,RAL 9007	<b>ACCESSORIES</b>		
<b>ACCESSORIES</b>			<b>SUSPENSION</b>		
<b>SUSPENSION</b>			SUS 1.25 C0/011	SUSPENSION 11	MODUL AAZ
SUS 1.35 C0/014	SUSPENSION 14	MODUL LAMBDA	SUS 1.25 C0/012	SUSPENSION 12	MODUL AAZ
SUS 1.35 C0/015	SUSPENSION 15	MODUL LAMBDA	<b>MODUL AA</b>		
SUS 1.35 C0/023	SUSPENSION 23	MODUL LAMBDA	MA1000211482000	MODUL AA T5	1x14W,ECG A2,RAL 9003
<b>MODUL QUARK</b>			MA1000212882000	MODUL AA T5	1x28W,ECG A2,RAL 9003
<b>MODUL QUARK CDP</b>			MA1000213582000	MODUL AA T5	1x35W,ECG A2,RAL 9003
MQ03K022288C000	MODUL QUARK CDP	2x28W,ECG A2,RAL 9007	MA1000214982000	MODUL AA T5	1x49W,ECG A2,RAL 9003
MQ03K022358C000	MODUL QUARK CDP	2x35W,ECG A2,RAL 9007	MA1000215482000	MODUL AA T5	1x54W,ECG A2,RAL 9003
MQ03K022498C000	MODUL QUARK CDP	2x49W,ECG A2,RAL 9007	MA1000218082000	MODUL AA T5	1x80W,ECG A2,RAL 9003
MQ03K022548C000	MODUL QUARK CDP	2x54W,ECG A2,RAL 9007	MA1000311832000	MODUL AA T8	1x18W,CCG B2,RAL 9003
MQ03K022808C000	MODUL QUARK CDP	2x80W,ECG A2,RAL 9007	MA1000311882000	MODUL AA T8	1x18W,ECG A2,RAL 9003
MQ03K024288C000	MODUL QUARK CDP	4x28W,ECG A2,RAL 9007	MA1000313632000	MODUL AA T8	1x36W,CCG B2,RAL 9003
MQ03K024358C000	MODUL QUARK CDP	4x35W,ECG A2,RAL 9007	MA1000313682000	MODUL AA T8	1x36W,ECG A2,RAL 9003
<b>MODUL QUARK CDP DIFF</b>			MA1000315832000	MODUL AA T8	1x58W,CCG B2,RAL 9003
MQ03L022288C000	MODUL QUARK CDP DIFF	2x28W,ECG A2,RAL 9007	MA1000315882000	MODUL AA T8	1x58W,ECG A2,RAL 9003
MQ03L022358C000	MODUL QUARK CDP DIFF	2x35W,ECG A2,RAL 9007	MA1001024082000	MODUL AA TC-L	2x40W,ECG A2,RAL 9003
MQ03L022498C000	MODUL QUARK CDP DIFF	2x49W,ECG A2,RAL 9007	MA1001025582000	MODUL AA TC-L	2x55W,ECG A2,RAL 9003
MQ03L022548C000	MODUL QUARK CDP DIFF	2x54W,ECG A2,RAL 9007	<b>XXXXXXXXXXXXXX</b>		
MQ03L022808C000	MODUL QUARK CDP DIFF	2x80W,ECG A2,RAL 9007	<b>9 - ECG DIM 1-10V</b>		
MQ03L024288C000	MODUL QUARK CDP DIFF	4x28W,ECG A2,RAL 9007	<b>A - ECG DIM DSI</b>		
MQ03L024358C000	MODUL QUARK CDP DIFF	4x35W,ECG A2,RAL 9007	<b>B - ECG DALI</b>		
<b>ACCESSORIES</b>					
<b>SUSPENSION</b>					
SUS 1.35 C0/004	SUSPENSION 04	MODUL QUARK			
SUS 1.35 C0/005	SUSPENSION 05	MODUL QUARK			
SUS 1.35 C0/016	SUSPENSION 16	MODUL QUARK			
SUS 1.35 C0/017	SUSPENSION 17	MODUL QUARK			
<b>MODUL RENDO</b>					
<b>MODUL RENDO LDP</b>					
MR03J022288C000	MODUL RENDO LDP	2x28W,ECG A2,RAL 9007			
MR03J022358C000	MODUL RENDO LDP	2x35W,ECG A2,RAL 9007			
MR03J022498C000	MODUL RENDO LDP	2x49W,ECG A2,RAL 9007			
MR03J022548C000	MODUL RENDO LDP	2x54W,ECG A2,RAL 9007			
<b>MODUL RENDO CDP</b>					
MR03K022288C000	MODUL RENDO CDP	2x28W,ECG A2,RAL 9007			
MR03K022358C000	MODUL RENDO CDP	2x35W,ECG A2,RAL 9007			
MR03K022498C000	MODUL RENDO CDP	2x49W,ECG A2,RAL 9007			
MR03K022548C000	MODUL RENDO CDP	2x54W,ECG A2,RAL 9007			
<b>MODUL RENDO CDP DIFF</b>					
MR03L022288C000	MODUL RENDO CDP DIFF	2x28W,ECG A2,RAL 9007			
MR03L022358C000	MODUL RENDO CDP DIFF	2x35W,ECG A2,RAL 9007			
MR03L022498C000	MODUL RENDO CDP DIFF	2x49W,ECG A2,RAL 9007			
MR03L022548C000	MODUL RENDO CDP DIFF	2x54W,ECG A2,RAL 9007			
<b>ACCESSORIES</b>					
<b>SUSPENSION</b>					
SUS 1.35 C0/024	SUSPENSION 24	MODUL RENDO			
SUS 1.35 C0/025	SUSPENSION 25	MODUL RENDO			
<b>MODUL KA</b>					
<b>MODUL KA LA</b>					
MK0210221482000	MODUL KA T5 LA	2x14W,ECG A2,RAL 9003			
MK0210222482000	MODUL KA T5 LA	2x24W,ECG A2,RAL 9003			
MK0210222882000	MODUL KA T5 LA	2x28W,ECG A2,RAL 9003			
MK0210223582000	MODUL KA T5 LA	2x35W,ECG A2,RAL 9003			
MK0210224982000	MODUL KA T5 LA	2x49W,ECG A2,RAL 9003			
MK0210225482000	MODUL KA T5 LA	2x54W,ECG A2,RAL 9003			
MK0210228082000	MODUL KA T5 LA	2x80W,ECG A2,RAL 9003			
MK0210321832000	MODUL KA T8 LA	2x18W,CCG B2,RAL 9003			
MK0210321882000	MODUL KA T8 LA	2x18W,ECG A2,RAL 9003			
MK0210323632000	MODUL KA T8 LA	2x36W,CCG B2,RAL 9003			
MK0210323682000	MODUL KA T8 LA	2x36W,ECG A2,RAL 9003			
MK0210325832000	MODUL KA T8 LA	2x58W,CCG B2,RAL 9003			
MK0210325882000	MODUL KA T8 LA	2x58W,ECG A2,RAL 9003			
<b>MODUL KA LB</b>					
MK0290221482000	MODUL KA T5 LB	2x14W,ECG A2,RAL 9003			
MK0290222482000	MODUL KA T5 LB	2x24W,ECG A2,RAL 9003			
MK0290222882000	MODUL KA T5 LB	2x28W,ECG A2,RAL 9003			
MK0290223582000	MODUL KA T5 LB	2x35W,ECG A2,RAL 9003			
MK0290224982000	MODUL KA T5 LB	2x49W,ECG A2,RAL 9003			
MK0290225482000	MODUL KA T5 LB	2x54W,ECG A2,RAL 9003			
MK0290228082000	MODUL KA T5 LB	2x80W,ECG A2,RAL 9003			
MK0290321832000	MODUL KA T8 LB	2x18W,CCG B2,RAL 9003			
MK0290321882000	MODUL KA T8 LB	2x18W,ECG A2,RAL 9003			
MK0290323632000	MODUL KA T8 LB	2x36W,CCG B2,RAL 9003			
MK0290323682000	MODUL KA T8 LB	2x36W,ECG A2,RAL 9003			
MK0290325832000	MODUL KA T8 LB	2x58W,CCG B2,RAL 9003			
MK0290325882000	MODUL KA T8 LB	2x58W,ECG A2,RAL 9003			
<b>MODUL KA PRISMA</b>					
MK03F0221482000	MODUL KA T5 PRISMA	2x14W,ECG A2,RAL 9003			
MK03F0222482000	MODUL KA T5 PRISMA	2x24W,ECG A2,RAL 9003			
MK03F0222882000	MODUL KA T5 PRISMA	2x28W,ECG A2,RAL 9003			
MK03F0223582000	MODUL KA T5 PRISMA	2x35W,ECG A2,RAL 9003			
MK03F0224982000	MODUL KA T5 PRISMA	2x49W,ECG A2,RAL 9003			
MK03F0225482000	MODUL KA T5 PRISMA	2x54W,ECG A2,RAL 9003			
MK03F0228082000	MODUL KA T5 PRISMA	2x80W,ECG A2,RAL 9003			
MK03F0321832000	MODUL KA T8 PRISMA	2x18W,CCG B2,RAL 9003			
MK03F0321882000	MODUL KA T8 PRISMA	2x18W,ECG A2,RAL 9003			
MK03F0323632000	MODUL KA T8 PRISMA	2x36W,CCG B2,RAL 9003			
MK03F0323682000	MODUL KA T8 PRISMA	2x36W,ECG A2,RAL 9003			
MK03F0325832000	MODUL KA T8 PRISMA	2x58W,CCG B2,RAL 9003			
MK03F0325882000	MODUL KA T8 PRISMA	2x58W,ECG A2,RAL 9003			





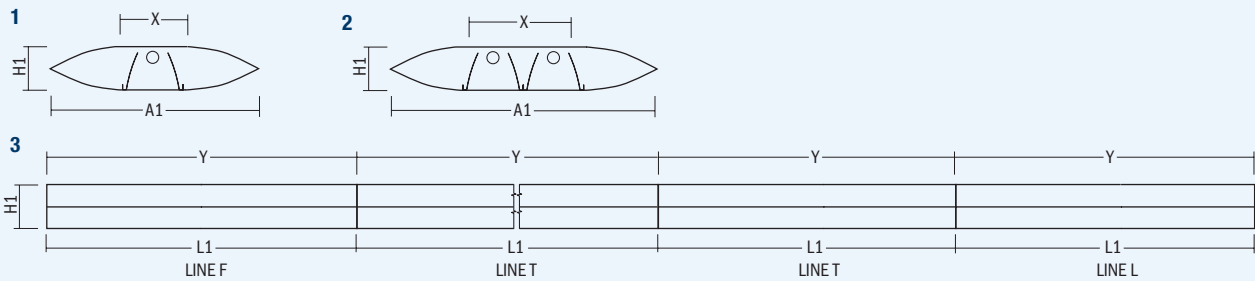
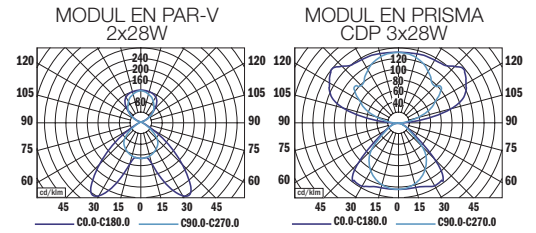






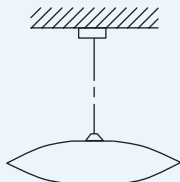
# LINE

## EN PAR-V/PAR MAT-V/LDP/CDP/CDP DIF T5



	OPTIC			POWER	LAMP	PICTURE	DIMENSIONS			FIXING			
	PAR-V	PAR MAT-V	LDP				CDP	CDP DIF	A1	L1	H1	X	Y
Modul EN line F	•	•		1x28	T5		250	1188	55	62	1173		
Modul EN line T	•	•		1x28	T5		250	1188	55	62	1188		
Modul EN line L	•	•		1x28	T5		250	1188	55	62	1173		
Modul EN line F	•	•		1x54	T5		250	1188	55	62	1173		
Modul EN line T	•	•		1x54	T5		250	1188	55	62	1188		
Modul EN line L	•	•		1x54	T5		250	1188	55	62	1173		
Modul EN line F	•	•		1x35	T5		250	1488	55	62	1473		
Modul EN line T	•	•		1x35	T5		250	1488	55	62	1488		
Modul EN line L	•	•		1x35	T5		250	1488	55	62	1473		
Modul EN line F	•	•		1x49	T5		250	1488	55	62	1473		
Modul EN line T	•	•		1x49	T5		250	1488	55	62	1488		
Modul EN line L	•	•		1x49	T5		250	1488	55	62	1473		
Modul EN line F	•	•		1x80	T5		250	1488	55	62	1473		
Modul EN line T	•	•		1x80	T5		250	1488	55	62	1488		
Modul EN line L	•	•		1x80	T5		250	1488	55	62	1473		
Modul EN line F	•	•	•	•	•		2x28	T5	330	1188	55	142	1173
Modul EN line T	•	•	•	•	•		2x28	T5	330	1188	55	142	1188
Modul EN line L	•	•	•	•	•		2x28	T5	330	1188	55	142	1173
Modul EN line F	•	•	•	•	•		2x54	T5	330	1188	55	142	1173
Modul EN line T	•	•	•	•	•		2x54	T5	330	1188	55	142	1188
Modul EN line L	•	•	•	•	•		2x54	T5	330	1188	55	142	1173
Modul EN line F	•	•	•	•	•		2x35	T5	330	1488	55	142	1473
Modul EN line T	•	•	•	•	•		2x35	T5	330	1488	55	142	1488
Modul EN line L	•	•	•	•	•		2x35	T5	330	1488	55	142	1473
Modul EN line F	•	•	•	•	•		2x49	T5	330	1488	55	142	1473
Modul EN line T	•	•	•	•	•		2x49	T5	330	1488	55	142	1488
Modul EN line L	•	•	•	•	•		2x49	T5	330	1488	55	142	1473
Modul EN line F	•	•	•	•	•		2x80	T5	330	1488	55	142	1473
Modul EN line T	•	•	•	•	•		2x80	T5	330	1488	55	142	1488
Modul EN line L	•	•	•	•	•		2x80	T5	330	1488	55	142	1473

INSTALLATION

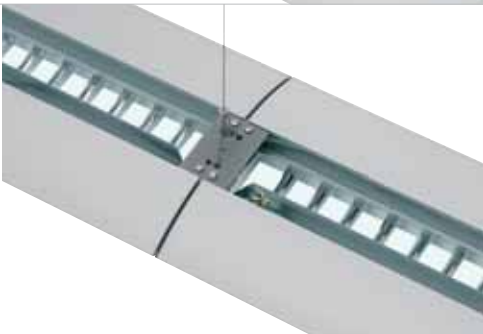
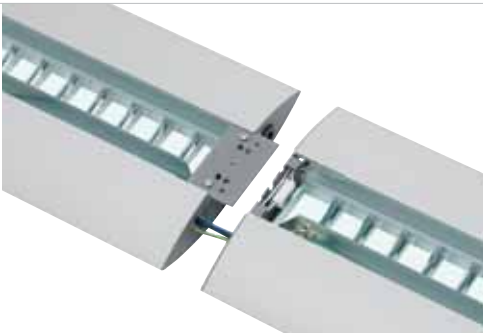




MODUL LINE EN F

MODUL LINE EN T

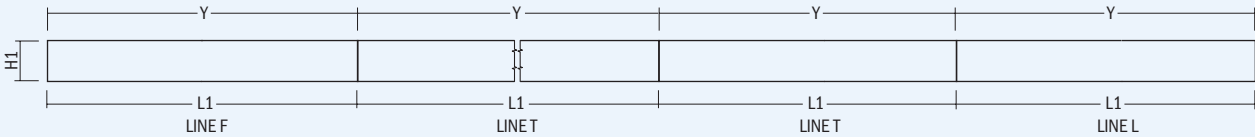
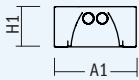
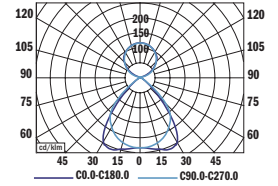
MODUL LINE EN L



# LINE

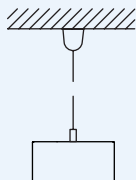
## LAMBDA PAR-V/ PAR MAT-V DIR/ DIR-INDIR T5

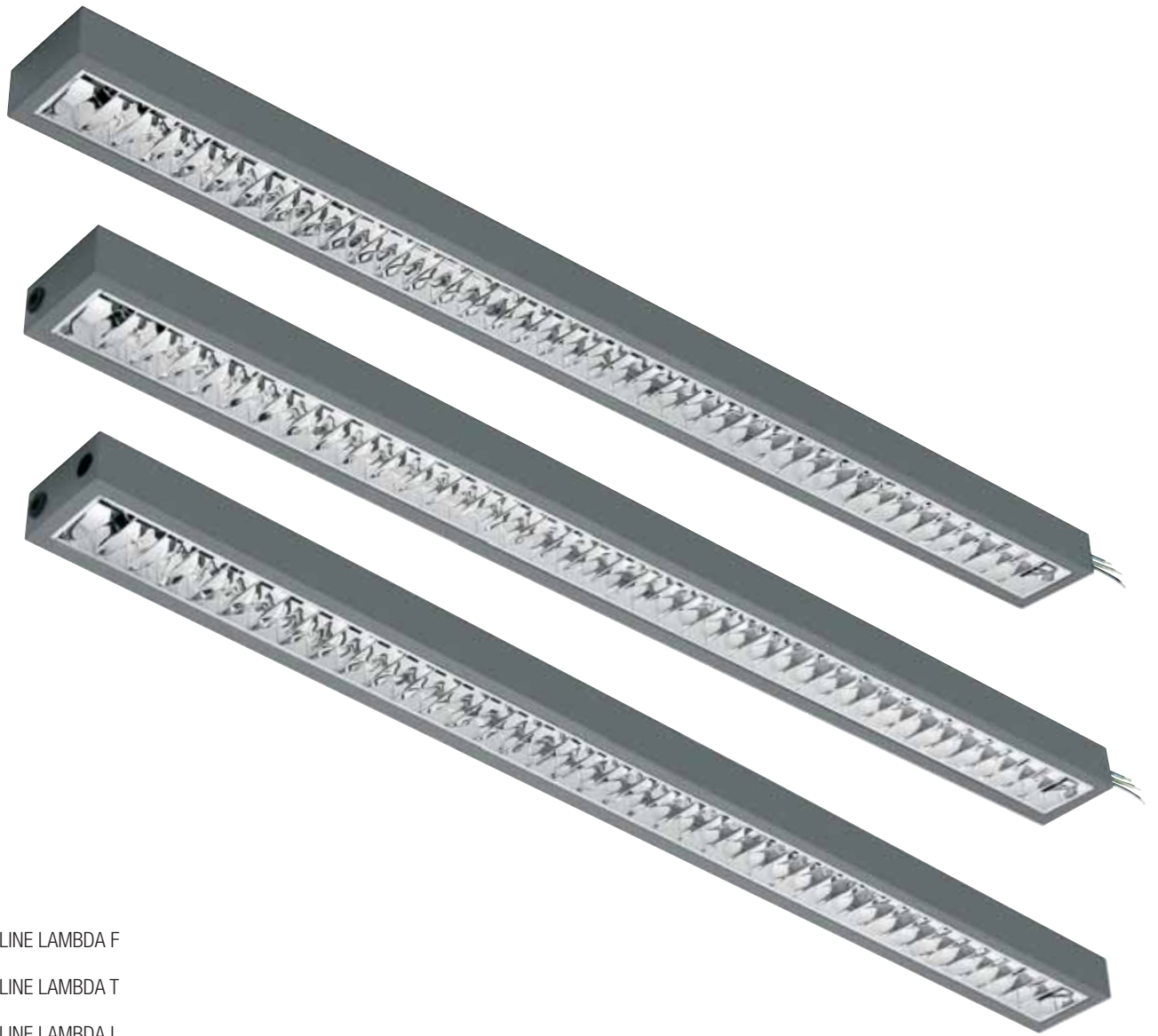
MODUL LAMBDA PAR-V DIR-INDIR  
2x54W



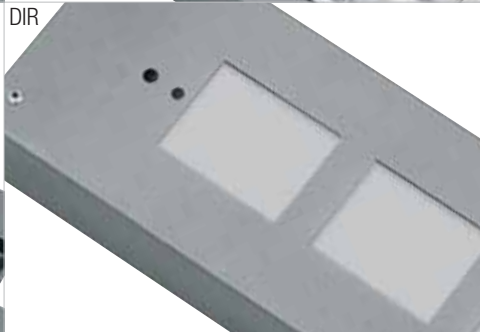
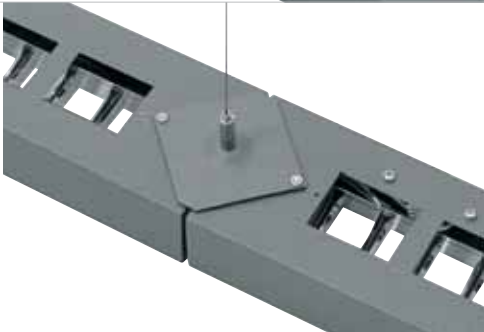
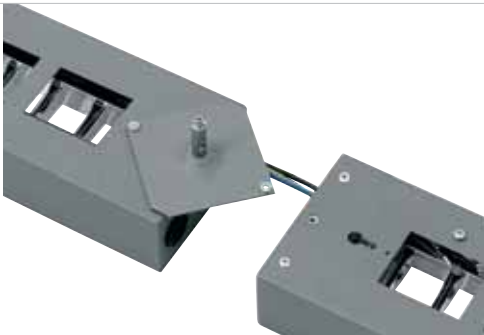
	OPTICS				POWER	LAMP	DIMENSIONS			FIXING Y
	PAR-V DIR	PAR MAT-V DIR	PAR-V DIR-INDIR	PAR MAT-V DIR-INDIR			A1	L1	H1	
Modul LAMBDA line F	•	•	•	•	1x28	T5	118	1206	58	1155
Modul LAMBDA line T	•	•	•	•	1x28	T5	118	1206	58	1206
Modul LAMBDA line L	•	•	•	•	1x28	T5	118	1206	58	1155
Modul LAMBDA line F	•	•	•	•	1x54	T5	118	1206	58	1155
Modul LAMBDA line T	•	•	•	•	1x54	T5	118	1206	58	1206
Modul LAMBDA line L	•	•	•	•	1x54	T5	118	1206	58	1155
Modul LAMBDA line F	•	•	•	•	1x35	T5	118	1506	58	1455
Modul LAMBDA line T	•	•	•	•	1x35	T5	118	1506	58	1506
Modul LAMBDA line L	•	•	•	•	1x35	T5	118	1506	58	1455
Modul LAMBDA line F	•	•	•	•	1x49	T5	118	1506	58	1455
Modul LAMBDA line T	•	•	•	•	1x49	T5	118	1506	58	1506
Modul LAMBDA line L	•	•	•	•	1x49	T5	118	1506	58	1455
Modul LAMBDA line F	•	•	•	•	1x80	T5	118	1506	58	1455
Modul LAMBDA line T	•	•	•	•	1x80	T5	118	1506	58	1506
Modul LAMBDA line L	•	•	•	•	1x80	T5	118	1506	58	1455
Modul LAMBDA line F	•	•	•	•	2x28	T5	118	1206	58	1155
Modul LAMBDA line T	•	•	•	•	2x28	T5	118	1206	58	1206
Modul LAMBDA line L	•	•	•	•	2x28	T5	118	1206	58	1155
Modul LAMBDA line F	•	•	•	•	2x54	T5	118	1206	58	1155
Modul LAMBDA line T	•	•	•	•	2x54	T5	118	1206	58	1206
Modul LAMBDA line L	•	•	•	•	2x54	T5	118	1206	58	1155
Modul LAMBDA line F	•	•	•	•	2x35	T5	118	1506	58	1455
Modul LAMBDA line T	•	•	•	•	2x35	T5	118	1506	58	1506
Modul LAMBDA line L	•	•	•	•	2x35	T5	118	1506	58	1455
Modul LAMBDA line F	•	•	•	•	2x49	T5	118	1506	58	1455
Modul LAMBDA line T	•	•	•	•	2x49	T5	118	1506	58	1506
Modul LAMBDA line L	•	•	•	•	2x49	T5	118	1506	58	1455
Modul LAMBDA line F	•	•	•	•	2x80	T5	118	1506	58	1455
Modul LAMBDA line T	•	•	•	•	2x80	T5	118	1506	58	1506
Modul LAMBDA line L	•	•	•	•	2x80	T5	118	1506	58	1455

INSTALLATION





MODUL LINE LAMBDA F  
MODUL LINE LAMBDA T  
MODUL LINE LAMBDA L









AVANT LINE L  
AVANT LINE T  
AVANT LINE F

PAR-V

PAR MAT-V

OPAL

SYMMETRIC

ASYMMETRIC



















# PRESTIGE

## PRESTIGE

Rýchlomontážny systém Prestige ponúkajúci široké príslušenstvo reflektorov a mriežok umožňuje veľmi ľahko a vysoko účinne realizovať rôzne typy vnútorných svetelných inštalácií.

Vďaka možnosti rôzneho nakonfigurovania môže systém Prestige pokryť široké množstvo aplikácií – fotometrické vlastnosti ho predurčujú k použitiu pre celkové osvetlenie interiérov (predajné plochy, priemyselné priestory, obchodné priestory, školy, knižnice) a taktiež pre priestory kde je dôležité stlačiť spotrebu elektrickej energie osvetľovacej sústavy na minimum. Tento koľajnicový systém určený na priebežnú montáž je ideálne do všetkých priestorov ktoré vyžadujú vysokú hladinu rovnomerného osvetlenia. V ponuke sú tiež špeciálne mriežky a reflektory pre výrobné alebo skladové priestory, nízke alebo vysoké sklady či výstavné plochy.

Hlavnou výhodou tohto prípojnicového systému je rýchla a ľahká montáž a vysoká variabilita použitia. Systém Prestige je navrhnutý pre lineárne žiarivky T5 a T8, jedno-žiarivkové alebo dvoj-žiarivkové verzie. Elektrická časť svietidla pozostáva buď z kompenzovaného magnetického predradníka, štandardného elektronického predradníka, stmievateľného elektronického predradníka alebo inteligentného elektronického predradníka podporujúceho DALI protokol. Na želanie sa svietidlo môže vybaviť núdzovou jednotkou.

Vhodným výberom vnútornej kabeláže inštalovanej v nosnom profile sa dá dosiahnuť optimálne riešenie pre každú aplikáciu. Skutočnosť, že kabeláž je súčasťou nosného profilu, umožňuje ďalšie šetrenie nákladov za elektrické rozvody. Priebežný systém je možné dodať až so siedmimi vodičmi, určenými pre sieťové napájanie, stmievanie a prevádzku v núdzovom režime, všetky štandardne s 1,5 mm<sup>2</sup> prierezom. Nosný profil môže byť pripravený s tromi, piatimi alebo siedmimi vodičmi priebežného vedenia.

Jednoduchý uzamykací mechanizmus umožňuje rýchlo a bezpečne upevniť teleso svietidla k nosnému profilu. Pre lepšie usmernenie svetelného toku sa k nosnému profilu môžu uchýtiť reflektory, ktoré sa k nosnému profilu uchytávajú prostredníctvom toho istého mechanizmu. Všetky tieto činnosti sa vykonávajú beznástrojovo.

Široký výber svetelných zdrojov a výkonov (lineárne žiarivky T5 alebo T8) umožňuje dosiahnuť maximálny svetelný výkon, koľajnicový systém s pripravenou kabelážou je v ponuke v rôznych štandardných dĺžkach: od 1,5m do 4,5m, určený pre priamu montáž na povrch alebo pre závesnú montáž pomocou laniek alebo reťazí.

Z projektantom navrhnutého usporiadania svetidiel sa dá správnou kombináciou reflektorov a mriežok ľahko dosiahnuť žiadaný výsledok – široký výber reflektorového príslušenstva pokrýva celú radu štandardných aplikácií. Ako príslušenstvo sú k dispozícii reflektory s priamym alebo s priamo/nepriamym smerovaním svetelného toku, mriežky zabraňujúce oslneniu od svetelných zdrojov a reflektory so širokou alebo úzkou charakteristikou vyžarovania svetelného toku. Doplnky – spojky reflektorov a biele plastové koncovky zabezpečujú čistý vzhľad sústavy a perfektné zoradenie priebežného systému do jednej línie.

Osvetľovací systém Prestige umožňuje ľahké prispôbenie sa novým požiadavkám na osvetlenie – systém je multifunkčný, flexibilný a spoľahlivý. S jeho beznástrojovou montážou a jednoduchým elektrickým pripojením systém Prestige významne redukuje čas potrebný k inštalácii.

## PRESTIGE

Easy – to – mount system PRESTIGE equipped with wide range of louvres and reflectors enables realization of different interior lighting solutions with high efficiency.

Thanks to the various configuration options of the Prestige system, a wide range of applications can be covered - the luminaires distinct characteristics make them ideal for general lighting (for commercial spaces, retail and industrial areas, schools and libraries) and also in areas that need to keep energy consumption at a minimum. This continuous light run system is ideally suited to areas which require high levels of uniform light. Specific reflectors/louvres are also available for manufacturing areas and storage rooms, low or high bay warehouses or exhibition halls.

The main advantage of this system is fast and easy montage and high variability of applications. System PRESTIGE is produced for T5 and T8 single and twin lamp luminaires.

Electric part of the system consists either of compensated conventional kontrol gear, standard electronic kontrol gear, dimmeable kontrol gear or intelligent kontrol gear supporting DALI protocol. Emergency version is available on request.

Optimal solution for specific application is enabled by variations of wiring installed in the suspension profile. As the internal wiring is the part of the mounting rail, it markedly decreases costs for distribution of electricity. The range is available with up to 7 conductors for mains power supply, dimming and emergency operation, with 1.5 mm<sup>2</sup> cross-section. Mounting rail can be supplied with three, five or seven conductors.

Easy lock mechanism fixes the device mount to the mounting rail quickly and securely and also enables the fixing of reflectors for light direction. No tools are needed to install accessories.

A great choice of lamp types (T5 or T8) and wattages gives maximum lighting performance and the pre-wired trunking is available in more modular lengths, from 1.5m to 4,5m, for surface mounting or suspended by ropes or chains.

The right combination of reflector and louvre enables reaching requested outcome of the lighting arrangement designed by the projectant - the wide selection of light-directing accessories easily covers the entire range of standard applications. Reflectors with and without indirect light part, louvers for glare limitation, reflectors with wide or narrow angle characteristic are available as light-directing components. Reflector couplers and white plastic end caps provide neat appearance and perfect alignment of the continuous row lighting system.

Prestige lighting systems enable easy adaptation to new lighting requirements - the system is multifunctional, flexible and reliable. With its simple and tool-free mounting and electrical connection Prestige can significant reduce required installation time.

## PRESTIGE

Der Schnellmontagesystem Prestige bietet eine breite Auswahl von Leuchten und Gittern, die eine sehr leichte und Hocheffiziente Realisierung von verschiedenen Typen von Lichtinstallationen in Innenräumen ermöglicht.

Dank der Möglichkeit einer schneller Konfigurierung bietet der Prestige System eine breite Auswahl von Anwendungen an – die photometrische Eigenschaften prädestinieren das System für eine Verwendungs zur ganzheitlichen Ausleuchtung von Innenräumen (Verkaufsflächen, Industrieräume, Geschäftsräume, Schulen, Bibliotheken), sowie für Räume mit einer Notwendigkeit von Reduzierung von Stromverbrauch auf das Minimum. Dieses zur Durchlaufmontage bestimmte Schienensystem passt ideal in alle Räume, die eine gleichmäßige Ausleuchtung auf hohem Niveau brauchen. In dem Angebot sind auch spezielle Gitter sowie Leuchten für Produktions- oder Lagerräume, niedrige oder hohe Lager, sowie für Ausstellungsflächen zu finden.

Der Hauptvorteil dieses Sammelschienensystems ist die Schnelle und leichte Montage und die hohe Anwendungsvariabilität. Das Prestige System ist für die Linearleuchten von Typen T5 und T8 vorgeworfen, und zwar für Ein- und Zweileuchtenvarianten. Der elektrische Teil der Leuchte besteht entweder aus einem kompensierten magnetischen Vorschaltgerät, handelsüblichen elektronischem Vorschaltgerät, dämmerbaren Vorschaltgerät oder einen intelligenten, das DALI Protokoll unterstützenden elektronischen Vorschaltgerät. Auf Anfrage kann man die Leuchte mit einer Noteinheit ausstatten.

Mit einer optimaler Auswahl der im Trageprofil zu montierender Innenverkabelung kann man eine optimale Lösung für jede Applikation zu finden. Aufgrund der Tatsache, dass die Innenverkabelung zum Trageprofil gehört, kann man weitere Stromverteilungskosten erzielen. Das Durchlaufsystem ist mit bis zu sieben Leitern zu liefern, die für die Netzversorgung, Dämmerung und einen Notbetrieb bestimmt sind, alle handelsüblich mit einem 1,5 mm<sup>2</sup> Profil geliefert. Das Trageprofil kann mit drei, fünf oder sieben Leitern der Durchlaufleitung ausgestattet werden.

Der einfache Sperrmechanismus ermöglicht eine schnelle und sichere Befestigung des Leuchtkörpers zum Trageprofil. Für eine bessere Regulierung des Lichtstroms kann man auch diejenigen Leuchten an das Trageprofil befestigen, die durch denselben Mechanismus an den Trageprofil befestigt. All diese Tätigkeiten werden ohne Instrumente ausgeführt.

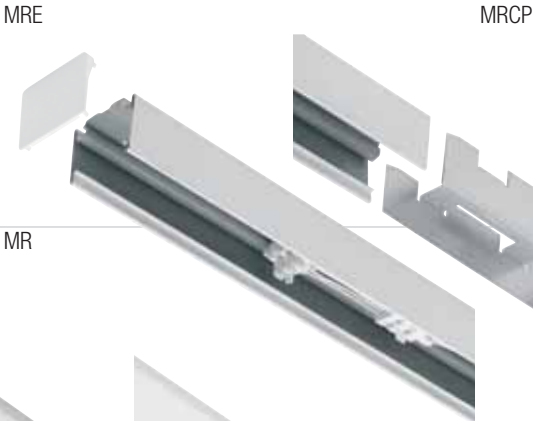
Die breite Auswahl von Lichtquellen und Leistungen (Linearleuchten des Typs T5 oder T8) ermöglicht eine maximale Lichtleistung, das Schienensystem mit einer vorbereiteter Verkabelung ist in verschiedenen Längen von 1,5 m bis 4,5 m, und ist für eine direkte Montage an der Oberfläche oder eine Aufhängung mittels Litzen oder Ketten bestimmt

Aus der vom Projektanten vorgeschlagenen Leuchtengestaltung kann man durch eine richtige Kombination von Leuchten und Gittern leicht zum gewünschten Ergebnis kommen – der breite Auswahl von Leuchtenzubehör schließt eine Reihe von Standardanwendungen ein. Als Zubehör stehen Leuchten mit einer direkten oder indirekten Leitung des Lichtstrahls, Gitter zur Verhinderung von Blendung durch Lichtquellen und Leuchten mit einer breiten oder engen Charakteristik der Ausstrahlung des Lichtstromes. Die Komponente – Leuchten Kupplungen und weiße Plastik-Endstücke sorgen für ein sauberes Aussehen des Systems und eine perfekte Rangierung des Durchlaufsystems in eine Linie.

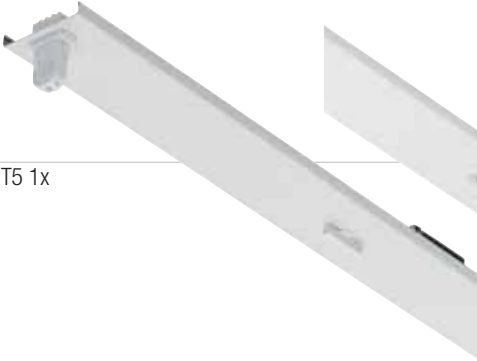
Das Prestige Beleuchtungssystem ermöglicht eine einfache Anpassung an die neue Forderungen an die Ausleuchtung – das System ist multifunktionell, flexibel und zuverlässig. Die werkzeugfreie Montage und der einfache Prestige Stromanschluss sorgt für eine erhebliche Reduzierung der Installationszeit.

# PRESTIGE

## EASY - TO - MOUNT SYSTEM



DM T5 1x



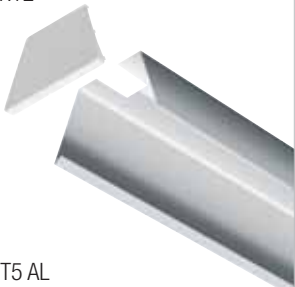
DM T5 2x



REP R12



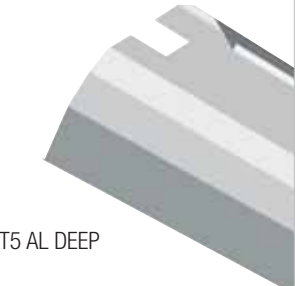
REP R12



R12 T5 L2



R12 T5 AL



R12 T5 AL DEEP

R12 T5 AL ASSYMETRIC



PART 5R12



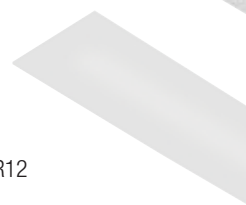
PAR MAT T5 R12



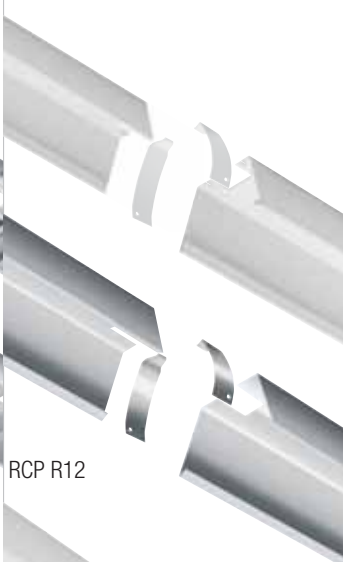
PRISMA T5 R12



OPAL T5 R12



RCP R12



RCP R2





DM T8 1x

DM T8 2x

REP R12

REP R12

R1 T8 L1

R1 T8 AL

PAR T8 R1

LA T8 R2

R1 T8 L2

REP R2

PAR MAT T8 R1

LB T8 R2

REP R2

R2 T8 AL

PRISMA T8 R1

R2 T8 L1

R12 T8 AL DEEP

OPAL T8 R1

PRISMA T8 R2

R2 T8 L2

R12 T8 AL ASSYMETRIC

OPAL T8 R2



# PRESTIGE

## MOUNTING RAIL

### MR – MOUNTING RAIL

The mounting rail is manufactured by calandring of 0,6 mm sheet steel, surface coated with white polyester resin paint. Rail is available in 2 lengths (double-body and triple-body) for lamps T8 or T5. It is available to order single-body mounting rail on request. The wiring of 3x1,5mm<sup>2</sup>, 5x1,5mm<sup>2</sup> or 7x1,5mm<sup>2</sup> cross-section can be installed in the profile. It is possible to order wiring with 2,5 mm<sup>2</sup> cross-section on request. Ends of conductors installed in the mounting rail are ended with the axial connector, which allows conductive continuous connection of the mounting rails without any tools. The connectors, that are part of wiring, allow simple clamping of luminaire bodies to the mounting rails.

### PRE-WIRED TRUNKING

Wiring for the Prestige system is fitted at the factory and prepared for a rapid electrical installation. Trunking systems with built-in conductors provides big flexibility. Prestige system have electrical connection points for mains, lighting control and emergency lighting supply at pre-defined points - in distances for T8 58W or T5 35/49/80W fluorescent lamp. For simple to complex configurations, the mounting rails feature three, five or seven-conductor wiring with 1.5 mm<sup>2</sup> cross-section. Cross-section

2.5 mm<sup>2</sup> is available on request. If emergency lighting is required in the lighting installation, some of lighting fixtures has to be equipped with emergency unit, which needs extra conductor for battery supply.

### 1. 3-pole electrical connection

Basic variant of Prestige system allows to connect phase, neutral and ground conductors to the terminal block.

### 2. 5-pole electrical connection

#### a) three-phase operation

Use of 3-phase system allows Prestige to be built in very long uninterrupted runs, making it ideal solution for large buildings. 3-phase system also allows to switch-off of most luminaires at night or during periods of low requirement, while maintaining sufficient illumination.

#### b) two-phase operation + emergency operation

option from two spare phase conductors is still available.

### 3. 7-pole electrical connection

This variant combines all above mentioned advantages together, moreover brings to the final user possibility of lighting control. 7-pole connection

is therefore necessary in lighting installations, where lighting fixtures should be pre-wired for:

#### a) three-phase operation + lighting control

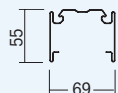
Use of 3-phase system allows Prestige to be built in very long uninterrupted runs, making it ideal solution for large buildings. 3-phase system also allows to switch-off of most luminaires at night or during periods of low requirement, while maintaining sufficient illumination. Two spare conductors are dedicated to lead a signal for dimmable electronic control gears.

#### b) two-phase operation + emergency operation + lighting control

By this type of wiring it is possible to use emergency modules inside, while alternative phase option from two spare phase conductors is still available. Two conductors are dedicated to lead a signal for dimmable electronic control gears.

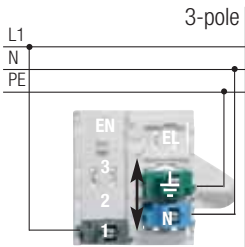
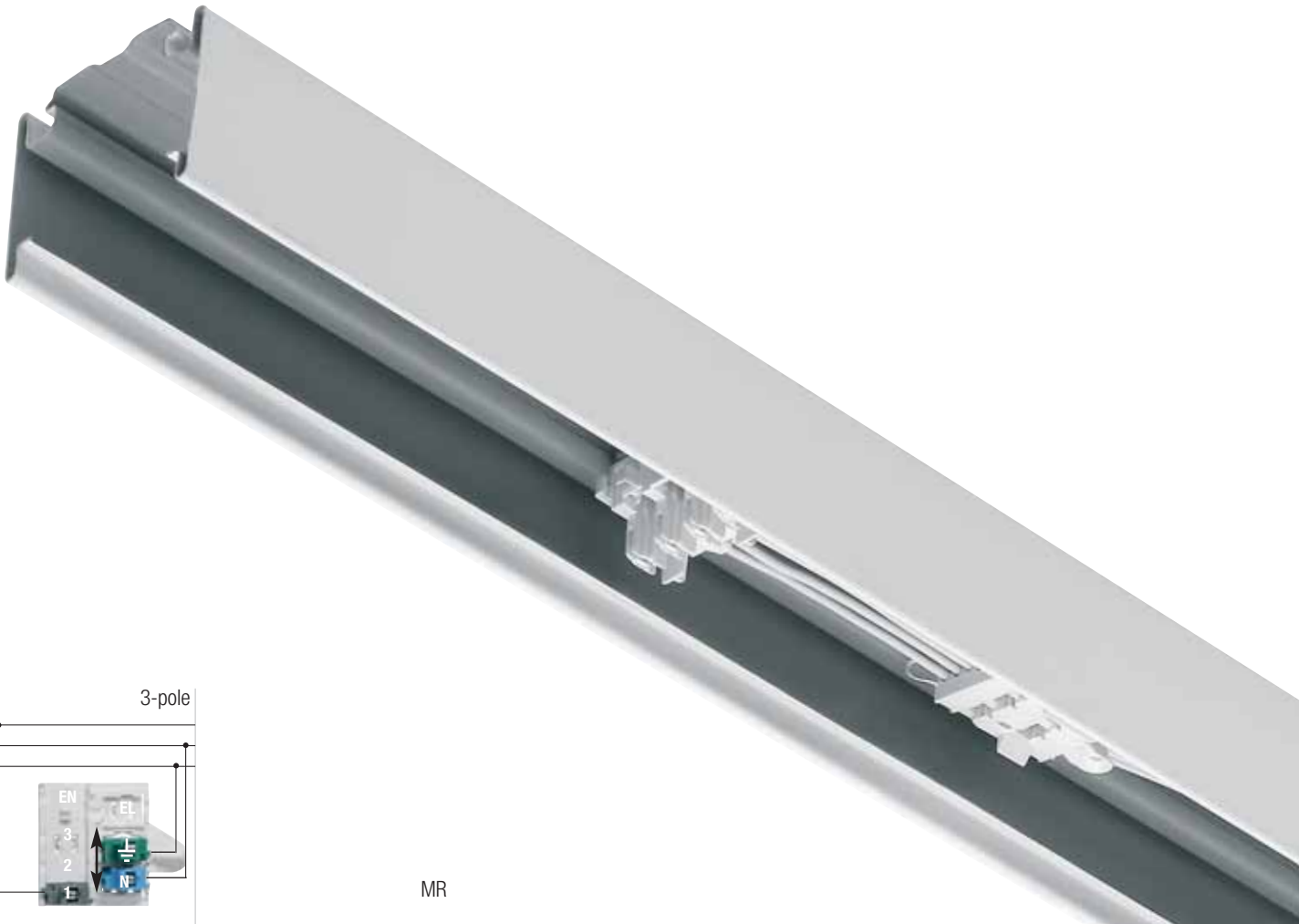
#### c) three-phase operation + emergency operation

The same benefits for three-phase operation as mentioned in point a) + emergency lighting possibility. The last seventh conductor is not connected.

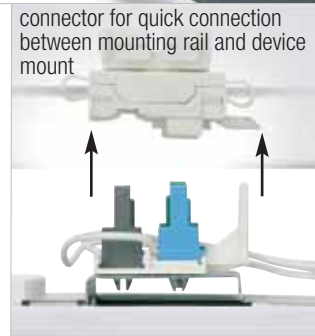
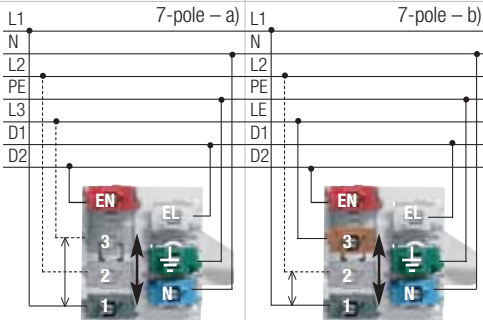
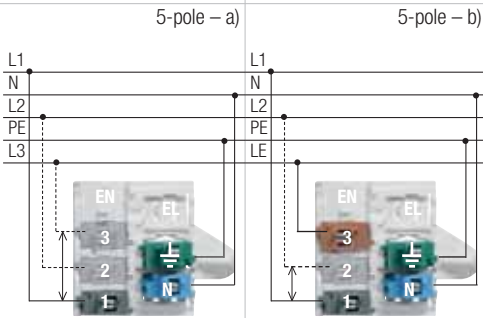


TYPE T5	ORDER NO.	L1 mm	WEIGHT kg
MR T5 II 3p 3x1,5mm <sup>2</sup>	PA2000200003000	2970	3.70
MR T5 III 3p 3x1,5mm <sup>2</sup>	PA3000200003000	4455	5.60
MR T5 II 5p 5x1,5mm <sup>2</sup>	PA5000200003000	2970	3.90
MR T5 III 5p 5x1,5mm <sup>2</sup>	PA6000200003000	4455	5.80
MR T5 II 7p 7x1,5mm <sup>2</sup>	PA8000200003000	2970	4.10
MR T5 III 7p 7x1,5mm <sup>2</sup>	PA9000200003000	4455	6.00

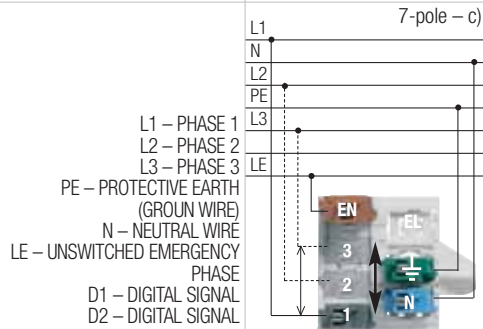
TYPE T5	ORDER NO.	L1 mm	WEIGHT kg
MR T8 II 3p 3x1,5mm <sup>2</sup>	PAB000300003000	3072	3.90
MR T8 III 3p 3x1,5mm <sup>2</sup>	PAC000300003000	4607	5.80
MR T8 II 5p 5x1,5mm <sup>2</sup>	PAE000300003000	3072	4.10
MR T8 III 5p 5x1,5mm <sup>2</sup>	PAF000300003000	4607	6.00
MR T8 II 7p 7x1,5mm <sup>2</sup>	PAH000300003000	3072	4.30
MR T8 III 7p 7x1,5mm <sup>2</sup>	PAI000300003000	4607	6.20



MR



conductive connection of mounting rails through the use of axial connectors



3-pole electrical connection

5-pole electrical connection

5-pole electrical connection

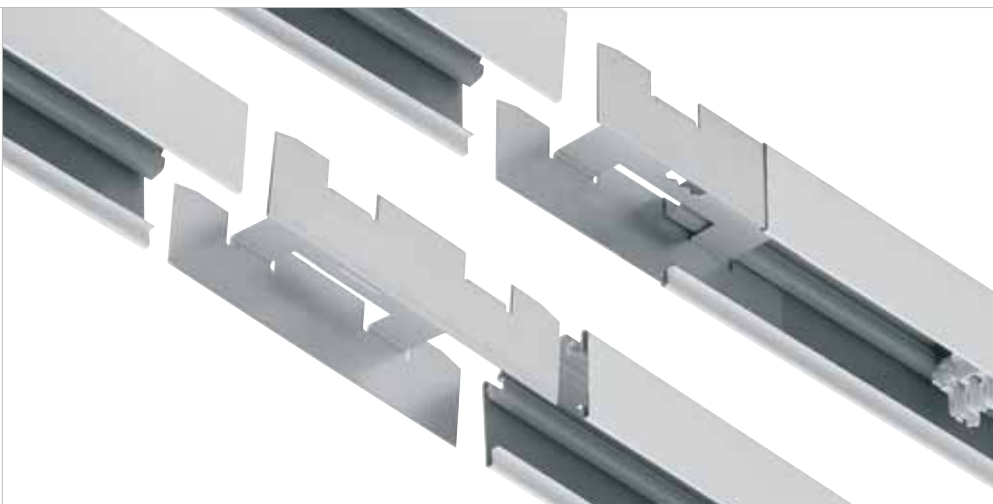
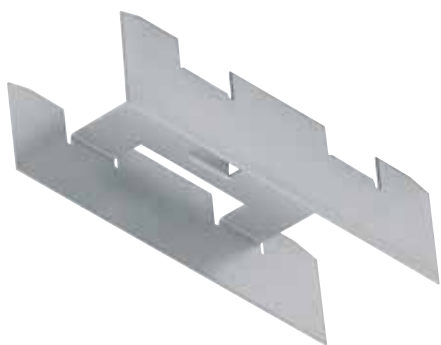


# PRESTIGE

## PRESTIGE ACCESSORIES

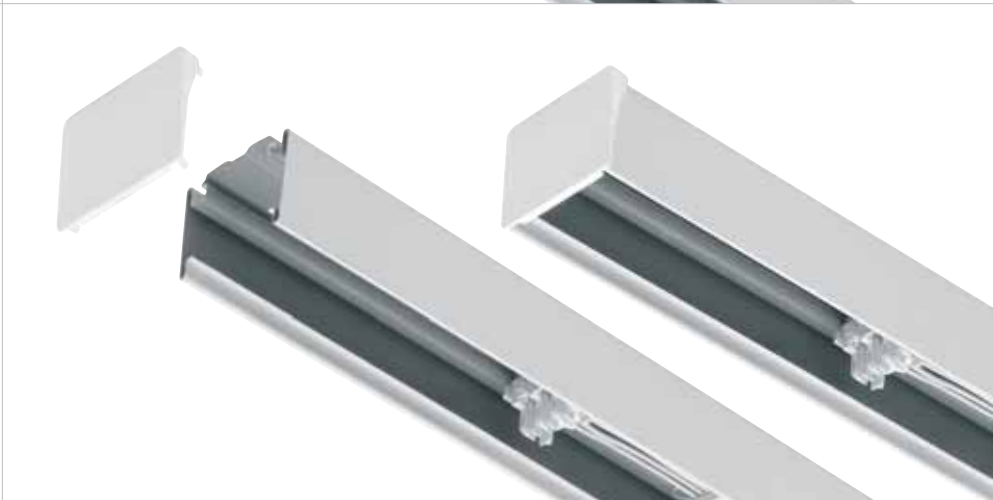
### MRCP – mounting rail connecting piece

The clutch for the mechanical connection of rail profiles is made of zinc – coated sheet steel. It is used for simple connection of the mounting rail profiles through simple insertion in the rail.

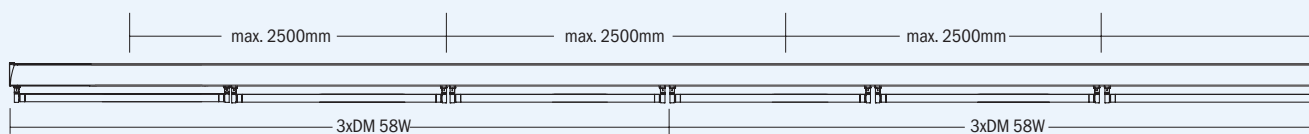


### MRE – mounting rail end piece

The plastic cover of the rail profile is used for the completion of free end of profile. End caps are made of self-extinguishing ABS. Rail end piece must be ordered separately.



TYPE	ORDER NO.	WEIGHT kg	TYPE	ORDER NO.	WEIGHT kg
MRCP	PB1000000000000	0.28	CHP	PB8000000000000	0.20
MRE (2 pieces)	PB20000000003000	0.02	CHS	PB9000000000000	0.04
RS	PB30000000000000	0.28	SB	PBA0000000000000	0.02
RSE 3x1,5mm <sup>2</sup>	PB40000000000000	0.28			
RSE 5x1,5mm <sup>2</sup>	PB50000000000000	0.68			



All types of suspensions are attached to the mounting rails without any tools via stainless steel quick-fix bracket. Wires length are fully adjustable without tools. Maximum distance between suspension brackets is 2.5 metres.

**RSE – rope suspension with electric cable**

The rope suspension for electric connection. Depth adjustable suspension is used for holding of the mounting rail together with connection of the mounting rail to the mains.

3 or 5-core wiring of 1,5 mm<sup>2</sup> cross-section of standard length 800mm is available.

Another length is available on request.



**RS – rope suspension**

Depth adjustable rope suspension of standard length 800mm. Another length is available on request.

Diameter of wire is 1.5 mm.



**CHS – chain suspension**

Chain suspension of standard length 800mm.



**SB – bracket for ceiling mounting**

Quick-fix bracket for ceiling installation of mounting rail.



**CHP – bracket for chain**

Quick-fix bracket for chain suspension of mounting rail.



# PRESTIGE

## DEVICE MOUNT T5 DM T5 1x.../DM T5

Device mount for T5 fluorescent lamps is normally installed by using of a mounting rail. Device mount is manufactured by calandring of sheet steel, surface coated with white polyester resin paint. Device mount is available in single and twin lamp version, where both versions can use mostly the same optic. Device mount is equipped with 2 clamping mechanisms which allow simple gripping of the device mount to the mounting rail. By using of these clamping mechanisms it is also possible to fix reflectors to the device mount without any tools.

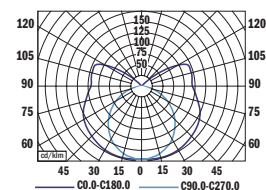
The connector placed on the gear tray is used for simple electrical connection of the lighting fixture to the mounting rail. This connector also allows simple selection of the phase in three-phase system (5 or 7-pole electrical connection). Phase

selection is made by repositioning of movable contact into the required position. Additional free contacts allow configuration of a standard lighting fixture into an emergency luminaire or into a dimmable luminaire.

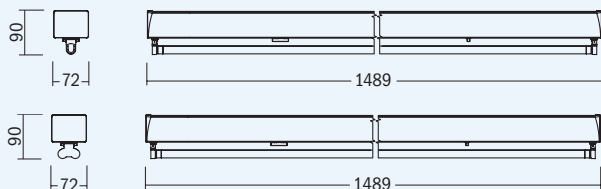
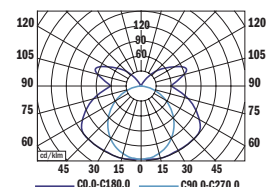
DM T5 can be equipped with an electronic ballast or with a dimmable electronic ballast (analogue or digital). Emergency version is available on request.

It is required to make a separate order for lamps.

PRESTIGE DM T5 1x35W



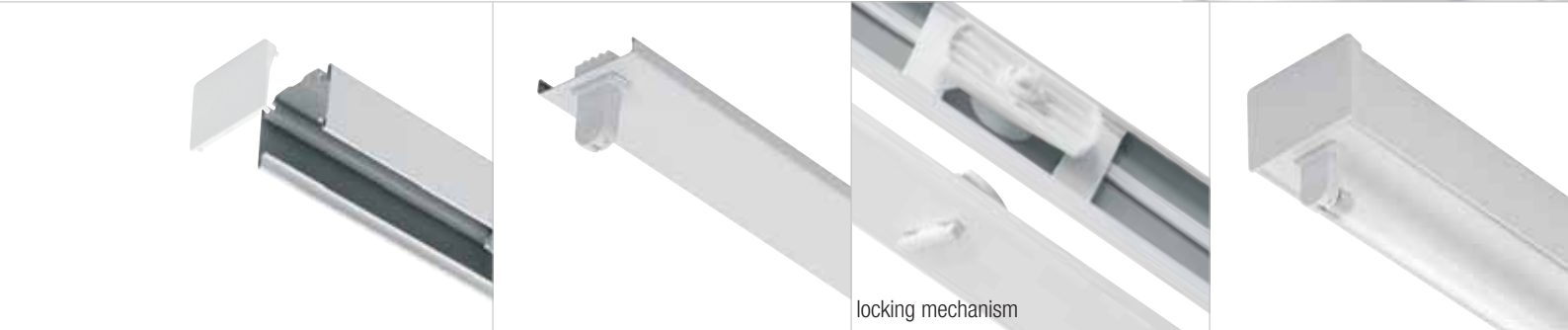
PRESTIGE DM T5 2x35W



TYPE	ORDER NO.	WEIGHT kg	TYPE	ORDER NO.	WEIGHT kg
ECG			ECG DALI		
DM T5 1x35W	PBB000213563000	1.2	DM T5 1x35W	PBB000213563000	1.2
DM T5 2x35W	PBB000223563000	1.5	DM T5 2x35W	PBB000223563000	1.5
DM T5 1x49W	PBB000214963000	1.2	DM T5 1x49W	PBB000214963000	1.2
DM T5 2x49W	PBB000224963000	1.5	DM T5 2x49W	PBB000224963000	1.5
DM T5 1x80W	PBB000218063000	1.2	DM T5 1x80W	PBB000218063000	1.2
DM T5 2x80W	PBB000228063000	1.5	DM T5 2x80W	PBB000228063000	1.5
ECG DIM 1-10V			ECG+EMERGENCY UNIT 1h		
DM T5 1x35W	PBB000213593000	1.2	DM T5 1x35W	PBB000213563NNO	1,6
DM T5 2x35W	PBB000223593000	1.5	DM T5 2x35W	PBB000223563NNO	1,9
DM T5 1x49W	PBB000214993000	1.2	DM T5 1x49W	PBB000214963NNO	1,6
DM T5 2x49W	PBB000224993000	1.5	DM T5 2x49W	PBB000224963NNO	1,9
DM T5 1x80W	PBB000218093000	1.2	DM T5 1x80W	PBB000218063NNO	1,6
DM T5 2x80W	PBB000228093000	1.5	ECG+EMERGENCY UNIT 3h		
ECG DIM DSI			DM T5 1x35W	PBB000213563NN1	1,8
DM T5 1x35W	PBB0002135A3000	1.2	DM T5 2x35W	PBB000223563NN1	2,0
DM T5 2x35W	PBB0002235A3000	1.5	DM T5 1x49W	PBB000214963NN1	2,0
DM T5 1x49W	PBB0002149A3000	1.2	DM T5 2x49W	PBB000224963NN1	2,3
DM T5 2x49W	PBB0002249A3000	1.5			
DM T5 1x80W	PBB0002180A3000	1.2			
DM T5 2x80W	PBB0002280A3000	1.5			



DM T5 1x



locking mechanism



DM T5 2x



locking mechanism



# PRESTIGE

## PRESTIGE OPTICAL SYSTEMS AND ACCESSORIES DM T5

### Batten luminaire without reflector

Luminaires that have exposed lamps allow the user to have almost 360° of space lighting. The version without optics can be used for basic lighting with no need of light concentration.

#### R12 T5 L1

Reflector accessory made of 0,6 mm steel sheet; finished with white powder coating RAL. Designed for one or twin fluorescent lamps T5. Light distribution direct, wide angle. Ideal for installations which require high illumination levels and low energy consumption.

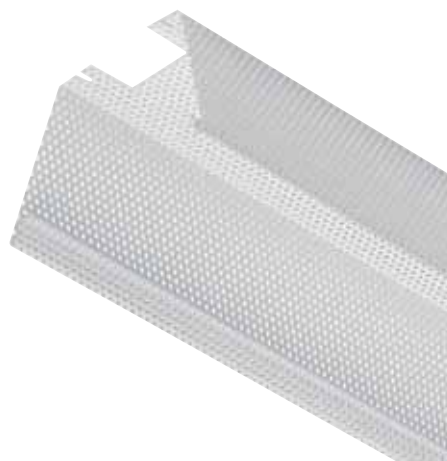


DM T5 R12 L1 1x

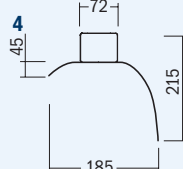
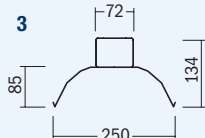
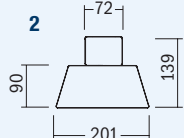
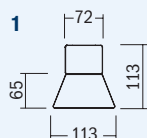


#### R12 T5 L2

Reflector accessory made of 0,6 mm perforated steel sheet; finished with white powder coating RAL. Designed for one or twin fluorescent lamps T5. Light distribution direct/indirect, wide angle. Reflector perforation for ceiling illumination ensures decorative look with pleasant lighting effect. Ideal for representative installations which require high illumination levels and low energy consumption.



DM T5 R12 L2 2x



TYPE	ORDER NO.	PICTURE
R12 T5 L1	PBD5F0203503000	1
R12 T5 L2	PBE5F0203503000	1
R12 T5 AL	PC0500203500000	2
R12 T5 AL DEEP	PC0540203500000	3
R12 T5 AL ASYMMETRIC	PC0510203500000	4
REP R12 (2 pieces)	PBH000000003000	
RCP R12 (2 pieces)	PBI000000003000	

**R12 T5 AL**

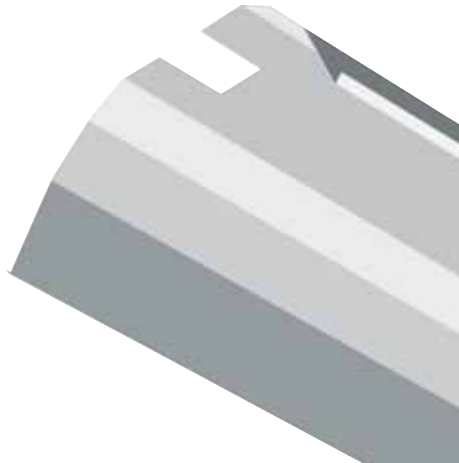
Reflector is made of pure anodized aluminium, high gloss. Light distribution direct, wide angle. Designed for one or twin fluorescent lamps T5. Ideal for middle - high mounting installations which require high illumination levels and low energy consumption.



DM T5 R12 AL 2x

**R12 T5 AL DEEP**

With aluminium narrow beam reflector it is possible to use fluorescent lamps at high levels and simultaneously to maintain the required illuminance - depending on room height, these optics ensures optimum illumination of aisles in high-bay storage facilities or production bays with high roofs. The narrow-beam optic is ideal for room heights from 6 to 10 m. Reflector is made of pure anodized aluminium, high gloss. Light distribution direct, narrow beam. Reflector is designed for T5 fluorescent lamps - both single or twin lamp versions.



DM T5 R12 AL DEEP 1x

**R12 T5 AL ASYMMETRIC**

Asymmetrical light distribution that enables designers to accentuate walls and displays while still applying the same type of luminaire appearance as used for general lighting. Reflector is designed for T5 fluorescent lamps - both single or twin lamp versions. Suitable for mounting halls, production sites, workshops and especially for wall, blackboard and shelf lighting.



DM T5 R12 AL ASYMMETRIC 2x

**REP R12 – reflector ending piece**

Plastic ending of reflectors R12 T5 L1, R12 T5 L2, R1 T8 L1 and R1 T8 L2. Reflector end piece must be ordered separately.

**RCP R12 – reflector connecting piece**

Clutch of reflectors R12 T5 L1, R12 T5 L2, R1 T8 L1 and R1 T8 L2. Reflector connector must be ordered separately.



# PRESTIGE

## PRESTIGE OPTICAL SYSTEMS AND ACCESSORIES

### DM T5 1x.../DM T5 2x...

#### PAR T5 R12

Parabolic louvre made of high polished anodized aluminium. The louvre can be used in combination with reflectors R12 T5 L1 and R12 T5 L2.

Thanks to the double-curved parabola construction is ideal to be used in rooms featuring computers, where good visual comfort is required e.g. of sales rooms, conference rooms, classrooms, libraries, reading rooms, etc. This types of louvers provides highest visual comfort at the screen due to exact glare evaluation. Parabolic louvre is designed for one or two T5 lamps.



DM T5 R12 L1 PAR 1x



#### PAR MAT T5 R12

Parabolic louvre made of mat anodized aluminium. The louvre can be used in combination with reflectors R12 T5 L1 and R12 T5 L2.

Thanks to the double-curved parabola construction is ideal to be used in rooms featuring computers, where good visual comfort is required e.g. of sales rooms, conference rooms, classrooms, libraries, reading rooms, etc. This types of louvers provides highest visual comfort at the screen due to exact glare evaluation. Matt louvres has much diffuse reflection, usually enhance the esthetic effect of rooms and are used for representative illumination. Parabolic louvre is designed for one or two T5 lamps.



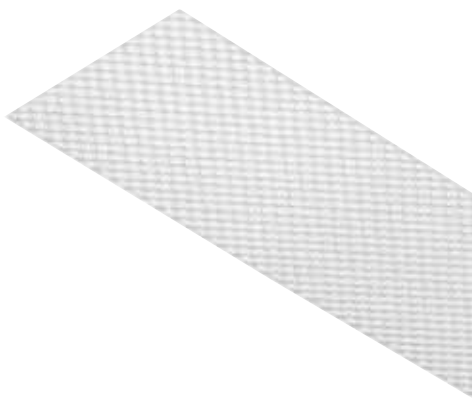
DM T5 R12 L2 PAR MAT 2x



TYPE	ORDER NO.
PAR T5 R12 (MIRO4)	PBN020203500000
PAR T5 R12 (316 G2)	PBN030203500000
PAR MAT T5 R12 (1100G)	PB00902035000000
PRISMA T5	PC93F02035000000
OPAL T5	PC93002035000000

**PRISMA T5 R12**

Decorative closed prismatic optic for a wider beam spread. Suitable for low installation rooms and when mechanical protection of lamps is requested. Prismatic structure plate is for fitting in reflector R12 T5 L1 and R12 T5 L2. Accessory available for one or two T5 lamps.

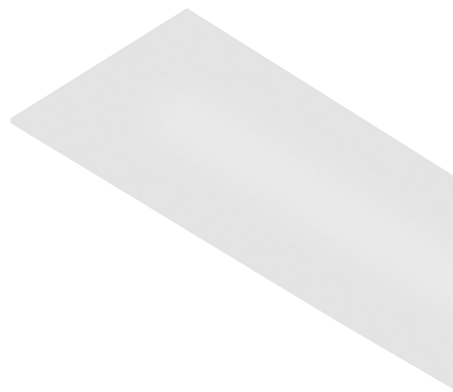


DM T5 R12 L1 PRISMA 1x



**OPAL T5 R12**

Decorative closed opal optic for a wider beam spread. Suitable for low installation rooms and when mechanical protection of lamps is requested. Prismatic structure plate is for fitting in reflector R12 T5 L1 and R12 T5 L2. Accessory available for one or two T5 lamps.



DM T5 R12 L2 OPAL 1x



# PRESTIGE

## DEVICE MOUNT T8 DM T8 1x.../DM T8 2x...

Device mount for T8 fluorescent lamps is normally installed by using of a mounting rail. Device mount is manufactured by calandering of sheet steel, surface coated with white polyester resin paint. Device mount is available in single and twin lamp version, where both versions can use mostly the same optic. Device mount is equipped with 2 clamping mechanisms which allow simple gripping of the device mount to the mounting rail. By using of these clamping mechanisms it is also possible to fix reflectors to the device mount without any tools.

The connector placed on the gear tray is used for simple electrical connection of the lighting fixture to the mounting rail. This connector also allows simple selection of the phase in three-phase system (5 or 7-pole electrical connection). Phase selection is made by repositioning of movable contact into the required position. Additional free contacts allow on-site configuration of a standard lighting fixture into an emergency luminaire or into a dimmable luminaire.

DM T8 can be equipped with a magnetic ballast (with or without compensation capacitor), with an electronic ballast or with a dimmable electronic

ballast (analogue or digital). Emergency version is available on request. It is required to make a separate order for lamps.

### Starter alternative: glow starters – longlife starters - safety starters

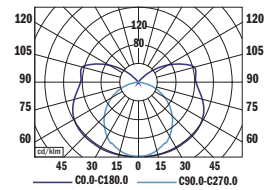
All luminaires equipped with magnetic ballasts are standardly fitted with glow starters. For better safety or economy of installation, it is possible to order safety starters or longlife starters.

Longlife starters - their number of switches is up to 10 times higher than that of other conventional starters – and they increase the fluorescent lamp lifetime by up to 20%.

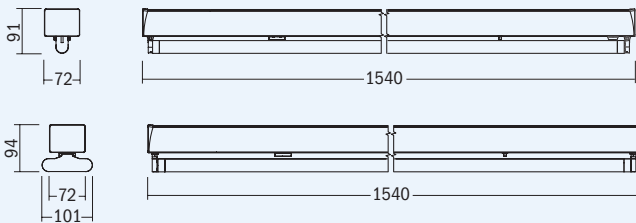
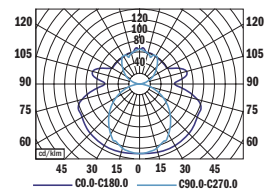
Safety starters - they offer decisive advantages in comparison to conventional starters without switch-off function: automatic and reliable switch-off of defective lamps or lamps, that have reached their end of life, thus avoiding annoying flickering and unscheduled maintenance work. Moreover, they have built in circuit breaker to protect both the starter and the ballast. 10 times higher number of switches ensures long service life compared to conventional starters. This type of starters also

increase the fluorescent lamp lifetime by up to 20%. It is strongly recommended to replace starter every time when lamp is changed.

PRESTIGE DM T8 1x58W



PRESTIGE DM T8 2x58W

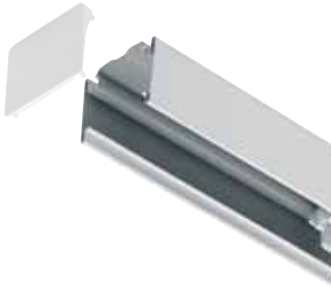


TYPE	ORDER NO.	WEIGHT kg
CCG EEI B1		
DM T8 1x58W	PBC000315823000	2.30
DM T8 2x58W	PBC000325823000	3.20
CCG EEI B2		
DM T8 1x58W	PBC000315833000	2.30
DM T8 2x58W	PBC000325833000	3.20
ECG		
DM T8 1x58W	PBC000315863000	1.20
DM T8 2x58W	PBC000325863000	1.30
ECG DIM 1-10V		
DM T8 1x58W	PBC000315893000	1.20
DM T8 2x58W	PBC000325893000	1.30
ECG DIM DSI		
DM T8 1x58W	PBC0003158A3000	1.20
DM T8 2x58W	PBC0003258A3000	1.30
ECG DALI		
DM T8 1x58W	PBC0003158B3000	1.20
DM T8 2x58W	PBC0003258B3000	1.30
ECG+EMERGENCY UNIT 1h		
DM T8 1x58W	PBC000315863NNO	1,60
DM T8 2x58W	PBC000325863NNO	1,70
ECG+EMERGENCY UNIT 3h		
DM T8 1x58W	PBC000315863NN1	1,90
DM T8 2x58W	PBC000325863NN1	2,00

DM T8 1x  
(CCG EEI B1, CCG EEI B2)



DM T8 1x

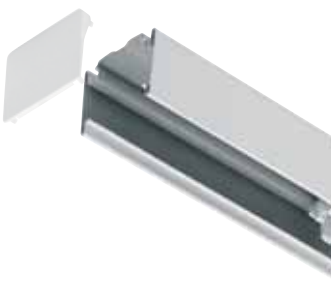


locking mechanism

DM T8 2x  
(CCG EEI B1, CCG EEI B2)



DM T8 2x



locking mechanism



# PRESTIGE

## PRESTIGE OPTICAL SYSTEMS AND ACCESSORIES DM T8 1x...

### Batten luminaire without reflector

Luminaires that have exposed lamps allow the user to have almost 360° of space lighting. The version without optics can be used for basic lighting with no need of light concentration.

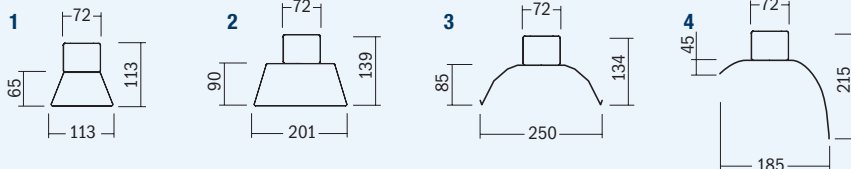
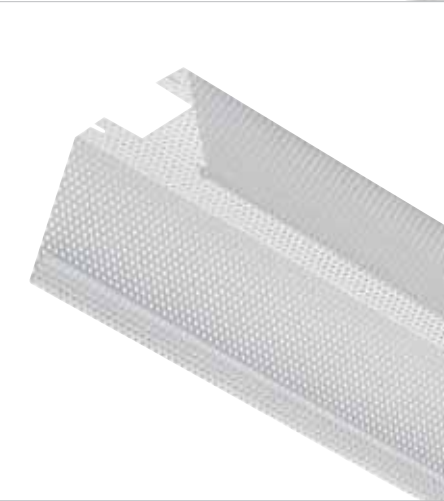
#### R1 T8 L1

Reflector accessory made of 0,6 mm steel sheet; finished with white powder coating RAL. Designed for one fluorescent lamp T8. Light distribution direct, wide angle. Ideal for installations which require high illumination levels and low energy consumption.



#### R1 T8 L2

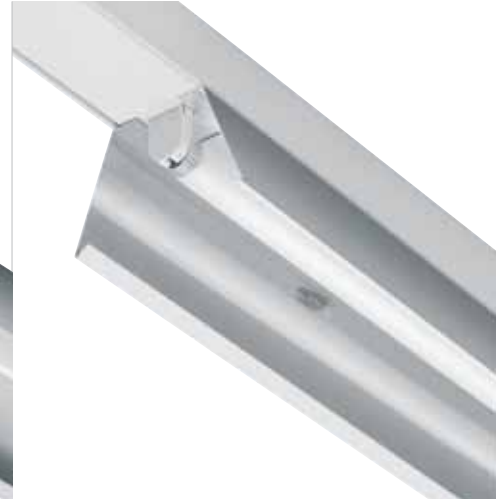
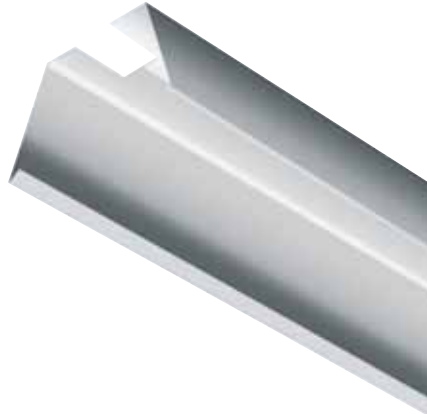
Reflector accessory made of 0,6 mm perforated steel sheet; finished with white powder coating RAL. Designed for one fluorescent lamp T8. Light distribution direct/indirect, wide angle. Reflector perforation for ceiling illumination ensures decorative look with pleasant lighting effect. Ideal for representative installations which require high illumination levels and low energy consumption.



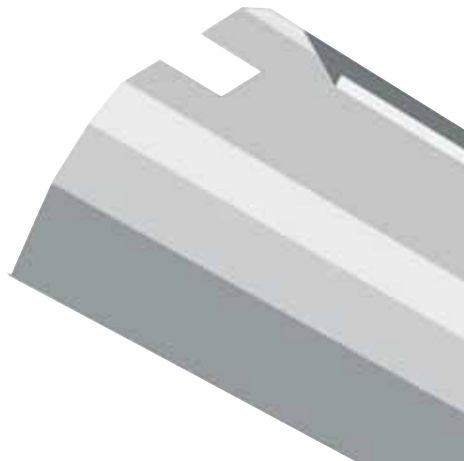
TYPE	ORDER NO.	PICTURE	TYPE	ORDER NO.	PICTURE
R1 T8 L1 ECG	PBF5F0315863000	1	R1 T8 AL CCG	PC1500315830000	2
R1 T8 L1 CCG	PBF5F0315813000	1	R1 T8 AL ECG	PC1500315880000	2
R1 T8 L2 ECG	PBG5F0315863000	1	R12 T8 AL DEEP CCG	PC1540315830000	3
R1 T8 L2 CCG	PBG5F0315813000	1	R12 T8 AL DEEP ECG	PC1540315880000	3
REP R12 (2 pieces)	PBH000000003000		R12 T8 AL ASYMMETRIC CCG	PC1510315830000	4
RCP R12 (2 pieces)	PBI000000003000		R12 T8 AL ASYMMETRIC ECG	PC1510315880000	4
			REP R2 (2 pieces)	PBL000000003000	
			RCP R2 (2 pieces)	PBM000000003000	

**R1 T8 AL**

Reflector is made of pure anodized aluminium, high gloss. Light distribution direct, wide angle. Designed for one fluorescent lamp T8. Ideal for middle - high mounting installations which require high illumination levels and low energy consumption.

**R12 T8 AL DEEP**

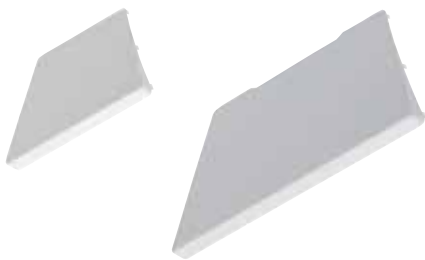
With aluminium narrow beam reflector it is possible to use fluorescent lamps at high levels and simultaneously to maintain the required illuminance - depending on room height, these optics ensures optimum illumination of aisles in high-bay storage facilities or production bays with high roofs. The narrow-beam optic is ideal for room heights from 6 to 10 m. Reflector is made of pure anodized aluminium, high gloss. Light distribution direct, narrow beam. Reflector is designed for T8 fluorescent lamps - both single or twin lamp versions.

**R12 T8 AL ASYMMETRIC**

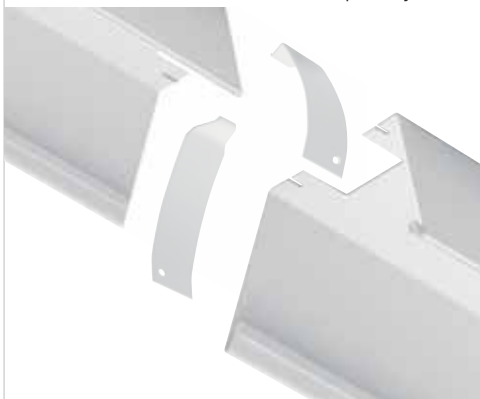
Asymmetrical light distribution that enables designers to accentuate walls and displays while still applying the same type of luminaire appearance as used for general lighting. Reflector is designed for T8 fluorescent lamps - both single or twin lamp versions. Suitable for mounting halls, production sites, workshops and especially for wall, blackboard and shelf lighting.

**REP R12 – reflector ending piece**

Plastic ending of reflectors R12 T5 L1, R12 T5 L2, R1 T8 L1 and R1 T8 L2. Reflector end piece must be ordered separately.

**RCP R12 – reflector connecting piece**

Clutch of reflectors R12 T5 L1, R12 T5 L2, R1 T8 L1 and R1 T8 L2. Reflector connector must be ordered separately.

**RCP R2 - reflector connecting piece**

Clutch of reflectors R2 T8 L1, R2 T8 L2. Reflector connector must be ordered separately.

**REP R2 - reflector ending piece**

Plastic ending of reflectors R2 T8 L1, R2 T8 L2. Reflector end piece must be ordered separately.

# PRESTIGE

## PRESTIGE OPTICAL SYSTEMS AND ACCESSORIES

### DM T8 1x...

#### PAR T8 R1

Parabolic louvre made of high polished anodized aluminium. The louvre can be used in combination with reflectors R1 T8 L1 and R1 T8 L2.

Thanks to the double-curved parabola construction is ideal to be used in rooms featuring computers, where good visual comfort is required e.g. of sales rooms, conference rooms, classrooms, libraries, reading rooms, etc. This types of louvers provides highest visual comfort at the screen due to exact glare evaluation. Parabolic louvre is designed for one T8 lamp.



DM T8 R1 L1 PAR 1x



#### PAR MAT T8 R1

Parabolic louvre made of mat anodized aluminium. The louvre can be used in combination with reflectors R1 T8 L1 and R1 T8 L2.

Thanks to the double-curved parabola construction is ideal to be used in rooms featuring computers, where good visual comfort is required e.g. of sales rooms, conference rooms, classrooms, libraries, reading rooms, etc. This types of louvers provides highest visual comfort at the screen due to exact glare evaluation. Matt louvres has much diffuse reflection, usually enhance the esthetic effect of rooms and are used for representative illumination. Parabolic louvre is designed for one T8 lamp.



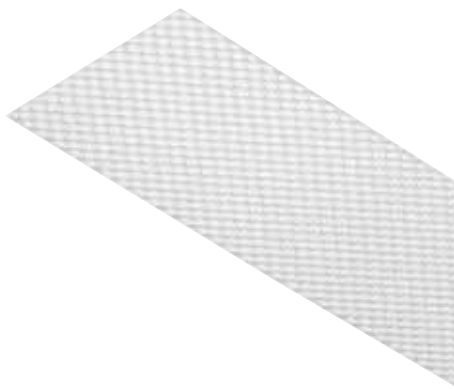
DM T8 R1 L2 PAR MAT 1x



TYPE	ORDER NO.
PAR T8 R1 (MIRO4)	PBP020315800000
PAR T8 R1 (316 G2)	PBP030315800000
PAR MAT T8 R1 (1100G)	PBQ090315800000
PRISMA T8 R1	PC93F0315800000
OPAL T8 R1	PC9300315800000

**PRISMA T8 R1**

Decorative closed prismatic optic for a wider beam spread. Suitable for low installation rooms and when mechanical protection of lamps is requested. Prismatic structure plate is for fitting in reflector R1 T8 L1 and R12 T8 L2. Accessory available for one T8 lamp.

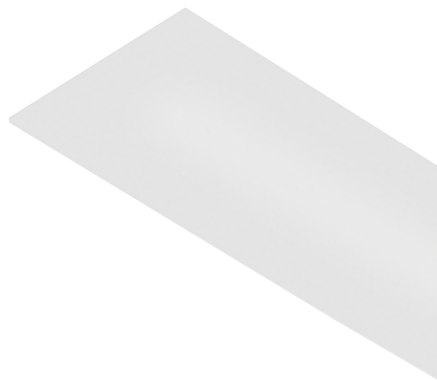


DM T8 R1 L1 PRISMA 1x



**OPAL T8 R1**

Decorative closed opal optic for a wider beam spread. Suitable for low installation rooms and when mechanical protection of lamps is requested. Prismatic structure plate is for fitting in reflector R1 T8 L1 and R12 T8 L2. Accessory available for one T8 lamp.



DM T8 R1 L1 OPAL 1x



# PRESTIGE

## PRESTIGE OPTICAL SYSTEMS AND ACCESSORIES

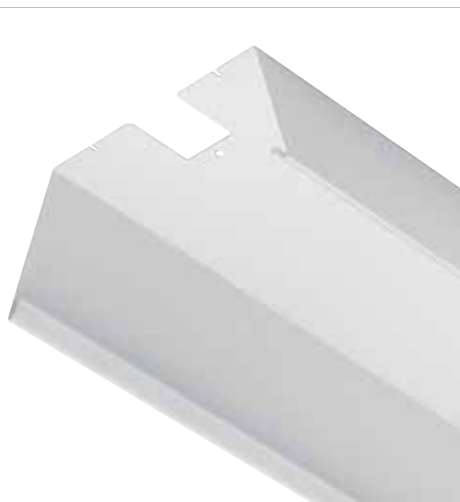
### DM T8 2x...

#### Batten luminaire without reflector

Luminaires that have exposed lamps allow the user to have almost 360° of space lighting. The version without optics can be used for basic lighting with no need of light concentration.

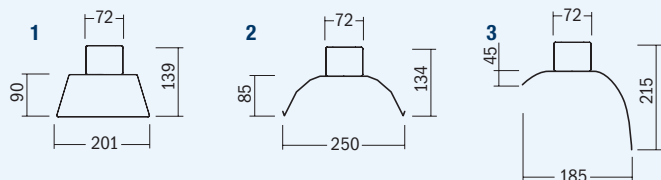
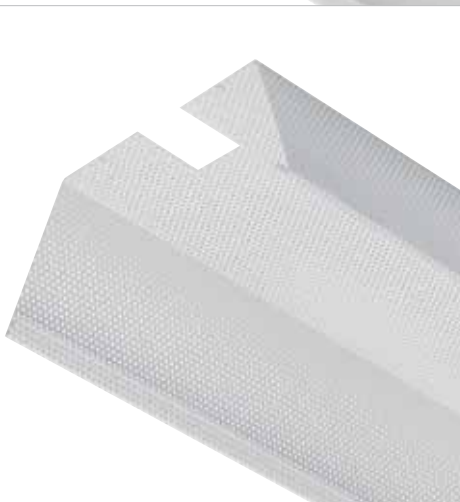
#### R2 T8 L1

Reflector accessory made of 0,6 mm steel sheet; finished with white powder coating RAL. Designed for two fluorescent lamps T8. Light distribution direct, wide angle. Ideal for installations which require high illumination levels and low energy consumption.



#### R2 T8 L2

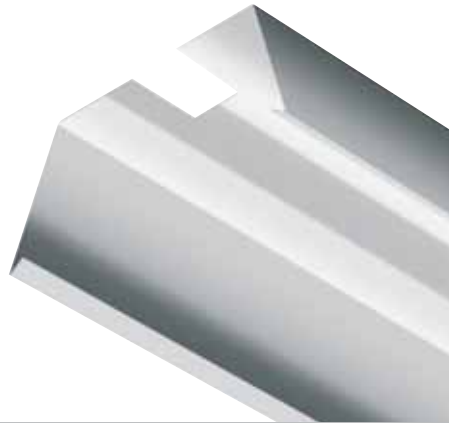
Reflector accessory made of 0,6 mm perforated steel sheet; finished with white powder coating RAL. Designed for two fluorescent lamps T8. Light distribution direct/indirect, wide angle. Reflector perforation for ceiling illumination ensures decorative look with pleasant lighting effect. Ideal for representative installations which require high illumination levels and low energy consumption.



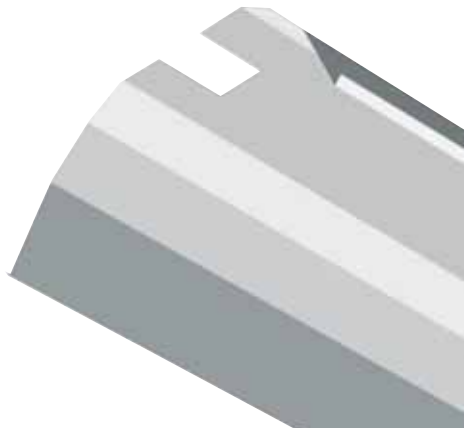
TYPE	ORDER NO.	PICTURE
R2 T8 L1	PBJ5F0325803000	1
R2 T8 L2	PBK5F0325803000	1
R2 T8 AL	PC1500315880000	1
R12 T8 AL DEEP	PC1540315880000	2
R12 T8 AL ASYMMETRIC	PC1510315880000	3
REP R2 (2 pieces)	PBL000000003000	
RCP R2 (2 pieces)	PBM000000003000	

**R2 T8 AL**

Reflector is made of pure anodized aluminium, high gloss. Light distribution direct, wide angle. Designed for one or twin fluorescent lamps T8. Ideal for middle – high mounting installations which require high illumination levels and low energy consumption.

**R12 T8 AL DEEP**

With aluminium narrow beam reflector it is possible to use fluorescent lamps at high levels and simultaneously to maintain the required illuminance - depending on room height, these optics ensures optimum illumination of aisles in high-bay storage facilities or production bays with high roofs. The narrow-beam optic is ideal for room heights from 6 to 10 m. Reflector is made of pure anodized aluminium, high gloss. Light distribution direct, narrow beam. Reflector is designed for or T8 fluorescent lamps - both single or twin lamp versions.

**R12 T8 AL ASYMMETRIC**

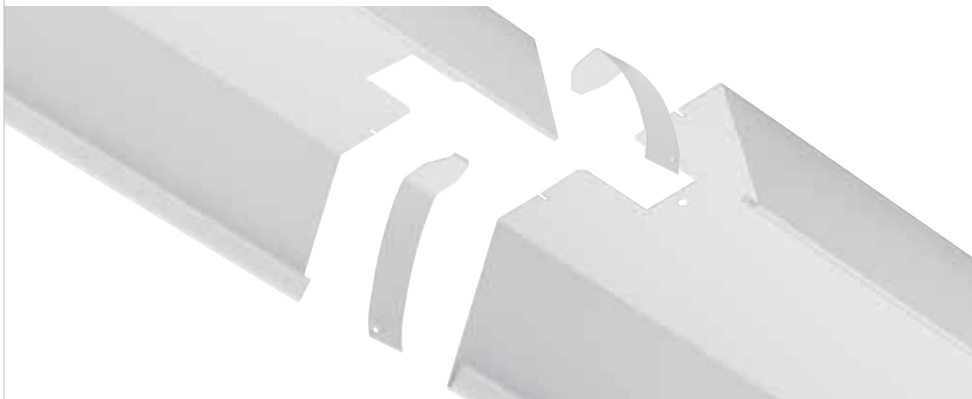
Asymmetrical light distribution that enables designers to accentuate walls and displays while still applying the same type of luminaire appearance as used for general lighting. Reflector is designed for T8 fluorescent lamps - both single or twin lamp versions. Suitable for mounting halls, production sites, workshops and especially for wall, blackboard and shelf lighting.

**REP R2 – reflector ending piece**

Plastic ending of reflectors R2 T8 L1, R2 T8 L2. Reflector end piece must be ordered separately.

**RCP R2 – reflector connecting piece**

Clutch of reflectors R2 T8 L1, R2 T8 L2. Reflector connector must be ordered separately.





# PRESTIGE

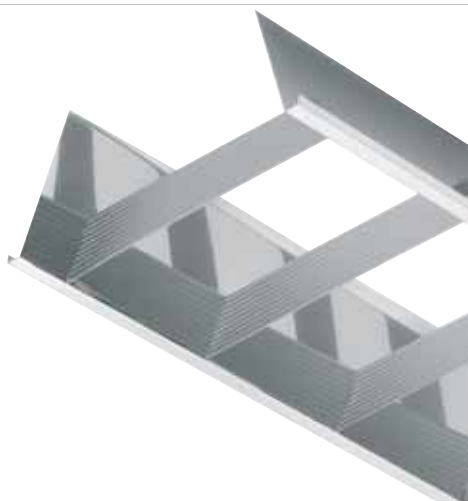
## PRESTIGE OPTICAL SYSTEMS AND ACCESSORIES

### DM T8 2x...

#### LA T8 R2

High polished anodized aluminium louvre with mat scored aluminium cross blades. It is used in combination with reflectors R2 T8 L1 and R2 T8 L2.

This aluminium louver offers very good relation between quality and price. Provides very good control of the light beam and higher luminous efficiency thanks to the scored cross blades, therefore is ideal for areas like workshops or production bays. Louvre is designed for two T8 lamps.



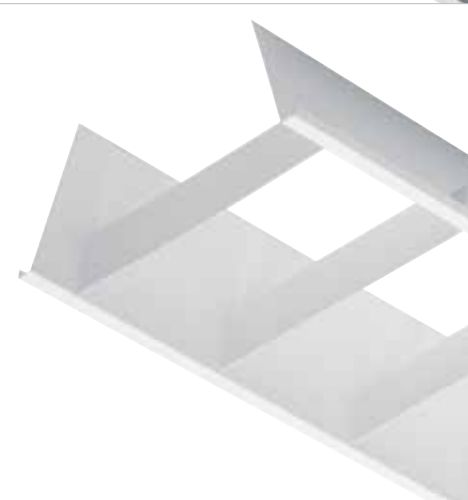
DM T8 R2 L2 LA 2x



#### LB T8 R2

White painted louvre with scored aluminium cross blades. It is used in combination with reflectors R2 T8 L1 and R2 T8 L2.

White painted louvre with diffusing reflection. It is suitable for installation in rooms where specific control of the light flux is not requested. Louvre is designed for two T8 lamps.



DM T8 R2 L1 LB 2x



TYPE	ORDER NO.
LA T8 R2	PBR200325800000
LB T8 R2	PBS290325800000
PRISMA T8 R2	PC93F0325800000
OPAL T8 R2	PC9300325800000

**PRISMA T8 R2**

Decorative closed prismatic optic for a wider beam spread. Suitable for low installation rooms and when mechanical protection of lamps is requested. Prismatic structure plate is for fitting in reflector R2 T8 L1 and R2 T8 L2. Accessory available for two T8 lamps.

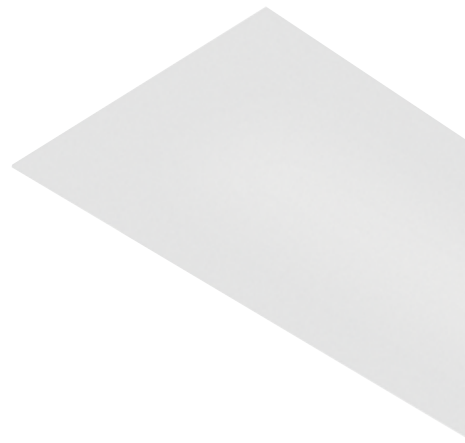


DM T8 R2 L1 PRISMA 2x



**OPAL T8 R2**

Decorative closed opal optic for a wider beam spread. Suitable for low installation rooms and when mechanical protection of lamps is requested. Prismatic structure plate is for fitting in reflector R2 T8 L1 and R2 T8 L2. Accessory available for two T8 lamps.



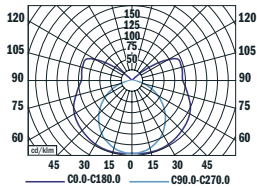
DM T8 R2 L2 OPAL 2x



# PRESTIGE

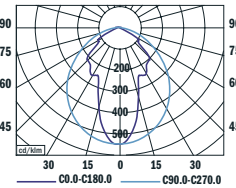
## PHOTOMETRY

PRESTIGE  
DM T5  
1x35W



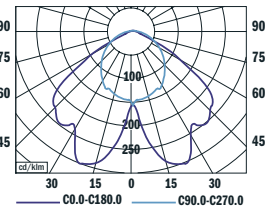
efficiency 95.4%

PRESTIGE  
DM T5  
R12 T5 AL DEEP  
1x35W



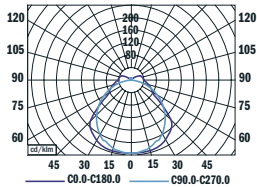
efficiency 87.5%

PRESTIGE  
DM T5  
R12 T5 AL  
1x35W



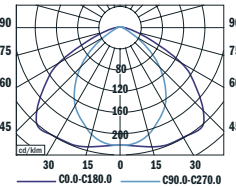
efficiency 73.8%

PRESTIGE  
DM T5  
R12 T5 L2  
1x35W



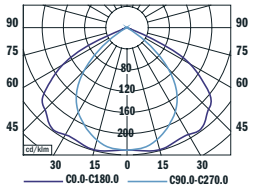
efficiency 78.6%

PRESTIGE  
DM T5  
R12 T5 L2  
PAR MAT R12  
1x35W



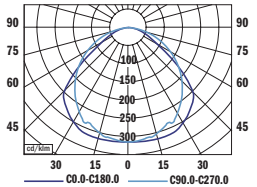
efficiency 57.8.5%

PRESTIGE  
DM T5  
R12 T5 L1  
PAR R12  
2x35W



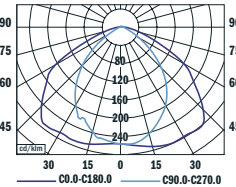
efficiency 58.2%

PRESTIGE  
DM T5  
R12 T5 L1  
1x49W



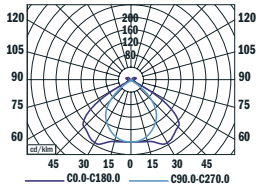
efficiency 90.4%

PRESTIGE  
DM T5  
R12 T5 L1  
PAR MAT R12  
1x49W



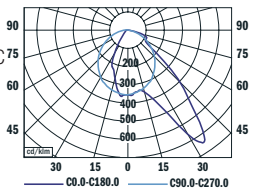
efficiency 67.4%

PRESTIGE  
DM T5  
R12 T5 L2  
PAR R12  
2x35W



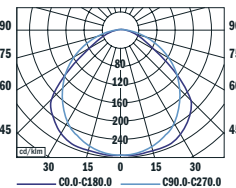
efficiency 56.1%

PRESTIGE  
DM T5  
R12 T5 AL ASYMMETRIC  
1x80W



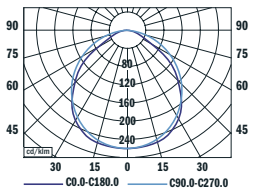
efficiency 89.1%

PRESTIGE  
DM T5  
R12 T5 L1  
1x80W



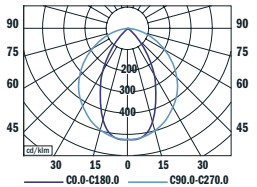
efficiency 79%

PRESTIGE  
DM T5  
R12 T5 L1  
2x80W



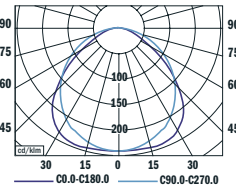
efficiency 69%

PRESTIGE  
DM T8  
R1 T8 AL DEEP  
1x58W



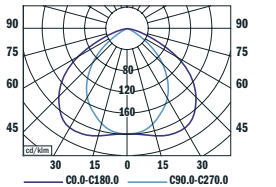
efficiency 77%

PRESTIGE  
DM T8  
R1 T8 L1  
1x58W



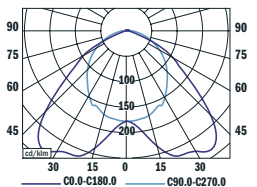
efficiency 68.8%

PRESTIGE  
DM T8  
R1 T8 L1  
PAR MAT R1  
1x58W



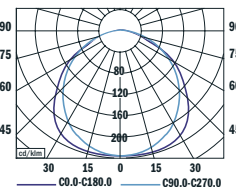
efficiency 50.6%

PRESTIGE  
DM T8  
R2 T8 AL  
2x58W



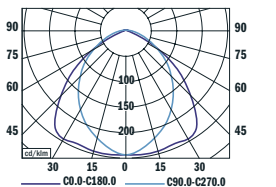
efficiency 71.4%

PRESTIGE  
DM T8  
R2 T8 L1  
2x58W



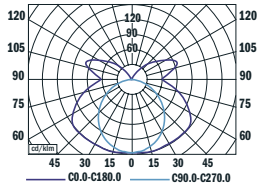
efficiency 70.2%

PRESTIGE  
DM T8  
R2 T8 L1  
LA R2  
2x58W



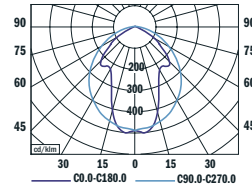
efficiency 58.9%

PRESTIGE  
DM T5  
2x35W



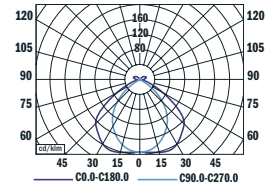
efficiency 71.2%

PRESTIGE  
DM T5  
R12 T5 AL DEEP  
2x35W



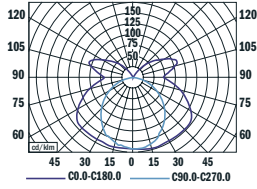
efficiency 91.1%

PRESTIGE  
DM T5  
R12 T5 L2  
PAR MAT R12  
2x35W



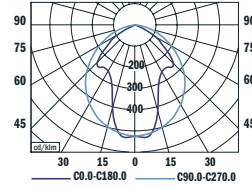
efficiency 50.7%

PRESTIGE  
DM T5  
2x49W



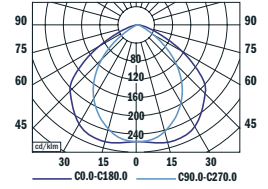
efficiency 89.6%

PRESTIGE  
DM T5  
R12 T5 AL DEEP  
2x49W



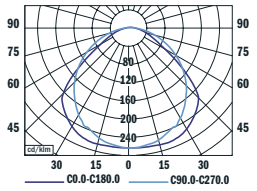
efficiency 98.2%

PRESTIGE  
DM T5  
R12 T5 L1  
PAR MAT R12  
2x49W



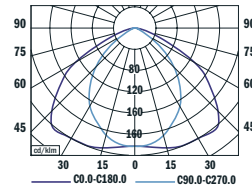
efficiency 59.7%

PRESTIGE  
DM T5  
R12 T5 L1  
1x35W



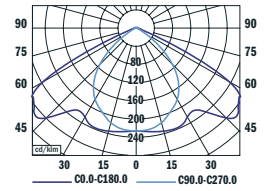
efficiency 76.1%

PRESTIGE  
DM T5  
R12 T5 L1  
PAR MAT R12  
1x35W



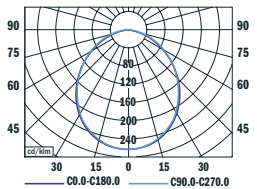
efficiency 57.8%

PRESTIGE  
DM T5  
R12 T5 L1  
PAR R12  
1x35W



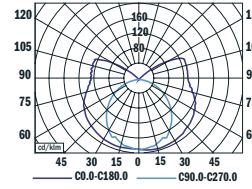
efficiency 64.7%

PRESTIGE  
DM T5  
R12 T5 L1 OPAL  
1x35W



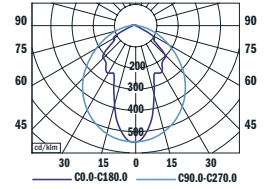
efficiency 65.9%

PRESTIGE  
DM T5  
R12 T5 AL DEEP  
1x80W



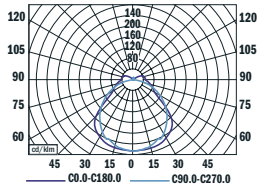
efficiency 98%

PRESTIGE  
DM T5  
R12 T5 AL DEEP  
1x80W



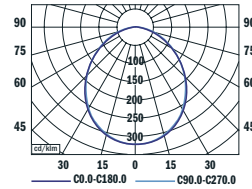
efficiency 87.5%

PRESTIGE  
DM T5  
R12 T5 L2  
1x49W



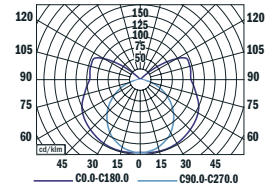
efficiency 88.4%

PRESTIGE  
DM T5  
R12 T5 L1 OPAL  
1x49W



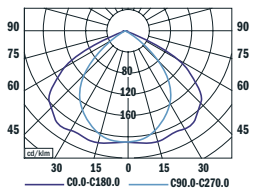
efficiency 80.9%

PRESTIGE  
DM T5  
1x80W



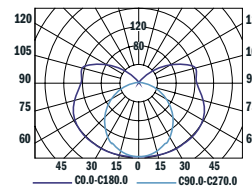
efficiency 93.2%

PRESTIGE  
DM T5  
R12 T5 L1  
PAR R12  
2x80W



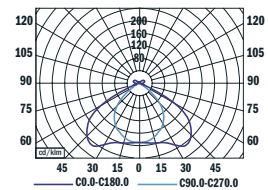
efficiency 52.7%

PRESTIGE  
DM T8  
1x58W



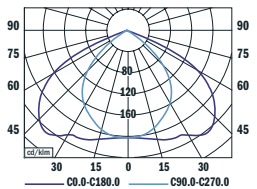
efficiency 93.4%

PRESTIGE  
DM T8  
R1 T8 L2  
PAR R1  
1x58W



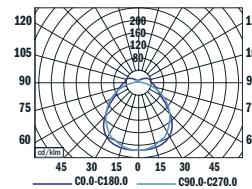
efficiency 59.8%

PRESTIGE  
DM T8  
R1 T8 L1  
PAR R1  
1x58W



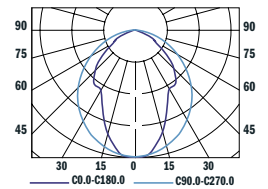
efficiency 57.2%

PRESTIGE  
DM T8  
R1 T8 L2  
1x58W



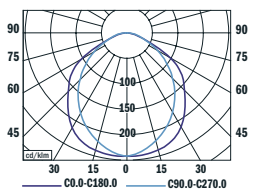
efficiency 72.9%

PRESTIGE  
DM T8  
R2 T8 AL DEEP  
2x58W



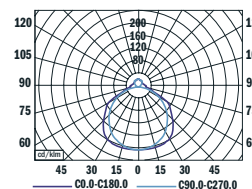
efficiency 71.4%

PRESTIGE  
DM T8  
R2 T8 L1  
LB R2  
2x58W



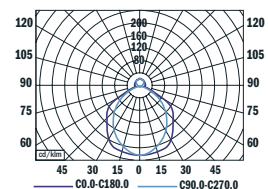
efficiency 59.7%

PRESTIGE  
DM T8  
R2 T8 L2  
2x58W



efficiency 74.2%

PRESTIGE  
DM T8  
R2 T8 L2  
LB R2  
2x58W



efficiency 65.1%

2

1



4



6

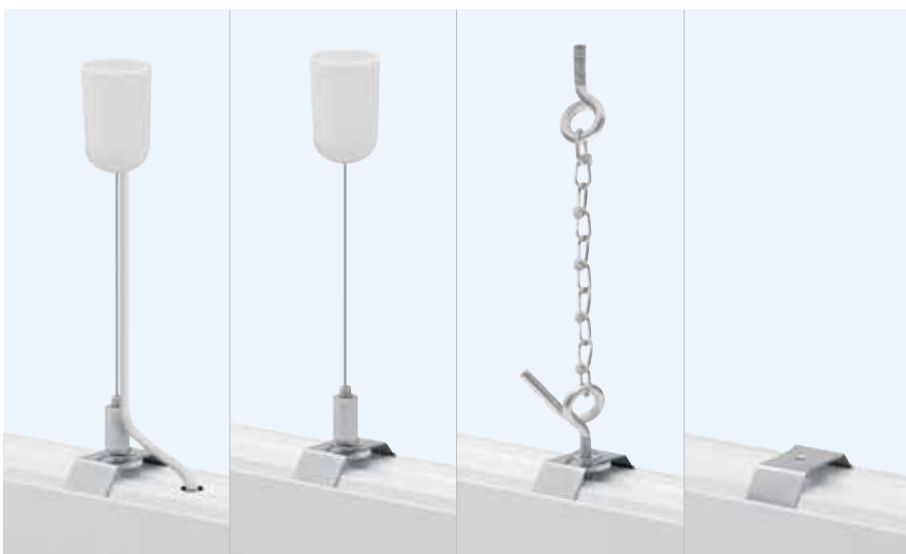
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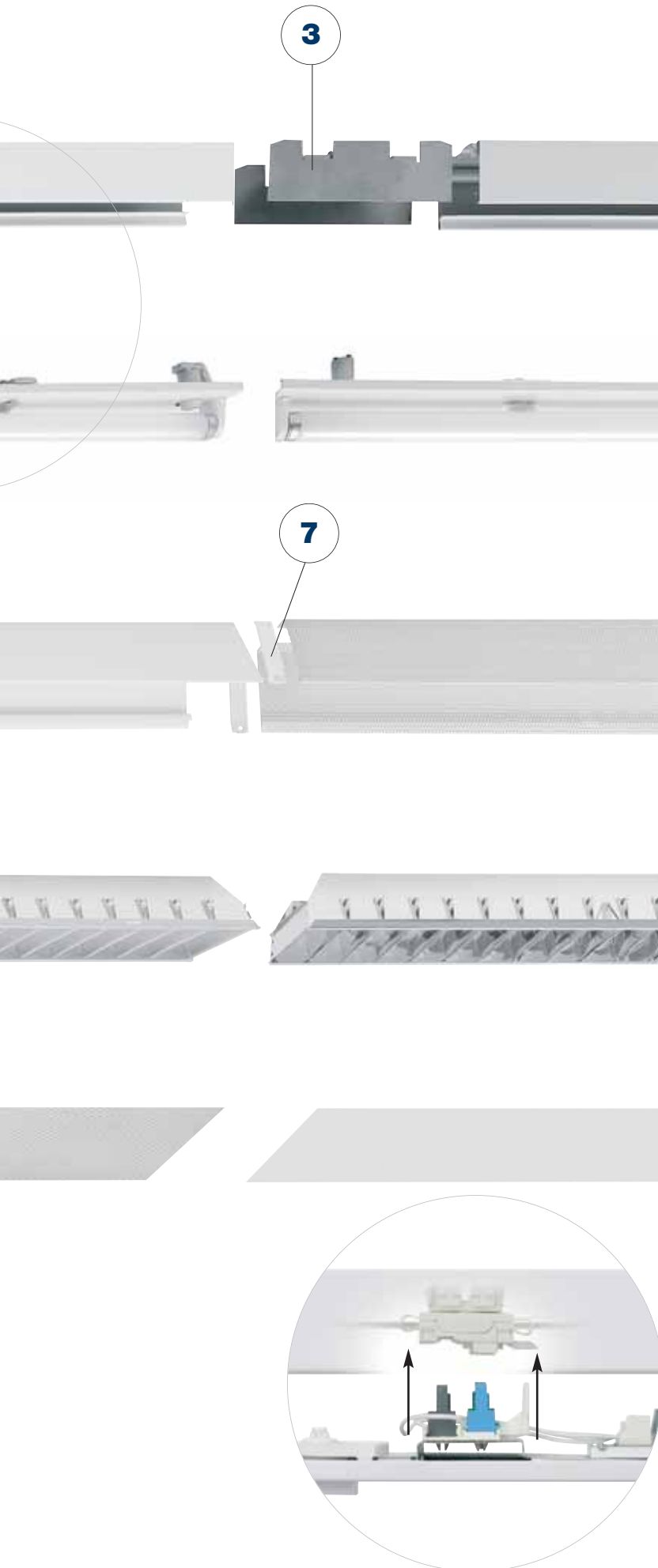


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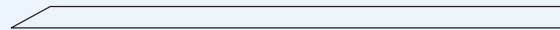
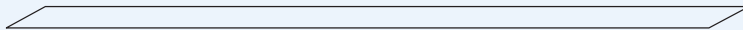
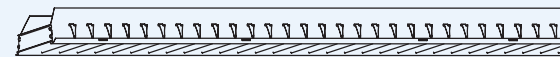
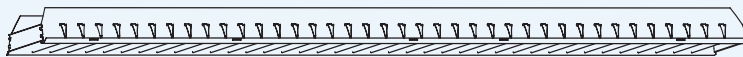
10

# PRESTIGE



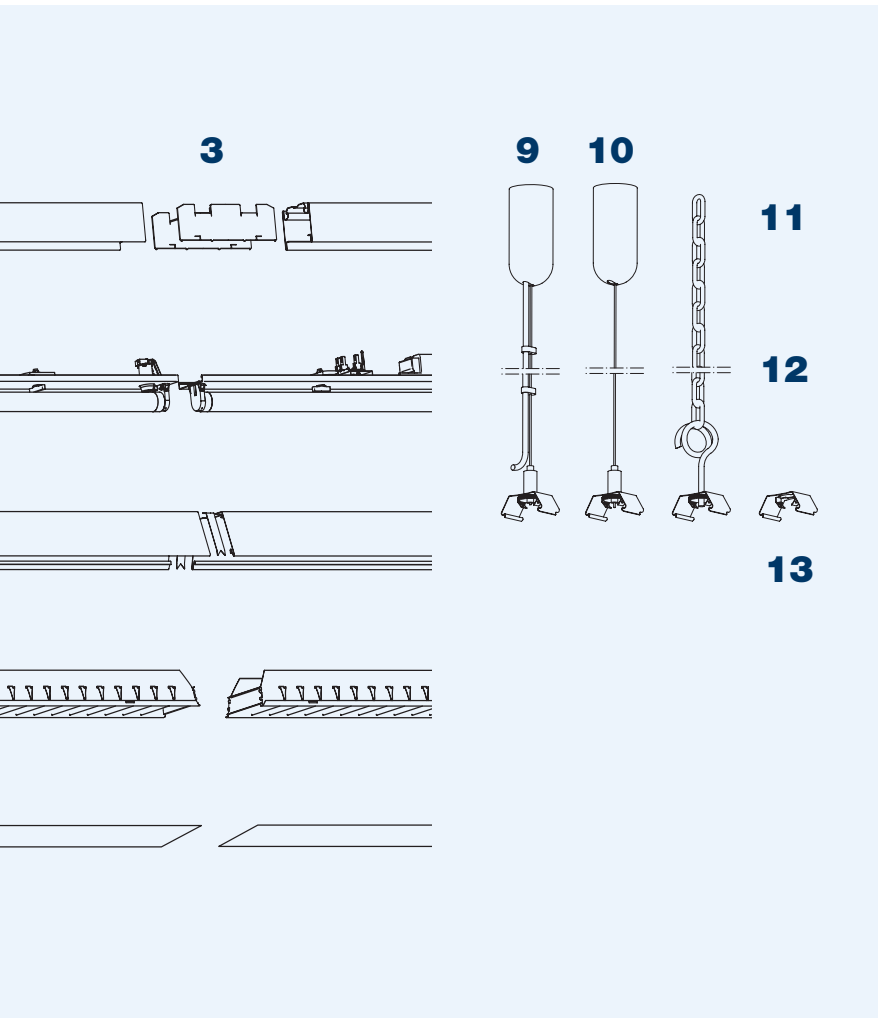
- 1** Mounting rail
- 2** Mounting rail end piece
- 3** Reflector connecting piece
- 4** Device mount
- 5** Reflector
- 6** Reflector ending piece
- 7** Reflector connecting piece
- 8** Parabolic louvre
- 9** Prismatic optic
- 10** Suspensions



**2****1****4****6****5****7****8**

LENGHT (M)	UNIT	MOUNTING RAIL		SUSPENSION RS CHS+CHP SB	MOUNTING RAIL CONECTING PIECE MRCP	END PIECE MRE	DEVICE MOUNT DM T5 1X... DM T5 2X...	REFLECTOR R12 T5 R12 T5
		MR T5 II	MR T5 III					
2,97	2	1	–	2	–	2	2	2
4,45	3	–	1	2	–	2	3	3
5,94	4	2	–	3	1	2	4	4
7,42	5	1	1	4	1	2	5	5
8,91	6	–	2	4	1	2	6	6
10,39	7	2	1	5	2	2	7	7
11,88	8	1	2	6	2	2	8	8
13,36	9	–	3	6	2	2	9	9
14,85	10	2	2	7	3	2	10	10
16,33	11	1	3	8	3	2	11	11
17,82	12	–	4	8	3	2	12	12
19,30	13	2	3	9	4	2	13	13
20,79	14	1	4	10	4	2	14	14
22,27	15	–	5	10	4	2	15	15
23,76	16	2	4	11	5	2	16	16
25,24	17	1	5	12	5	2	17	17
26,73	18	–	6	12	5	2	18	18
28,21	19	2	5	13	6	2	19	19
29,70	20	1	6	14	6	2	20	20
31,18	21	–	7	14	6	2	21	21
32,67	22	2	6	15	7	2	22	22
34,15	23	1	7	16	7	2	23	23
35,64	24	–	8	16	7	2	24	24
37,12	25	2	7	17	8	2	25	25
38,60	26	1	8	18	8	2	26	26
40,09	27	–	9	18	8	2	27	27
41,57	28	2	8	19	9	2	28	28
43,06	29	1	9	20	9	2	29	29
44,54	30	–	10	20	9	2	30	30

# PRESTIGE



REFLECTOR CONNECTING PIECE	REFLECTOR END PIECE	LOUVRE/DIFFUSER
RCP R12	REP R12	PAR T5 R12/PAR MAT T5 R12/PRISMA T5 R12/OPAL T5 R12
2	2	2
4	2	3
6	2	4
8	2	5
10	2	6
12	2	7
14	2	8
16	2	9
18	2	10
20	2	11
22	2	12
24	2	13
26	2	14
28	2	15
30	2	16
32	2	17
34	2	18
36	2	19
38	2	20
40	2	21
42	2	22
44	2	23
46	2	24
48	2	25
50	2	26
52	2	27
54	2	28
56	2	29
58	2	30

## T5 COMPOSITION OF CONTINUOUS LIGHT RUNS ACCORDING TO INDIVIDUAL ELEMENTS

<b>1</b>	Mounting rail T5 II 3-pole Mounting rail T5 III 3-pole Mounting rail T5 II 5-pole Mounting rail T5 III 5-pole Mounting rail T5 II 7-pole Mounting rail T5 III 7-pole	MR T5 II 3p MR T5 III 3p MR T5 II 5p MR T5 III 5p MR T5 II 7p MR T5 III 7p
<b>2</b>	Mounting rail end	MRE
<b>3</b>	Mounting rail connecting piece	MRCP
<b>4</b>	Device mount T5 1x35 Device mount T5 1x49 Device mount T5 1x80 Device mount T5 2x35 Device mount T5 2x49 Device mount T5 2x80	DM T5 1x35 DM T5 1x49 DM T5 1x80 DM T5 2x35 DM T5 2x49 DM T5 2x80
<b>5</b>	Reflector T5 R12 L1 Reflector T5 R12 L2 Reflector T5 R12 AI Reflector T5 R12 AL DEEP Reflector T5 R12 AL ASYMMETRIC	R12 T5 L1 R12 T5 L2 R12 T5 AI R12 T5 AL DEEP R12 T5 SL ASYMMETRIC
<b>6</b>	Reflector end piece R12	REP R12
<b>7</b>	Reflector R12 connecting piece	RCP R12
<b>8</b>	Parabolic louvre T5 PAR R12 Parabolic louvre T5 PAR MAT R12 Diffuser T5 PRISMA R12 Diffuser T5 OPAL R12	PAR T5 R12 PAR MAT T5 R12 PRISMA T5 R12 OPAL T5 R12
<b>9</b>	Rope suspension with electrical connection	RSE
<b>10</b>	Rope suspension without electrical connection	RS
<b>11</b>	Chain suspension	CHS
<b>12</b>	Chain pendant	CHP
<b>13</b>	Suspension bracket	SB

2

1



4



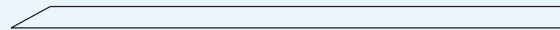
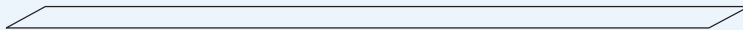
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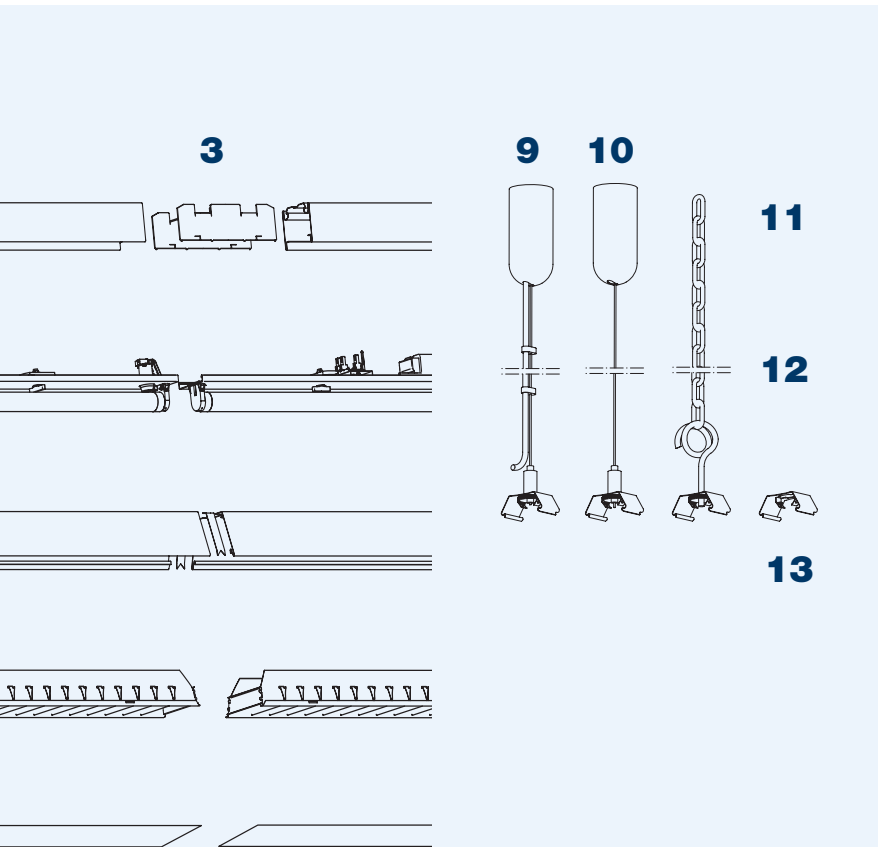
8



220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 G13	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP 20	IP 40
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LENGHT (M)	UNIT	MOUNTING RAIL		SUSPENSION RS CHS+CHP SB	MOUNTING RAIL CONECTING PIECE MRCP	END PIECE MRE	DEVICE MOUNT DM T8 1X... DM T8 2X...	REFLECTOR R1 T8 R2 T8
		MR T8 II	MR T8 III					
3.07	2	1	-	2	-	2	2	2
4.61	3	-	1	2	-	2	3	3
6.14	4	2	-	3	1	2	4	4
7.68	5	1	1	4	1	2	5	5
9.21	6	-	2	4	1	2	6	6
10.75	7	2	1	5	2	2	7	7
12.29	8	1	2	6	2	2	8	8
13.82	9	-	3	6	2	2	9	9
15.36	10	2	2	7	3	2	10	10
16.89	11	1	3	8	3	2	11	11
18.43	12	-	4	8	3	2	12	12
19.97	13	2	3	9	4	2	13	13
21.50	14	1	4	10	4	2	14	14
23.04	15	-	5	10	4	2	15	15
24.57	16	2	4	11	5	2	16	16
26.11	17	1	5	12	5	2	17	17
27.64	18	-	6	12	5	2	18	18
29.18	19	2	5	13	6	2	19	19
30.72	20	1	6	14	6	2	20	20
32.25	21	-	7	14	6	2	21	21
33.79	22	2	6	15	7	2	22	22
35.32	23	1	7	16	7	2	23	23
36.86	24	-	8	16	7	2	24	24
38.40	25	2	7	17	8	2	25	25
39.93	26	1	8	18	8	2	26	26
41.47	27	-	9	18	8	2	27	27
43.00	28	2	8	19	9	2	28	28
44.54	29	1	9	20	9	2	29	29
46.07	30	-	10	20	9	2	30	30

# PRESTIGE



## T8 COMPOSITION OF CONTINUOUS LIGHT RUNS ACCORDING TO INDIVIDUAL ELEMENTS

<b>1</b>	Mounting rail T8 II 3-pole Mounting rail T8 III 3-pole Mounting rail T8 II 5-pole Mounting rail T8 III 5-pole Mounting rail T8 II 7-pole Mounting rail T8 III 7-pole	MR T8 II 3p MR T8 III 3p MR T8 II 5p MR T8 III 5p MR T8 II 7p MR T8 III 7p
<b>2</b>	Mounting rail end	MRE
<b>3</b>	Mounting rail connecting piece	MRCP
<b>4</b>	Device mount T8 1x58W Device mount T5 2x58W	DM T8 1x58W DM T8 2x58W
<b>5</b>	Reflector T8 R1 L1 Reflector T8 R1 L2 Reflector T8 R2 L1 Reflector T8 R2 L2 Reflector T5 R12 AI Reflector T5 R12 AL DEEP Reflector T5 R12 AL ASYMMETRIC	R1 T8 L1 R1 T8 L2 R2 T8 L1 R2 T8 L2 R12 T5 AI R12 T5 AL DEEP R12 T5 SL ASYMMETRIC
<b>6</b>	Reflector end piece R12 Reflector end piece R2	REP R12 REP R2
<b>7</b>	Reflector R12 connecting piece Reflector R2 connecting piece	RCP R12 RCP R2
<b>8</b>	Parabolic louvre T8 PAR R1 Parabolic louvre T8 PAR MAT R1 Diffuser T8 PRISMA R1 Diffuser T8 OPAL R1 Louvre LA T8 R2 Louvre LB T8 R2 Diffuser T8 PRISMA R2 Diffuser T8 OPAL R2	PAR T8 R1 PAR T8 R1 PRISMA T8 R1 OPAL T8 R1 LA T8 R2 LB T8 R2 PRISMA T8 R2 OPAL T8 R2
<b>9</b>	Rope suspension with electrical connection	RSE
<b>10</b>	Rope suspension without electrical connection	RS
<b>11</b>	Chain suspension	CHS
<b>12</b>	Chain pendant	CHP
<b>13</b>	Suspension bracket	SB

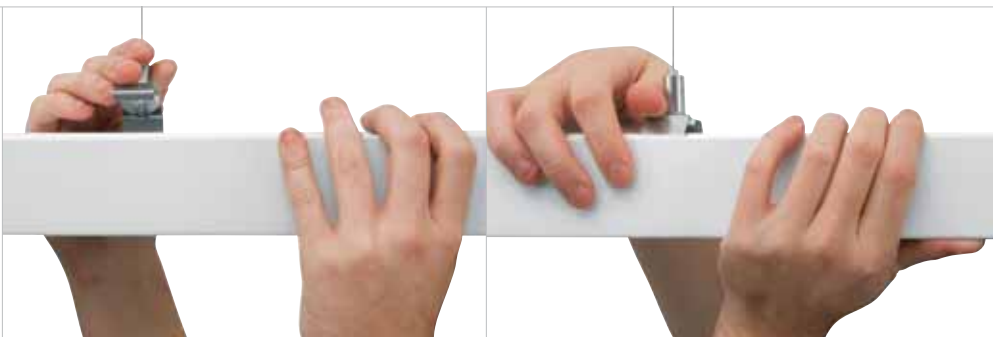
REFLECTOR CONNECTING PIECE	REFLECTOR END PIECE	LOUVRE/DIFFUSER
RCP R12 RCP R2	REP R12 REP R2	PAR T8 R1/PAR MAT T8 R1/PRISMA T8 R1/OPAL T8 R1 LA T8 R2/LB T8 R2/PRISMA T8 R2/OPAL T8 R2
2	2	2
4	2	3
6	2	4
8	2	5
10	2	6
12	2	7
14	2	8
16	2	9
18	2	10
20	2	11
22	2	12
24	2	13
26	2	14
28	2	15
30	2	16
32	2	17
34	2	18
36	2	19
38	2	20
40	2	21
42	2	22
44	2	23
46	2	24
48	2	25
50	2	26
52	2	27
54	2	28
56	2	29
58	2	30

# PRESTIGE

## INSTALLATION

**The PRESTIGE system is a perfect compound. It consists of different factory pre-wired mounting profiles, which needs to be simply joined together at the place of installation without the need to use of any tools. Even untrained staff can handle this.**

For suspended ceiling installation (RS rope suspension with adjustable height in this case), the clip is simply snapped to the mounting rail using a slight pressure.



A MRCP joint is used for mechanical connection of different mounting rails.



Different mounting rails are connected electrically via axial connectors located always on both ends of the mounting rails.



Electrical and mechanical connection of the device mount (DM T5 1x in this case) to the mounting rail without the need to use of any tools is done by the special connector which is a part of the wiring. Simple selection of the lamp phase is done by adjusting of this connector.



Lighting fixtures device mount are equipped with two locking mechanisms that make it possible to fit them easily to the mounting rail.



By using of the same locking mechanisms it is possible to fit reflector to the device mount. Reflector (R12 L1 in this case) is pushed to the device mount and fixed by simply turning of the locking mechanism.



After connecting of the reflector (R12) end piece, it is possible to insert the light source.



Use the spring mechanisms, which are parts of the louvre, various types of louvers can be attached to the reflectors.



PRESTIGE DM T5 R12 L1 PAR MAT 1x

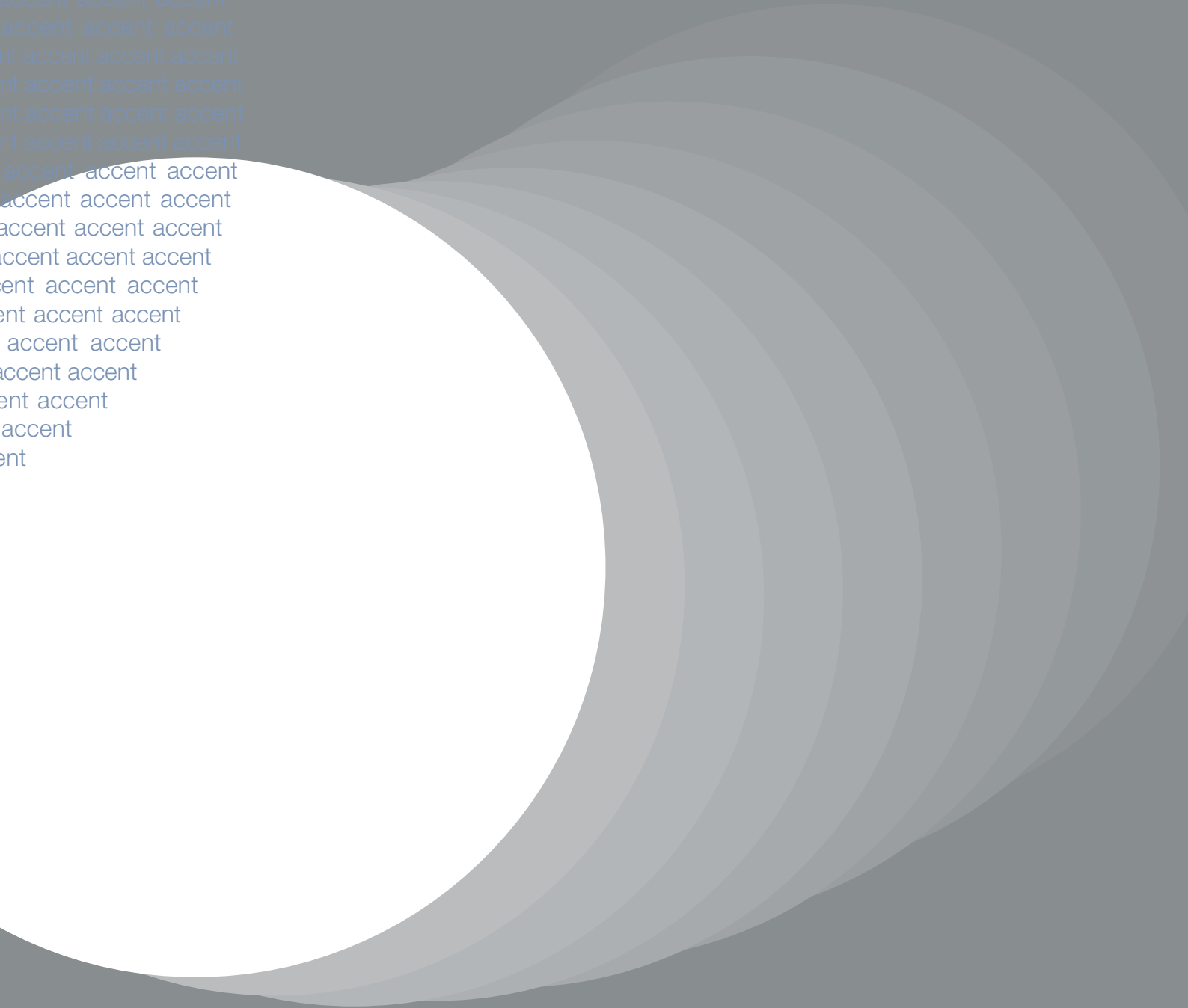






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ACCENT



# ACCENT

## ACCENT

Prípojnícový systém Accent pokračuje v osvedčenej koncepcii tradičného systému NOKIA a je s ním kompatibilný. Je to najpoužívanejší typ trojfázového prípojnícového systému v Európe. Lišty osvetľovacieho systému sú navrhnuté pre jednoduchú montáž na stropy a steny alebo pre zapustenú montáž do závesných podhládov. Lišty môžu mať rôznu dĺžku a môžu byť spájané buď priamo, alebo pod rôznymi uhlami prostredníctvom nastaviteľných koncoviek. Pre vytvorenie ľubovoľného útvaru sú k dispozícii konektory typu I, L, T alebo X. Lišty majú v sebe diery na uchytenie v pravidelných rozstupoch. Hlavná výhoda systému Accent je jeho univerzálnosť – možnosť prispôsobenia osvetlenia na základe požiadaviek užívateľa. Zákazník si môže vybrať z rôznych typov svetelných zdrojov, ktoré môže ľubovoľne rozmiestňovať a natáčať do požadovaných smerov. Okrem flexibility systému je samozrejmosťou rýchla a jednoduchá montáž.

### KONŠTRUKCIA

**Lišty:** extrudovaný hliníkový profil, štandardná dĺžka 3 metre, povrchová úprava anodizovaním

**Plastové príslušenstvo:** spojky, klby a koncovky sú vo farbe RAL 7040 (okenná šedá)

**Telesá svietidiel:** hliníkové odliatky

V každej kolajnici sú uložené 4 vodiče - tri slúžia pre fázové vodiče, štvrtý je nulový vodič. Konektory svietidiel sa vložia do kolajnice, otočením plastovej páčky sa upevnia a uzemia zároveň, pomocou otočného mechanizmu sa nastaví požadovaná fáza. Predradníky sú umiestnené v hliníkových kazetách svietidiel.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- stmievateľnými 12V elektronickými transformátormi
- elektronickými predradníkmi pre výbojky

**Ostatné komponenty:**

- svetelné zdroje: nízkonapäťové halogénové žiarovky QR-CB51, metal-halogenidové výbojky HIT (svetelné zdroje je nutné objednať zvlášť)

### PRÍSLUŠENSTVO

- rôzne typy spojok a závesov (pozri technickú schému systému ACCENT)

## ACCENT

The Accent connecting bar system continues in the traditions of the NOKIA system and is compatible with it. It is the most frequently used type of three-stage connecting bar system in Europe. Lighting system bars are designed for simple installation to walls and ceilings, or for embedded pendant installation. Bars can have various lengths and can be connected either directly or in various angles using adjustable ends. Connector types I, L, T and X are available to create random formations. The bars contain regular attachment holes.

The main advantage of the Accent system is its flexibility – adjustment of the light fittings on the basis of user's requirements is possible. The customer can choose from various types of light sources, which can be randomly positioned and deflected to desired directions. In addition to the system's flexibility, fast and simple installation is also an advantage.

### CONSTRUCTION

**Bars:** extruded aluminium profile, standard length of 3 metres, anodised surface finish

**Plastic accessories:** connectors, joints and ends are RAL 7040 (window grey)

**Light fixture bodies:** aluminium casting

Each track contains 4 conductors – three of them serve as phase conductors, the fourth is neutral. Lamp connectors are put into the track, attached by twisting plastic lever, and at the same time they are grounded, then the required phase is set using a rotary mechanism. Ballast boxes are situated in the aluminium housings of the light fixtures.

### WIRING

Light fixtures can be equipped with:

- dimmable 12V electronic transformers
- electronic ballast for discharge lamps

**Other components:**

- lamps: low-voltage halogen lamps QR-CB51, metal-halide discharge lamps HIT (lamps must be ordered separately)

### ACCESSORIES

- various types of connections and suspension equipment (see ACCENT system technical description)

## ACCENT

Das Schienensystem Accent setzt in bewährter Konzeption des traditionellen System NOKIA fort und ist mit ihm kompatibel. Es ist ein am meisten angewendetes dreiphasiges Schienensystem in Europa. Die Leisten sind für einen einfachen Einbau in Decken und an Wände, oder für die Unterputzinstallation in Hängeuntersichten, entworfen. Die Leisten können verschiedene Längen haben und können direkt sein oder unter verschiedenen Winkeln durch einstellbare Endstücke verbunden werden. Gestaltung in beliebige Form stehen Verbindungsstecker I, L, T oder X zur Verfügung. Die Leisten haben Öffnungen zur Befestigung in regelmäßigen Abständen.

Der Hauptvorteil des Accent-Systems ist seine Allseitigkeit – Möglichkeit der Anpassung der Beleuchtung aufgrund von Forderungen des Anwenders. Der Kunde kann aus verschiedenen Typen der Lichtquellen wählen, die er beliebig anbringen und in gewünschte Richtungen drehen kann. Nebst der Flexibilität des Systems ist auch ein schneller und einfacher Einbau selbstverständlich.

### KONSTRUKTION

**Leisten:** extrudiertes Aluminium, Standardlänge von 3 m, anodisierte Oberflächenbehandlung.

**Kunststoffzubehör:** Verbindungen, Gelenke und Endstücke der Farbe RAL 7040 (Fenstergrau)

**Leuchtenkörper:** Aluminiumgüsse

Es sind in jeder Schiene 4 Leiter angebracht – drei dienen als Phasenleiter, der vierte ist ein Nullungsleiter. Die Verbindungsstecker werden in die Schiene angebracht, durch die Drehung des Kunststoffhebels befestigt und geerdet, mit einem Drehmechanismus wird die geforderte Phase eingestellt. Die Vorschalter sind in Aluminiumkassetten der Leuchten angebracht.

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten können wie folgt ausgerüstet sein:

- mit elektronischen 12 V-Dimmertransformatoren
- mit elektronischen Vorschaltern für Entladungslampen

**Andere Komponente:**

- Lichtquellen: Niederspannung-Halogenlampen QR-CB51, Metall-Halogenid Entladungslampen HIT (die Lichtquellen sind extra zu bestellen)

### ZUBEHÖR

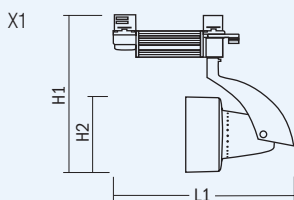
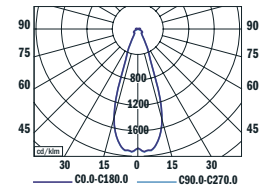
- verschiedene Typen von Verbindungen und Aufhängungen (siehe technisches Schema des Systems ACCENT)

# ACCENT

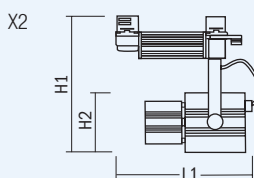
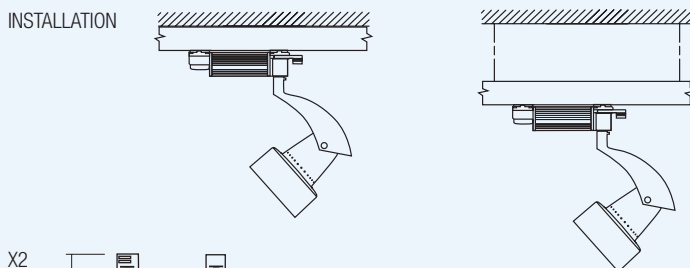
## X1/X2 QB-CB



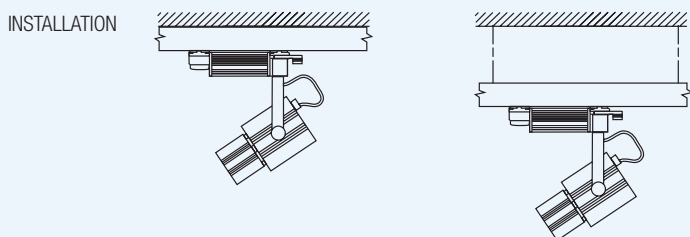
ACCENT X2 QR CB 51 35W



	OPTIC SPOT	POWER	LAMP	DIMENSIONS		
				L1	H1	H2
ACCENT X1	•	1x20	QR CB51	270	250	110
ACCENT X1	•	1x35	QR CB51	270	250	110
ACCENT X1	•	1x50	QR CB51	270	250	110



	OPTIC SPOT	POWER	LAMP	DIMENSIONS		
				L1	H1	H2
ACCENT X2	•	1x20	QR CB51	200	210	90
ACCENT X2	•	1x35	QR CB51	200	210	90
ACCENT X2	•	1x50	QR CB51	200	210	90





ACCENT X1

ACCENT X2

ACCENT X1



ACCENT X2



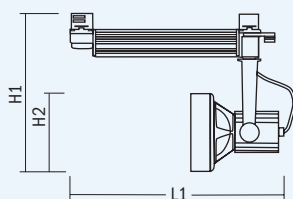
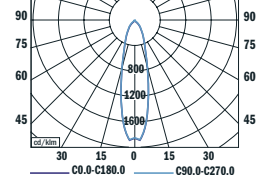


# ACCENT

## X3/X4 HI

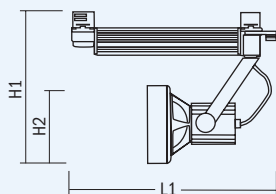
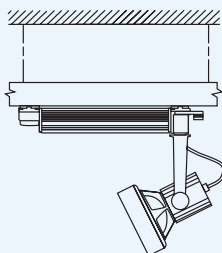
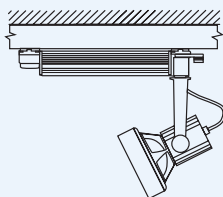


ACCENT X3 H1 1x70W



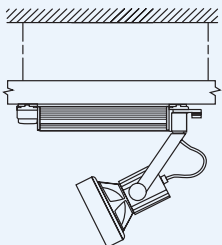
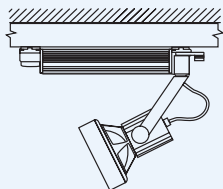
	OPTIC SPOT	POWER	LAMP	DIMENSIONS		
				L1	H1	H2
ACCENT X3	•	1x70	HI	325	245	120

INSTALLATION



	OPTIC SPOT	POWER	LAMP	DIMENSIONS		
				L1	H1	H2
ACCENT X4	•	1x70	HI	290	230	120

INSTALLATION





ACCENT X3

ACCENT X4

ACCENT X3



ACCENT X4

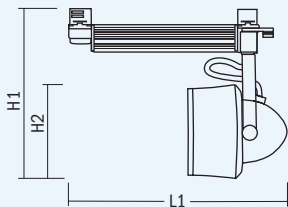
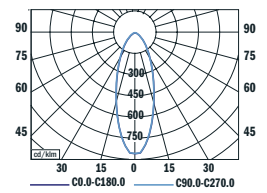


# ACCENT

**X5**  
**HI**

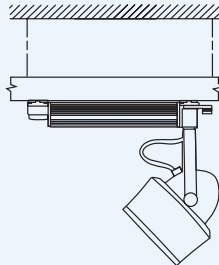
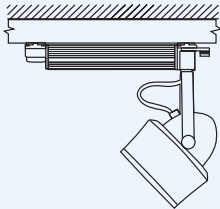


ACCENT X5 HI 1x70W



	OPTIC SPOT	POWER	LAMP	DIMENSIONS		
				L1	H1	H2
ACCENT X5	•	1x70	HI	290	230	120

INSTALLATION

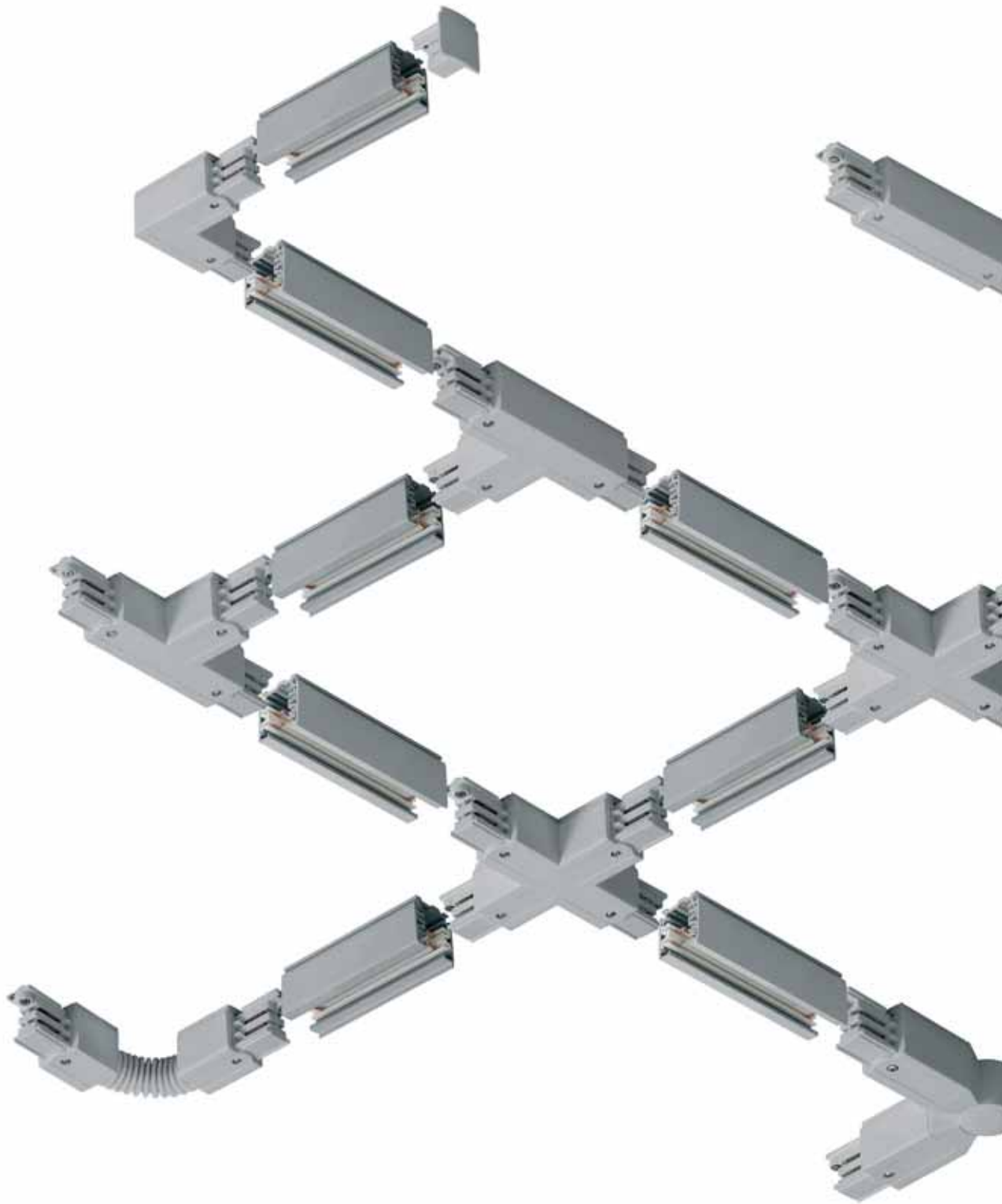




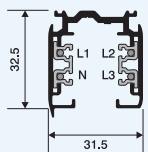
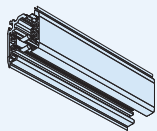
ACCENT X5

ACCENT X5

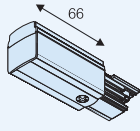




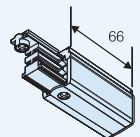
XTS



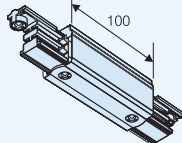
XTS 11



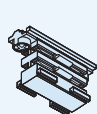
XTS 12



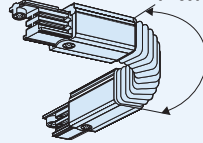
XTS 14



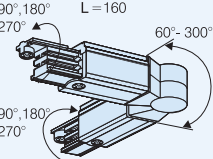
XTS 21



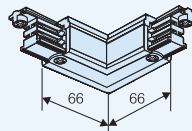
XTS 23



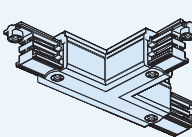
XTS 24



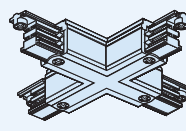
XTS 34/35



XTS 33/37/39/40



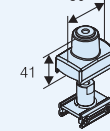
XTS 38



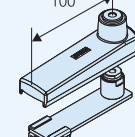
XTS 41



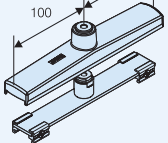
SP 4R



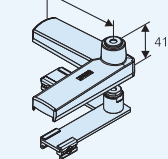
SP 4E

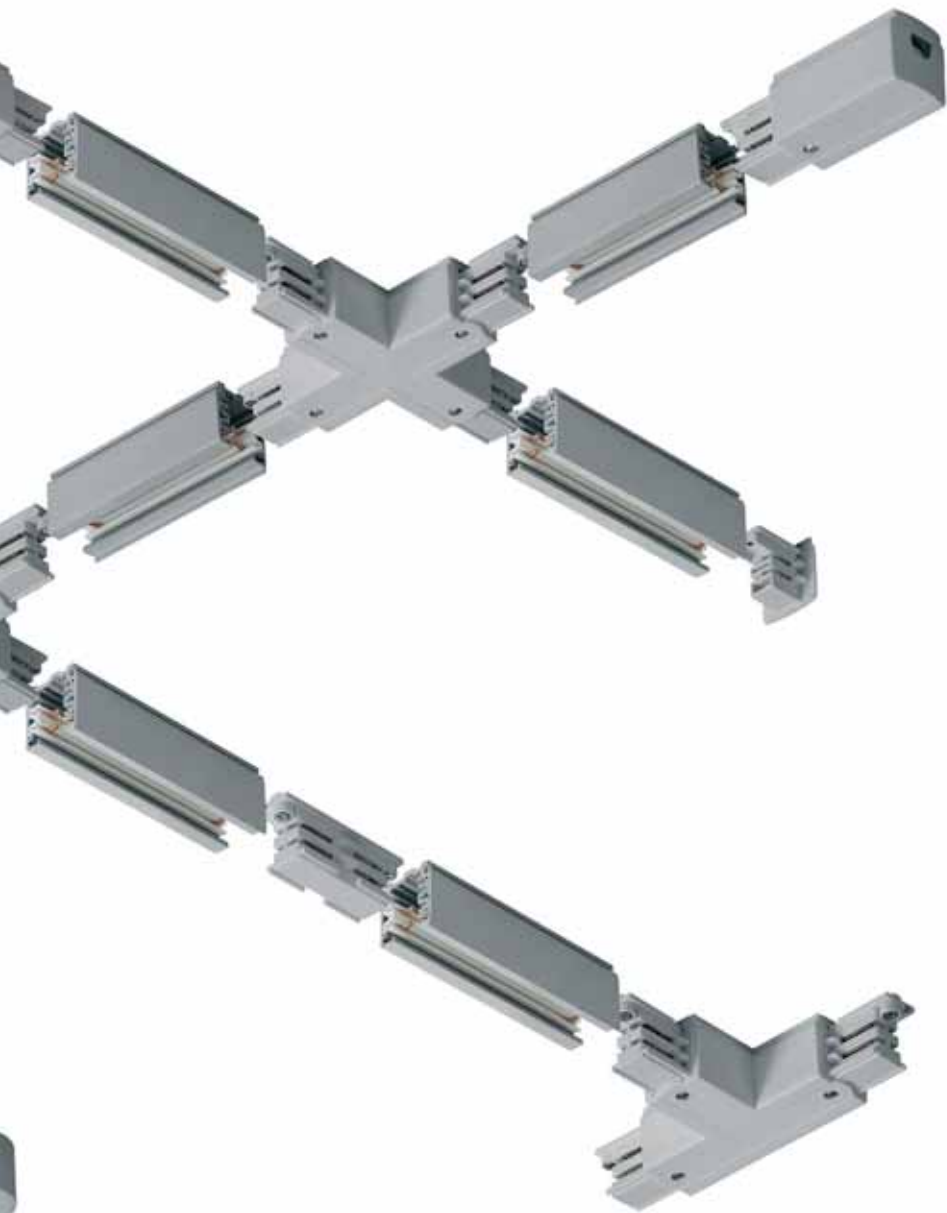


SP 4I



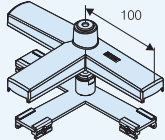
SP 4L



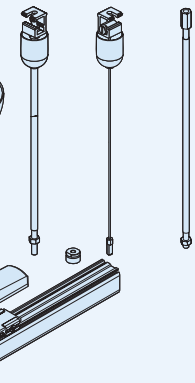


XTS	Kofajnica Track Schiene
XTS 11	Koncovka End feed Endstueck
XTS 12	Koncovka opačná End feed, mirror image Gegenendstueck
XTS 14	Spojka kofajnice Middle feed Verbindungsstueck der Schiene
XTS 21	Priebežný konektor Straight connector Durchlaufender Verbindungsstecker
XTS 23	Ohybný rohový konektor Flexible corner connector Flexibler Eckverbindungsstecker
XTS 24	Nastaviteľný rohový konektor Adjustable corner connector Einstellbarer Eckverbindungsstecker
XTS 34/35	L - konektor L - connector L - Verbindungsstecker
XTS 33/37/39/40	T - konektor T - connector T - Verbindungsstecker
XTS 38	X - konektor X - connector X - Verbindungsstecker
XTS 41	Koncovka End cap Endstueck
SP 4R	Bodový záves Point clamp suspension Punkt-Aufhängung
SP 4E	Koncový záves End feed suspension End-Aufhängung
SP 4I	Stredový záves Middle feed suspension Mittel-Aufhängung
SP 4L	L - záves L-feed suspension L - Aufhängung
SP 4T	T - záves T-feed suspension T - Aufhängung
SP 4X	X - záves X-feed suspension X - Aufhängung
SP C16	Záves s elektrickým prívodom Conduit suspension set Aufhängung mit elektrischer Betriebsleistung
SP R6	Týčový záves Rod suspension set Stabaufhängung
SP W1	Lankový záves Wire suspension set Seilaufhängung
SP R61	Predlžovacia tyč Rod extension set Verlängerungsstange
SKB 12	Stropný úchyt Ceiling clamp Deckenbuege
SKB 16	Uchyt pre záves Suspension clamp Buegel fuer Aufhängung
SKB 18	Uchyt Support Buegel
SKB 21	Nástenný držiak Wall bracket Wandhalter
SKB 40	Výškovo nastaviteľný držiak, nastaviteľný o 20mm Height adjusting sleeve, adjustable to 20mm Hoeheneinstellbarer Halter, einstellbar um 20mm
SPW 40	Držiak kábla Cable holder Kabelhalter

SP 4T



SP C16



SP R6



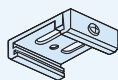
SP W1



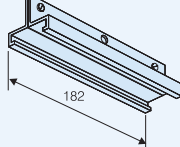
SP R61



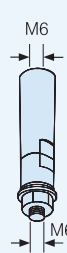
SKB 12



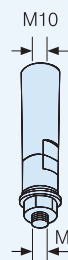
SKB 18



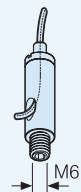
SKB 40



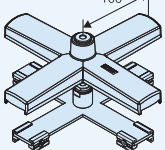
SKB 100



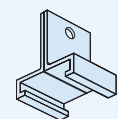
SPW 40



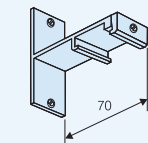
SP 4X



SKB 16



SKB 21





ORDER CODE	TYPE	SPECIFICATION
<b>ACCENT X1</b>		
AC16053120F9000	ACCENT X1	1x20W,QR CB51,ET,RAL 9006
AC16053135F9000	ACCENT X1	1x35W,QR CB51,ET,RAL 9006
AC16053150F9000	ACCENT X1	1x50W,QR CB51,ET,RAL 9006
<b>ACCENT X2</b>		
AC26053120F9000	ACCENT X2	1x20W,QR CB51,ET,RAL 9006
AC26053135F9000	ACCENT X2	1x35W,QR CB51,ET,RAL 9006
AC26053150F9000	ACCENT X2	1x50W,QR CB51,ET,RAL 9006
<b>ACCENT X3</b>		
AC3602017069000	ACCENT X3	1x70W,HI,ECG,RAL 9006
<b>ACCENT X4</b>		
AC4602017069000	ACCENT X4	1x70W,HI,ECG,RAL 9006
<b>ACCENT X5</b>		
AC5602017069000	ACCENT X5	1x70W,HI,ECG,RAL 9006









# CCS T5

## CCS T5

Svietidlá radu CCS (colour changing system) si nájdu svoje miesto hlavne v aplikáciach, v ktorých sa uplatní náladové osvetlenie dosiahnuteľné prostredníctvom miešania farieb, dynamické osvetlenie, v priestoroch vyžadujúcich simuláciu priebehu denného osvetlenia, no dajú sa použiť aj pri riešení celkového osvetlenia. Rad CCS je v ponuke s priamym vyžarovaním ako vstavaná, prisadená alebo závesná varianta, alebo s priamo-nepriamym vyžarovaním ako prisadená alebo závesná varianta. Základ svietidla tvorí špeciálny opálový difúzor. Jeho vlastnosti zabezpečujú dokonalé zmiešavanie farieb na povrchu, čoho výsledkom je homogénna farebná plocha - jednotlivé farebné žiarivky nie sú rozoznateľné.

### KONŠTRUKCIA

**Teleso svietidla:** extrudované hliníkové profily, povrchovo upravené elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9007 (šedý hliník – jemná mikroštruktúra).

Pri variante priameho a nepriameho vyžarovania (CCS DIR/INDIR) sú na spodku svietidla vyseknuté otvory prekryté opálovým difúzorom (PC). Vnútorne steny svietidla sú obložené bielym plechom s difúznym rozptylom svetla, povrchovo upravené elektrostaticky nanášanou práškovou farbou - odtieň RAL 9003 (matná biela).

**Difúzor:** opálový plast (liaty PMMA). Pod difúzorom je umiestnený priehľadný plastový kryt (SAN), ktorý chráni difúzor svietidla pred prípadnými nečistotami. Difúzor je v svietidle uchytený prostredníctvom štyroch pružín a zaistený bezpečnostnými lankami proti úplnému vypadnutiu. Pre prístup do svietidla je difúzor potrebné vybrať pomocou špeciálnych nástrojov (nástroje sú súčasťou balenia). Pri verzii svietidla CCS určenej pre vstavanie do podhládu má hliníkový rám svietidla po krajoch rozšírený lem o 30 mm na každej strane (viď obr.).

### ELEKTRICKÁ VÝBAVA

Svietidlá sú štandardne vybavené stmievateľnými elektronickými predradníkmi (trieda EEL=A1) riadenými DALI signálom, ktoré umožňujú využiť všetky výhody svietidiel CCS - samostatné ovládanie každej farby (viac informácií v technickej prílohe).

#### Ostatné komponenty:

- svetelné zdroje: lineárne žiarivky T5 (16 mm) - svetelné zdroje sú dodané spolu so svietidlom
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- na zadnej strane svietidla je pre rýchle elektrické pripojenie do siete umiestnená trojpólová svorkovnica WIELAND 92.030.2053.0 (prierez vodičov max. 2,5 mm<sup>2</sup>), spolu s dvojpólovou svorkovnicou WIELAND 93.420.4553.0 pre rýchle pripojenie riadiaceho signálu (max. 2 x 0,75 mm<sup>2</sup>)

### PRÍSLUŠENSTVO

- držiaky svietidla pre vstavanú variantu
- závesné príslušenstvo
- rôzne typy elektronického príslušenstva umožňujúce programovanie farebných scén a vytváranie sekvencií podľa predstáv užívateľa (viac informácií v technickej prílohe)

## CCS T5

The **CCS (colour changing system) range of light fittings** are used mainly in applications that involve mood lighting achievable by mixing colours or dynamic lighting, in spaces requiring simulation of daylight changes, but they can also be used for general lighting. The CCS range is offered with direct illumination as recessed, surface mounted or suspended, or with direct-indirect illumination as recessed, surface mounted or suspended.

On the base of the light fixture is a special opal diffuser. Its properties ensure perfect blending of colours on surface, resulting in a homogenous colour area – individual coloured lamps are indistinguishable.

### CONSTRUCTION

**Housing:** extruded aluminium profiles, electrostatic powder coat finish – basic shade RAL 9007 (grey aluminium – fine microstructure).

The direct and indirect illumination variant (CCS DIR/INDIR) includes cutout openings at the bottom of the light fixture, covered with an opal diffuser (PC). Inner walls of the light fixture are covered in white sheet metal with diffuse light dispersion, electrostatic powder coat finish – RAL 9003 shade (matte white).

**Diffuser:** opal plastic (cast PMMA). Under the diffuser is a transparent plastic cover (SAN) protecting the diffuser from potential dirt.

The diffuser is attached to the light fixture using four springs and secured against complete fall-out by security wires. To access the light fixture, the diffuser must be taken out using special tools (they are part of delivery). The CCS version designed for recessing into ceilings has its aluminium frame widened by 30 mm on each side (see fig.).

### WIRING

As standard equipment, these light fixtures come equipped with dimmable electronic DALI signal-controlled control gears (class EEI=A1) that enable the use of all the advantages of CCS light fixtures – mainly, independent control of each colour (for more information see the technical appendix).

#### Other components:

- lamps: linear fluorescent lamps T5 (16 mm) – lamps are delivered with the light fixture
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- for fast electrical connection, a three-pole WIELAND 92.030.2053.0 terminal can be found in the back of the light fixture (conductors up to 2.5 mm<sup>2</sup> cross-section), together with a two-pole WIELAND 93.420.4553.0 terminal for fast connection of the control signal (up to 2 x 0,75 mm<sup>2</sup> cross-section)

### ACCESSORIES

- light fixture holders for the built-in version
- suspension accessories
- various types of electronic equipment that allow programming of colour scenes and creation of sequences of the user's choosing (for more information see the technical appendix)

## CCS T5

Die Leuchten der Reihe CCS (colour changing system) werden ihren Platz hauptsächlich in den Applikationen finden, in denen eine mittels des Farbgemisches erreichbare stimmungsvolle Beleuchtung und eine dynamische Beleuchtung in den die Simulation der Tagesbeleuchtung erfordernden Räumen zur Geltung kommen und sie können auch bei der Lösung der gesamten Beleuchtung verwendet werden. Die Reihe CCS ist im Angebot mit einer direkten Strahlung als eine Einbau-, Anbau- oder Hängevariante, oder mit direkter-indirekter Strahlung als eine Anbau- oder Hängevariante.

Die Leuchtengrundlage bildet ein spezieller Opaldiffusor. Seine Eigenschaften gewährleisten eine vollkommene Mischung der Farben an der Oberfläche, deren Ergebnis eine homogene Farbfläche ist – die einzelnen Farbleuchtstoffröhren sind nicht erkennbar.

### KONSTRUKTION

**Leuchtenkörper:** extrudierte Aluminiumprofile, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9007 (Graualuminium - Mikrostruktur)

Bei der Variante direkter und indirekter Strahlung (CCS DIR/INDIR) sind am Unterteil der Leuchte Öffnungen ausgestanzt, die mit dem Opaldiffusor (PC) verdeckt sind. Die Innenwände der Leuchte sind mit Weißblech mit diffuser Lichtstreuung belegt, sie haben Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe - RAL 9003 (mattweiß).

**Diffusor:** Opalkunststoff (gegossener PMMA). Unter dem Diffusor ist ein durchsichtiger Kunststoffdeckel (SAN) angebracht, der den Diffusor der Leuchte gegen eventuelle Unreinheit schützt.

Der Diffusor ist an der Leuchte mit vier Federn befestigt und mit Sicherheitsseilen gegen völligem Ausfall gesichert. Für den Zugang zur Leuchte ist es notwendig, den Diffusor mit speziellen Werkzeugen (Werkzeug bildet den Bestandteil der Lieferung) herauszunehmen. Bei der Leuchtenausführung CCS, die zum Einbau in die Untersicht bestimmt ist, hat ein Aluminiumrahmen am Rand den Saum um 30 mm an jeder Seite verbreitert (siehe Abb.).

### ELEKTRISCHE AUSRÜSTUNG

Leuchten sind standardmäßig mit den mit DALI-Signal gesteuerten elektronischen Dimmvorschaltgeräten (Klasse EE1=A1) ausgerüstet, die es ermöglichen, alle Vorteile der Leuchten CCS auszunutzen – selbständige Steuerung jeder Farbe (mehr Informationen in technischer Anlage)

#### Andere Komponente:

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm) - die Lichtquellen werden zusammen mit der Leuchte geliefert
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- auf der Rückseite der Leuchte ist für den schnellen Anschluß zum Netz eine dreipolige Klemmleiste WIELAND 92.030.2053.0 (Leiterdurchschnitt von max. 2,5 mm<sup>2</sup>) zusammen mit einer zweipoligen Klemmleiste WIELAND 93.420.4553.0 für schnellen Anschluß des Steuersignals (max. 2 x 0,75 mm<sup>2</sup>) angebracht

### ZUBEHÖR

- Leuchtehalter für die Einbauvariante
- Hängezubehör
- verschiedene Typen des elektronischen Zubehörs, das die Programmierung der Farbszenen und die Bildung der Sequenzen nach den Vorstellungen des Benutzers ermöglicht (mehrere Informationen in technischer Anlage)

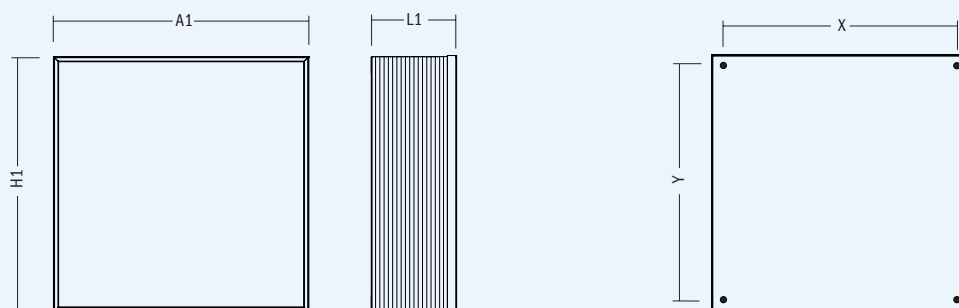


# CCS T5

## OPAL T5

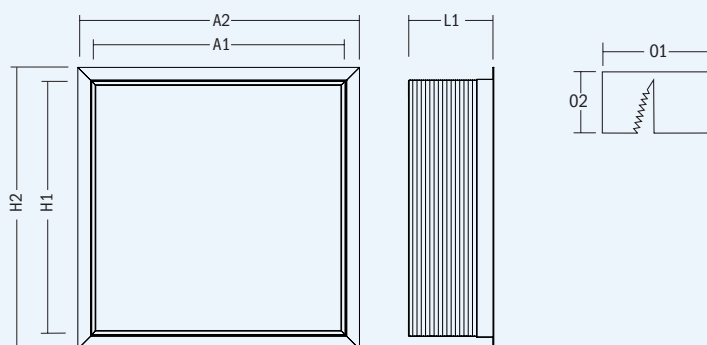


### SURFACE MOUNTED/SUSPENDED



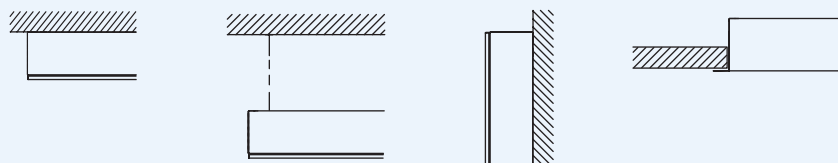
	POWER			LAMP	DIMENSIONS			FIXING	
	RED	GREEN	BLUE		A1	H1	L1	X	Y
CCS T5 OPAL	2x14	2x14	2x14	T5	600	600	200	550	550
CCS T5 OPAL	2x28	2x28	2x28	T5	600	1200	200	550	1150
CCS T5 OPAL	4x28	4x28	4x28	T5	1200	1200	200	1150	1150

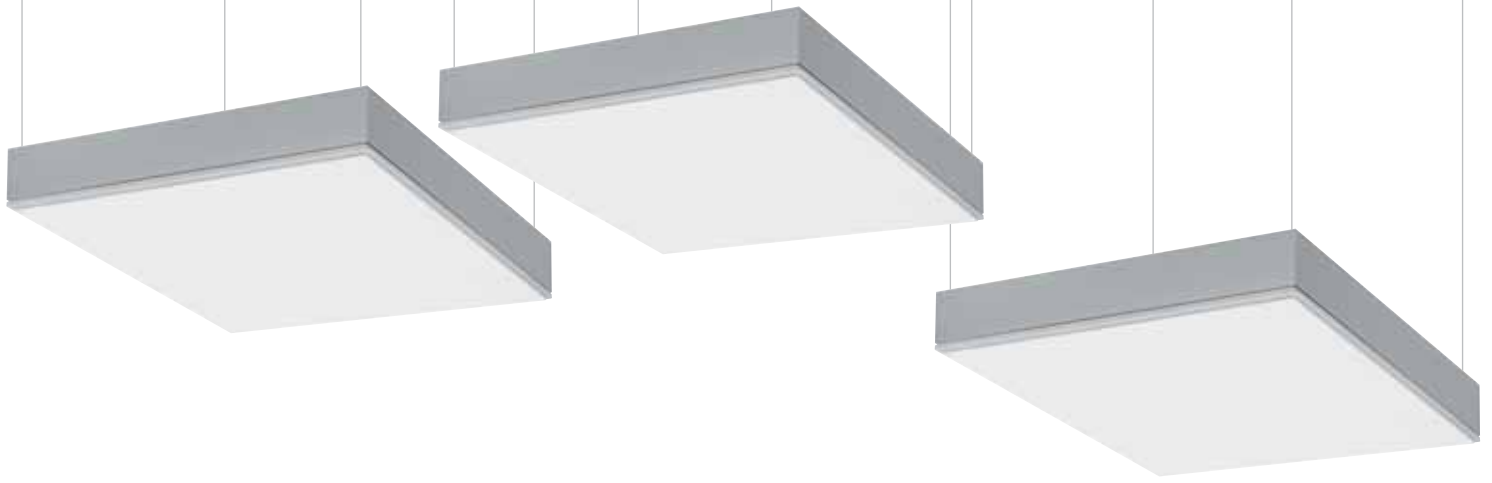
### RECESS MOUNTED



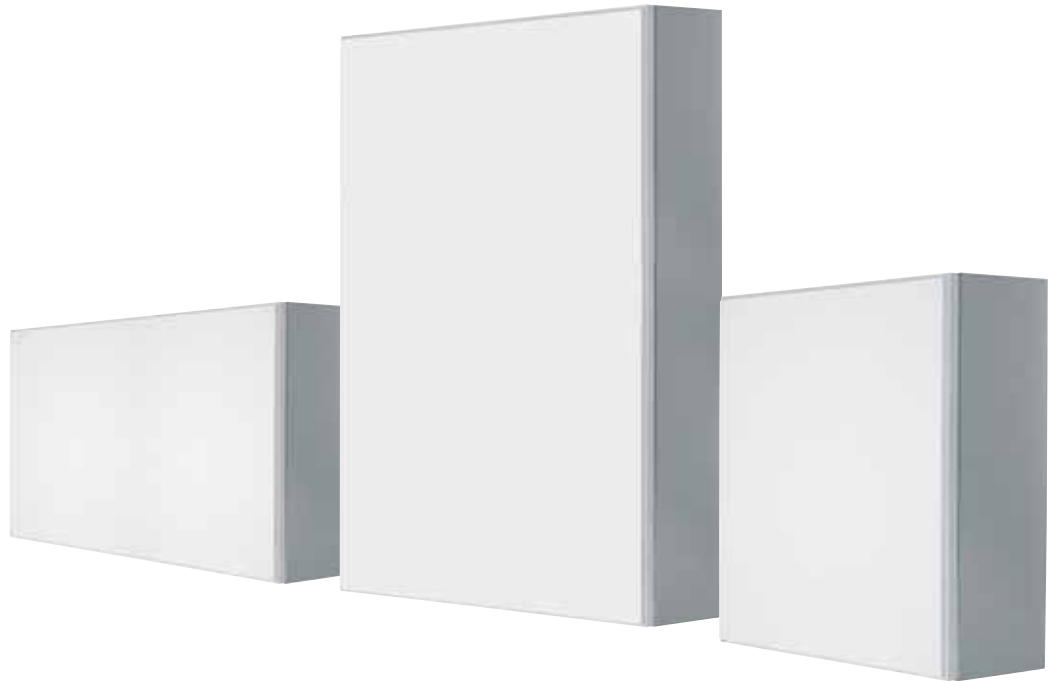
	POWER			LAMP	DIMENSIONS					HOLE	
	RED	GREEN	BLUE		A1	A2	H1	H2	L1	01	02
CCS T5 OPAL PB	2x14	2x14	2x14	T5	600	660	600	660	200	625	625
CCS T5 OPAL PB	2x28	2x28	2x28	T5	600	660	1200	1260	200	625	1225
CCS T5 OPAL PB	4x28	4x28	4x28	T5	1200	1260	1200	1260	200	1225	1225

### INSTALLATION

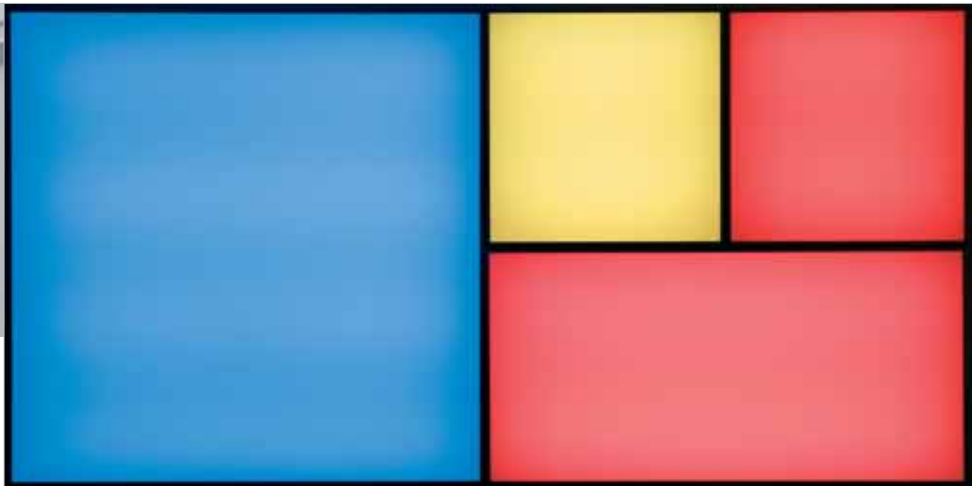




CCS T5

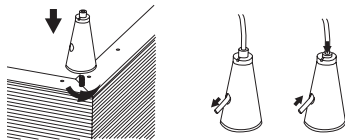


OPAL

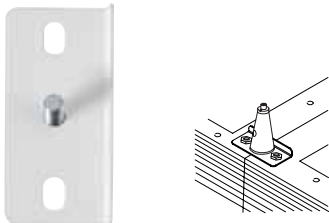


ORDER CODE	TYPE	SPECIFICATION
<b>CCS T5</b>		
<b>CCS T5 OPAL</b>		
CC13002614BA000	CCS T5 OPAL	6x14W,ECG DALI,RAL 9006
CC13002628BA000	CCS T5 OPAL	6x28W,ECG DALI,RAL 9006
CC13002C28BA000	CCS T5 OPAL	12x28W,ECG DALI,RAL 9006
<b>ACCESSORIES</b>		
<b>SUSPENSION</b>		
CC3150000000000	SUSPENSION CCS (4 pieces)	CCS T5
CC520000000A000	CONNECTING PIECE CCS 2x (1 piece)	CCS T5
CC730000000A000	CONNECTING PIECE CCS 3x (1 piece)	CCS T5
CC640000000A000	CONNECTING PIECE CCS 4x (1 piece)	CCS T5
<b>BRACKET</b>		
CC400000000A000	BRACKET CCS (4 pieces)	CCS T5
<b>CCS PB T5 OPAL</b>		
CCA3002614BA000	CCS PB T5 OPAL	6x14W,ECG DALI,RAL 9006
CCA3002628BA000	CCS PB T5 OPAL	6x28W,ECG DALI,RAL 9006
CCA3002C28BA000	CCS PB T5 OPAL	12x28W,ECG DALI,RAL 9006

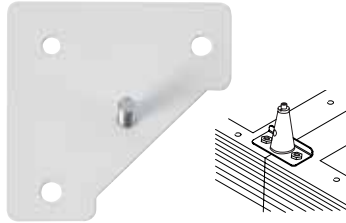
SUSPENSION CCS



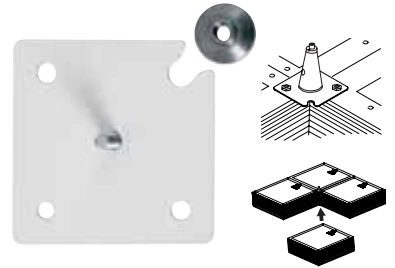
CONNECTING PIECE CCS 2x



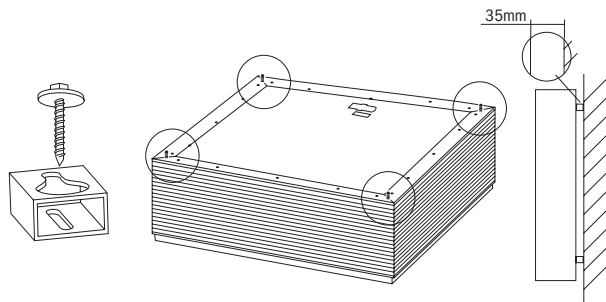
CONNECTING PIECE CCS 3x



CONNECTING PIECE CCS 4x



BRACKET CCS





# CCS T5

## THE DYNAMICS OF LIGHT AND COLOUR: BAR – BAR REFERENCE

### The project and the challenge

Skalica is smaller historical city placed in western part of Slovakia. In the silent part of the city is located building for sport and leisure time – squash centrum. This building consists of two parts – part for sport (two squash courts, showers) and relax part (bar). After squash game people can relax in next-door situated bar, called BAR-BAR. Bar is very good equipped with modern interior and very rich menu of alco and nealco drinks. The goal of the project was to realize some unique designed bar, which can simulate different feelings for people – either relax atmosphere after sport match – or different exciting atmospheres for evening party.

### Design

Equipment of the bar is in three basic tones – black, red and creamy. This classic bar-trio become a solid ground for a colour firework above them, so Bar could turn into a showroom of modern RGB technology. One of the features contributing to the right atmosphere for spending a few pleasant hours in the centre is the unusual lighting solution.

By creating of scenes architects solved completely different problem as few years ago: „To create similar colour show as we wanted to achieve before few years, was now child’s play. Now we could choose from infinite colour palette, we almost became crazy“, said lead architect of this project. After all they decided for 14 lighting scenes, from illusion of day light, through afternoon silent till evening club atmosphere.

### Dialux project

For better vision, how will final project look like, we simulate all scenes in the latest version of light calculation software – Dialux 4.3. It has several important improvements against the older versions, that helps planners especially with colour changing luminaires, the main are:

- calculating the light distribution, taking into account the spectral radiation of the light
- the selection of lamps from a lamp PlugIn for a desired luminaire; the selected lamp from a lamp PlugIn can contain the following information:
  - technical information like luminous flux, power consumption, voltage, etc.
  - a new light distribution curve (LDC) for example with reflector lamps
  - maintenance factors for the lamp
  - spectral light distribution
  - pictures, text, article names and numbers
  - further marketing relevant information
  - colour filters for luminaires. DIALux includes a large quantity of available and measured colour filters which influence in addition to the used lamp the spectral light distribution of the luminaire
- improved diagrams for the luminaire technique, better resolution and better design for the monitor and for the printouts
- a large quantity of new furniture and textures

### Components

In this installation we used 30 LED COB RGB panels and 17 special built in luminaires with T5 colour lamps. In the ceiling are built-in luminaires from CCS T5 range, improved only for this project. Concealed behind special diffuser material, designed to guarantee uniform light distribution and good colour intensity, are 2 green, 2 blue and 2 red T5 fluorescent lamps in each luminaire. They are operated on DALI electronic control gear units. DALI electronic control gear is characterised by optimised control of filament preheating as a function of dimming setting and luminous flux. This results in maximum lamp service life, even in the event of frequent and dynamic dimming operations.

DIGIDIM management system, completed with sequencer, is responsible for controlling the dynamic lighting solution in the bar area. In coordination with the architects and the builder owners, 14 coloured-light transition sequences were programmed, which can be called up very easily via an touch panels or a personal computer.

For atmosphere improvement and decoration of the bar, coloured balls were also used. There are colour changing RGB LEDs inside each ball, which are also individual adressable. As 64 addresses of DALI system was not enough for us, we have to group some luminaires equipped with 1-10V ballasts and control them with DALI/1-10V converters.

### Scene control

In places like this, an atmosphere in which people feel comfortable guarantees that customers stay longer and spend correspondingly much money. The illuminated wall and the illuminated ceiling contribute to creating pleasant surroundings, which was an important reason for deciding in favour of this lighting concept. With its



3D vizualization of architect vision of the interior



3D vizualization from dialux software



coloured highlights and vivid dynamic transitions, the bright but glare-free light creates the desired, "consumption-promoting" atmosphere.

Up to 16 lighting groups can be assigned and, in addition, 16 lighting scenes can be programmed and recalled. Bar-men can very easily recall different colour scenes by simple pressing of pre-programmed button. For slowly changing from one colour scene to another we used special sequencer, which recalls DALI scenes automatically, in pre-defined time. This means that the atmosphere in the room can be changed constantly. Dynamic light grabs our attention and arouses our interest. Whether it's a gentle change of colour in a bar or spectacular lighting for a shop window display or event, the intensity and the colour of the light can be changed automatically or at the touch of a button to create the right effects for the particular application. Such effects are based on dimmable electronic control gear in conjunction with coloured fluorescent lamps and/or LED modules.

The Bar-Bar is impressive proof that innovative light concepts can be functional and aesthetically pleasing at the same time. The final effect seems very fine, helps to create complete different colour atmospheres, and becomes very attractive for visitors, because each time they can relax in different atmosphere.









# PLASTIC

## PLASTIC

**Tradičné svietidlá s plastovými difúzormi rôznych veľkostí a povrchov. V kombinácii s lineárnymi alebo kompaktnými žiarivkami nájdu široké uplatnenie v rôznych aplikáciách. Svietidlá sú určené pre montáž na povrch (Plast D umožňuje aj závesnú montáž).**

### KONŠTRUKCIA

**Telesá svietidiel (Chubby, M, P, C, D):** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela). Dva otvory pre vodiče, jeden opatrený gumenou prechodkou.

**Difúzor (Chubby, C):** vyrobený z PMMA v opálovom alebo prizmatickom prevedení

**Difúzor (M, P):** vyrobený z polystyrénu (PS) v opálovom alebo prizmatickom prevedení

**Difúzor (D):** vyrobený z polykarbonátu (PC) v opálovom prevedení

**Koncovky (Chubby, M, P):** biely polystyrén (PS)

Plastový difúzor (Chubby, M, P) je uchytený za plechovým lemom svietidla fixovaný koncovkami na pružinách. Difúzor (C, D) je k telesu svietidla prichytený otočnými klipsami. Tieto riešenia umožňujú jednoduchý prístup do svietidiel a beznástrojovú výmenu svetelných zdrojov. Všetky plastové difúzory sú UV stabilizované.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá nie sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm), T8 (26 mm), kompaktné žiarivky TC-L, TC-S, TC-DD (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- skrutkovacia svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny (verzie 1x36/58W len s 1h)

## PLASTIC

**Traditional light fittings with plastic diffusers of various sizes and surfaces. Combined with linear or compact fluorescent lamps, they can be used in numerous applications. The light fittings are designed for surface installation (Plast D also allows pendant installation).**

### CONSTRUCTION

**Housing (Chubby, M, P, C, D):** sheet steel, electrostatic powder coat finish – basic shade RAL 9003 (signal white). Two openings for conductors, one equipped with a rubber reducer

**Diffuser (Chubby, C):** made of PMMA in opal or prismatic finish

**Diffuser (M, P):** made of polystyrene (PS) in opal or prismatic finish

**Diffuser (D):** made of polycarbonate (PC) in opal finish

**Endings (Chubby, M, P):** white polystyrene (PS)

The plastic diffuser (Chubby, M, P) is attached behind the rim of the light fixture and fixed by endings on springs. The diffuser (C, D) is attached to the body by rotating clips. Such solutions allow easy access to the light fixture and tool-free lamp replacement. All plastic diffusers are UV-stabilised.

### WIRING

**Light fixtures can be equipped with:**

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, lighting fixtures are not standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signals)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm), T8 (26 mm), compact fluorescent lamps TC-L, TC-S, TC-DD (lamps must be ordered separately)
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> diameter
- a screw terminal allows connecting conductors up to 2.5 mm<sup>2</sup> cross-section
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request (version 1x36/58W only 1 hr)

## PLASTIC

**Traditionelle Leuchten mit Kunststoffdiffusoren verschiedener Größen und Oberflächen. In der Kombination mit linearen oder kompakten Leuchtstoffröhren kommen sie in verschiedenen Applikationen zur Geltung. Die Leuchten sind zum Oberflächeneinbau bestimmt (Kunststoff D ermöglicht auch den Hängeeinbau).**

### KONSTRUKTION

**Leuchtenkörper (Chubby, M, P, C, D):** Stahlblech, Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe - Grundton RAL 9003 (Signalweiß). Zwei Öffnungen für Leiter, eine ist mit Gummidurchführung versehen.

**Diffusor (Chubby, C):** aus PMMA in einer Opalausführung oder einer prismatischen Ausführung hergestellt

**Diffusor (M, P):** aus Polystyrol (PS) in einer Opalausführung oder einer prismatischen Ausführung hergestellt

**Diffusor (D):** aus Polykarbonat (PC) in einer Opalausführung hergestellt

**Endstücke (Chubby, M, P):** weißes Polystyrol (PS)

Der Kunststoffdiffusor (Chubby, M, P) ist hinter dem Blechsaum der Leuchte befestigt und mit Endstücken an den Federn fixiert. Der Diffusor (C, D) ist an den Leuchtenkörper mit Drehclips befestigt. Diese Lösungen ermöglichen einfachen Zugang zu Leuchten und Austausch der Lichtquellen ohne Werkzeug. Alle Kunststoffdiffusoren sind UV-stabilisiert.

### ELEKTRISCHE AUSRÜSTUNG

**Die Leuchten können wie folgt ausgerüstet sein:**

- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, Klasse EEI=B1 auf Wunsch, Leuchten sind nicht standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert sein)

**Andere Komponente:**

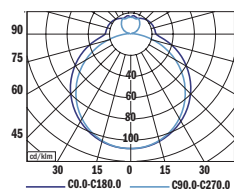
- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm), T8 (26 mm), kompakte Leuchtstofflampen TC-L, TC-S, TC-DD (die Lichtquellen sind extra zu bestellen)
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine Schraubklemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Leuchten können auf Wunsch mit Noteinheiten mit einem unabhängigen Betrieb von 1 oder 3 Stunden ausgerüstet werden (Ausführungen 1x36/58W nur mit 1 Std.)

# PLASTIC

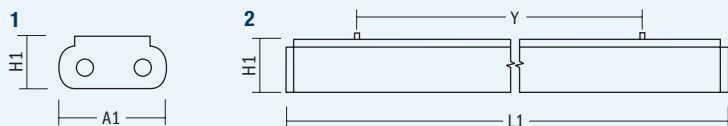
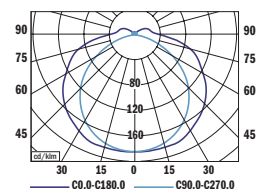
## CHUBBY OPAL/PRISMA T8/T5

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T5 G5	T8 G13	CCG EEI-B2	CCG EEI-B1	AA EEI-A2	AA EEI-A1	AA EEI-A1	AA EEI-A1	AA EEI-A1	EMERGENCY	F	IP 40
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CHUBBY OPAL 2x36W

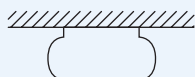


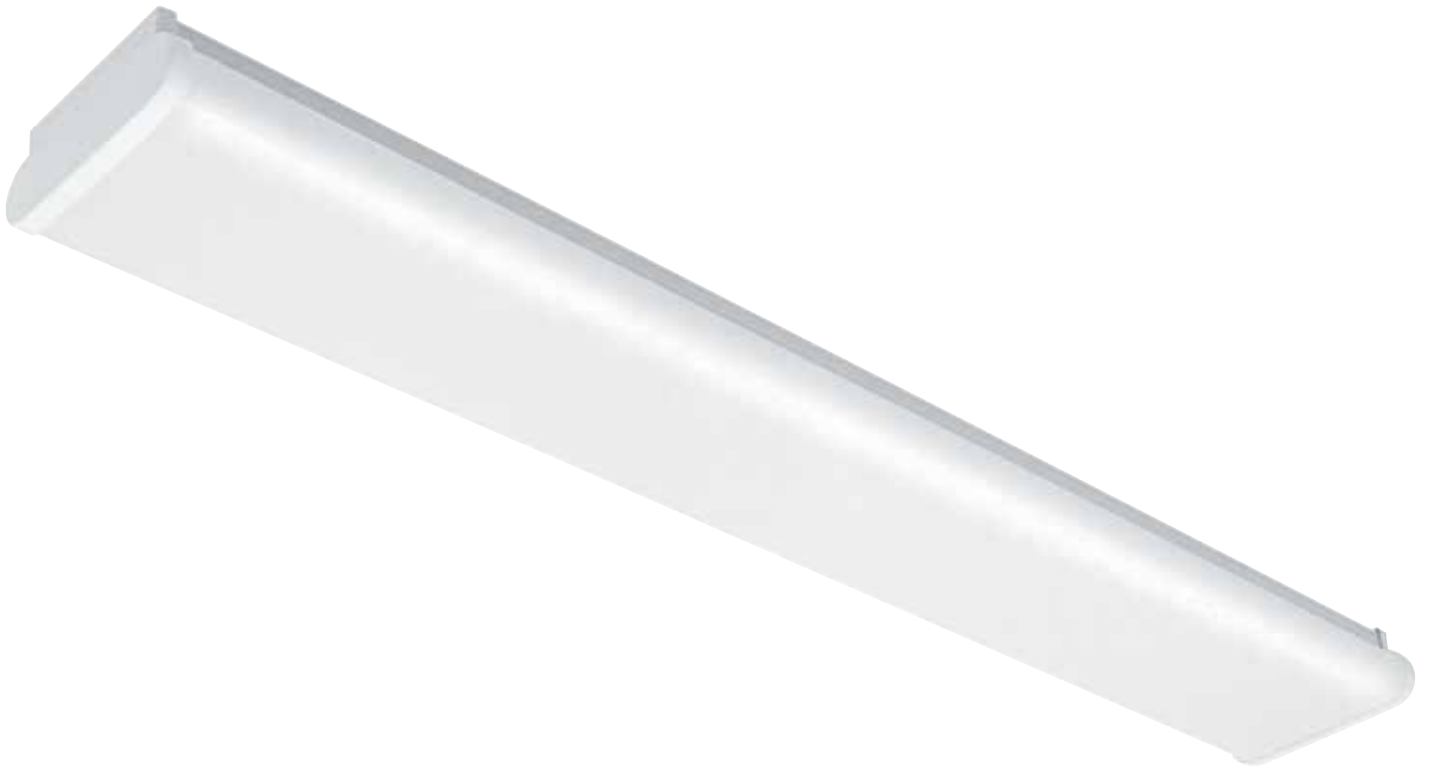
CHUBBY PRISMA 2x36W



	OPTIC		POWER	LAMP	DIMENSIONS			FIXING Y
	OPAL	PRISMA			A1	L1	H1	
Chubby T8	•	•	2x18	T8	195	630	70	437
Chubby T8	•	•	2x36	T8	195	1255	70	1040
Chubby T8	•	•	2x58	T8	195	1535	70	1340
Chubby T5	•	•	2x14	T5	195	630	70	437
Chubby T5	•	•	2x24	T5	195	630	70	437
Chubby T5	•	•	2x28	T5	195	1255	70	1040
Chubby T5	•	•	2x35	T5	195	1535	70	1340
Chubby T5	•	•	2x49	T5	195	1535	70	1340
Chubby T5	•	•	2x54	T5	195	1255	70	1040
Chubby T5	•	•	2x80	T5	195	1535	70	1340

INSTALLATION





CHUBBY OPAL 2x36W

OPAL



PRISMA



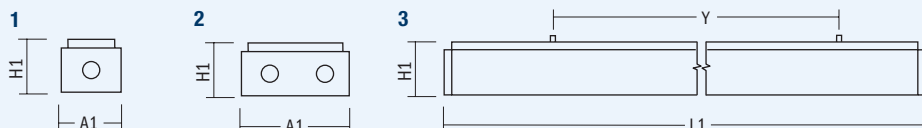
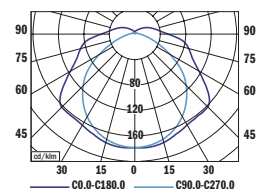


# PLASTIC

## PLAST M PRISMA T8/T5

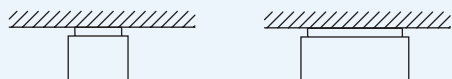
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T5 G5	T8 G13	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP 40
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PLAST M PRISMA 2x36W



	OPTIC PRISMA	POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
					A1	L1	H1	
PLAST M T8	•	1x18	T8	1,3	70	625	70	415
PLAST M T8	•	1x36	T8	1,3	70	1255	70	1040
PLAST M T8	•	1x58	T8	1,3	70	1535	70	1320
PLAST M T8	•	2x18	T8	2,3	150	625	70	437
PLAST M T8	•	2x36	T8	2,3	150	1255	70	1040
PLAST M T8	•	2x58	T8	2,3	150	1535	70	1320
PLAST M T5	•	1x14	T5	1,3	70	625	70	415
PLAST M T5	•	1x24	T5	1,3	70	625	70	415
PLAST M T5	•	1x28	T5	1,3	70	1255	70	1040
PLAST M T5	•	1x35	T5	1,3	70	1535	70	1320
PLAST M T5	•	1x49	T5	1,3	70	1535	70	1320
PLAST M T5	•	1x54	T5	1,3	70	1255	70	1040
PLAST M T5	•	1x80	T5	1,3	70	1535	70	1320
PLAST M T5	•	2x14	T5	2,3	150	625	70	437
PLAST M T5	•	2x24	T5	2,3	150	625	70	437
PLAST M T5	•	2x28	T5	2,3	150	1255	70	1040
PLAST M T5	•	2x35	T5	2,3	150	1535	70	1340
PLAST M T5	•	2x49	T5	2,3	150	1535	70	1340
PLAST M T5	•	2x54	T5	2,3	150	1255	70	1040
PLAST M T5	•	2x80	T5	2,3	150	1535	70	1340

INSTALLATION





PLAST M 2x36W

1x...



2x...

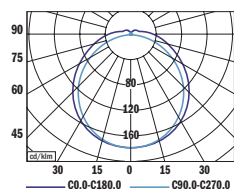


# PLASTIC

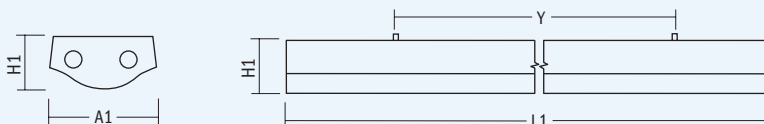
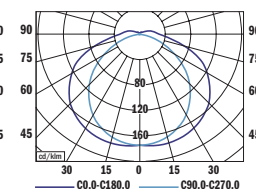
## PLAST P OPAL/PRISMA T8



PLAST P OPAL 2x36W

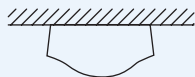


PLAST P PRISMA 2x36W



	OPTIC		POWER	LAMP	DIMENSIONS			FIXING Y
	OPAL	PRISMA			A1	L1	H1	
PLAST P	•	•	2x18	T8	200	630	70	430
PLAST P	•	•	2x36	T8	200	1255	70	1040
PLAST P	•	•	2x58	T8	200	1540	70	1340

INSTALLATION





PLAST P OPAL 2x18W

OPAL



PRISMA

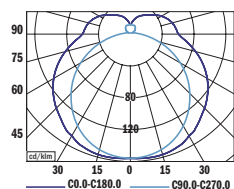


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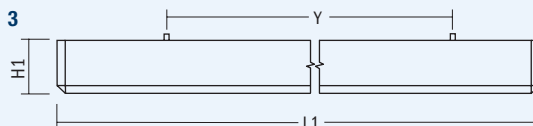
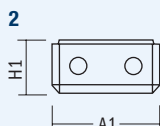
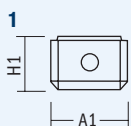
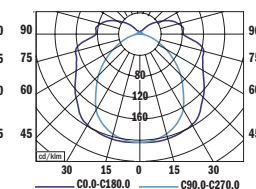
## PLAST C OPAL/PRISMA T8



PLAST C OPAL 2x36W

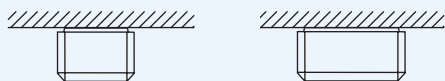


PLAST C PRISMA 2x36W



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
	OPAL	PRISMA				A1	L1	H1	
PLAST C	•	•	1x36	T8	1,3	110	1270	88	900
PLAST C	•	•	1x58	T8	1,3	110	1570	88	1200
PLAST C	•	•	2x36	T8	2,3	190	1270	88	900
PLAST C	•	•	2x58	T8	2,3	190	1570	88	1200

INSTALLATION





PLAST C OPAL 2x36W

OPAL



PRISMA

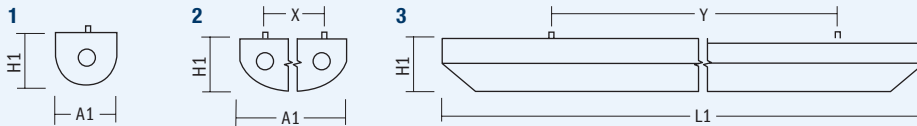
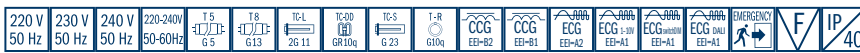
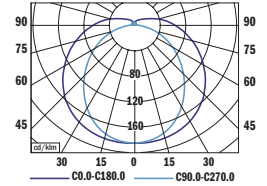




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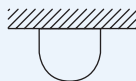
## PLAST D OPAL T8/T5/TC-L/TC-S/TC-DD

PLAST D OPAL 2x36W



	OPTIC OPAL	POWER	LAMP	PICTURE	DIMENSIONS			FIXING	
					A1	L1	H1	X	Y
PLAST D	•	1x18	T8	1,3	100	675	65	50	390
PLAST D	•	1x36	T8	1,3	100	1285	65	50	1010
PLAST D	•	1x58	T8	1,3	100	1585	65	50	1310
PLAST D	•	2x18	T8	2,3	180	640	62	93	390
PLAST D	•	2x36	T8	2,3	180	1250	62	93	1010
PLAST D	•	2x58	T8	2,3	180	1550	62	93	1310
PLAST D	•	3x18	T8	2,3	320	640	62	233	390
PLAST D	•	3x36	T8	2,3	320	1250	62	233	1010
PLAST D	•	4x18	T8	2,3	320	640	62	233	390
PLAST D	•	4x36	T8	2,3	320	1250	62	233	1010
PLAST D	•	1x14	T5	1,3	100	670	65	50	390
PLAST D	•	1x24	T5	1,3	100	670	65	50	390
PLAST D	•	1x28	T5	1,3	100	1285	65	50	1010
PLAST D	•	1x35	T5	1,3	100	1585	65	50	1310
PLAST D	•	1x54	T5	1,3	100	1285	65	50	1010
PLAST D	•	1x80	T5	1,3	100	1585	65	50	1310
PLAST D	•	2x14	T5	2,3	180	640	62	93	390
PLAST D	•	2x24	T5	2,3	180	640	62	93	390
PLAST D	•	2x28	T5	2,3	180	1250	62	93	1010
PLAST D	•	2x35	T5	2,3	180	1550	62	93	1310
PLAST D	•	2x54	T5	2,3	180	1250	62	93	1010
PLAST D	•	2x80	T5	2,3	180	1550	62	93	1310
PLAST D	•	3x14	T5	2,3	320	640	62	233	390
PLAST D	•	3x24	T5	2,3	320	640	62	233	390
PLAST D	•	3x28	T5	2,3	320	1250	62	233	1010
PLAST D	•	3x35	T5	2,3	320	1550	62	233	1310
PLAST D	•	4x14	T5	2,3	320	640	62	233	390
PLAST D	•	4x24	T5	2,3	320	640	62	233	390
PLAST D	•	4x28	T5	2,3	320	1250	62	233	1010
PLAST D	•	4x35	T5	2,3	320	1550	62	233	1310
PLAST D	•	2x18	TC-L	2,3	270	270	63	60	180
PLAST D	•	2x24	TC-L	2,3	400	400	63	190	310
PLAST D	•	2x11	TC-S	2,3	270	270	63	60	180
PLAST D	•	1x22	TC-DD	2,3	270	270	63	60	180
PLAST D	•	1x32	T-R	2,3	400	400	63	190	310

INSTALLATION





PLAT D OPAL TC-DD 1x22W

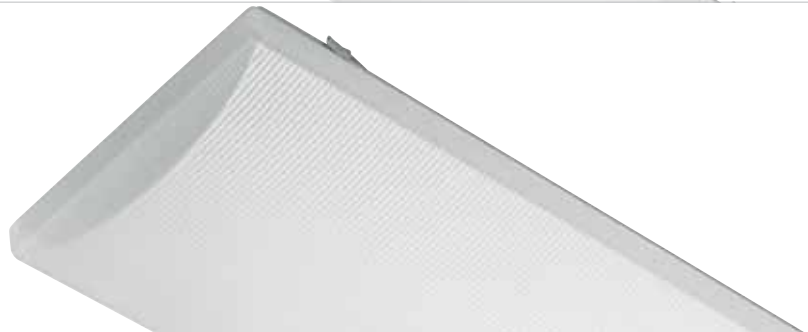
1x...



2x...



3x... 4x...



# PLASTIC

## PLAST H

## PLAST H

Svietidlo jednoduchého účelného dizajnu s plastovým difúzorom dostupné v rôznych dĺžkových prevedeniach. Vďaka zvýšenej odolnosti proti vniknutiu pevných predmetov a striekajúcej vode nájde uplatnenie v rôznych aplikáciách - obzvlášť tam, kde je vyžadovaná rýchla inštalácia, jednoduchá údržba a čistenie svietidiel, resp. v priestoroch so zvýšeným rizikom korózie.

### KONŠTRUKCIA

**Teleso svietidla:** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou –základný odtieň RAL 9003 (signálna biela). Dva otvory pre vodiče (možná priebežná montáž).

**Difúzor:** číry alebo opálový polykarbonát

**Koncovky:** biely polykarbonát. Tri oslabené miesta pre vytvorenie otvorov pre vodiče v každej koncovke (možná priebežná montáž).

Plastový difúzor je uchytенý za plechovým lemom svietidla bez akýchkoľvek skrutiek. Toto riešenie umožňuje jednoduchý prístup do svietidla a beznástrojovú výmenu svetelných zdrojov.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- elektronickými predradníkmi, štandardne triedy EEL=A2
- stmievateľnými elektronickými predradníkmi, trieda EEL=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm), svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>, držiaky proti vytrhnutiu vodičov zo svorkovnice
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

### PRÍSLUŠENSTVO

- gumenné prechodky pre káble (súčasť balenia)
- závesné príslušenstvo
- troj alebo päť žilové vedenie s pevným medeným jadrom prierezu 1,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C) pre možnosť priebežnej montáže

## PLAST H

**A light fixture with a simple and practical design, including a plastic diffuser, available in various lengths. Thanks to its higher protection to solid objects and wet conditions, it can be used in many applications – especially where fast installation, easy maintenance and fixture cleaning are required or in places with a higher risk of corrosion.**

### CONSTRUCTION

**Housing:** sheet steel, electrostatic powder coat finish – basic shade RAL 9003 (signal white). Two openings for conductors (through wiring possible)

**Diffuser:** clear or opal polycarbonate

**Ends:** white polycarbonate. Three pre-weakened spots to create holes for conductors in each end (through wiring possible)

The plastic diffuser is attached with no screws behind the rim of the light fixture. Such a solution allows easy access to the light fixture and tool-free lamp replacement.

### WIRING

**Light fixtures can be equipped with:**

- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm), lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- a screwless three or five pole connector allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section, holders to prevent the conductors from detaching
- an emergency version of light fixtures with autonomous operation of 1 or 3 hours is available on request

### ACCESSORIES

- rubber reducers for cables (part of delivery)
- suspension accessories
- PVC insulated solid copper three- or five-core conductors with 1.5 mm<sup>2</sup> in diameter (heat resistant up to 90°C) for the option of through wiring

## PLAST H

**Leuchten mit einfachem zweckdienlichen Design mit einem Kunststoffdiffusor, die in verschiedenen Längenausführungen verfügbar sind. Dank erhöhtem Widerstand gegen Eindringung von festen Gegenständen und spritzendem Wasser kommt sie in verschiedenen Applikationen zur Geltung – besonders dort, wo schnelle Installation, einfache Wartung und Reinigung der Leuchten gefordert ist, bzw. in Räumlichkeiten mit erhöhtem Korrosionsrisiko**

### KONSTRUKTION

**Leuchtenkörper:** Stahlblech, Oberflächenbehandlung mit elektrostatisch beschichteter Pulverfarbe - Grundton RAL 9003 (Signalweiß). Zwei Öffnungen für Leiter (möglicher durchgehender Einbau).

**Diffusor:** Klar- oder Opalpolykarbonat

**Endstücke:** weißes Polykarbonat. Drei abgeschwächte Stellen für die Bildung von Öffnungen für Leiter in jedem Endstück (möglicher durchgehender Einbau)

Der Kunststoffdiffusor ist hinter dem Blechsaum der Leuchte ohne Schrauben befestigt. Diese Lösung ermöglicht einfachen Zugang in die Leuchte und den Austausch der Lichtquellen ohne Werkzeug.

### ELEKTRISCHE AUSTRÜSTUNG

**Die Leuchten können wie folgt ausgerüstet sein:**

- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit elektronischen Dimmervorschaltgeräten, Klasse EEI=A1 (Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert werden)

**Andere Komponente:**

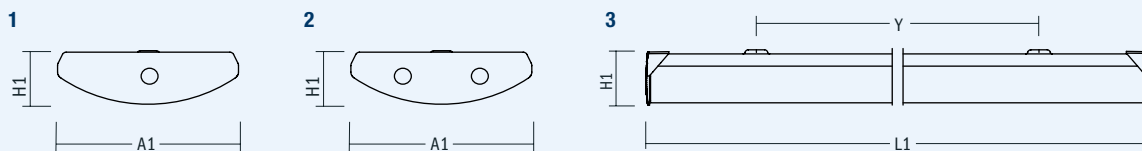
- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm) - die Lichtquellen sind extra zu bestellen
- Innenleiter mit festem Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen, die Halter gegen Ausreißen der Leiter aus der Klemmleiste
- Leuchten können auf Wunsch mit Noteinheiten mit Autonometrieb von 1 oder 3 Stunden ausgerüstet werden

### ZUBEHÖR

- Gummidurchführungen für Kabel (Bestandteil der Packung)
- Hängezubehör
- eine dreidradige oder fünfadriges Leitung mit festem Kupferkern mit einem Durchmesser von 1,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)

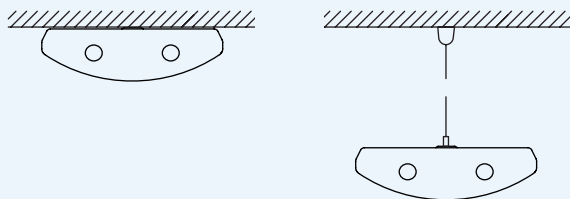
# PLASTIC

## PLAST H OPAL/PRISMA T5



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
	OPAL	PRISMA				A1	L1	H1	
PLAST-H	•	•	1x14	T5	1,3	172	594	53	400*
PLAST-H	•	•	1x24	T5	1,3	172	594	53	400*
PLAST-H	•	•	1x28	T5	1,3	172	1194	53	1000*
PLAST-H	•	•	1x35	T5	1,3	172	1494	53	1300*
PLAST-H	•	•	1x54	T5	1,3	172	1194	53	1000*
PLAST-H	•	•	1x49	T5	1,3	172	1494	53	1300*
PLAST-H	•	•	1x80	T5	1,3	172	1494	53	1300*
PLAST-H	•	•	2x14	T5	2,3	172	594	53	400*
PLAST-H	•	•	2x28	T5	2,3	172	1194	53	1000*
PLAST-H	•	•	2x35	T5	2,3	172	1494	53	1300*
PLAST-H	•	•	2x49	T5	2,3	172	1494	53	1300*

INSTALLATION





PLAST H OPAL

OPAL



PRISMA





# PLASTIC

## PLAST 1/2/3/4

### PLAST 1/2/3/4

#### KONŠTRUKCIA

**Telesá svietidiel (Plast 1, 2, 3, 4):** biely polykarbonát (PC). Jeden otvor pre prívodný vodič.

**Difúzor (Plast 1, 3):** polykarbonát v opálovom prevedení

**Difúzor (Plast 4):** polykarbonát v prizmatickom prevedení

**Difúzor (Plast 2):** PMMA v opálovom prevedení

**Klipsy:** polykarbonát

Plastový difúzor (verzie Plast 1/3/4) je uchytený k telesu svietidla pomocou dvoch polykarbonátových klipsov. Plastový difúzor pre svietidlo Plast 2 sa beznástrojovo uchytáva do spodku svietidla. Difúzor je utesený gumeným tesnením zabezpečujúcim krytie IP54/IP65 (Plast 2).

Všetky spôsoby uchytenia difúzorov umožňujú jednoduchý prístup do svietidiel a beznástrojovú výmenu svetelných zdrojov. Plastové difúzory sú UV stabilizované.

#### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá nie sú štandardne kompenzované

**Ostatné komponenty:**

- svetelné zdroje: žiarovky IT, kompaktné žiarivky TC-L, TC-S, TC-DD, kruhové žiarivky T-R (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- skrutkovacia trojpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny (platí len pre Plast 1/3/4 s priemerom 360mm - verzie 1x28/38W)

#### PRÍSLUŠENSTVO

- gumenné priechodky pre káble (súčasť balenia pre Plast 2)

## PLAST 1/2/3/4

### CONSTRUCTION

**Lamp bodies (Plast 1, 2, 3, 4):** white polycarbonate (PC). One slot for supply wire.

**Diffuser (Plast 1, 3):** polycarbonate in opal version

**Diffuser (Plast 4):** polycarbonate in prismatic version

**Diffuser (Plast 2):** PMMA in opal version

**Clips:** polycarbonate

The plastic diffuser (Plast 1/3/4 version) is mounted to the lamp housing by two polycarbonate clips. The plastic diffuser of the Plast 2 lamp will be mounted to the lamp bottom without instruments. The diffuser is sealed with rubber seal in order to cover the IP54/IP65 (Plast 2).

All types of diffuser mounting enable easy access to lamps and replacing of the light sources without instruments. The plastic diffusers are UV-stabilized.

### ELECTRIC EQUIPMENT

**The lamps can be equipped with:**

- conventional magnetic ballasts, medium-size category EEI=B2, EEI=B1 class on demand, the lamps are not standard compensated

**Other components:**

- light sources: IT fluorescent lamps, TC-L, TC-S, TC-DD fluorescent lamps, circular fluorescent lamps T-R (the light sources must be ordered separately)
- inner conductors with solid copper cross-section core 0,5 mm<sup>2</sup> in PVC insulation (thermal protection to 90°C)
- screw three pole terminal plates, which allow connecting wires with a cross-section to max. 2, 5 mm<sup>2</sup>
- the lamps can be on demand equipped with emergency units, which can be automatically operated from 1 to 3 hours (valid only for Plast 1/3/4 with 360mm diameter - versions 1x28/38W)

### ACCESSORIES

- rubber cable grommets (part of the package for Plast 2)

## PLAST 1/2/3/4

### KONSTRUKTION

**Leuchtenkörper (Kunststoff 1, 2, 3, 4):** weißes Polykarbonat (PC). Eine Öffnung für den Speiseleiter

**Diffusor (Kunststoff 1, 3):** Polykarbonat in einer Opalausführung

**Diffusor (Kunststoff 4):** Polykarbonat in einer prismatischen Ausführung

**Diffusor (Kunststoff 2):** PMMA in einer Opalausführung

**Klipps:** Polykarbonat

Der Kunststoffdiffusor (Ausführung Kunststoff 1/3/4) ist zum Leuchtenkörper mittels zwei Polykarbonatklipps befestigt. Der Kunststoffdiffusor für den Kunststoff 2 wird in den Unterteil der Leuchte ohne Werkzeug befestigt. Der Diffusor ist mit einer Gummidichtung gedichtet, die die Schutzart IP54/IP65 sichert (Kunststoff 2).

Alle Arten der Befestigung von Diffusoren ermöglichen den einfachen Zugang in die Leuchten und den Austausch der Lichtquellen ohne Werkzeug. Die Kunststoffdiffusoren sind UV-stabilisiert.

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten können ausgerüstet sein:

- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, die Klasse EEI=B1 auf Wunsch, die Leuchten sind nicht standardmäßig kompensiert

**Andere Komponenten:**

- Lichtquellen: Glühlampen IT, kompakte Leuchtstofflampen TC-L, TC-S, TC-DD, kreisförmige Leuchtstofflampen T-R (es ist notwendig die Lichtquellen extra zu bestellen)
- die Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine Schraubklemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- es ist möglich die Leuchten auf Wunsch mit Noteinheiten mit einem unabhängigen Betrieb von 1 oder 3 Stunden auszurüsten (es gilt nur für den Kunststoff 1/3/4 mit dem Durchmesser von 360 mm - Ausführungen 1x28/38W)

### ZUBEHÖR

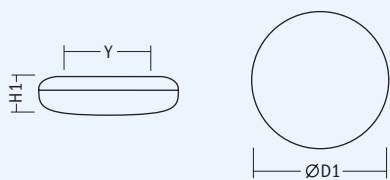
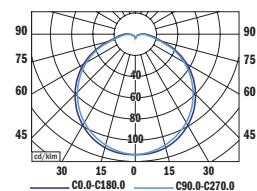
- Gummidurchführungen für Kabel (Bestandteil der Packung für den Kunststoff 2)

# PLASTIC

## PLAST 1 OPAL TC-DD/TC-S/T-R

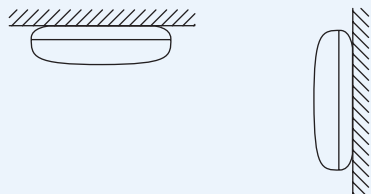
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	IT E 14	TC-S G 23	TC-DD GR10q	T-R G10q	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	IP40
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PLAST 1 OPAL T-R 32W



	OPTIC OPAL	POWER	LAMP	DIMENSIONS		FIXING
				D1	H1	Y
PLAST 1	•	1x16	TC-DD	270	86	115
PLAST 1	•	1x28	TC-DD	360	107	148
PLAST 1	•	1x38	TC-DD	360	107	148
PLAST 1	•	2x9	TC-S	270	86	115
PLAST 1	•	1x22	T-R	270	86	115
PLAST 1	•	1x32	T-R	360	107	148
PLAST 1	•	1x32+25	T-R+IT	360	107	148

INSTALLATION





PLAST 1 OPAL

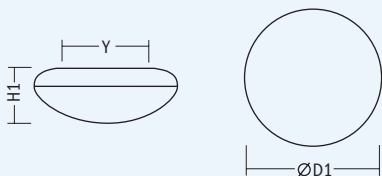
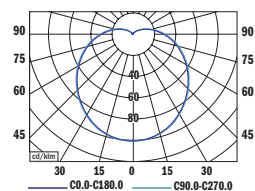


# PLASTIC

## PLAST 3 OPAL TC-DD/TC-S/T-R

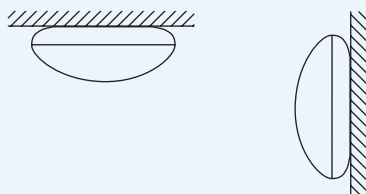
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	IT E 14	A 60 E 27	TC-S G 23	TC-DD GR10q	T-R G10q	CCG EE-B2	CCG EE-B1	ECG EE-A2	F	IP 40
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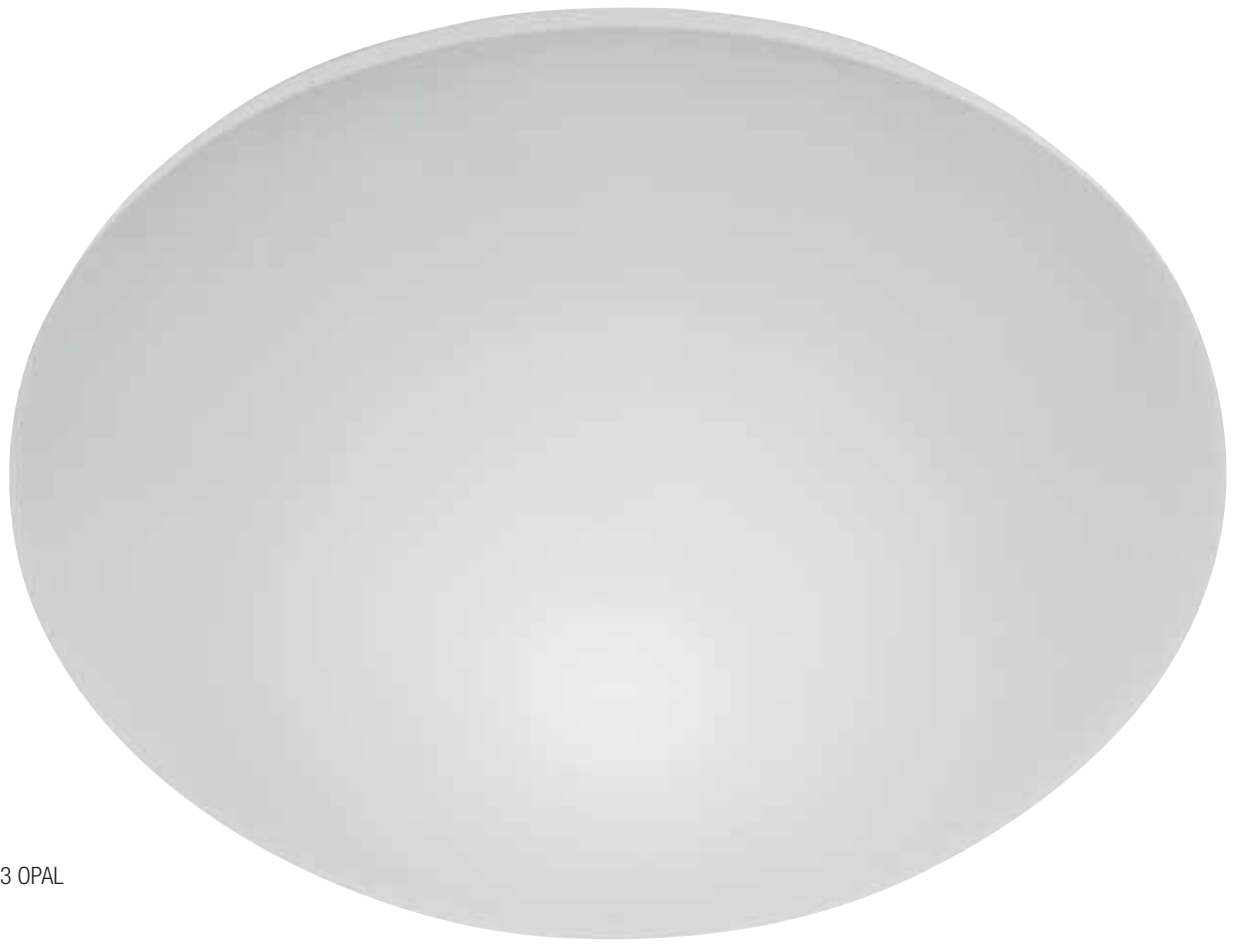
PLAST 3 OPAL T-R 1x32W



	OPTIC OPAL	POWER	LAMP	DIMENSIONS		FIXING
				D1	H1	Y
PLAST 3	•	1x16	TC-DD	270	136	115
PLAST 3	•	1x28	TC-DD	360	180	148
PLAST 3	•	1x38	TC-DD	360	180	148
PLAST 3	•	2x9	TC-S	270	136	115
PLAST 3	•	1x22	T-R	270	136	115
PLAST 3	•	1x32	T-R	360	180	148
PLAST 3	•	1x32+25	T-R+IT	360	180	148
PLAST 3	•	1x60	A60	270	136	115
PLAST 3	•	1x80	A60	360	180	148

INSTALLATION





PLAST 3 OPAL



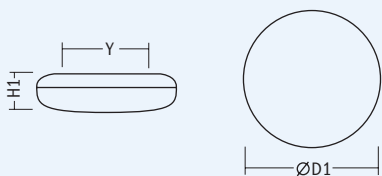
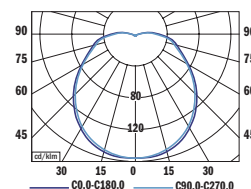


# PLASTIC

## PLAST 4 PRISMA TC-DD/TC-S/T-R

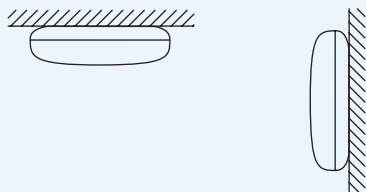
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	IT E 14	TC-S G 23	TC-DD GR10q	T-R G10q	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	IP40
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PLAST 4 PRISMA T-R 1x32W



	OPTIC PRISMA	POWER	LAMP	DIMENSIONS		FIXING
				D1	H1	Y
PLAST 4	•	1x16	TC-DD	270	86	115
PLAST 4	•	1x28	TC-DD	360	107	148
PLAST 4	•	1x38	TC-DD	360	107	148
PLAST 4	•	2x9	TC-S	270	86	115
PLAST 4	•	1x22	T-R	270	86	115
PLAST 4	•	1x32	T-R	360	107	148
PLAST 4	•	1x32+25	T-R+IT	360	107	148

INSTALLATION





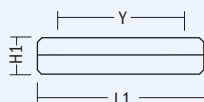
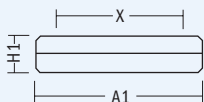
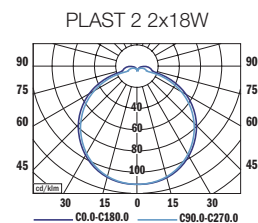
PLAST 4 PRISMA



# PLASTIC

## PLAST 2 OPAL TC-L/TC-S

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	TC-L 26 11	TC-S G 23	CCG E1-E2	F	IP 65	IP 54
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	OPTIC OPAL	POWER	LAMP	DIMENSIONS			FIXING	
				A1	L1	H1	X	Y
PLAST 2	•	2x18	TC-L	300	300	90	200	200
PLAST 2	•	1x9	TC-S	200	200	65	60	70
PLAST 2	•	2x11	TC-S	300	300	90	200	200
PLAST 2	•	2x9	TC-S	200	200	65	60	70

INSTALLATION





PLAST 2



# PLASTIC

## FORWALL

## FORWALL

**Nástenné svietidlá s plastovým difúzorom dostupné v troch tvarových prevedeniach. Vďaka zvýšenej odolnosti proti vniknutiu pevných predmetov a striekajúcej vode nájdu uplatnenie v rôznych aplikáciách - obzvlášť tam, kde je vyžadovaná rýchla inštalácia, jednoduchá údržba a čistenie svietidiel, resp. v priestoroch so zvýšeným rizikom korózie.**

### KONŠTRUKCIA

Plechová inštaláčna doska s otvormi pre montáž na povrch. Jeden otvor pre prívodný vodič.

**Teleso svietidla:** každý rad používa dva typy plastových rámkov, rozlišiteľných ako typy 11/12, 21/22 a 31/32. Rámiky sú vyrobené z polykarbonátu, uchytené k svietidlu dvomi skrutkami. Možnosť výberu z dvoch farieb – čiernej a bielej.

**Difúzor:** priesvitný alebo opálový polykarbonát. Plastový difúzor je skrutkami uchytený k telesu svietidla a prekrytý plastovým rámkom. Plastové difúzory sú UV stabilizované.

### ELEKTRICKÁ VÝBAVA

Svietidlá sú vybavené konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie.

#### Ostatné komponenty:

- svetelné zdroje: žiarovky A60, kompaktné žiarivky TC-S, TC-DD, kruhové žiarivky T-R (svetelné zdroje je nutné objednať zvlášť)
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková trojpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>

### PRÍSLUŠENSTVO

- gumenné priechodky pre káble (súčasť balenia)

## FORWALL

**Wall-mounted luminaries with plastic diffusers, available in three shapes. Thanks to its higher resistance to solid objects and splashing water, it can be used in many applications – especially where fast installation, easy maintenance and cleaning of luminaries is required, or in places with higher risk of corrosion.**

### CONSTRUCTION

Metal installation plate with holes for surface mounting. One opening for the conductor.

**Housing:** each range uses two types of plastic frame, distinguishable as type 11/12, 21/22 and 31/32. The frames are made of polycarbonate and attached to the luminaire using two screws. Two colour options are available - black and white.

**Diffuser:** transparent or opal polycarbonate. The plastic diffuser is screwed to the body and covered with a plastic frame. Plastic diffusers are UV-stabilised.

### WIRING

The luminaries are equipped with conventional magnetic control gears, standard class EEI=B2, class EEI=B1 is available on request.

#### Other components:

- lamps: A60 lamps, TC-S and TC-DD compact fluorescent lamps, T-R round fluorescent lamps (light sources must be ordered separately)
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- screwless three-pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section

### ACCESSORIES

- rubber reducers for cables (part of delivery)

## FORWALL

**Die Wandleuchten mit einem Kunststoffdiffusor, die in drei Formausführungen verfügbar sind. Dank der erhöhten Beständigkeit gegen die Eindringung von festen Gegenständen und spritzendem Wasser kommen sie in verschiedenen Applikationen zur Geltung – hauptsächlich dort, wo schnelle Installation, einfache Wartung und Reinigung von Leuchten erfordert sind, bzw. in Räumen mit erhöhtem Risiko vom Korrosion.**

### KONSTRUKTION

Die Blech-Installationsplatte mit Öffnungen für die Aufputzmontage. Eine Öffnung für den Zuführungsleiter.

**Leuchtenkörper:** jede Reihe verwendet zwei Typen der Kunststoffrahmen, die als Typen 11/12, 21/22 und 31/32 erkennbar sind. Die Rahmen sind aus dem Polykarbonat hergestellt, mit zwei Schrauben zu der Leuchte befestigt. Die Möglichkeit der Auswahl aus zwei Farben – schwarzer und weißer.

**Diffusor:** durchsichtiges Polykarbonat oder Opalpolykarbonat. Der Kunststoffdiffusor ist zum Leuchtenkörper mit Schrauben befestigt und mit dem Kunststoffrahmen verdeckt. Die Kunststoffdiffusoren sind UV-stabilisiert.

### ELEKTRISCHE AUSRÜSTUNG

Die Leuchten sind mit konventionellen magnetischen Vorschaltern ausgerüstet, standardgemäß der Klasse EEI=B2, die Klasse EEI=B1 auf Wunsch.

#### Andere Komponenten:

- Lichtquellen: Glühlampen A60, kompakte Leuchtstofflampen TC-S, TC-DD, Rundleuchtstofflampen T-R (es ist notwendig die Lichtquellen extra zu bestellen)
- die Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen

### ZUBEHÖR

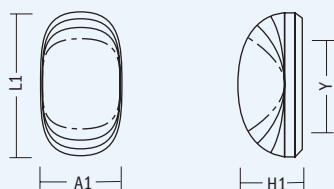
- Gummidurchführungen für Kabel (Bestandteil der Packung)



# PLASTIC

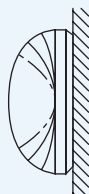
## FORWALL 10 TC-S/A 60

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	A 60 E 27	TC-S G 23	CCG E1-B2	F	IP 54
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	OPTIC		POWER	LAMP	DIMENSIONS			FIXING Y
	TRANSPARENT	OPAL			A1	L1	H1	
FORWALL 11	•	•	1x9	TC-S	150	280	110	88
FORWALL 11	•	•	2x9	TC-S	150	280	110	88
FORWALL 11	•	•	1x40	A 60	150	280	110	88
FORWALL 12	•	•	1x9	TC-S	150	280	110	88
FORWALL 12	•	•	2x9	TC-S	150	280	110	88
FORWALL 12	•	•	1x40	A 60	150	280	110	88

### INSTALLATION



FORWALL 11 OPAL



BLACK



11 OPAL



11 TRANSPARENT



WHITE



12 OPAL



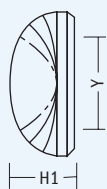
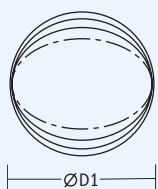
12 TRANSPARENT



# PLASTIC

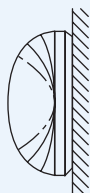
## FORWALL 20 TC-DD/TC-S/T-R/A 60

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	A 60 E 27	TC-S G 23	T-R G10q	TC-DD GR10q	CCG EE-R2	F	IP 54
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	OPTIC		POWER	LAMP	DIMENSIONS		FIXING Y
	TRANSPARENT	OPAL			D1	H1	
FORWALL 21	•	•	1x16	TC-DD	280	115	100
FORWALL 21	•	•	2x9	TC-S	280	115	100
FORWALL 21	•	•	1x22	T-R	280	115	100
FORWALL 21	•	•	1x60	A 60	280	115	100
FORWALL 22	•	•	1x16	TC-DD	280	115	100
FORWALL 22	•	•	2x9	TC-S	280	115	100
FORWALL 22	•	•	1x22	T-R	280	115	100
FORWALL 22	•	•	1x60	A 60	280	115	100

### INSTALLATION





FORWALL 21 OPAL

BLACK



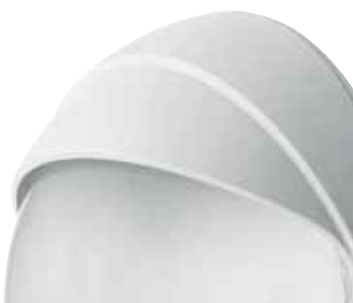
21 OPAL



21 TRANSPARENT



WHITE



22 OPAL



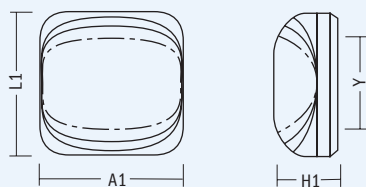
22 TRANSPARENT



# PLASTIC

## FORWALL 30 TC-DD/TC-S/T-R/A 60

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	A 60 E 27	TC-S G 23	T-R G10q	TC-DD GR10q	CCG EEI-R2	F	IP 54
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	OPTIC		POWER	LAMP	DIMENSIONS			FIXING Y
	TRANSPARENT	OPAL			A1	L1	H1	
FORWALL 31	•	•	1x16	TC-DD	280	280	115	100
FORWALL 31	•	•	2x9	TC-S	280	280	115	100
FORWALL 31	•	•	1x22	T-R	280	280	115	100
FORWALL 31	•	•	1x60	A 60	280	280	115	100
FORWALL 32	•	•	1x16	TC-DD	280	280	115	100
FORWALL 32	•	•	2x9	TC-S	280	280	115	100
FORWALL 32	•	•	1x22	T-R	280	280	115	100
FORWALL 32	•	•	1x60	A 60	280	280	115	100

INSTALLATION





FORWALL 31 OPAL

BLACK



31 OPAL



31 TRANSPARENT



WHITE



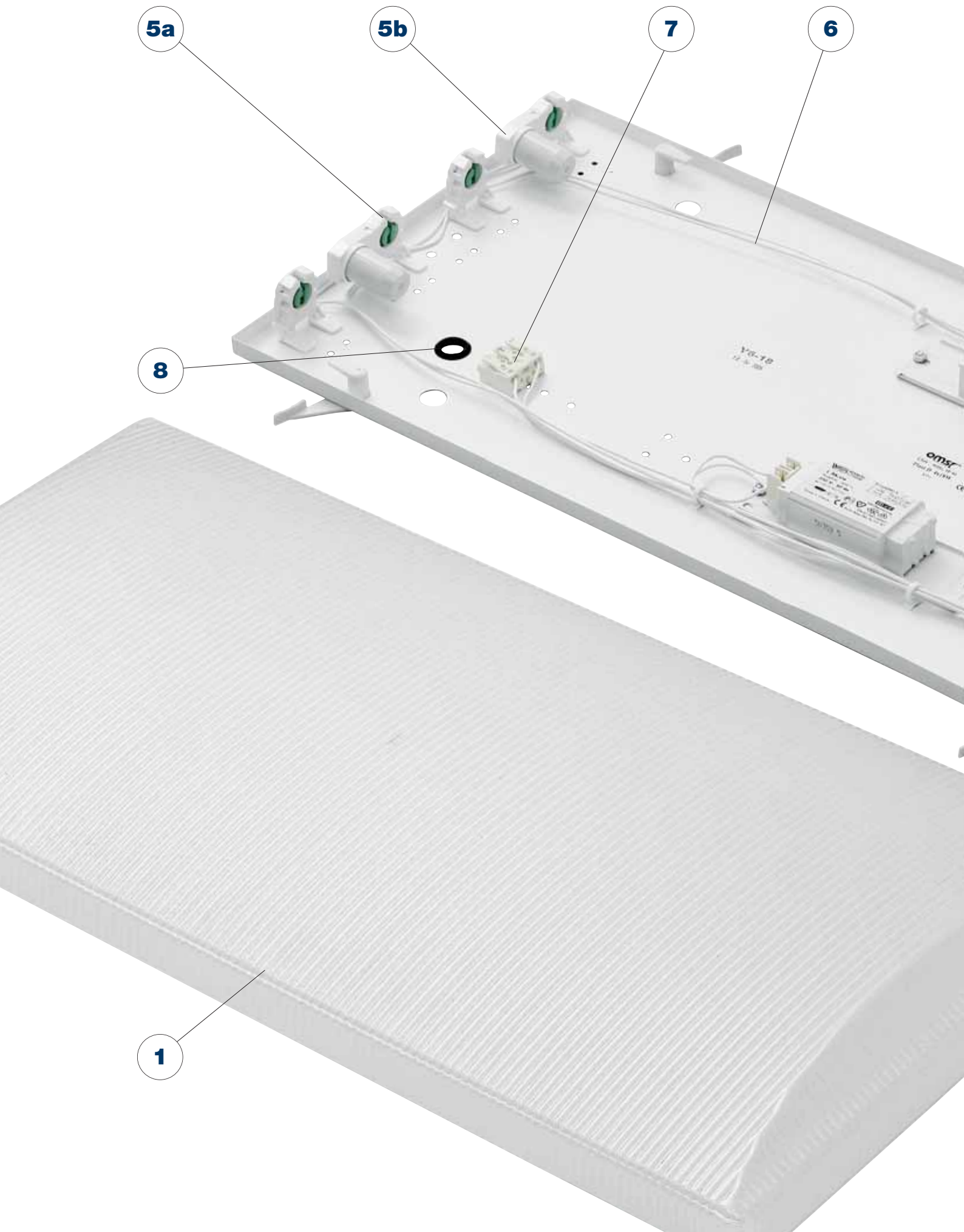
32 OPAL



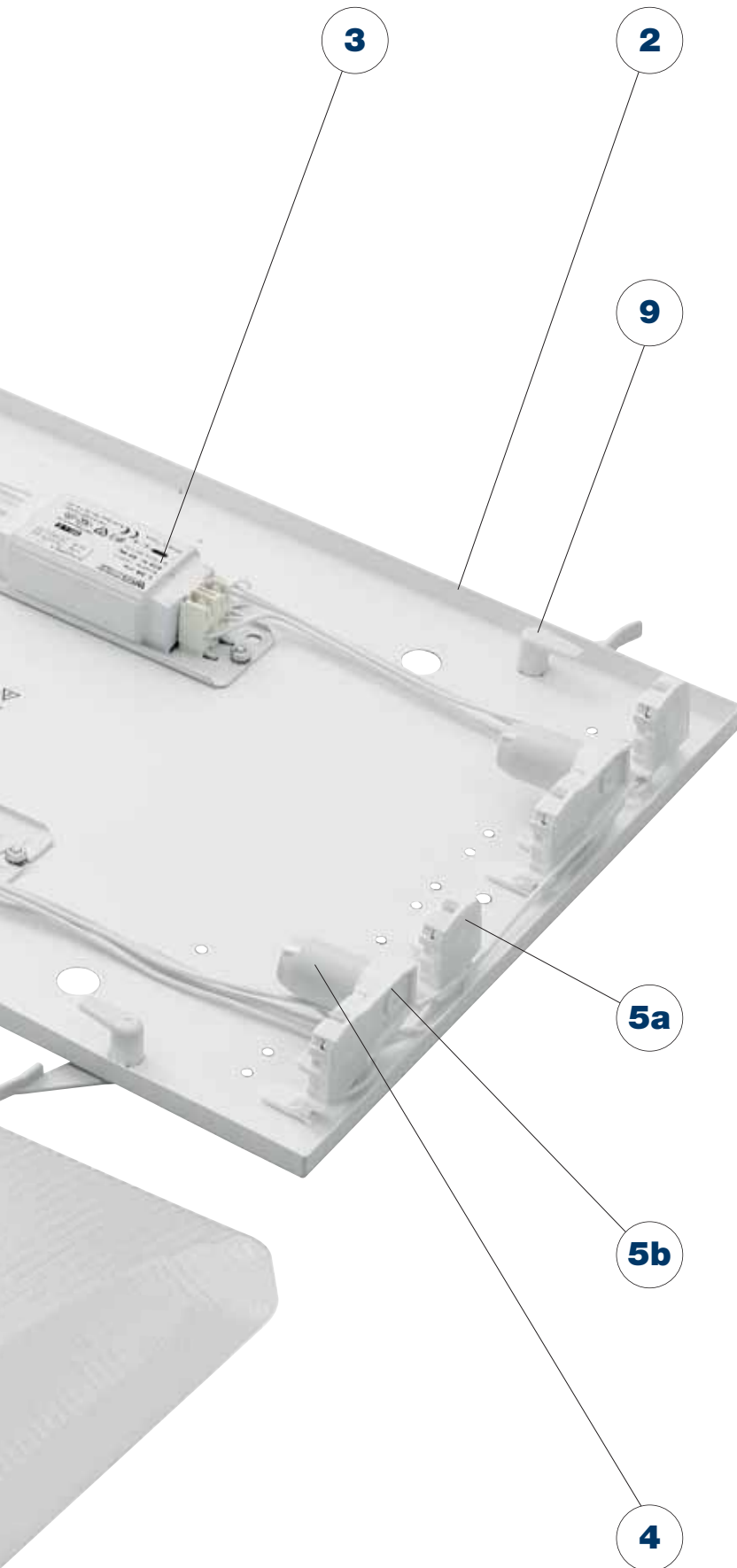
32 TRANSPARENT







# PLASTIC



## PLAST D 4X18W CONVENTIONAL CONTROL GEAR

- 1** Difúzor  
Diffusor  
Abdeckung
- 2** Teleso svetidla  
Housing  
Leuchtenkörper
- 3** Tlmivka  
Magnetic ballast  
Magnetische Vorschaltgeräte
- 4** Štartér  
Starter  
Zündgeräte
- 5a** Pätica  
Lampholder  
Lampenhalter
- 5b** Pätica so štartérom  
Lampholder with starter  
Lampenhalter mit Züngerät
- 6** Vodič  
Cable  
Kabel
- 7** Svorkovnica  
Terminal block  
Anschlussklemme
- 8** Prechodka  
Rubber band  
Gummiband
- 9** Upínací klips  
Fastening clip  
Bajonettverschlüssen



ORDER CODE	TYPE	SPECIFICATION	ORDER CODE	TYPE	SPECIFICATION
<b>PLAST 3 OPAL</b>			<b>FORWALL 21 T-R TRANS</b>		
<b>PLAST 3 OPAL TC-S</b>			LAC3T151223H000	FORWALL 21 T-R TRANS	1x22W,CCG B2,white
LA7301220930000	PLAST 3 OPAL TC-S	2x9W,CCG B2	LAC3T151223I000	FORWALL 21 T-R TRANS	1x22W,CCG B2,black
LA7301220980000	PLAST 3 OPAL TC-S	2x9W,CCG A2	<b>FORWALL 21 A 60 TRANS</b>		
<b>PLAST 3 OPAL TC-DD</b>			LAC3T701600H000	FORWALL 21 A 60 TRANS	1x60W,white
LA7301411630000	PLAST 3 OPAL TC-DD	1x16W,CCG B2	LAC3T701600I000	FORWALL 21 A 60 TRANS	1x60W,black
LA7301411680000	PLAST 3 OPAL TC-DD	1x16W,CCG A2	<b>FORWALL 22</b>		
LA7301412830000	PLAST 3 OPAL TC-DD	1x28W,CCG B2	<b>FORWALL 22 TC-S OPAL</b>		
LA7301412880000	PLAST 3 OPAL TC-DD	1x28W,CCG A2	LAD30122093H000	FORWALL 22 TC-S OPAL	2x9W,CCG B2,white
LA7301413830000	PLAST 3 OPAL TC-DD	1x38W,CCG B2	LAD30122093I000	FORWALL 22 TC-S OPAL	2x9W,CCG B2,black
LA7301413880000	PLAST 3 OPAL TC-DD	1x38W,CCG A2	<b>FORWALL 22 TC-DD OPAL</b>		
<b>PLAST 3 OPAL T-R</b>			LAD30141163H000	FORWALL 22 TC-DD OPAL	1x16W,CCG B2,white
LA7301512230000	PLAST 3 OPAL T-R	1x22W,CCG B2	LAD30141163I000	FORWALL 22 TC-DD OPAL	1x16W,CCG B2,black
LA7301512280000	PLAST 3 OPAL T-R	1x22W,CCG A2	<b>FORWALL 22 T-R OPAL</b>		
LA7301513230000	PLAST 3 OPAL T-R	1x32W,CCG B2	LAD30151223H000	FORWALL 22 T-R OPAL	1x22W,CCG B2,white
LA7301513280000	PLAST 3 OPAL T-R	1x32W,CCG A2	LAD30151223I000	FORWALL 22 T-R OPAL	1x22W,CCG B2,black
<b>PLAST 3 OPAL A</b>			<b>FORWALL 22 A 60 OPAL</b>		
LA7307016000000	PLAST 3 OPAL A60	1x60W	LAD30701600H000	FORWALL 22 A 60 OPAL	1x60W,white
LA7307018000000	PLAST 3 OPAL A80	1x80W	LAD30701600I000	FORWALL 22 A 60 OPAL	1x60W,black
<b>PLAST 3 OPAL T-R+IT</b>			<b>FORWALL 22 TC-S TRANS</b>		
LA730A32AZ30000	PLAST 3 OPAL T-R+IT	1x32+25W,CCG B2	LAD3T122093H000	FORWALL 22 TC-S TRANS	2x9W,CCG B2,white
LA730A32AZ80000	PLAST 3 OPAL T-R+IT	1x32+25W,CCG A2	LAD3T122093I000	FORWALL 22 TC-S TRANS	2x9W,CCG B2,black
<b>PLAST 4 PRISMA</b>			<b>FORWALL 22 TC-DD TRANS</b>		
<b>PLAST 4 PRISMA TC-S</b>			LAD3T141163H000	FORWALL 22 TC-DD TRANS	1x16W,CCG B2,white
LA83F1220930000	PLAST 4 PRISMA TC-S	2x9W,CCG B2	LAD3T141163I000	FORWALL 22 TC-DD TRANS	1x16W,CCG B2,black
LA83F1220980000	PLAST 4 PRISMA TC-S	2x9W,CCG A2	<b>FORWALL 22 T-R TRANS</b>		
<b>PLAST 4 PRISMA TC-DD</b>			LAD3T151223H000	FORWALL 22 T-R TRANS	1x22W,CCG B2,white
LA83F1411630000	PLAST 4 PRISMA TC-DD	1x16W,CCG B2	LAD3T151223I000	FORWALL 22 T-R TRANS	1x22W,CCG B2,black
LA83F1411680000	PLAST 4 PRISMA TC-DD	1x16W,CCG A2	<b>FORWALL 22 A 60 TRANS</b>		
LA83F1412830000	PLAST 4 PRISMA TC-DD	1x28W,CCG B2	LAD3T701600H000	FORWALL 22 A 60 TRANS	1x60W,white
LA83F1412880000	PLAST 4 PRISMA TC-DD	1x28W,CCG A2	LAD3T701600I000	FORWALL 22 A 60 TRANS	1x60W,black
LA83F1413830000	PLAST 4 PRISMA TC-DD	1x38W,CCG B2	<b>FORWALL 31</b>		
LA83F1413880000	PLAST 4 PRISMA TC-DD	1x38W,CCG A2	<b>FORWALL 31 TC-S OPAL</b>		
<b>PLAST 4 PRISMA T-R</b>			LAE30122093H000	FORWALL 31 TC-S OPAL	2x9W,CCG B2,white
LA83F1512230000	PLAST 4 PRISMA T-R	1x22W,CCG B2	LAE30122093I000	FORWALL 31 TC-S OPAL	2x9W,CCG B2,black
LA83F1512280000	PLAST 4 PRISMA T-R	1x22W,CCG A2	<b>FORWALL 31 TC-DD OPAL</b>		
LA83F1513230000	PLAST 4 PRISMA T-R	1x32W,CCG B2	LAE30141163H000	FORWALL 31 TC-DD OPAL	1x16W,CCG B2,white
LA83F1513280000	PLAST 4 PRISMA T-R	1x32W,CCG A2	LAE30141163I000	FORWALL 31 TC-DD OPAL	1x16W,CCG B2,black
<b>PLAST 4 PRISMA T-R+IT</b>			<b>FORWALL 31 T-R OPAL</b>		
LA830A32AZ30000	PLAST 4 PRISMA T-R+IT	1x32+25W,CCG B2	LAE30151223H000	FORWALL 31 T-R OPAL	1x22W,CCG B2,white
LA830A32AZ80000	PLAST 4 PRISMA T-R+IT	1x32+25W,CCG A2	LAE30151223I000	FORWALL 31 T-R OPAL	1x22W,CCG B2,black
<b>PLAST 2 OPAL</b>			<b>FORWALL 31 A 60 OPAL</b>		
<b>PLAST 2 OPAL TC-L</b>			LAE30701600H000	FORWALL 31 A 60 OPAL	1x60W,white
LA9301021830000	PLAST 2 OPAL TC-L	2x18W,CCG B2	LAE30701600I000	FORWALL 31 A 60 OPAL	1x60W,black
LA9301021880000	PLAST 2 OPAL TC-L	2x18W,CCG A2	<b>FORWALL 31 TC-S TRANS</b>		
<b>PLAST 2 OPAL TC-S</b>			LAE3T122093H000	FORWALL 31 TC-S TRANS	2x9W,CCG B2,white
LA9301210930000	PLAST 2 OPAL TC-S	1x9W,CCG B2	LAE3T122093I000	FORWALL 31 TC-S TRANS	2x9W,CCG B2,black
LA9301220930000	PLAST 2 OPAL TC-S	2x9W,CCG B2	<b>FORWALL 31 TC-DD TRANS</b>		
LA9301221130000	PLAST 2 OPAL TC-S	2x11W,CCG B2	LAE3T141163H000	FORWALL 31 TC-DD TRANS	1x16W,CCG B2,white
LA9301221180000	PLAST 2 OPAL TC-S	2x11W,CCG A2	LAE3T141163I000	FORWALL 31 TC-DD TRANS	1x16W,CCG B2,black
<b>FORWALL 11</b>			<b>FORWALL 31 T-R TRANS</b>		
<b>FORWALL 11 TC-S OPAL</b>			LAE3T151223H000	FORWALL 31 T-R TRANS	1x22W,CCG B2,white
LAA30121093H000	FORWALL 11 TC-S OPAL	1x9W,CCG B2,white	LAE3T151223I000	FORWALL 31 T-R TRANS	1x22W,CCG B2,black
LAA30121093I000	FORWALL 11 TC-S OPAL	1x9W,CCG B2,black	<b>FORWALL 31 A 60 TRANS</b>		
LAA30122093H000	FORWALL 11 TC-S OPAL	2x9W,CCG B2,white	LAE3T701600H000	FORWALL 31 A 60 TRANS	1x60W,white
LAA30122093I000	FORWALL 11 TC-S OPAL	2x9W,CCG B2,black	LAE3T701600I000	FORWALL 31 A 60 TRANS	1x60W,black
<b>FORWALL 11 A 60 OPAL</b>			<b>FORWALL 32</b>		
LAA30701400H000	FORWALL 11 A 60 OPAL	1x40W,white	<b>FORWALL 32 TC-S OPAL</b>		
LAA30701400I000	FORWALL 11 A 60 OPAL	1x40W,black	LAF30122093H000	FORWALL 32 TC-S OPAL	2x9W,CCG B2,white
<b>FORWALL 11 TC-S TRANS</b>			LAF30122093I000	FORWALL 32 TC-S OPAL	2x9W,CCG B2,black
LAA3T121093H000	FORWALL 11 TC-S TRANS	1x9W,CCG B2,white	<b>FORWALL 32 TC-DD OPAL</b>		
LAA3T121093I000	FORWALL 11 TC-S TRANS	1x9W,CCG B2,black	LAF30141163H000	FORWALL 32 TC-DD OPAL	1x16W,CCG B2,white
LAA3T122093H000	FORWALL 11 TC-S TRANS	2x9W,CCG B2,white	LAF30141163I000	FORWALL 32 TC-DD OPAL	1x16W,CCG B2,black
LAA3T122093I000	FORWALL 11 TC-S TRANS	2x9W,CCG B2,black	<b>FORWALL 32 T-R OPAL</b>		
<b>FORWALL 11 A 60 TRANS</b>			LAF30151223H000	FORWALL 32 T-R OPAL	1x22W,CCG B2,white
LAA3T701400H000	FORWALL 11 A 60 TRANS	1x40W,white	LAF30151223I000	FORWALL 32 T-R OPAL	1x22W,CCG B2,black
LAA3T701400I000	FORWALL 11 A 60 TRANS	1x40W,black	<b>FORWALL 32 A 60 OPAL</b>		
<b>FORWALL 12</b>			LAF30701600H000	FORWALL 32 A 60 OPAL	1x60W,white
<b>FORWALL 12 TC-S OPAL</b>			LAF30701600I000	FORWALL 32 A 60 OPAL	1x60W,black
LAB30121093H000	FORWALL 12 TC-S OPAL	1x9W,CCG B2,white	<b>FORWALL 32 TC-S TRANS</b>		
LAB30121093I000	FORWALL 12 TC-S OPAL	1x9W,CCG B2,black	LAF3T122093H000	FORWALL 32 TC-S TRANS	2x9W,CCG B2,white
LAB30122093H000	FORWALL 12 TC-S OPAL	2x9W,CCG B2,white	LAF3T122093I000	FORWALL 32 TC-S TRANS	2x9W,CCG B2,black
LAB30122093I000	FORWALL 12 TC-S OPAL	2x9W,CCG B2,black	<b>FORWALL 32 TC-DD TRANS</b>		
<b>FORWALL 12 A 60 OPAL</b>			LAF3T141163H000	FORWALL 32 TC-DD TRANS	1x16W,CCG B2,white
LAB30701400H000	FORWALL 12 A 60 OPAL	1x40W,white	LAF3T141163I000	FORWALL 32 TC-DD TRANS	1x16W,CCG B2,black
LAB30701400I000	FORWALL 12 A 60 OPAL	1x40W,black	<b>FORWALL 32 T-R TRANS</b>		
<b>FORWALL 12 TC-S TRANS</b>			LAF3T151223H000	FORWALL 32 T-R TRANS	1x22W,CCG B2,white
LAB3T121093H000	FORWALL 12 TC-S TRANS	1x9W,CCG B2,white	LAF3T151223I000	FORWALL 32 T-R TRANS	1x22W,CCG B2,black
LAB3T121093I000	FORWALL 12 TC-S TRANS	1x9W,CCG B2,black	<b>FORWALL 32 A 60 TRANS</b>		
LAB3T122093H000	FORWALL 12 TC-S TRANS	2x9W,CCG B2,white	LAF3T701600H000	FORWALL 32 A 60 TRANS	1x60W,white
LAB3T122093I000	FORWALL 12 TC-S TRANS	2x9W,CCG B2,black	LAF3T701600I000	FORWALL 32 A 60 TRANS	1x60W,black
<b>FORWALL 12 A 60 TRANS</b>					
LAB3T701400H000	FORWALL 12 A 60 TRANS	1x40W,white			
LAB3T701400I000	FORWALL 12 A 60 TRANS	1x40W,black			
<b>FORWALL 21</b>					
<b>FORWALL 21 TC-S OPAL</b>					
LAC30122093H000	FORWALL 21 TC-S OPAL	2x9W,CCG B2,white			
LAC30122093I000	FORWALL 21 TC-S OPAL	2x9W,CCG B2,black			
<b>FORWALL 21 TC-DD OPAL</b>					
LAC30141163H000	FORWALL 21 TC-DD OPAL	1x16W,CCG B2,white			
LAC30141163I000	FORWALL 21 TC-DD OPAL	1x16W,CCG B2,black			
<b>FORWALL 21 T-R OPAL</b>					
LAC30151223H000	FORWALL 21 T-R OPAL	1x22W,CCG B2,white			
LAC30151223I000	FORWALL 21 T-R OPAL	1x22W,CCG B2,black			
<b>FORWALL 21 A 60 OPAL</b>					
LAC30701600H000	FORWALL 21 A 60 OPAL	1x60W,white			
LAC30701600I000	FORWALL 21 A 60 OPAL	1x60W,black			
<b>FORWALL 21 TC-S TRANS</b>					
LAC3T122093H000	FORWALL 21 TC-S TRANS	2x9W,CCG B2,white			
LAC3T122093I000	FORWALL 21 TC-S TRANS	2x9W,CCG B2,black			
<b>FORWALL 21 TC-DD TRANS</b>					
LAC3T141163H000	FORWALL 21 TC-DD TRANS	1x16W,CCG B2,white			
LAC3T141163I000	FORWALL 21 TC-DD TRANS	1x16W,CCG B2,black			







# EMERGENCY

## EMERGENCY

Svietidlá určené pre priestory, v ktorých je vyžadované náhradné alebo núdzové osvetlenie. Svetidlá sú trvalo napájané zo siete aby ich vnútorné batérie boli vždy nabité. Všetky žiarivkové modely z radu núdzových svietidiel disponujú LED kontrolkou, ktorá svieti v prípade napájania zo siete a nabíjacej fázy batérie. Tlačidlom TEST sa dá skontrolovať funkčnosť núdzového obvodu svietidla ako aj svetelného zdroja počas napájania zo siete. Nikel-kadmiové (Ni-Cd) batérie zaručujú vysokú spoľahlivosť a dlhú životnosť.

Svietidlá používajú dva typy štítkov – „pictogram“ a „universal pictogram“. Pri objednávke svietidla s „pictogram universal label“ štítkom sú v jednom balení spolu so svietidlom samolepiace piktogramy potrebné na vytvorenie všetkých možných smerov úniku. Pri objednávke „pictogram“ svietidiel musí zákazník presne určiť žiadanú nálepku.

Zákazník si všeobecne môže vybrať medzi dvomi typmi núdzového zapojenia svietidiel:

### **Svietidlá pre netrvalú prevádzku**

Tieto svietidlá sú v prevádzke len počas výpadku napájania siete. Pozostávajú z nabíjacieho obvodu, nabíjateľných Ni-Cd batérií, kontrolného obvodu a obvodu zabezpečujúceho štart žiarivky, pokiaľ ju svietidlo používa.

### **Svietidlá pre trvalú prevádzku**

Svietidlá tohto typu sú v prevádzke aj počas sieťového napájania, aj počas jeho výpadku. Pre obidva prípady je používaný rovnaký svetelný zdroj. Skladajú sa z predradníka pre svetelný zdroj na sieťové napájanie (obvyčajne elektronický predradník), nabíjacieho obvodu, nabíjateľných Ni-Cd batérií, kontrolného obvodu a invertora pre žiarivku, pokiaľ ju svietidlo používa.

## EMERGENCY

The luminaries are designed for spaces where substitute or emergency illumination is required. They are constantly powered so that their internal batteries are always charged. All fluorescent luminaires in emergency range incorporate a charge LED indicator that lights during the main power supply presence and battery charging phase. The TEST button can be used to check emergency circuit of the luminaire as well as lighting source when the mains power supply is present. Ni-Cd batteries ensure high reliability and long lifespan.

The luminaries use two types of labels – „pictogram“ and „universal pictogram“. The packing of a „universal pictogram label“ luminaire includes pictogram stickers needed to create all possible exit directions. When ordering „pictogram“ luminaries, customer must specify the required sticker.

Generally, customers can choose between two types of emergency connection of luminaries:

### NON-MAINTAINED EMERGENCY LUMINAIRES

These luminaries are in operation only during power failures. They consist of a charge circuit, rechargeable Ni-Cd batteries, control circuit and a circuit to ensure start of the fluorescent lamp operation, if it is used by the luminaire.

### MAINTAINED EMERGENCY LUMINAIRES

Luminaries of this type are in operation when power is on, as well as during power failures. Both cases use the same source of light. They consist of a light source voltmeter box for power connection (usually an electronic box), charge circuit, rechargeable Ni-Cd batteries, control circuit and fluorescent lamp inverter, if it is used by the luminaire.

## EMERGENCY

Die für die Räume bestimmten Leuchten, in denen die Reserve- oder Notbeleuchtung erfordert ist. Die Leuchten sind aus dem Netz ständig gespeist, damit ihre inneren Batterien immer aufgeladen sind. Alle Leuchtstoffmodelle aus der Reihe der Notleuchten verfügen über eine Kontrolleuchte, die im Fall der Speisung aus dem Netz und der Ladephase der Batterie leuchtet. Mit dem TEST-Knopf kann die Funktionsfähigkeit der Notschaltung der Leuchte und der Lichtquelle während der Speisung aus dem Netz überwacht werden. Die Nickel-Kadmium-Batterien (Ni-Cd) gewährleisten hohe Zuverlässigkeit und lange Lebensdauer.

Die Leuchten benutzen zwei Typen der Schilder – „pictogram“ und „universal pictogram“. Bei der Bestellung der Leuchte mit dem Schild „pictogram universal label“ sind in einer Packung selbstklebende Piktogramme zusammen mit der Leuchte, die zur Bildung aller möglichen Fluchrichtungen notwendig sind. Bei der Bestellung der Leuchten „pictogram“ muß der Kunde das gewünschte Schild genau bestimmen.

Die Kunden können im allgemeinen zwischen zwei Typen der Noteinschaltung der Leuchten wählen:

### Leuchten für einen nicht dauerhaften Betrieb

Diese Leuchten sind im Betrieb nur während des Ausfalls der Netzspeisung. Sie bestehen aus einer Ladeschaltung, aufladenden Ni-Cd Batterien, einer Kontrollschaltung und einer Schaltung, die die Anlassung der Leuchtstoffröhre sichert, soweit sie in der Leuchte verwendet ist.

### Die Leuchten für einen dauerhaften Betrieb

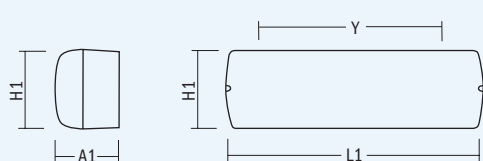
Die Leuchten von diesem Typ sind im Betrieb auch während der Netzspeisung und auch während ihres Ausfalls. Für beide Fälle ist die gleiche Lichtquelle verwendet. Sie bestehen aus einem Vorschalter für die Lichtquelle für Netzspeisung (in der Regel aus einem elektronischen Vorschalter), einer Ladeschaltung, aufladenden Ni-Cd Batterien, einer Kontrollschaltung und eines Inverters für die Leuchtstoffröhre, soweit sie in der Leuchte verwendet ist.

# EMERGENCY

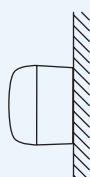
## 2700

- teleso svietidla: biely ABS
- difúzor: číry polycarbonát
- Ni-Cd batéria
- testovacie tlačidlo – pre kontrolu funkcie núdzového okruhu
- LED indikátor nabíjania
- ochrana batérie pred preťažením
- montáž na povrch

- luminaire housing: white ABS
- diffuser: pure polycarbonate
- Ni-Cd battery
- test button – for emergency circuit function control
- charge LED indicator
- protection of battery against overload
- surface installation



INSTALLATION

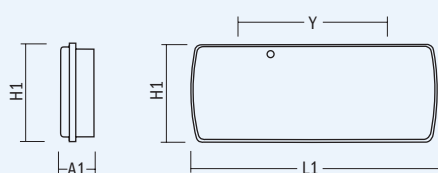


	POWER (W)	LAMP	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM UNIVERSAL LABEL
										A1	L1	H1		
Emergency 2701	6	T5	3	2,4V / 1,5 Ah	1,5	50 lm	400 g		•	42	246	76	215	•
Emergency 2702	6	T5	3,5	2,4V / 3 Ah	3	50 lm	450 g		•	42	246	76	215	•

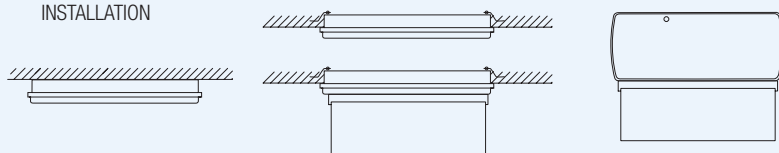
## 2710

- teleso svietidla: biely ABS
- difúzor: číry polycarbonát
- Ni-Cd batéria
- testovacie tlačidlo – pre kontrolu funkcie núdzového okruhu
- LED indikátor nabíjania
- ochrana batérie pred preťažením a vybitím
- určené pre montáž na povrch alebo na vstavanie do steny/stropu
- vstavaná montáž: buď pomocou montážneho rámu určeného pre vstavenie do steny/stropu, alebo pre montáž do stropu pomocou dvoch pružín. Príslušenstvo pre vstavanú montáž je nutné objednať zvlášť.

- luminaire housing: white ABS
- diffuser: pure polycarbonate
- Ni-Cd battery
- test button – for emergency circuit function control
- charge LED indicator
- protection of battery against overload and discharge
- designed for surface installation or mounting into walls/ceiling
- built-in installation: either using an installation frame designed for mounting into walls/ceiling or for ceiling installation using two springs. Built-in version accessories must be ordered separately.



INSTALLATION



	POWER (W)	LAMP	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM UNIVERSAL LABEL
										A1	L1	H1		
Emergency 2711	8	T5	3	2,4V / 1,5 Ah	1,5	85 lm	900 g		•	45	350	134	220	•
Emergency 2712	8	T5	3,5	2,4V / 3 Ah	3	85 lm	1150 g		•	45	350	134	220	•
Emergency 2714	8	T5	18	2,4V / 1,5 Ah	1,5	315 / 85 lm	820 g	•		45	350	134	220	•
Emergency 2715	8	T5	22	2,4V / 3 Ah	3	315 / 85 lm	860 g	•		45	350	134	220	•
Emergency 2716	6	T5	6	2,4V / 1,5 Ah	1,5	50 lm	600 g		•	48	270	117	150	•
Emergency 2717	6	T5	6	2,4V / 3 Ah	3	50 lm	700 g		•	48	270	117	150	•
Emergency 2718	6	T5	14	2,4V / 1,5 Ah	1,5	240 / 50 lm	600 g	•		48	270	117	150	•
Emergency 2719	6	T5	15	2,4V / 3 Ah	3	240 / 50 lm	700 g	•		48	270	117	150	•

D/M – maintained  
UD/NM – non – maintained

- Leuchtenkörper: weißes ABS
- Diffusor: klares Polykarbonat
- Ni-Cd Batterie
- Testknopf – zur Überwachung der Funktion der Notschaltung
- LED-Anzeige der Aufladung
- Überspannungsschutz der Batterie
- Aufputzmontage



- Leuchtenkörper: weißes ABS
- Diffusor: klares Polykarbonat
- Ni-Cd Batterie
- Testknopf – zur Überwachung der Funktion der Notschaltung
- LED-Anzeige der Aufladung
- Überspannungs- und Entladungsschutz der Batterie
- zur Aufputzmontage oder zum Einbau in die Wand/Decke bestimmt
  - eingebaute Montage: entweder mittels des Montagerahmens, der zum Einbau in die Wand/Decke bestimmt ist, oder mittels zwei Federn zur Montage in die Decke. Es ist notwendig das Zubehör für eingebaute Montage extra zu bestellen.

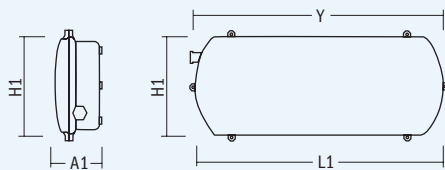


# EMERGENCY

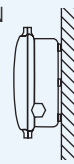
## 2720

- teleso svietidla: biely ABS
- difúzor: číry polycarbonát
- Ni-Cd batéria
- LED indikátor nabíjania
- ochrana batérie pred preťažením a vybitím
- montáž na povrch

- luminaire housing: white ABS
- diffuser: pure polycarbonate
- Ni-Cd battery
- charge LED indicator
- protection of battery against overload and discharge
- surface installation



INSTALLATION

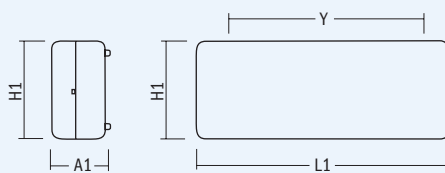


	POWER (W)	LAMP	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM UNIVERSAL LABEL
										A1	L1	H1		
Emergency 2721	8	T5	3	2,4V / 1,5 Ah	1,5	85 lm	700 g		•	72	355	160	340	•
Emergency 2722	8	T5	3,5	2,4V / 3 Ah	3	85 lm	950 g		•	72	355	160	340	•
Emergency 2724	8	T5	18	2,4V / 1,5 Ah	1,5	315 / 85 lm	950 g	•		72	355	160	340	•
Emergency 2725	8	T5	22	2,4V / 3 Ah	3	315 / 85 lm	1050 g	•		72	355	160	340	•

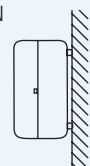
## 2730

- teleso svietidla: biely ABS
- difúzor: číry polycarbonát
- Ni-Cd batéria
- testovacie tlačidlo – pre kontrolu funkcie núdzového okruhu
- LED indikátor nabíjania
- ochrana batérie pred preťažením a vybitím
- všetky verzie majú dve diódy LED, ktoré osvetľujú piktogram aj v čase normálnej prevádzky, mimo núdzového režimu
- určené pre montáž na povrch alebo na vstavanie do steny/stropu – vstavaná montáž: pomocou montážneho rámu určeného pre vstavanie do steny/stropu. Príslušenstvo pre vstavanú montáž je nutné objednať zvlášť.

- luminaire housing: white ABS
- diffuser: pure polycarbonate
- Ni-Cd battery
- test button – for emergency circuit function control
- charge LED indicator
- protection of battery against overload and discharge
- all versions have two LED diodes, which illuminate the pictogram even during normal operation, outside emergency hours
- designed for surface installation or mounting into walls/ceiling – built-in installation: using installation frame designed for mounting into walls/ceiling. Built-in version accessories must be ordered separately.

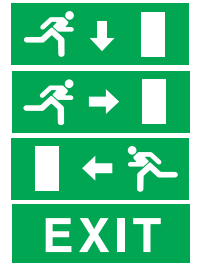


INSTALLATION



	POWER (W)	LAMP	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM UNIVERSAL LABEL
										A1	L1	H1		
Emergency 2731	8	T5	3	2,4V / 1,5 Ah	1,5	85 lm	550 g		•	74	332	100	173	•
Emergency 2732	8	T5	3,5	2,4V / 3 Ah	3	85 lm	650 g		•	74	332	100	173	•
Emergency 2734	8	T5	18	2,4V / 1,5 Ah	1,5	315 / 85 lm	950 g	•		74	332	100	173	•
Emergency 2735	8	T5	22	2,4V / 3 Ah	3	315 / 85 lm	1050 g	•		74	332	100	173	•

- Leuchtenkörper: weißes ABS
- Diffusor: klares Polykarbonat
- Ni-Cd Batterie
- LED-Anzeige der Aufladung
- Überspannungs- und Entladungsschutz der Batterie
- Aufputzmontage



- Leuchtenkörper: weißes ABS
- Diffusor: klares Polykarbonat
- Ni-Cd Batterie
- Testknopf – zur Überwachung der Funktion der Notschaltung
- LED-Anzeige der Aufladung
- Überspannungs- und Entladungsschutz der Batterie
- alle Ausführungen haben zwei LED-Dioden, die das Piktogramm auch während des Regelbetriebs, außer der Notbetriebsart beleuchten
- zur Aufputzmontage oder zum Einbau in die Wand/Decke bestimmt
  - eingebaute Montage: mittels des Montagerahmens, der zum Einbau in die Wand/Decke bestimmt ist. Es ist notwendig das Zubehör für eingebaute Montage extra zu bestellen.



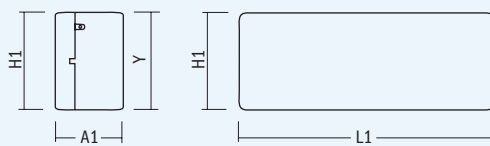


# EMERGENCY

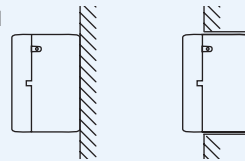
## 2740

- teleso svietidla: biely ABS
- difúzor: čirý polykarbonát
- Ni-Cd batéria
- testovacie tlačidlo – pre kontrolu funkcie núdzového okruhu
- LED indikátor nabíjania
- ochrana batérie pred preťažením a vybitím
- verzie 2741 a 2742 majú dve diódy LED, ktoré osvetľujú piktogram aj v čase normálnej prevádzky, mimo núdzového režimu
- určené pre montáž na povrch alebo na vstavanie do steny/stropu  
– vstavaná montáž: pomocou montážneho rámu určeného pre vstavanie do steny/stropu. Príslušenstvo pre vstavanú montáž je nutné objednať zvlášť.

- luminaire housing: white ABS
- diffuser: pure polycarbonate
- Ni-Cd battery
- test button – for emergency circuit function control
- charge LED indicator
- protection of battery against overload and discharge
- versions 2741 and 2742 have two LED diodes, which illuminate the pictogram even during normal operation, outside emergency hours
- designed for surface installation or mounting into walls/ceiling  
– built-in installation: using installation frame designed for mounting into walls/ceiling. Built-in version accessories must be ordered separately.



INSTALLATION

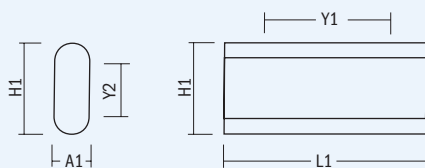


	POWER (W)	LAMP	CONSUMPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM UNIVERSAL LABEL
										A1	L1	H1		
Emergency 2741	6	T5	3	2,4V / 1,5 Ah	1,5	50 lm	650 g		•	70	260	100	173	•
Emergency 2742	6	T5	3,5	2,4V / 3 Ah	3	50 lm	800 g		•	70	260	100	173	•
Emergency 2744	6	T5	14	2,4V / 1,5 Ah	1,5	240 / 50 lm	750 g	•		70	260	100	173	•
Emergency 2745	6	T5	15	2,4V / 3 Ah	3	240 / 50 lm	850 g	•		70	260	100	173	•

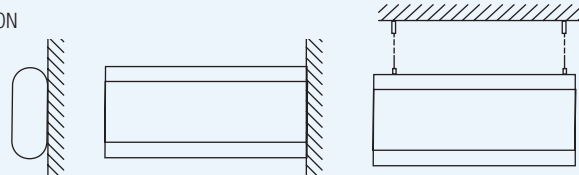
## 2750

- teleso svietidla: hliníkový profil, rohové koncovky z ABS
- svietiace plochy: plexisklo (acrylic)
- Ni-Cd batéria
- testovacie tlačidlo – pre kontrolu funkcie núdzového okruhu
- LED indikátor nabíjania
- ochrana batérie pred preťažením a vybitím
- určené pre montáž na stenu alebo pre závesnú montáž na strop  
– dve varianty montáže na stenu: prisadená montáž s viditeľnou prednou svietiacou stranou, alebo bočná montáž s viditeľnou prednou a zadnou stranou núdzového svietidla

- luminaire housing: aluminium profile, corner endings from ABS
- luminaire surfaces: plexiglass (acrylic)
- Ni-Cd battery
- test button – for emergency circuit function control
- charge LED indicator
- protection of battery against overload and discharge
- designed for wall installation or for pendant ceiling installation  
– two variants of wall installation: solid installation with front luminaire side visible, or side installation with front and back side of emergency luminaire visible



INSTALLATION



	POWER	LAMP	CONSUMPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING		PICTOGRAM			
										A1	L1	H1	Y1	Y2	LEFT	RIGHT	DOWN	EXIT
Emergency 2751	8	T5	4,5	2,4V / 1,5 Ah	1,5	110 lm	1350 g		•	50	380	260	202	88	•	•	•	•
Emergency 2752	8	T5	5	2,4V / 3 Ah	3	110 lm	1450 g		•	50	380	260	202	88	•	•	•	•
Emergency 2754	8	T5	18	2,4V / 1,5 Ah	1,5	315 / 110 lm	1450 g	•		50	380	260	202	88	•	•	•	•
Emergency 2755	8	T5	22	2,4V / 3 Ah	3	315 / 110 lm	1550 g	•		50	380	260	202	88	•	•	•	•

D/M – maintained  
UD/NM – non – maintained

- Leuchtenkörper: weißes ABS
- Diffusor: klares Polykarbonat
- Ni-Cd Batterie
- Testknopf – zur Überwachung der Funktion der Notschaltung
- LED-Anzeige der Aufladung
- Überspannungs- und Entladungsschutz der Batterie
- die Ausführungen 2741 und 2742 haben zwei LED-Dioden, die das Piktogramm auch während des Regelbetriebs, außer der Notbetriebsart beleuchten
- zur Aufputzmontage oder zum Einbau in die Wand/Decke bestimmt
  - eingebaute Montage: mittels des Montagerahmens, der zum Einbau in die Wand/Decke bestimmt ist. Es ist notwendig das Zubehör für eingebaute Montage extra zu bestellen.



- Leuchtenkörper: Aluminiumprofil, Eck-Endstücke aus ABS
- Leuchtfächen: Plexiglas (acrylic)
- Ni-Cd Batterie
- Testknopf – zur Überwachung der Funktion der Notschaltung
- LED-Anzeige der Aufladung
- Überspannungs- und Entladungsschutz der Batterie
- zur Montage auf die Wand oder zur Hängemontage auf die Decke bestimmt
  - zwei Varianten der Montage auf die Wand: die Anbaumontage mit einer sichtbaren vorderen leuchtenden Seite oder die Seitenmontage mit einer sichtbaren vorderen und hinteren Seite der Notleuchte

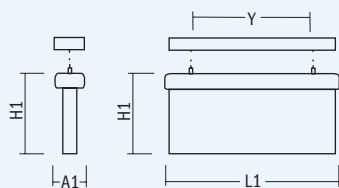


# EMERGENCY

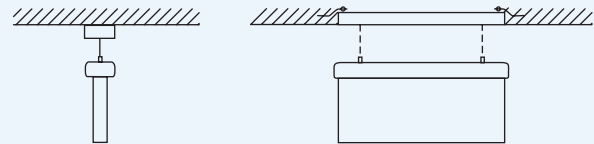
## 2760

- teleso svietidla sa skladá z dvoch kusov - svietiacej plochy ktorá obsahuje pás LEDiek, a základne, ktorá môže byť montovaná na stenu alebo strop
- na svietiacej ploche (plexisklo) sú nalepené piktogramy podľa výberu
- Ni-Cd batéria
- testovacie tlačidlo – pre kontrolu funkcie núdzového okruhu
- LED indikátor nabíjania
- dve varianty montáže:
  - prísadená montáž na strop alebo stenu,
  - pomocou príslušenstva (súčasť balenia) môže byť základňa vstavaná do stropu
  - prídavné lankové príslušenstvo (20cm alebo 40cm) pre voľbu vzdialenosti svietidla od stropu

- housing of the luminaire is composed of two pieces – luminaire surface which includes a line of LEDs and a base which can be wall-mounted or ceiling-mounted
- the luminaire surface (plexiglass) contains pictograms of your choice
- Ni-Cd battery
- test button – for emergency circuit function control
- charge LED indicator
- two variants of installation:
  - solid installation on ceiling or wall,
  - the base can be built into ceiling using accessories (delivered)
  - additional wire accessories (20 cm or 40 cm) for adjusting the distance of the luminaire from ceiling



INSTALLATION

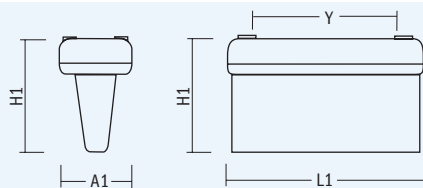


	POWER	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM			
									A1	L1	H1		LEFT	RIGHT	DOWN	EXIT
Emergency 2761	9 (EXIT 8) LEDs	5	3,6V / 1Ah	3	4400 mcd, 120°	980 g	•		15	280	120	233	•	•	•	•
Emergency 2762	11 LEDs	6	3,6V / 1Ah	3	6100 mcd, 120°	1150 g	•		15	340	190	233	•	•	•	•

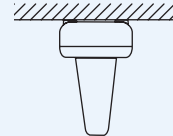
## 2770

- teleso svietidla: biely ABS
- difúzor: biely polykarbonát
- Ni-Cd batéria
- testovacie tlačidlo - pre kontrolu funkcie núdzového okruhu
- LED indikátor nabíjania
- ochrana batérie pred preťažením a vybitím
- určené pre montáž na povrch alebo na vstavanie do steny/stropu

- luminaire housing: white ABS
- diffuser: white polycarbonate
- Ni-Cd battery
- test button – for emergency circuit function control
- charge LED indicator
- protection of battery against overload and discharge
- designed for surface installation or mounting into walls/ceiling



INSTALLATION



	POWER	LAMP	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM UNIVERSAL LABEL
										A1	L1	H1		
Emergency 2771	8	T5	3	2,4V / 1,5 Ah	1,5	85 lm	900 g		•	100	132	205	173	•
Emergency 2772	8	T5	3,5	2,4V / 3 Ah	3	85 lm	1000 g		•	100	132	205	173	•
Emergency 2774	8	T5	18	2,4V / 1,5 Ah	1,5	315 / 85 lm	1000 g	•		100	132	205	173	•
Emergency 2775	8	T5	22	2,4V / 3 Ah	3	315 / 85 lm	1100 g	•		100	132	205	173	•

D/M – maintained  
UD/NM – non – maintained

- der Leuchtenkörper besteht aus zwei Teilen – aus einer Leuchtfläche, die ein LED-Diodenband enthält und einer Grundfläche, die auf die Wand oder die Decke montiert werden kann
- auf der Leuchtfläche (Plexiglas) sind Piktogramme nach Auswahl aufgeklebt
- Ni-Cd Batterie
- Testknopf – zur Überwachung der Funktion der Notschaltung
- LED-Anzeige der Aufladung
- zwei Varianten der Montage:
  - Anbaumontage auf die Decke oder die Wand,
  - mittels des Zubehörs (Bestandteil der Packung) kann die Grundfläche in die Decke eingebaut werden
  - zusätzliches Seilzubehör (20cm oder 40cm) für die Auswahl des Abstands der Leuchte von der Decke



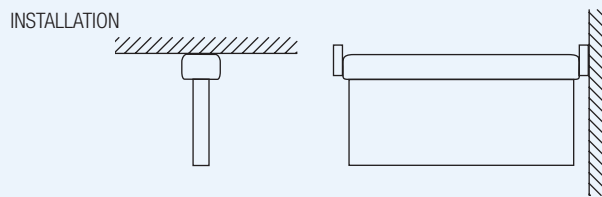
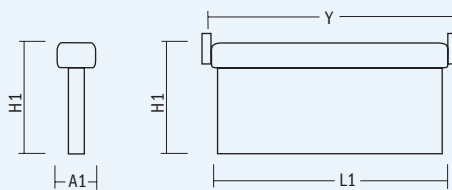
- Leuchtenkörper: weißes ABS
- Diffusor: weißes Polykarbonat
- Ni-Cd Batterie
- Testknopf – zur Überwachung der Funktion der Notschaltung
- LED-Anzeige der Aufladung
- Überspannungs- und Entladungsschutz der Batterie
- zur Aufputzmontage oder zum Einbau in die Wand/Decke bestimmt



# EMERGENCY

## 2780

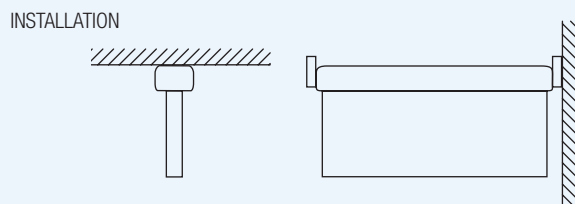
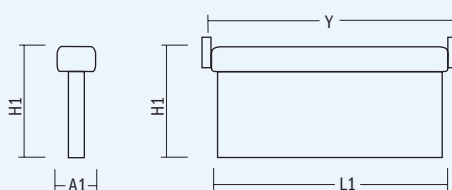
- teleso svietidla sa skladá z dvoch kusov - svietiacej plochy ktorá obsahuje pás LEDiek, a základne, ktorá môže byť montovaná na stenu alebo strop
- svietiace plochy: plexisklo (acrylic)
- Ni-Cd batéria
- prisadená montáž na strop alebo stenu,
  - pomocou príslušenstva (súčasť balenia) môže byť základňa vstavaná do stropu
  - dve varianty montáže na stenu: prisadená montáž s viditeľnou prednou svietiacou stranou, alebo bočná montáž s viditeľnou prednou aj zadnou stranou núdzového svietidla
- housing of the luminaire is composed of two pieces – luminaire surface which includes a line of LEDs and a base which can be wall-mounted or ceiling-mounted
- luminaire surfaces: plexiglass (acrylic)
- Ni-Cd battery
- solid installation on ceiling or wall,
  - the base can be built into ceiling using accessories (delivered)
  - two variants of wall installation: solid installation with front luminaire side visible, or side installation with front and back side of emergency luminaire visible



	POWER	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM			
									A1	L1	H1		LEFT	RIGHT	DOWN	EXIT
Emergency 2781	8 LEDs	5	3,6V / 1Ah	3	4400 mcd, 120°	500 g	•		40	320	145	300	•	•	•	•
Emergency 2782	11 (EXIT 6) LEDs	6	3,6V / 1Ah	3	6100 mcd, 120°	800 g	•		40	380	215	360	•	•	•	•

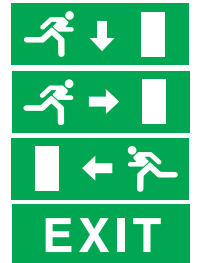
## 2810

- teleso svietidla sa skladá z dvoch kusov - svietiacej plochy ktorá obsahuje pás LEDiek, a základne, ktorá môže byť montovaná na stenu alebo strop
- svietiace plochy: plexisklo (acrylic)
- Ni-Cd batéria
- prisadená montáž na strop alebo stenu,
  - pomocou príslušenstva (súčasť balenia) môže byť základňa vstavaná do stropu
  - dve varianty montáže na stenu: prisadená montáž s viditeľnou prednou svietiacou stranou, alebo bočná montáž s viditeľnou prednou aj zadnou stranou núdzového svietidla
- housing of the luminaire is composed of two pieces – luminaire surface which includes a line of LEDs and a base which can be wall-mounted or ceiling-mounted
- luminaire surfaces: plexiglass (acrylic)
- Ni-Cd battery
- solid installation on ceiling or wall,
  - the base can be built into ceiling using accessories (delivered)
  - two variants of wall installation: solid installation with front luminaire side visible, or side installation with front and back side of emergency luminaire visible

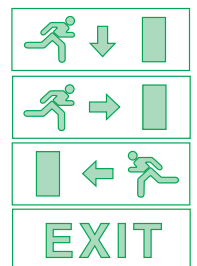


	POWER	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM			
									A1	L1	H1		LEFT	RIGHT	DOWN	EXIT
Emergency 2811	8 LEDs	5	3,6V / 1Ah	3	5100 mcd, 120°	500 g	•		40	320	145	300	•	•	•	•
Emergency 2812	11 (EXIT 6) LEDs	6	3,6V / 1Ah	3	7000 mcd, 120°	800 g	•		40	380	215	360	•	•	•	•

- der Leuchtenkörper besteht aus zwei Teilen – aus einer Leuchtfläche, die ein LED-Diodenband enthält und einer Grundfläche, die auf die Wand oder die Decke montiert werden kann
- Leuchtflächen: Plexiglas (acrylic)
- Ni-Cd Batterie
- Anbaumontage auf die Decke oder die Wand,
  - mittels des Zubehörs (Bestandteil der Packung) kann die Grundfläche in die Decke eingebaut werden
  - zwei Varianten der Montage auf die Wand: die Anbaumontage mit einer sichtbaren vorderen leuchtenden Seite oder die Seitenmontage mit einer sichtbaren vorderen und hinteren Seite der Notleuchte



- der Leuchtenkörper besteht aus zwei Teilen – aus einer Leuchtfläche, die ein LED-Diodenband enthält und einer Grundfläche, die auf die Wand oder die Decke montiert werden kann
- Leuchtflächen: Plexiglas (acrylic)
- Ni-Cd Batterie
- Anbaumontage auf die Decke oder die Wand,
  - mittels des Zubehörs (Bestandteil der Packung) kann die Grundfläche in die Decke eingebaut werden
  - zwei Varianten der Montage auf die Wand: die Anbaumontage mit einer sichtbaren vorderen leuchtenden Seite oder die Seitenmontage mit einer sichtbaren vorderen und hinteren Seite der Notleuchte



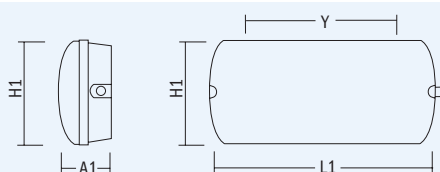


# EMERGENCY

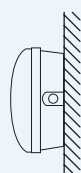
## 2820

- teleso svietidla: biely polycarbonát
- difúzor: číry polycarbonát
- Ni-Cd batéria
- LED indikátor nabíjania
- ochrana batérie pred preťažením a vybitím
- montáž na povrch

- luminaire housing: white polycarbonate
- diffuser: pure polycarbonate
- Ni-Cd battery
- charge LED indicator
- protection of battery against overload and discharge
- surface installation



INSTALLATION

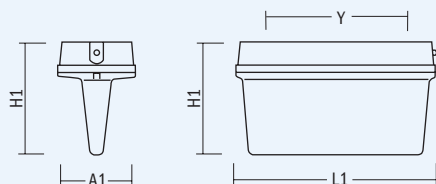


	POWER	LAMP	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM UNIVERSAL LABEL
										A1	L1	H1		
Emergency 2821	8	T5	3,5	3,6V / 1 Ah	1	60 lm	1000 g		•	79	356	136	322	•
Emergency 2822	8	T5	3,5	3,6V / 2,5 Ah	3	60 lm	1150 g		•	79	356	136	322	•
Emergency 2824	8	T5	3,5	3,6V / 1 Ah	1	210 / 60 lm	1000 g	•		79	356	136	322	•
Emergency 2825	8	T5	3,5	3,6V / 2,5 Ah	3	210 / 60 lm	1150 g	•		79	356	136	322	•

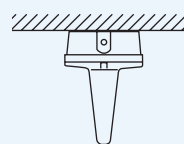
## 2830

- teleso svietidla: biely polycarbonát
- difúzor: opálový polycarbonát
- Ni-Cd batéria
- LED indikátor nabíjania
- ochrana batérie pred preťažením a vybitím
- montáž na povrch

- luminaire housing: white polycarbonate
- diffuser: opal polycarbonate
- Ni-Cd battery
- charge LED indicator
- protection of battery against overload and discharge
- surface installation



INSTALLATION



	POWER	LAMP	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM UNIVERSAL LABEL
										A1	L1	H1		
Emergency 2831	8	T5	3,5	3,6V / 1 Ah	1	80 lm	1700 g		•	136	356	219	322	•
Emergency 2832	8	T5	3,5	3,6V / 2,5 Ah	3	80 lm	1850 g		•	136	356	219	322	•
Emergency 2834	8	T5	17	3,6V / 1 Ah	1	230 / 80 lm	1700 g	•		136	356	219	322	•
Emergency 2835	8	T5	17	3,6V / 2,5 Ah	3	230 / 80 lm	1850 g	•		136	356	219	322	•

D/M – maintained  
UD/NM – non – maintained

- Leuchtenkörper: weißes Polykarbonat
- Diffusor: klares Polykarbonat
- Ni-Cd Batterie
- LED-Anzeige der Aufladung
- Überspannungs- und Entladungsschutz der Batterie
- Aufputzmontage



- Leuchtenkörper: weißes Polykarbonat
- Diffusor: Opalpolykarbonat
- Ni-Cd Batterie
- LED-Anzeige der Aufladung
- Überspannungs- und Entladungsschutz der Batterie
- Aufputzmontage

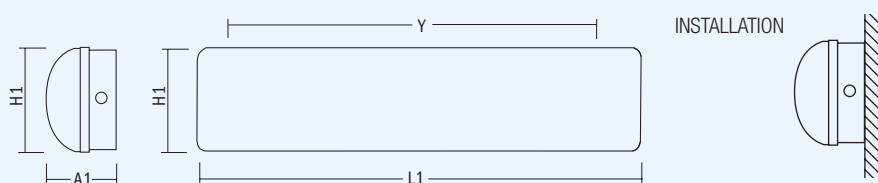


# EMERGENCY

## 2840

- teleso svietidla: šedý polykarbonát
- difúzor: číry polykarbonát
- Ni-Cd batéria
- LED indikátor nabíjania
- ochrana batérie pred preťažením a vybitím
- montáž na povrch

- luminaire housing: grey polycarbonate
- diffuser: pure polycarbonate
- Ni-Cd battery
- charge LED indicator
- protection of battery against overload and discharge
- surface installation

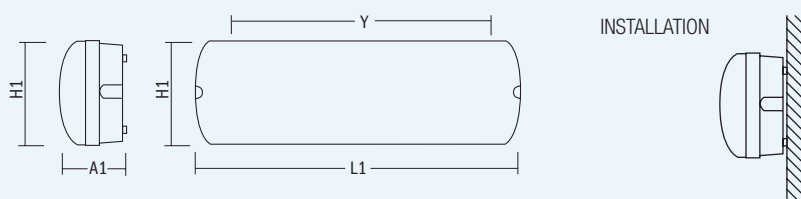


	POWER	LAMP	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM UNIVERSAL LABEL
										A1	L1	H1		
Emergency 2841	8	T5	9	2,4V / 4,5 Ah	3	105 lm	1150 g		•	95	353	75	255	•

## 2850

- teleso svietidla: šedý polykarbonát
- difúzor: číry polykarbonát
- Ni-Cd batéria
- LED indikátor nabíjania
- ochrana batérie pred preťažením a vybitím
- montáž na povrch

- luminaire housing: grey polycarbonate
- diffuser: pure polycarbonate
- Ni-Cd battery
- charge LED indicator
- protection of battery against overload and discharge
- surface installation



	POWER	LAMP	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM UNIVERSAL LABEL
										A1	L1	H1		
Emergency 2851	8	T5	3,5	2,4V / 4,5 Ah	3	80 lm	1000 g		•	117	352	76	240	•

D/M – maintained  
UD/NM – non – maintained

- Leuchtenkörper: graues Polykarbonat
- Diffusor: klares Polykarbonat
- Ni-Cd Batterie
- LED-Anzeige der Aufladung
- Überspannungs- und Entladungsschutz der Batterie
- Aufputzmontage



- Leuchtenkörper: graues Polykarbonat
- Diffusor: klares Polykarbonat
- Ni-Cd Batterie
- LED-Anzeige der Aufladung
- Überspannungs- und Entladungsschutz der Batterie
- Aufputzmontage



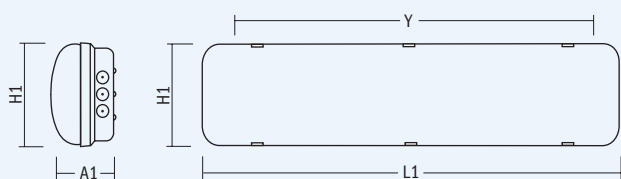
# EMERGENCY

## 3000

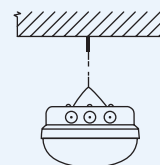
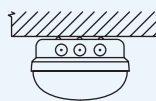
- teleso svietidla: šedý polykarbonát
- difúzor: číry polykarbonát
- Ni-Cd batéria
- testovacie tlačidlo - pre kontrolu funkcie núdzového okruhu
- LED indikátor nabíjania
- ochrana batérie pred preťažením a vybitím
- určené pre prísadenú alebo závesnú montáž

- luminaire housing: grey polycarbonate
- diffuser: pure polycarbonate
- Ni-Cd battery
- test button – for emergency circuit function control
- charge LED indicator
- protection of battery against overload and discharge
- designed for solid or pendant installation

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 G13	CCG EB-B2	CCG EB-B1	ECG EB-A2	EMERGENCY	IP 65
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INSTALLATION



	POWER	LAMP	CONSUPTION (W)	BATTERY NI-CD	DURATION	LIGHT OUTPUT	WEIGHT	D/M	UD/NM	DIMENSIONS			FIXING Y	PICTOGRAM UNIVERSAL LABEL
										A1	L1	H1		
Emergency 3001	18	T8	3	3,6V / 1,5 Ah	1	140 lm	1800 g		•	101	660	160	490	•
Emergency 3002	18	T8	3,5	3,6V / 4 Ah	3	140 lm	1950 g		•	101	660	160	490	•
Emergency 3004	18	T8	20	3,6V / 1,5 Ah	1	1100 / 140 lm	1800 g	•		101	660	160	490	•
Emergency 3005	18	T8	20	3,6V / 4 Ah	3	1100 / 140 lm	1950 g	•		101	660	160	490	•

ORDER CODE	TYPE	SPECIFICATION	ORDER CODE	TYPE	SPECIFICATION
<b>Emergency 2700</b>			<b>Emergency 2760</b>		
EA07002106U0000	Emergency 2701	1,5h/NM	EAQ7380009S0000	Emergency 2761	3h/M DOWN
EA17002106V0000	Emergency 2702	3h/NM	EAQ7480009S0000	Emergency 2761	3h/M EXIT
<b>Emergency 2710</b>			EAQ7580009S0000	Emergency 2761	3h/M L/R
EA27002108U0000	Emergency 2711	1,5h/NM	EAR7380011S0000	Emergency 2762	3h/M DOWN
EA37002108V0000	Emergency 2712	3h/NM	EAR7480011S0000	Emergency 2762	3h/M EXIT
EA47002108R0000	Emergency 2714	1,5h/M	EAR7580011S0000	Emergency 2762	3h/M L/R
EA57002108S0000	Emergency 2715	3h/M	<b>Emergency 2770</b>		
EA67002106U0000	Emergency 2716	1,5h/NM	EAS7002108U0000	Emergency 2771	1,5h/NM
EA77002106V0000	Emergency 2717	3h/NM	EAT7002108V0000	Emergency 2772	3h/NM
EA87002106R0000	Emergency 2718	1,5h/M	EAU7002108R0000	Emergency 2774	1,5h/M
EA97002106S0000	Emergency 2719	3h/M	EAV7002108S0000	Emergency 2775	3h/M
<b>Emergency 2720</b>			<b>Emergency 2780</b>		
EAA7002108U0000	Emergency 2721	1,5h/NM	EAW7380005S0000	Emergency 2781	3h/M DOWN
EAB7002108V0000	Emergency 2722	3h/NM	EAW7480005S0000	Emergency 2781	3h/M EXIT
EAC7002108R0000	Emergency 2724	1,5h/NM	EAW7580005S0000	Emergency 2781	3h/M L/R
EAD7002108S0000	Emergency 2725	3h/NM	EAX7380006S0000	Emergency 2782	3h/M DOWN
<b>Emergency 2730</b>			EAX7480006S0000	Emergency 2782	3h/M EXIT
EAE7002108U0000	Emergency 2731	1,5h/NM	EAX7580006S0000	Emergency 2782	3h/M L/R
EAF7002108V0000	Emergency 2732	3h/NM	<b>Emergency 2810</b>		
EAG7002108R0000	Emergency 2734	1,5h/M	EB47480005S0000	Emergency 2811	3h/M EXIT
EAH7002108S0000	Emergency 2735	3h/M	EB47680005S0000	Emergency 2811	3h/M L/R/D
<b>Emergency 2740</b>			EB57480006S0000	Emergency 2812	3h/M EXIT
EAI7002106U0000	Emergency 2741	1,5h/NM	EB57680006S0000	Emergency 2812	3h/M L/R/D
EAJ7002106V0000	Emergency 2742	3h/NM	<b>Emergency 2820</b>		
EAK7502106R0000	Emergency 2744	1,5h/M	EB67002108T0000	Emergency 2821	1h/NM
EAL7002106S0000	Emergency 2745	3h/M	EB77002108V0000	Emergency 2822	3h/NM
<b>Emergency 2750</b>			EB87002108Q0000	Emergency 2824	1h/M
EAM7302108U0000	Emergency 2751	1,5h/NM DOWN	EB97002109S0000	Emergency 2825	3h/M
EAM7402108U0000	Emergency 2751	1,5h/NM EXIT	<b>Emergency 2830</b>		
EAM7502108U0000	Emergency 2751	1,5h/NM L/R	EBA7002108T0000	Emergency 2831	1h/NM
EAM7702108U0000	Emergency 2751	1,5h/NM UP	EBB7002108V0000	Emergency 2832	3h/NM
EAN7302108V0000	Emergency 2752	3h/NM DOWN	EB7002108Q0000	Emergency 2834	1h/M
EAN7402108V0000	Emergency 2752	3h/NM EXIT	EBD7002108S0000	Emergency 2835	3h/M
EAN7502108V0000	Emergency 2752	3h/NM L/R	<b>Emergency 2840</b>		
EAN7702108V0000	Emergency 2752	3h/NM UP	EBI7002108V0000	Emergency 2841	3h/NM
EAO7702108R0000	Emergency 2754	1,5h/M UP	<b>Emergency 2850</b>		
EA07302108R0000	Emergency 2754	1,5h/M DOWN	EBJ7002108V0000	Emergency 2851	3h/NM
EA07402108R0000	Emergency 2754	1,5h/M EXIT			
EA07502108R0000	Emergency 2754	1,5h/M L/R			
EAP7702108S0000	Emergency 2755	3h/M UP			
EAP7302108S0000	Emergency 2755	3h/M DOWN			
EAP7402108S0000	Emergency 2755	3h/M EXIT			
EAP7502108S0000	Emergency 2755	3h/M L/R			

- Leuchtenkörper: graues Polykarbonat
- Diffusor: klares Polykarbonat
- Ni-Cd Batterie
- Testknopf – zur Überwachung der Funktion der Notschaltung
- LED-Anzeige der Aufladung
- Überspannungs- und Entladungsschutz der Batterie
- zur Anbau- oder Hängemontage bestimmt







SIMPLE

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# SIMPLE

## SIMPLE

### KONŠTRUKCIA

**Teleso svietidla (TS/PS):** oceľový plech, povrchovo upravený elektrostaticky nanášanou práškovou farbou - základný odtieň RAL 9003 (signálna biela, lesklá)

**Teleso svietidla (US):** biely lakoplastovaný plech

**Teleso svietidla (WS):** polyester, vystužený sklenými vláknami

**Koncovky svietidiel:** polystyrén (rad TS), polykarbonát (rad PS/US)

**Reflektor:** leštený hliník alebo na bielo nastriekaný plech (RAL 9003 – signálna biela)

Pre svietidlá Simple WS je na požiadanie možné dodať kryty žiaroviek z číreho polykarbonátu.

### ELEKTRICKÁ VÝBAVA

#### Svietidlá môžu byť vybavené:

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá nie sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

#### Ostatné komponenty:

- svetelné zdroje: lineárne žiarivky T5 (16 mm), T8 (26 mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny (okrem verzií 18W a 2x36W CCG)

### PRÍSLUŠENSTVO

- závesné príslušenstvo

## SIMPLE

### CONSTRUCTION

**Luminaire housing (TS/PS):** sheet steel, finished with electrostatic powder coating – basic shade RAL 9003 (signal white, glossy)

**Housing (US):** white plastic-varnished metal sheet

**Housing (WS):** fibreglass-reinforced polyester

**Luminaire endings:** polystyrene (TS range), polycarbonate (PS/US range)

**Reflector:** polished aluminium or white painted metal sheet (RAL 9003 – signal white)

Simple WS luminaires can be equipped with pure polycarbonate lamp covers on request.

### WIRING

**Lighting fixtures can be equipped with:**

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, lighting fixtures are not standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm), T8 (26 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- emergency version of lighting fixtures with autonomous operation 1 or 3 hours is available on request (except versions 1x18W and 2x36W CCG)

### ACCESSORIES

- suspension accessories

## SIMPLE

### KONSTRUKTION

**Leuchtenkörper (TS/PS):** Stahlblech, Oberflächenbehandlung mit einer elektrostatisch beschichteten Pulverfarbe - Grundton RAL 9003 (signalweiß, glänzend).

**Leuchtenkörper (US):** weißes Blech mit Lack-Kunststoffbeschichtung

**Leuchtenkörper (WS):** mit Glasfasern bewehrtes Polyester

**Endstücke der Leuchten:** Polystyrol (Reihe TS), Polykarbonat (Reihe PS/US)

**Reflektor:** poliertes Aluminium oder weiß aufgespritztes Blech (RAL 9003 – Signalweiß)

Es ist möglich, für die Leuchten Simple WS die Deckel der Leuchtstoffröhren aus klarem Polykarbonat auf Wunsch zu liefern.

### ELEKTRISCHE AUSRÜSTUNG

**Die Leuchten können ausgerüstet sein:**

- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, die Klasse EEI=B1 auf Wunsch, die Leuchten sind nicht standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit dimmbar elektronischen Vorschaltgeräten, die Klasse EEI=A1 (die Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert sein)

**Andere Komponenten:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm), T8 (26 mm) - es ist notwendig die Lichtquellen extra zu bestellen
- die Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- es ist möglich die Leuchte auf Wunsch mit Noteinheiten mit einem unabhängigen Betrieb von 1 oder 3 Stunden auszurüsten (außer den Ausführungen 18W a 2x36W CCG)

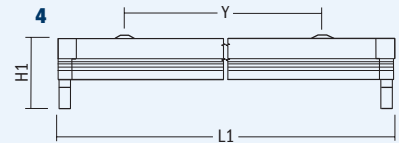
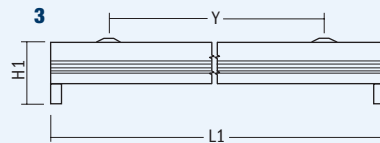
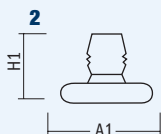
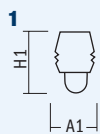
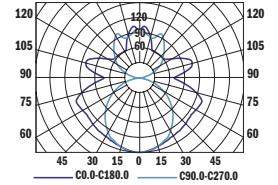
### ZUBEHÖR

- Hängezubehör

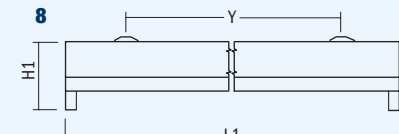
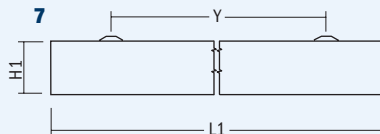
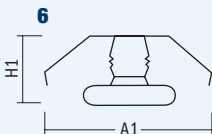
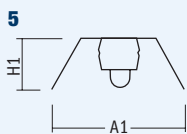
# SIMPLE

## TS/TSM-W/TSM-AL T8

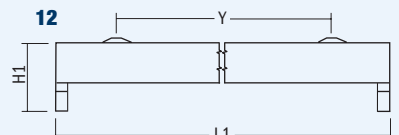
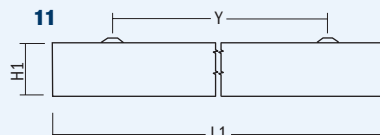
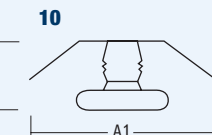
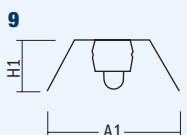
SIMPLE TS T8 2x36W



	OPTIC TS	POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
					A1	L1	H1	
Simple TS T8	•	1x18	T8	1;3	50	620	75	507
Simple TS T8	•	1x36	T8	1;3	50	1225	75	820
Simple TS T8	•	1x58	T8	1;3	50	1530	75	820
Simple TS T8	•	2x18	T8	2;4	100	620	85	507
Simple TS T8	•	2x36	T8	2;4	100	1225	85	820
Simple TS T8	•	2x58	T8	2;4	100	1530	85	820

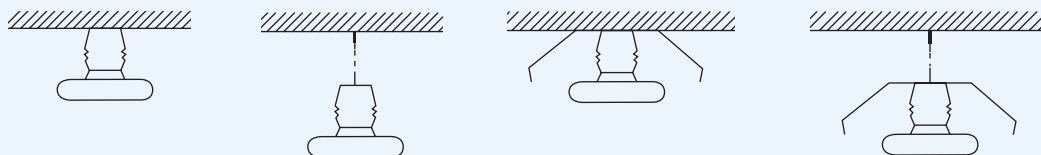


	OPTIC TSM-W	POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
					A1	L1	H1	
Simple TSM-W T8	•	1x18	T8	5;7	140	620	90	507
Simple TSM-W T8	•	1x36	T8	5;7	140	1225	90	820
Simple TSM-W T8	•	1x58	T8	5;7	140	1530	90	820
Simple TSM-W T8	•	2x18	T8	6;8	185	620	85	507
Simple TSM-W T8	•	2x36	T8	6;8	185	1225	85	820
Simple TSM-W T8	•	2x58	T8	6;8	185	1530	85	820



	OPTIC TSM-AL	POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
					A1	L1	H1	
Simple TSM-AL T8	•	1x18	T8	9;11	130	620	80	507
Simple TSM-AL T8	•	1x36	T8	9;11	130	1225	80	820
Simple TSM-AL T8	•	1x58	T8	9;11	130	1530	80	820
Simple TSM-AL T8	•	2x18	T8	10;12	200	620	85	507
Simple TSM-AL T8	•	2x36	T8	10;12	200	1225	85	820
Simple TSM-AL T8	•	2x58	T8	10;12	200	1530	85	820

### INSTALLATION





SIMPLE TS T8 2x36W

1x...



TS



2x...



TSM-W



TSM-AL



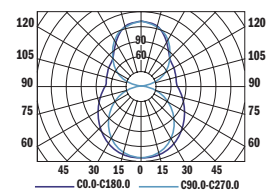


# SIMPLE

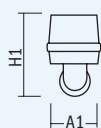
## WS/WS-T T8

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 G13	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP 65
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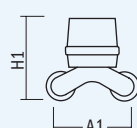
SIMPLE WS T8 2x36W



1



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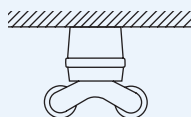


3



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
	WS	WS-T				A1	L1	H1	
Simple WS T8	•	•	1x36	T8	1;3	62	1265	130	800
Simple WS T8	•	•	1x58	T8	1;3	62	1560	130	1100
Simple WS T8	•	•	2x36	T8	2;3	125	1265	125	800
Simple WS T8	•	•	2x58	T8	2;3	125	1560	125	1100

INSTALLATION





SIMPLE WS T8 2x36W IP 65

1x...



WS



1x...



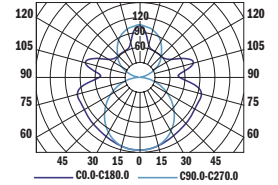
WS-T  
with protective tube



# SIMPLE

## US/USM-W/USM-AL T5/T8

SIMPLE US T5 2x28W

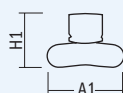


220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 E17/E18 G13	T5 E17/E18 G5	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP20
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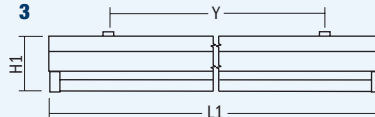
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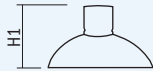


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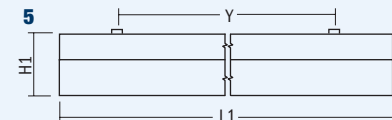


	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
	US					A1	L1	H1	
Simple US T8	•		1x18	T8	1;3	48	630	95	560
Simple US T8	•		1x36	T8	1;3	48	1238	95	1170
Simple US T8	•		1x58	T8	1;3	48	1538	95	1270
Simple US T8	•		2x18	T8	2;3	100	630	90	560
Simple US T8	•		2x36	T8	2;3	100	1238	90	1170
Simple US T8	•		2x58	T8	2;3	100	1538	90	1270
Simple US T5	•		1x14	T5	1;3	48	585	95	515
Simple US T5	•		1x24	T5	1;3	48	585	95	515
Simple US T5	•		1x28	T5	1;3	48	1187	95	1115
Simple US T5	•		1x35	T5	1;3	48	1487	95	1415
Simple US T5	•		1x49	T5	1;3	48	1487	95	1415
Simple US T5	•		1x54	T5	1;3	48	1187	95	1115
Simple US T5	•		1x80	T5	1;3	48	1487	95	1415
Simple US T5	•		2x14	T5	2;3	100	585	90	515
Simple US T5	•		2x24	T5	2;3	100	585	90	515
Simple US T5	•		2x28	T5	2;3	100	1187	90	1115
Simple US T5	•		2x35	T5	2;3	100	1487	90	1415
Simple US T5	•		2x49	T5	2;3	100	1487	90	1415
Simple US T5	•		2x54	T5	2;3	100	1187	90	1115
Simple US T5	•		2x80	T5	2;3	100	1487	90	1415

4



5



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
	USM-W	USM-AL				A1	L1	H1	
Simple USM T8	•	•	1x18	T8	4;5	205	630	130	560
Simple USM T8	•	•	1x36	T8	4;5	205	1238	130	1170
Simple USM T8	•	•	1x58	T8	4;5	205	1538	130	1270
Simple USM T8	•	•	2x18	T8	4;5	205	630	130	560
Simple USM T8	•	•	2x36	T8	4;5	205	1238	130	1170
Simple USM T8	•	•	2x58	T8	4;5	205	1538	130	1270
Simple USM T5	•	•	1x14	T5	4;5	205	585	130	515
Simple USM T5	•	•	1x24	T5	4;5	205	585	130	515
Simple USM T5	•	•	1x28	T5	4;5	205	1187	130	1115
Simple USM T5	•	•	1x35	T5	4;5	205	1487	130	1415
Simple USM T5	•	•	1x49	T5	4;5	205	1487	130	1415
Simple USM T5	•	•	1x54	T5	4;5	205	1187	130	1115
Simple USM T5	•	•	1x80	T5	4;5	205	1487	130	1415
Simple USM T5	•	•	2x14	T5	4;5	205	585	130	515
Simple USM T5	•	•	2x24	T5	4;5	205	585	130	515
Simple USM T5	•	•	2x28	T5	4;5	205	1187	130	1115
Simple USM T5	•	•	2x35	T5	4;5	205	1487	130	1415
Simple USM T5	•	•	2x49	T5	4;5	205	1487	130	1415
Simple USM T5	•	•	2x54	T5	4;5	205	1187	130	1115
Simple USM T5	•	•	2x80	T5	4;5	205	1487	130	1415

INSTALLATION





SIMPLE US T5 2x28W

US



1x...



USM-W



2x...

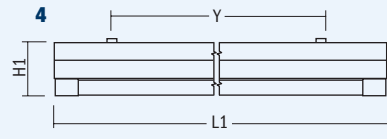
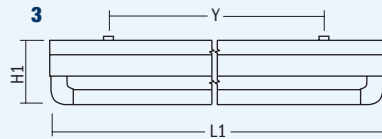
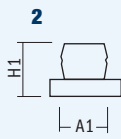
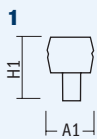
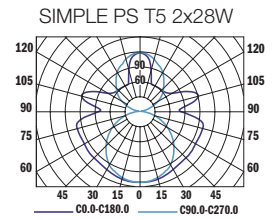


USM-AL

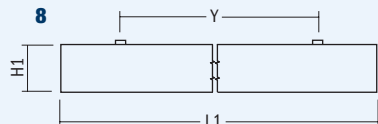
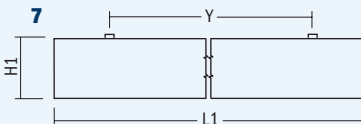
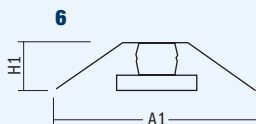
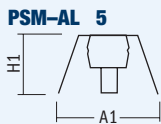
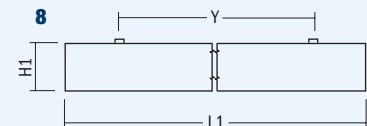
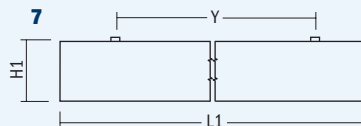
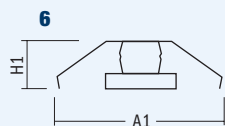
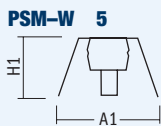


# SIMPLE

## PS/PSM-W/PSM-AL T5

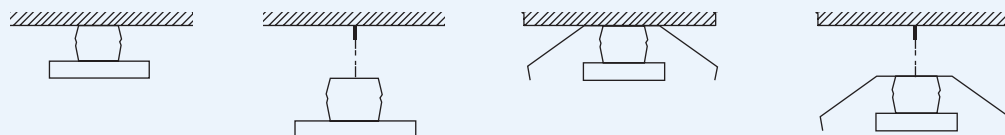


	OPTIC PS	POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
					A1	L1	H1	
Simple PS T5	•	1x14	T5	1;3	52	620	85	507
Simple PS T5	•	1x24	T5	1;3	52	620	85	507
Simple PS T5	•	1x28	T5	1;3	52	1225	85	820
Simple PS T5	•	1x35	T5	1;3	52	1530	85	820
Simple PS T5	•	1x49	T5	1;3	52	1530	85	820
Simple PS T5	•	1x54	T5	1;3	52	1225	85	820
Simple PS T5	•	1x80	T5	1;3	52	1530	85	820
Simple PS T5	•	2x14	T5	2;4	105	620	85	507
Simple PS T5	•	2x24	T5	2;4	105	620	85	507
Simple PS T5	•	2x28	T5	2;4	105	1225	85	820
Simple PS T5	•	2x35	T5	2;4	105	1530	85	820
Simple PS T5	•	2x49	T5	2;4	105	1530	85	820
Simple PS T5	•	2x54	T5	2;4	105	1225	85	820
Simple PS T5	•	2x80	T5	2;4	105	1530	85	820



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS					FIXING Y
	PSM-W	PSM-AL				A1/W	A1/AL	L1	H1/W	H1/AL	
Simple PSM T5	•	•	1x14	T5	5;7	140	130	620	90	80	507
Simple PSM T5	•	•	1x24	T5	5;7	140	130	620	90	80	507
Simple PSM T5	•	•	1x28	T5	5;7	140	130	1225	90	80	820
Simple PSM T5	•	•	1x35	T5	5;7	140	130	1530	90	80	820
Simple PSM T5	•	•	1x49	T5	5;7	140	130	1225	90	80	820
Simple PSM T5	•	•	1x54	T5	5;7	140	130	1225	90	80	820
Simple PSM T5	•	•	1x80	T5	5;7	140	130	1530	90	80	820
Simple PSM T5	•	•	2x14	T5	6;8	185	200	620	65	40	507
Simple PSM T5	•	•	2x24	T5	6;8	185	200	620	65	40	507
Simple PSM T5	•	•	2x28	T5	6;8	185	200	1225	65	40	820
Simple PSM T5	•	•	2x35	T5	6;8	185	200	1530	65	40	820
Simple PSM T5	•	•	2x49	T5	6;8	185	200	1225	65	40	820
Simple PSM T5	•	•	2x54	T5	6;8	185	200	1225	65	40	820
Simple PSM T5	•	•	2x80	T5	6;8	185	200	1530	65	40	820

INSTALLATION





SIMPLE PS T5 2x28W

1x...



PS



2x...



PSM-W



PSM-AL





ORDER CODE	TYPE	SPECIFICATION
<b>SIMPLE TS</b>		
<b>SIMPLE TS T8</b>		
S01000311832000	SIMPLE TS T8	1x18W, CCG B2, RAL 9003
S01000311882000	SIMPLE TS T8	1x18W, ECG A2, RAL 9003
S01000313632000	SIMPLE TS T8	1x36W, CCG B2, RAL 9003
S01000313682000	SIMPLE TS T8	1x36W, ECG A2, RAL 9003
S01000315832000	SIMPLE TS T8	1x58W, CCG B2, RAL 9003
S01000315882000	SIMPLE TS T8	1x58W, ECG A2, RAL 9003
S01000321832000	SIMPLE TS T8	2x18W, CCG B2, RAL 9003
S01000321882000	SIMPLE TS T8	2x18W, ECG A2, RAL 9003
S01000323632000	SIMPLE TS T8	2x36W, CCG B2, RAL 9003
S01000323682000	SIMPLE TS T8	2x36W, ECG A2, RAL 9003
S01000325832000	SIMPLE TS T8	2x58W, CCG B2, RAL 9003
S01000325882000	SIMPLE TS T8	2x58W, ECG A2, RAL 9003
<b>SIMPLE TSM-W T8</b>		
S025F0311832000	SIMPLE TSM-W T8	1x18W, CCG B2, RAL 9003
S025F0311882000	SIMPLE TSM-W T8	1x18W, ECG A2, RAL 9003
S025F0313632000	SIMPLE TSM-W T8	1x36W, CCG B2, RAL 9003
S025F0313682000	SIMPLE TSM-W T8	1x36W, ECG A2, RAL 9003
S025F0315832000	SIMPLE TSM-W T8	1x58W, CCG B2, RAL 9003
S025F0315882000	SIMPLE TSM-W T8	1x58W, ECG A2, RAL 9003
S025F0321832000	SIMPLE TSM-W T8	2x18W, CCG B2, RAL 9003
S025F0321882000	SIMPLE TSM-W T8	2x18W, ECG A2, RAL 9003
S025F0323632000	SIMPLE TSM-W T8	2x36W, CCG B2, RAL 9003
S025F0323682000	SIMPLE TSM-W T8	2x36W, ECG A2, RAL 9003
S025F0325832000	SIMPLE TSM-W T8	2x58W, CCG B2, RAL 9003
S025F0325882000	SIMPLE TSM-W T8	2x58W, ECG A2, RAL 9003
<b>SIMPLE TSM-AL T8</b>		
S03500311832000	SIMPLE TSM-AL T8	1x18W, CCG B2, RAL 9003
S03500311882000	SIMPLE TSM-AL T8	1x18W, ECG A2, RAL 9003
S03500313632000	SIMPLE TSM-AL T8	1x36W, CCG B2, RAL 9003
S03500313682000	SIMPLE TSM-AL T8	1x36W, ECG A2, RAL 9003
S03500315832000	SIMPLE TSM-AL T8	1x58W, CCG B2, RAL 9003
S03500315882000	SIMPLE TSM-AL T8	1x58W, ECG A2, RAL 9003
S03500321832000	SIMPLE TSM-AL T8	2x18W, CCG B2, RAL 9003
S03500321882000	SIMPLE TSM-AL T8	2x18W, ECG A2, RAL 9003
S03500323632000	SIMPLE TSM-AL T8	2x36W, CCG B2, RAL 9003
S03500323682000	SIMPLE TSM-AL T8	2x36W, ECG A2, RAL 9003
S03500325832000	SIMPLE TSM-AL T8	2x58W, CCG B2, RAL 9003
S03500325882000	SIMPLE TSM-AL T8	2x58W, ECG A2, RAL 9003
<b>ACCESSORIES</b>		
<b>SUSPENSION</b>		
SUS 1.25 C0/007	SUSPENSION 07	SIMPLE TS
SUS 1.25 C0/008	SUSPENSION 08	SIMPLE TS
SUS 1.35 C0/009	SUSPENSION 09	SIMPLE TS
SUS 1.35 C0/010	SUSPENSION 10	SIMPLE TS
<b>SIMPLE WS</b>		
<b>SIMPLE WS T8</b>		
S04000313630000	SIMPLE WS T8	1x36W, CCG B2
S04000313680000	SIMPLE WS T8	1x36W, ECG A2
S04000315830000	SIMPLE WS T8	1x58W, CCG B2
S04000315880000	SIMPLE WS T8	1x58W, ECG A2
S04000323630000	SIMPLE WS T8	2x36W, CCG B2
S04000323680000	SIMPLE WS T8	2x36W, ECG A2
S04000325830000	SIMPLE WS T8	2x58W, CCG B2
S04000325880000	SIMPLE WS T8	2x58W, ECG A2
<b>SIMPLE WS-T T8</b>		
S05000313630000	SIMPLE WS-T T8	1x36W, CCG B2
S05000313680000	SIMPLE WS-T T8	1x36W, ECG A2
S05000315830000	SIMPLE WS-T T8	1x58W, CCG B2
S05000315880000	SIMPLE WS-T T8	1x58W, ECG A2
S05000323630000	SIMPLE WS-T T8	2x36W, CCG B2
S05000323680000	SIMPLE WS-T T8	2x36W, ECG A2
S05000325830000	SIMPLE WS-T T8	2x58W, CCG B2
S05000325880000	SIMPLE WS-T T8	2x58W, ECG A2
<b>SIMPLE US</b>		
<b>SIMPLE US T8</b>		
S06000311830000	SIMPLE US T8	1x18W, CCG B2
S06000311880000	SIMPLE US T8	1x18W, ECG A2
S06000313630000	SIMPLE US T8	1x36W, CCG A2
S06000313680000	SIMPLE US T8	1x36W, ECG A2
S06000315830000	SIMPLE US T8	1x58W, CCG B2
S06000315880000	SIMPLE US T8	1x58W, ECG A2
S06000321830000	SIMPLE US T8	2x18W, CCG B2
S06000321880000	SIMPLE US T8	2x18W, ECG A2
S06000323630000	SIMPLE US T8	2x36W, CCG B2
S06000323680000	SIMPLE US T8	2x36W, ECG A2
S06000325830000	SIMPLE US T8	2x58W, CCG B2
S06000325880000	SIMPLE US T8	2x58W, ECG A2
<b>SIMPLE US T5</b>		
S06000211480000	SIMPLE US T5	1x14W, ECG A2
S06000212480000	SIMPLE US T5	1x24W, ECG A2
S06000212880000	SIMPLE US T5	1x28W, ECG A2
S06000213580000	SIMPLE US T5	1x35W, ECG A2
S06000214980000	SIMPLE US T5	1x49W, ECG A2
S06000215480000	SIMPLE US T5	1x54W, ECG A2
S06000218080000	SIMPLE US T5	1x80W, ECG A2
S06000221480000	SIMPLE US T5	2x14W, ECG A2
S06000222480000	SIMPLE US T5	2x24W, ECG A2
S06000222880000	SIMPLE US T5	2x28W, ECG A2
S06000223580000	SIMPLE US T5	2x35W, ECG A2
S06000224980000	SIMPLE US T5	2x49W, ECG A2
S06000225480000	SIMPLE US T5	2x54W, ECG A2
S06000228080000	SIMPLE US T5	2x80W, ECG A2
<b>SIMPLE US-W T8</b>		
S075F0311830000	SIMPLE US-W T8	1x18W, CCG B2
S075F0311880000	SIMPLE US-W T8	1x18W, ECG A2
S075F0313630000	SIMPLE US-W T8	1x36W, CCG B2
S075F0313680000	SIMPLE US-W T8	1x36W, ECG A2
S075F0315830000	SIMPLE US-W T8	1x58W, CCG B2
S075F0315880000	SIMPLE US-W T8	1x58W, ECG A2
S075F0321830000	SIMPLE US-W T8	2x18W, CCG B2
S075F0321880000	SIMPLE US-W T8	2x18W, ECG A2
S075F0323630000	SIMPLE US-W T8	2x36W, CCG B2

ORDER CODE	TYPE	SPECIFICATION
S075F0323680000	SIMPLE US-W T8	2x36W, ECG A2
S075F0325830000	SIMPLE US-W T8	2x58W, CCG B2
S075F0325880000	SIMPLE US-W T8	2x58W, ECG A2
<b>SIMPLE US-W T5</b>		
S075F0211480000	SIMPLE US-W T5	1x14W, ECG A2
S075F0212480000	SIMPLE US-W T5	1x24W, ECG A2
S075F0212880000	SIMPLE US-W T5	1x28W, ECG A2
S075F0213580000	SIMPLE US-W T5	1x35W, ECG A2
S075F0214980000	SIMPLE US-W T5	1x49W, ECG A2
S075F0215480000	SIMPLE US-W T5	1x54W, ECG A2
S075F0218080000	SIMPLE US-W T5	1x80W, ECG A2
S075F0221480000	SIMPLE US-W T5	2x14W, ECG A2
S075F0222480000	SIMPLE US-W T5	2x24W, ECG A2
S075F0222880000	SIMPLE US-W T5	2x28W, ECG A2
S075F0223580000	SIMPLE US-W T5	2x35W, ECG A2
S075F0224980000	SIMPLE US-W T5	2x49W, ECG A2
S075F0225480000	SIMPLE US-W T5	2x54W, ECG A2
S075F0228080000	SIMPLE US-W T5	2x80W, ECG A2
<b>SIMPLE US-AL T8</b>		
S08500311830000	SIMPLE US-AL T8	1x18W, CCG B2
S08500311880000	SIMPLE US-AL T8	1x18W, ECG A2
S08500313630000	SIMPLE US-AL T8	1x36W, CCG B2
S08500313680000	SIMPLE US-AL T8	1x36W, ECG A2
S08500315830000	SIMPLE US-AL T8	1x58W, CCG B2
S08500315880000	SIMPLE US-AL T8	1x58W, ECG A2
S08500321830000	SIMPLE US-AL T8	2x18W, CCG B2
S08500321880000	SIMPLE US-AL T8	2x18W, ECG A2
S08500323630000	SIMPLE US-AL T8	2x36W, CCG B2
S08500323680000	SIMPLE US-AL T8	2x36W, ECG A2
S08500325830000	SIMPLE US-AL T8	2x58W, CCG B2
S08500325880000	SIMPLE US-AL T8	2x58W, ECG A2
<b>SIMPLE US-AL T5</b>		
S08500211480000	SIMPLE US-AL T5	1x14W, ECG A2
S08500212480000	SIMPLE US-AL T5	1x24W, ECG A2
S08500212880000	SIMPLE US-AL T5	1x28W, ECG A2
S08500213580000	SIMPLE US-AL T5	1x35W, ECG A2
S08500214980000	SIMPLE US-AL T5	1x49W, ECG A2
S08500215480000	SIMPLE US-AL T5	1x54W, ECG A2
S08500218080000	SIMPLE US-AL T5	1x80W, ECG A2
S08500221480000	SIMPLE US-AL T5	2x14W, ECG A2
S08500222480000	SIMPLE US-AL T5	2x24W, ECG A2
S08500222880000	SIMPLE US-AL T5	2x28W, ECG A2
S08500223580000	SIMPLE US-AL T5	2x35W, ECG A2
S08500224980000	SIMPLE US-AL T5	2x49W, ECG A2
S08500225480000	SIMPLE US-AL T5	2x54W, ECG A2
S08500228080000	SIMPLE US-AL T5	2x80W, ECG A2
<b>SIMPLE PS</b>		
<b>SIMPLE PS T5</b>		
S09000211482000	SIMPLE PS T5	1x14W, ECG A2, RAL 9003
S09000212482000	SIMPLE PS T5	1x24W, ECG A2, RAL 9003
S09000212882000	SIMPLE PS T5	1x28W, ECG A2, RAL 9003
S09000213582000	SIMPLE PS T5	1x35W, ECG A2, RAL 9003
S09000214982000	SIMPLE PS T5	1x49W, ECG A2, RAL 9003
S09000215482000	SIMPLE PS T5	1x54W, ECG A2, RAL 9003
S09000218082000	SIMPLE PS T5	1x80W, ECG A2, RAL 9003
S09000221482000	SIMPLE PS T5	2x14W, ECG A2, RAL 9003
S09000222482000	SIMPLE PS T5	2x24W, ECG A2, RAL 9003
S09000222882000	SIMPLE PS T5	2x28W, ECG A2, RAL 9003
S09000223582000	SIMPLE PS T5	2x35W, ECG A2, RAL 9003
S09000224982000	SIMPLE PS T5	2x49W, ECG A2, RAL 9003
S09000225482000	SIMPLE PS T5	2x54W, ECG A2, RAL 9003
S09000228082000	SIMPLE PS T5	2x80W, ECG A2, RAL 9003
<b>SIMPLE PS-W T5</b>		
S0A5F0211482000	SIMPLE PS-W T5	1x14W, ECG A2, RAL 9003
S0A5F0212482000	SIMPLE PS-W T5	1x24W, ECG A2, RAL 9003
S0A5F0212882000	SIMPLE PS-W T5	1x28W, ECG A2, RAL 9003
S0A5F0213582000	SIMPLE PS-W T5	1x35W, ECG A2, RAL 9003
S0A5F0214982000	SIMPLE PS-W T5	1x49W, ECG A2, RAL 9003
S0A5F0215482000	SIMPLE PS-W T5	1x54W, ECG A2, RAL 9003
S0A5F0218082000	SIMPLE PS-W T5	1x80W, ECG A2, RAL 9003
S0A5F0221482000	SIMPLE PS-W T5	2x14W, ECG A2, RAL 9003
S0A5F0222482000	SIMPLE PS-W T5	2x24W, ECG A2, RAL 9003
S0A5F0222882000	SIMPLE PS-W T5	2x28W, ECG A2, RAL 9003
S0A5F0223582000	SIMPLE PS-W T5	2x35W, ECG A2, RAL 9003
S0A5F0224982000	SIMPLE PS-W T5	2x49W, ECG A2, RAL 9003
S0A5F0225482000	SIMPLE PS-W T5	2x54W, ECG A2, RAL 9003
S0A5F0228082000	SIMPLE PS-W T5	2x80W, ECG A2, RAL 9003
<b>SIMPLE PS-AL T5</b>		
S0B500211482000	SIMPLE PS-AL T5	1x14W, ECG A2, RAL 9003
S0B500212482000	SIMPLE PS-AL T5	1x24W, ECG A2, RAL 9003
S0B500212882000	SIMPLE PS-AL T5	1x28W, ECG A2, RAL 9003
S0B500213582000	SIMPLE PS-AL T5	1x35W, ECG A2, RAL 9003
S0B500214982000	SIMPLE PS-AL T5	1x49W, ECG A2, RAL 9003
S0B500215482000	SIMPLE PS-AL T5	1x54W, ECG A2, RAL 9003
S0B500218082000	SIMPLE PS-AL T5	1x80W, ECG A2, RAL 9003
S0B500221482000	SIMPLE PS-AL T5	2x14W, ECG A2, RAL 9003
S0B500222482000	SIMPLE PS-AL T5	2x24W, ECG A2, RAL 9003
S0B500222882000	SIMPLE PS-AL T5	2x28W, ECG A2, RAL 9003
S0B500223582000	SIMPLE PS-AL T5	2x35W, ECG A2, RAL 9003
S0B500224982000	SIMPLE PS-AL T5	2x49W, ECG A2, RAL 9003
S0B500225482000	SIMPLE PS-AL T5	2x54W, ECG A2, RAL 9003
S0B500228082000	SIMPLE PS-AL T5	2x80W, ECG A2, RAL 9003
<b>ACCESSORIES</b>		
<b>SUSPENSION</b>		
SUS 1.25 C0/007	SUSPENSION 07	SIMPLE PS/SIMPLE TS
SUS 1.25 C0/008	SUSPENSION 08	SIMPLE PS/SIMPLE TS
SUS 1.35 C0/009	SUSPENSION 09	SIMPLE PS/SIMPLE TS
SUS 1.35 C0/010	SUSPENSION 10	SIMPLE PS/SIMPLE TS

XXXXXXXXXXXX  
**9 - ECG DIM 1-10V**  
**A - ECG DIM DSI**  
**B - ECG DALI**





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# TORNADO

# TORNADO

## TORNADO

**Prachotesné a vodeodolné svietidlo pre lineárne žiarivky s uplatnením v prostrediach s prítomnosťou prachu, špiny, výparov, dymu, so zvýšenou vlhkosťou a rizikom korózie. Možnosť prisadenej alebo závesnej inštalácie. V ponuke aj verzia do prostredia s nebezpečenstvom výbuchu (viac informácií v technickej prílohe).**

### KONŠTRUKCIA

**Teleso svietidla (Tornado PC):** vstrekovaný polykarbonát, šedý

**Teleso svietidla (Tornado PX.ABS):** vstrekovaný ABS, šedý

**Difúzor (Tornado PC):** vstrekovaný polykarbonát, číry

**Difúzor (Tornado PX.ABS):** vstrekovaný polystyrén, číry

**Reflektor:** pre všetky verzie na požiadanie prídavný vrchný reflektor (verzia REF) – symetrický alebo asymetrický

**Klipsy (Tornado PC):** polykarbonátové alebo z nehrdzavejúcej ocele (inox)

**Klipsy (Tornado PX.ABS):** polyamidové alebo z nehrdzavejúcej ocele (inox)

**Inštaláčna doska:** ocelový plech, zvrchu povrchovo upravený (RAL 9003 – biela)

Na inštaláčnej doske svietidla sú umiestnené všetky elektrické komponenty. Pre priebežnú montáž môže byť v svietidlách vedená troj alebo päťžilová kabeláž. Difúzor je vložený do drážky telesa svietidla vyplnenej polyuretánovým tesnením a prichytený klipsami. Tornado umožňuje rýchlu beznástrojovú výmenu svetelných zdrojov. Súčasťou balenia sú inštaláčne klipsy z nerezovej ocele, určené pre prisadenú montáž svietidla. V prípade závesnej montáže sa na klips jednoducho pripevní držiak závesu.

### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá nie sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16mm), T8 (26mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny

### PRÍSLUŠENSTVO

- troj alebo päť žilové vedenie s pevným medeným jadrom prierezu 2,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C) pre možnosť priebežnej montáže
- konektory WIELAND s krytím IP65
- prechodky PG 13,5
- závesné príslušenstvo
- vyhotovenie svietidla v triede II

## TORNADO

**Dust-resistant and waterproof luminaire for linear fluorescent lamps for use in environments involving dust, dirt, vapours, smoke, increased humidity and risk of corrosion. Possibility of surface or pendant installation. Also available in a version for explosive environments (for more information see the technical appendix).**

### CONSTRUCTION

**Body (Tornado PC):** inject polycarbonate, grey

**Body (Tornado PX.ABS):** inject ABS, grey

**Diffuser (Tornado PC):** inject polycarbonate, pure

**Diffuser (Tornado PX.ABS):** inject polystyrene, pure

**Reflector:** additional top reflector (REF version) for all versions available on request – symmetrical or asymmetrical

**Clips (Tornado PC):** polycarbonate or stainless steel (inox)

**Clips (Tornado PX.ABS):** polyamide or stainless steel (inox)

**Installation plate:** metal sheet, surface finished (RAL 9003 – white)

The installation plate of the luminaire contains all electronic components. Three- or five-core cabling can be used in the luminaire for through wiring installation. The diffuser is embedded in the luminary body groove filled with polyurethane sealing and attached using clips. Tornado allows fast toolless luminary replacement. Rustfree steel installation clips designed for surface installation of the luminaire are included in packing. In case of pendant installation, holder is simply attached to the clip.

### WIRING

**Lighting fixtures can be equipped with:**

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, lighting fixtures are not standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm), T8 (26 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- emergency version of lighting fixtures with autonomous operation 1 or 3 hours is available on request

### ACCESSORIES

- PVC insulated solid copper three- or five-core conduction with 2.5 mm<sup>2</sup> diameter (heat resistant up to 90°C) for the option of through wiring installation
- WIELAND connectors with IP65 protection
- PG 13,5 grommet
- Suspension accessories
- class II luminaire version

## TORNADO

**Eine staubdichte und wasserbeständige Leuchte für lineare Leuchtstofflampen mit Anwendung in den Umgebungen mit Staub, Schmutz, Dunst, Rauch, erhöhter Feuchte und Risiko der Korrosion. Die Möglichkeit der Anbau- oder Hängeinstallation. Im Angebot ist auch die Ausführung in die Umgebung mit Explosionsgefahr (mehr Informationen in technischer Anlage).**

### KONSTRUKTION

**Leuchtenkörper (Tornado PC):** eingespritztes graues Polykarbonat

**Leuchtenkörper (Tornado PX.ABS):** eingespritztes graues ABS

**Diffusor (Tornado PC):** eingespritztes klares Polykarbonat

**Diffusor (Tornado PX.ABS):** eingespritztes klares Polystyrol

**Reflektor:** für alle Ausführungen ein zusätzlicher Oberreflektor (Ausführung REF) auf Wunsch – symmetrischer oder asymmetrischer

**Klipps (Tornado PC):** aus Polykarbonat oder aus rostfreiem Stahl (inox)

**Klipps (Tornado PX.ABS):** aus Polyamid oder aus rostfreiem Stahl (inox)

**Installationsplatte:** Stahlblech, von oben mit Oberflächenbehandlung (RAL 9003 – weiß)

Auf der Installationsplatte sind alle elektrische Komponente angebracht. Für durchlaufenden Einbau kann in den Leuchten eine drei- oder fünfadrig Verkabelung geführt werden. Der Diffusor ist in die Rille des Leuchtenkörpers angebracht, die mit Polyurethandichtung gefüllt ist und er ist mit Klipps befestigt. Tornado ermöglicht einen schnellen Austausch der Lichtquellen ohne Werkzeug. Den Bestandteil der Packung bilden die Installationsklipps aus rostfreiem Stahl, die für die Anbaumontage der Leuchte bestimmt sind. Im Fall der Hängemontage wird der Halter der Aufhängung auf den Klipp einfach befestigt.

### ELEKTRISCHE AUSTRÜSTUNG

**Die Leuchten können ausgerüstet sein:**

- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, die Klasse EEI=B1 auf Wunsch, die Leuchten sind nicht standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit dimmbar elektronischen Vorschaltgeräten, die Klasse EEI=A1 (die Vorschaltgeräte können mit einem analogen, digitalen oder DALI-Signal gesteuert sein)

**Andere Komponenten:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm), T8 (26 mm) - es ist notwendig die Lichtquellen extra zu bestellen
- die Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- es ist möglich die Leuchte auf Wunsch mit Noteinheiten mit einem unabhängigen Betrieb von 1 oder 3 Stunden auszurüsten (außer der Ausführung 18W)

### ZUBEHÖR

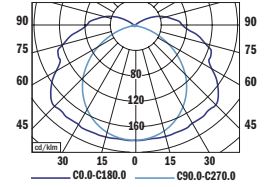
- eine drei- oder fünfadrig Leitung mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C) für die Möglichkeit des durchgehenden Einbaus
- Verbindungsstecker WIELAND mit Schutzart IP65
- Durchführungen PG 13,5
- Hängezubehör
- Ausfertigung der Leuchte in der Klasse II



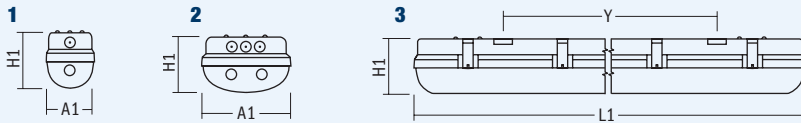
# TORNADO

**PC**  
**T8/T5**

TORNADO PC IP 65 2x36W

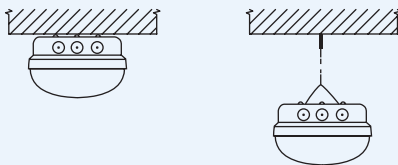


220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T5 G5	T8 G13	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP 65	IK 09	D	Ex
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	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
	DIF	REF				A1	L1	H1	
Tornado PC	•	•	1x18	T8	1;3	100	660	101	490
Tornado PC	•	•	1x36	T8	1;3	100	1270	101	918
Tornado PC	•	•	1x58	T8	1;3	100	1570	101	1220
Tornado PC	•	•	1x70	T8	1;3	100	1839	101	1380
Tornado PC	•	•	2x18	T8	2;3	160	660	101	490
Tornado PC	•	•	2x36	T8	2;3	160	1270	101	918
Tornado PC	•	•	2x58	T8	2;3	160	1570	101	1220
Tornado PC	•	•	2x70	T8	2;3	160	1839	101	1380
Tornado PC	•	•	3x36	T8	2;3	160	1270	101	918
Tornado PC	•	•	1x14	T5	1;3	100	660	101	490
Tornado PC	•	•	1x24	T5	1;3	100	660	101	490
Tornado PC	•	•	1x28	T5	1;3	100	1270	101	918
Tornado PC	•	•	1x35	T5	1;3	100	1570	101	1220
Tornado PC	•	•	1x49	T5	1;3	100	1570	101	1220
Tornado PC	•	•	1x54	T5	1;3	100	1270	101	918
Tornado PC	•	•	1x80	T5	1;3	100	1570	101	1220
Tornado PC	•	•	2x14	T5	2;3	160	660	101	490
Tornado PC	•	•	2x24	T5	2;3	160	660	101	490
Tornado PC	•	•	2x28	T5	2;3	160	1270	101	918
Tornado PC	•	•	2x28	T5	2;3	100	1270	101	918
Tornado PC	•	•	2x35	T5	2;3	160	1570	101	1220
Tornado PC	•	•	2x35	T5	2;3	160	1570	101	1220
Tornado PC	•	•	2x49	T5	2;3	160	1570	101	1220
Tornado PC	•	•	2x54	T5	2;3	160	1270	101	918
Tornado PC	•	•	2x80	T5	2;3	160	1570	101	1220
Tornado PC	•	•	3x14	T5	2;3	160	660	101	490
Tornado PC	•	•	3x24	T5	2;3	160	660	101	490
Tornado PC	•	•	3x28	T5	2;3	160	1270	101	918
Tornado PC	•	•	3x35	T5	2;3	160	1570	101	1220

INSTALLATION





POLYCARBONATE CLIP

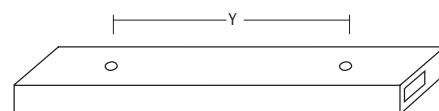
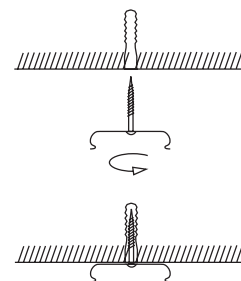
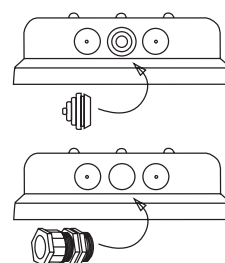
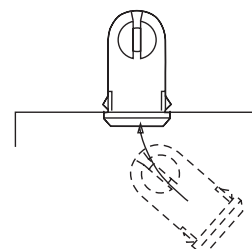
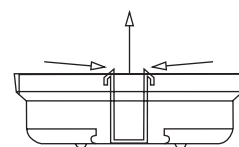


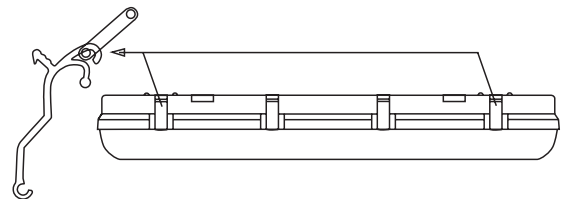
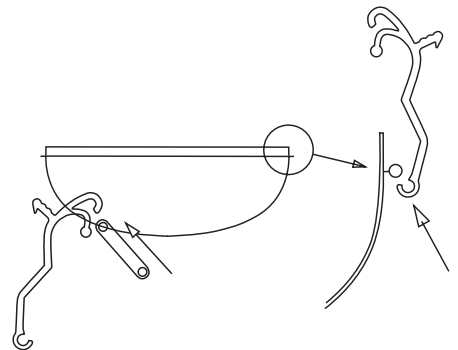
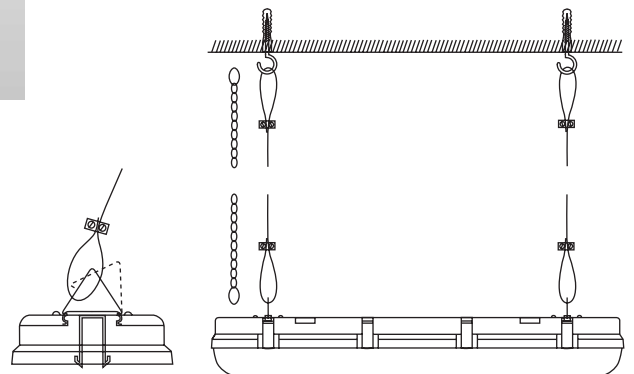
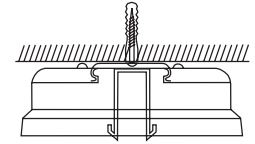
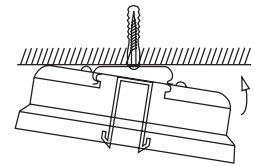
INOX CLIP

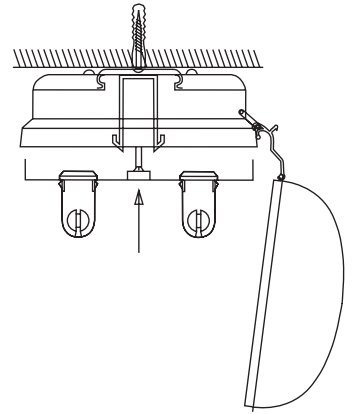
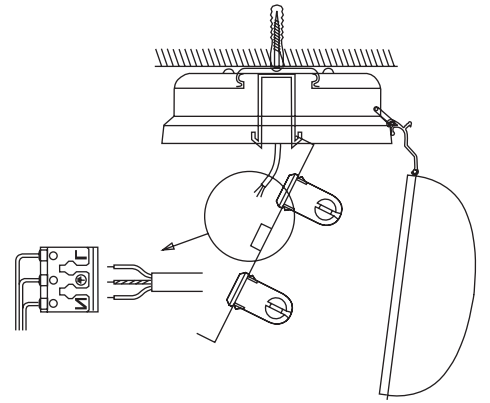


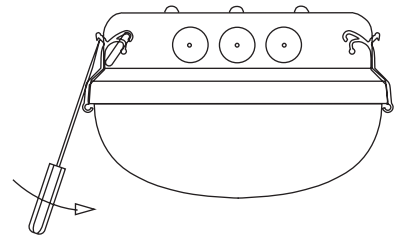
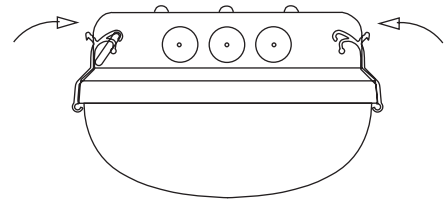


**NÁVOD NA MONTÁŽ**  
**INSTALLATION INSTRUCTIONS**  
**MONTAGEANWEISUNG**









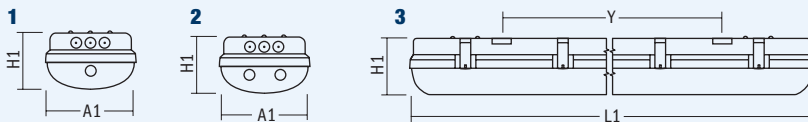
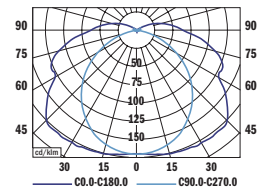


# TORNADO

## PX.ABS T8

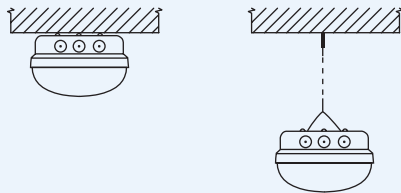
220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T8 G13	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP 65
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TORNADO PX.ABS IP 65 2x36W



	OPTIC		POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
	DIF	REF				A1	L1	H1	
Tornado PX.ABS	•	•	1x36	T8	1;3	136	1270	101	918
Tornado PX.ABS	•	•	1x58	T8	1;3	136	1570	101	1220
Tornado PX.ABS	•	•	2x36	T8	2;3	136	1270	101	918
Tornado PX.ABS	•	•	2x58	T8	2;3	136	1570	101	1220

INSTALLATION





TORNADO PX.ABS 2x36W



PLASTIC CLIP 1x...



INOX CLIP 2x...



# TORNADO

## STEEL

### TORNADO STAINLESS STEEL

**Prachotesné a vodeodolné svietidlo pre lineárne žiarivky so zvýšenou mechanickou odolnosťou, s uplatnením v prostrediach s prítomnosťou prachu, špiny, výparov, dymu, všade tam, kde je vyžadovaná vysoká odolnosť voči korózii alebo chemickým látkam, alebo kde je zvýšené riziko mechanického poškodenia. Svietidlo určené pre závesnú montáž.**

#### KONŠTRUKCIA

**Teleso svietidla:** nerezová oceľ

**Difúzor:** kalené sklo, opieskované na okrajoch

**Reflektor:** pre všetky verzie na požiadanie prídavný vrchný reflektor (verzia REF)

**Klipsy:** z nehrdzavejúcej ocele, poistné skrutky

**Inštalácia doska:** ocelový plech, zvrchu povrchovo upravený (RAL 9003 – biela)

Na inštaláčnej doske svietidla sú umiestnené všetky elektrické komponenty. Krycie sklo je položené na gumenom tesnení uloženom po celom obvode svietidla a prichytené nerezovými klipsami. Klipsy sú proti otvoreniu zaistené skrutkami. Krycie sklo je k inštaláčnej doske prichytené dvomi lankami, čo zjednodušuje výmenu svetelných zdrojov. Súčasťou balenia sú inštaláčne podložky z nerezovej ocele spolu s gumenými podložkami.

#### ELEKTRICKÁ VÝBAVA

**Svietidlá môžu byť vybavené:**

- konvenčnými magnetickými predradníkmi, štandardne triedy EEI=B2, trieda EEI=B1 na požiadanie, svietidlá nie sú štandardne kompenzované
- elektronickými predradníkmi, štandardne triedy EEI=A2
- stmievateľnými elektronickými predradníkmi, trieda EEI=A1 (predradníky môžu byť riadené analógovým, digitálnym alebo DALI signálom)

**Ostatné komponenty:**

- svetelné zdroje: lineárne žiarivky T5 (16 mm), T8 (26 mm) - svetelné zdroje je nutné objednať zvlášť
- vnútorné vodiče s pevným medeným jadrom prierezu 0,5 mm<sup>2</sup> v PVC izolácii (teplotná odolnosť do 90°C)
- bezskrutková troj- alebo päťpólová svorkovnica umožňuje pripojiť vodiče do prierezu max. 2,5 mm<sup>2</sup>
- kovová prechodka PG 13,5
- svietidlá je na požiadanie možné vybaviť núdzovými jednotkami s autonómnou prevádzkou 1 alebo 3 hodiny (okrem 18W verzie)

#### PRÍSLUŠENSTVO

- konektory WIELAND s krytím IP65
- závesné príslušenstvo

## TORNADO STAINLESS STEEL

**Dust-resistant and waterproof luminaire for linear fluorescent lamps with increased mechanical resistance, usable in environments involving dust, dirt, vapours, smoke, or where there is a high resistance to corrosion or chemical substances required, or where an increased risk of mechanical damage exists. Luminaire is designed for pendant installation.**

### CONSTRUCTION

**Housing:** stainless steel

**Diffuser:** hardened glass, sandblasted on the sides

**Reflector:** additional top reflector (REF version) for all versions available on request

**Clips:** stainless steel, secure screws

**Installation plate:** sheet steel, surface finished (RAL 9003 – white)

The installation plate of the luminaire contains all electronic components. Cover glass is laid on rubber sealing all across the luminaire circumference and attached using stainless clips. The clips are secured with screws against opening. The cover glass is attached to the installation plate with two wires, which makes replacement of light sources easier. Stainless steel installation plates together with rubber sealing are included in packing.

### WIRING

**Lighting fixtures can be equipped with:**

- conventional control gears, standard class EEI=B2, class EEI=B1 is available on request, lighting fixtures are not standardly compensated
- electronic control gears, standard class EEI=A2
- dimmable electronic control gears, class EEI=A1 (electronic control gears can be controlled with analogue, digital or DALI signal)

**Other components:**

- lamps: linear fluorescent lamps T5 (16 mm), T8 (26 mm) - lamps must be ordered separately
- solid copper internal conductors, PVC insulated (heat resistant up to 90°C) with 0.5 mm<sup>2</sup> cross-section
- screwless three or five pole terminal allows to connect conductors up to 2.5 mm<sup>2</sup> cross-section
- metal PG 13,5 grommet
- emergency version of lighting fixtures with autonomous operation 1 or 3 hours is available on request (except 18W version)

### ACCESSORIES

- WIELAND connectors with IP65 protection
- pendant accessories

## TORNADO STAINLESS STEEL

**Eine staubdichte und wasserbeständige Leuchte für lineare Leuchtstofflampen mit erhöhter mechanischer Beständigkeit, mit Anwendung in den Umgebungen mit Staub, Schmutz, Dunst, Rauch und dort, wo eine hohe Beständigkeit gegen Korrosion oder chemische Stoffe erfordert ist, oder dort, wo ein erhöhtes Risiko der mechanischen Beschädigung besteht. Die Leuchte ist zur Hängemontage bestimmt.**

### KONSTRUKTION

**Leuchtenkörper:** rostfreier Stahl

**Diffusor:** an Randen sandgestrahltes Hartglas

**Reflektor:** für alle Ausführungen ein zusätzlicher Oberreflektor (Ausführung REF) auf Wunsch

**Klipps:** aus rostfreiem Stahl, Sicherungsschrauben

**Installationsplatte:** Stahlblech, von oben mit Oberflächenbehandlung (RAL 9003 – weiß)

Auf der Installationsplatte der Leuchte sind alle elektrische Komponenten angebracht. Das Deckglas ist auf der Gummidichtung gelegt, die entlang der ganzen Leuchte gelegt ist und es ist mit rostfreien Klipps befestigt. Klipps sind gegen Öffnen mit Schrauben gesichert. Das Deckglas ist zur Installationsplatte mit zwei Seilen befestigt, was den Austausch der Lichtquellen vereinfacht. Den Bestandteil der Packung bilden die Installationsunterlagen aus rostfreiem Stahl zusammen mit Gummiunterlagen.

### ELEKTRISCHE AUSRÜSTUNG

**Die Leuchten können ausgerüstet sein:**

- mit konventionellen magnetischen Vorschaltgeräten, standardgemäß der Klasse EEI=B2, die Klasse EEI=B1 auf Wunsch, die Leuchten sind nicht standardmäßig kompensiert
- mit elektronischen Vorschaltgeräten, standardgemäß der Klasse EEI=A2
- mit dimmbar elektronischen Vorschaltgeräten, die Klasse EEI=A1 (die Vorschaltgeräten können mit einem analogen, digitalen oder DALI-Signal gesteuert sein)

**Andere Komponenten:**

- Lichtquellen: lineare Leuchtstofflampen T5 (16 mm), T8 (26 mm) - es ist notwendig die Lichtquellen extra zu bestellen
- die Innenleiter mit einem festen Kupferkern mit einem Durchmesser von 0,5 mm<sup>2</sup> in einer PVC-Isolierung (Wärmewiderstand bis zu 90°C)
- eine schraubenfreie dreipolige oder fünfpolige Klemmleiste ermöglicht die Leiter in einen Durchmesser von max. 2,5 mm<sup>2</sup> anzuschließen
- Metaldurchführung PG 13,5
- es ist möglich die Leuchte auf Wunsch mit Noteinheiten mit einem unabhängigen Betrieb von 1 oder 3 Stunden auszurüsten (außer der Ausführung 18W)

### ZUBEHÖR

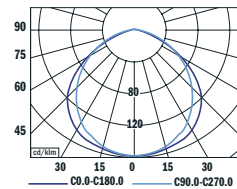
- Verbindungsstecker WIELAND mit Schutzart IP65
- Hängezubehör

# TORNADO

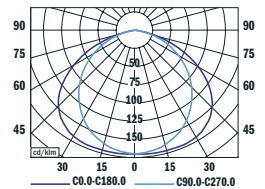
## STEEL T5/T8

220 V 50 Hz	230 V 50 Hz	240 V 50 Hz	220-240V 50-60Hz	T5 G5	T8 G13	CCG EEI-B2	CCG EEI-B1	ECG EEI-A2	ECG EEI-A1	ECG EEI-A1	ECG EEI-A1	EMERGENCY	F	IP 65
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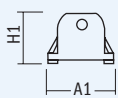
TORNADO STEEL 1x58W



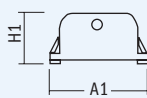
TORNADO STEEL 2x58W



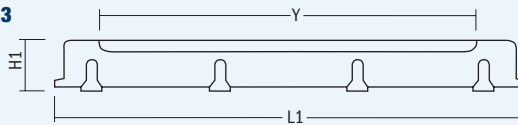
1



2

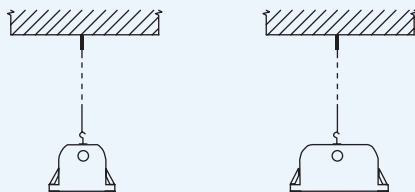


3



	POWER	LAMP	PICTURE	DIMENSIONS			FIXING Y
				A1	L1	H1	
Tornado STEEL	1x18	T8	1,3	135	705	90	500
Tornado STEEL	1x36	T8	1,3	135	1305	90	1100
Tornado STEEL	1x58	T8	1,3	135	1605	90	1400
Tornado STEEL	2x18	T8	2,3	195	705	90	500
Tornado STEEL	2x36	T8	2,3	195	1305	90	1100
Tornado STEEL	2x58	T8	2,3	195	1605	90	1400
Tornado STEEL	1x14	T5	1,3	135	705	90	500
Tornado STEEL	1x24	T5	1,3	135	705	90	500
Tornado STEEL	1x28	T5	1,3	135	1305	90	1100
Tornado STEEL	1x35	T5	1,3	135	1605	90	1400
Tornado STEEL	1x49	T5	1,3	135	1605	90	1400
Tornado STEEL	1x54	T5	1,3	135	1305	90	1100
Tornado STEEL	1x80	T5	1,3	135	1605	90	1400
Tornado STEEL	2x14	T5	2,3	195	705	90	500
Tornado STEEL	2x24	T5	2,3	195	705	90	500
Tornado STEEL	2x28	T5	2,3	195	1305	90	1100
Tornado STEEL	2x35	T5	2,3	195	1605	90	1400
Tornado STEEL	2x49	T5	2,3	195	1605	90	1400
Tornado STEEL	2x54	T5	2,3	195	1305	90	1100

INSTALLATION





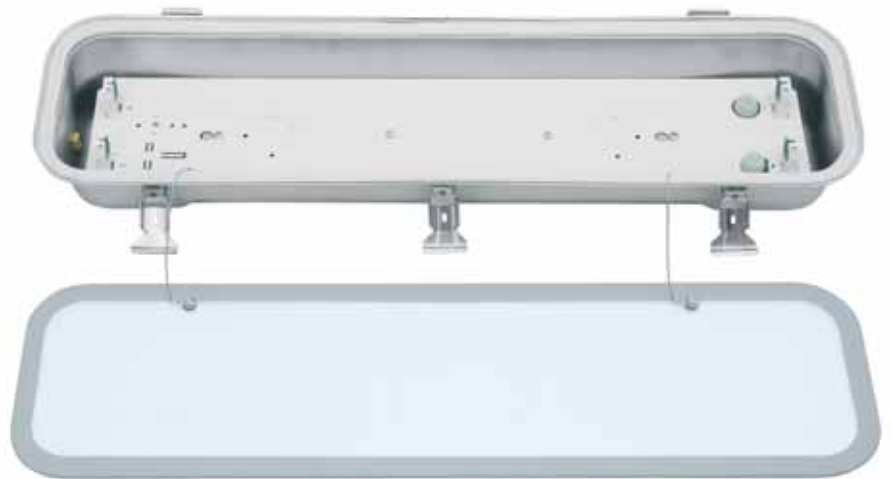
TORNADO STEEL 2x



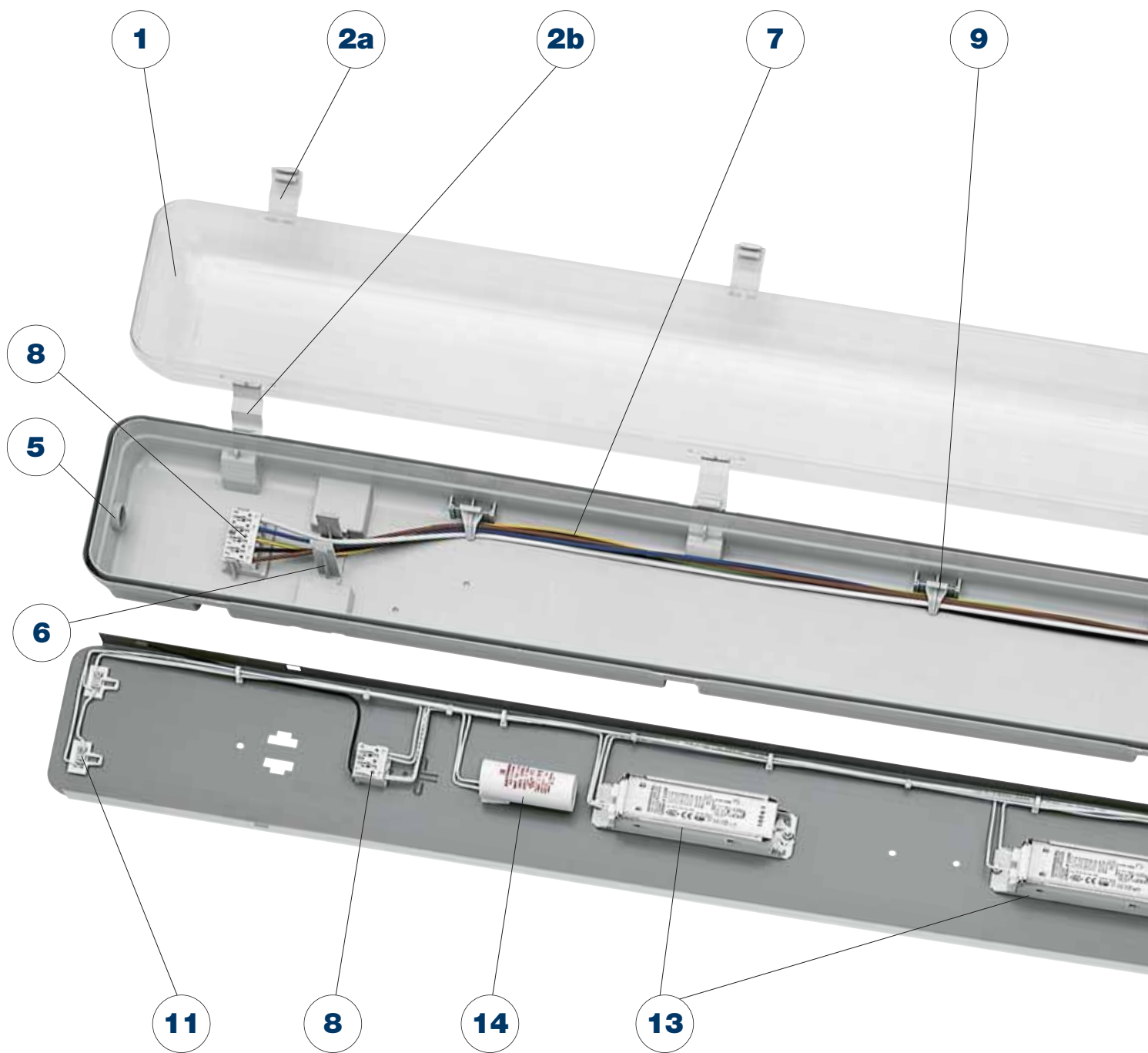
1x...



2x...

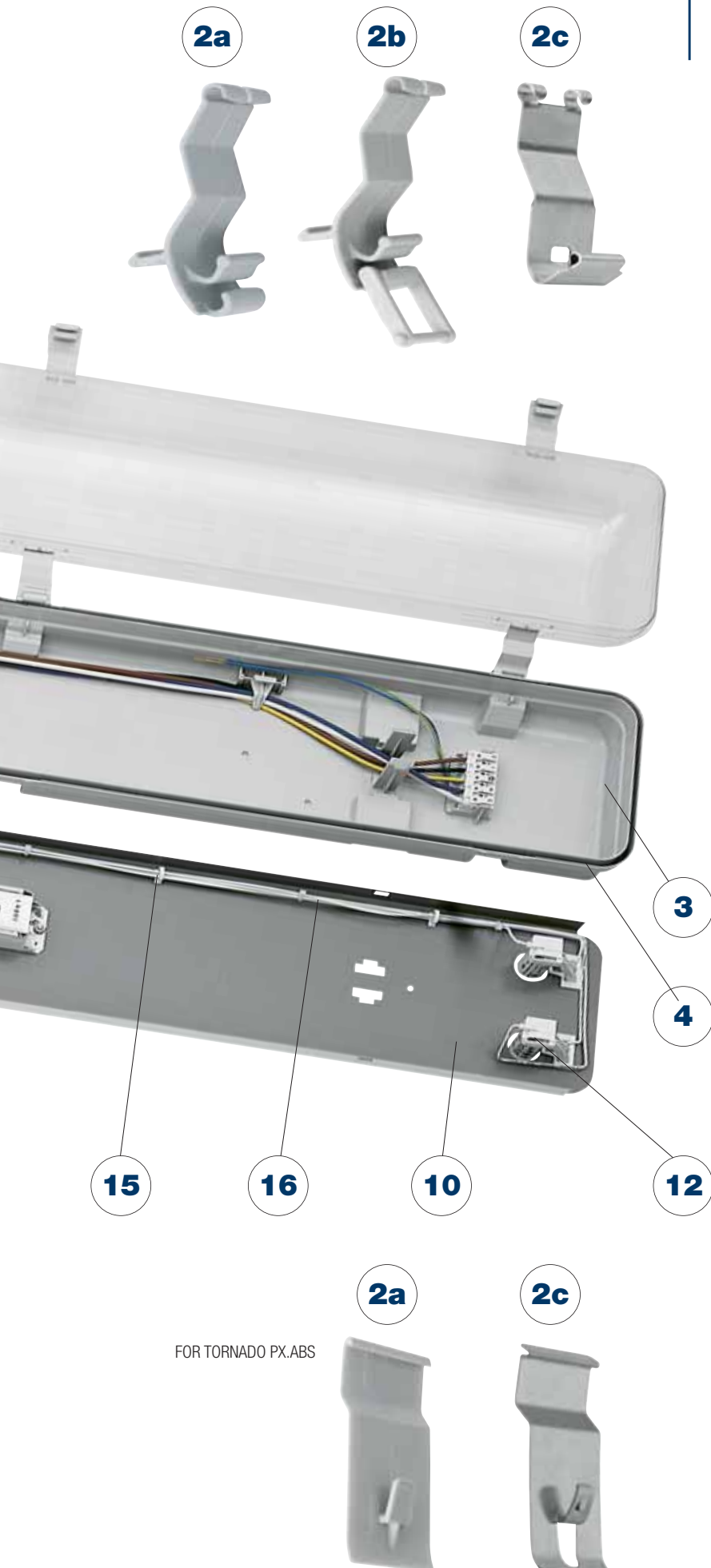






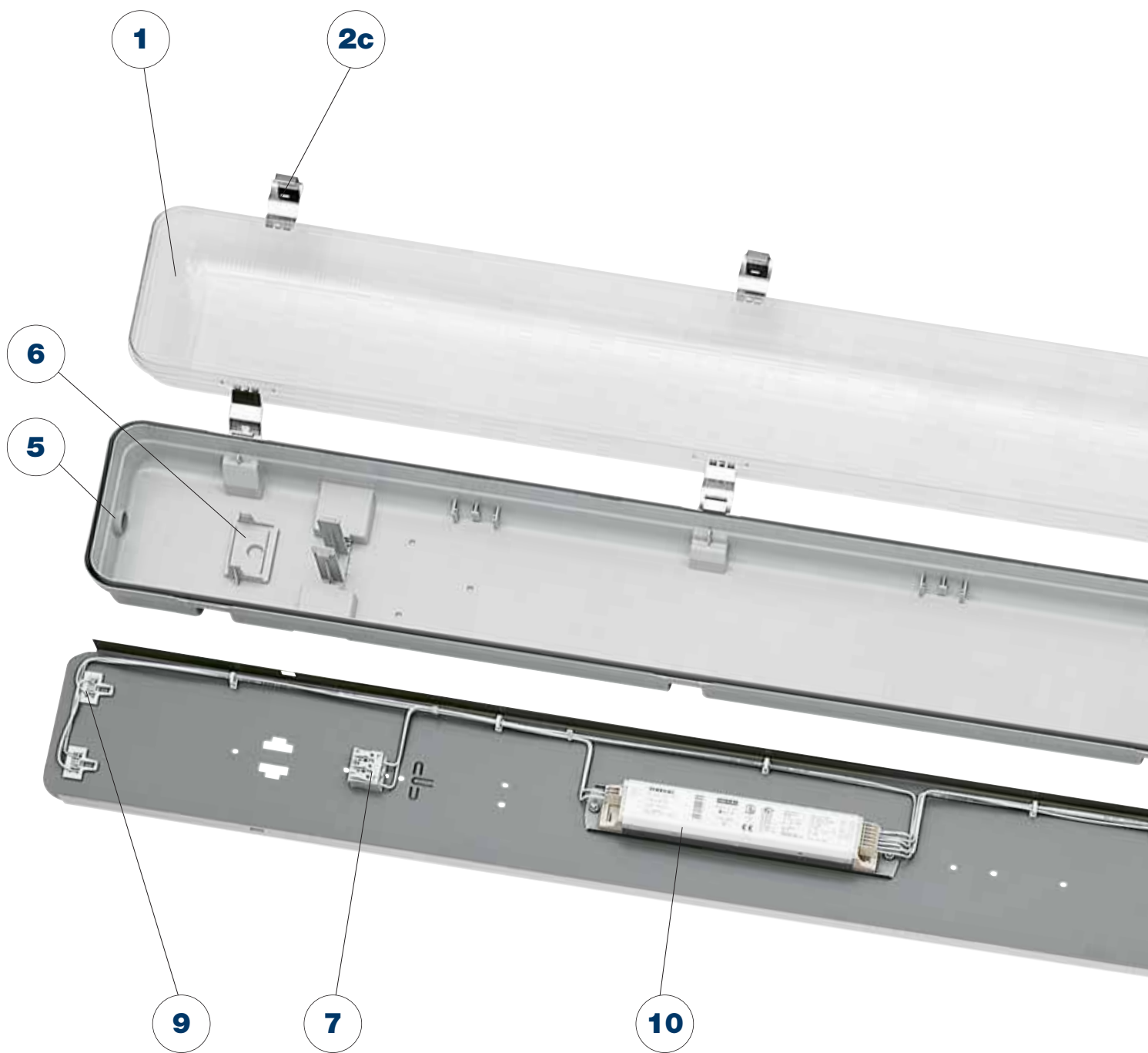
# TORNADO

## PC T8 CONVENTIONAL CONTROL GEAR

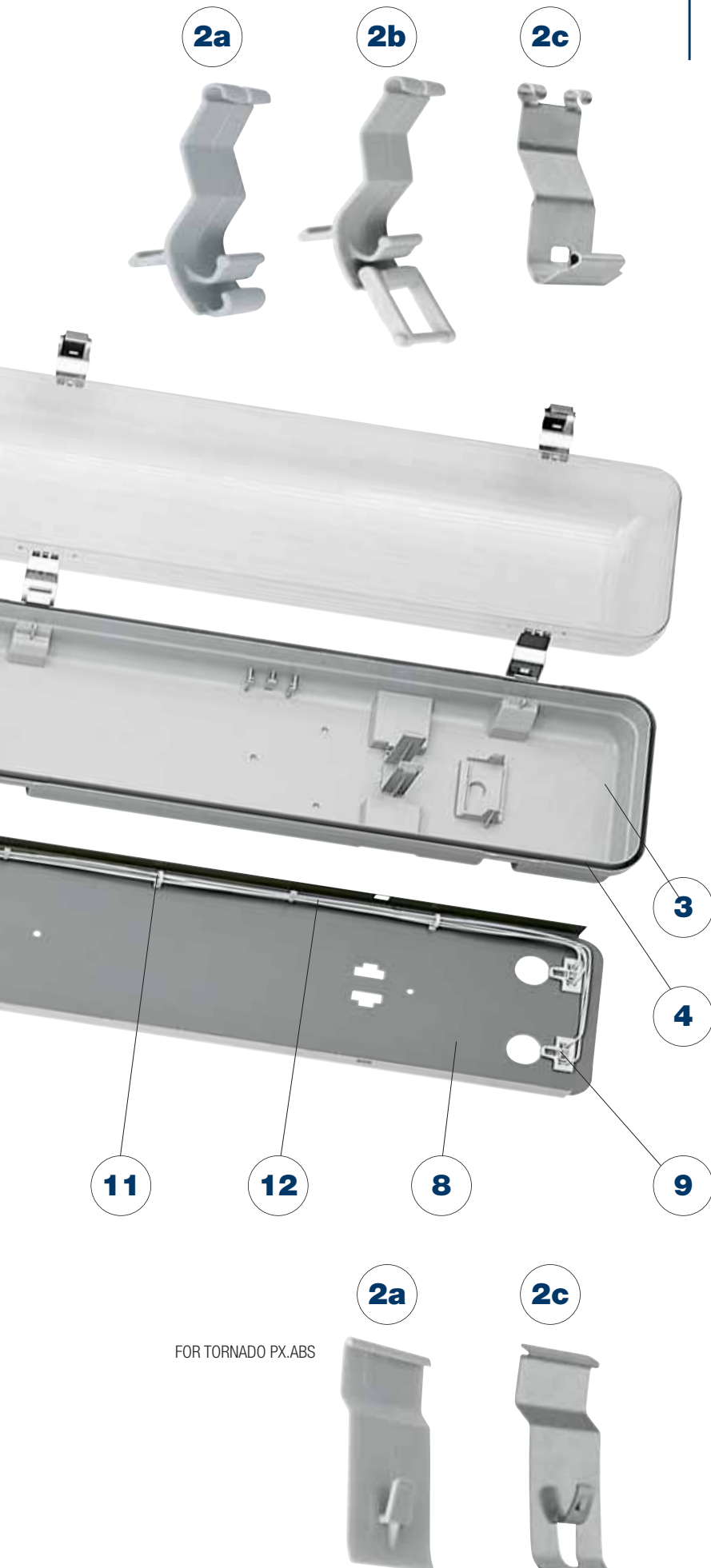


FOR TORNADO PX.ABS

- 1** Difúzor  
Diffusor  
Abdeckwanne
- 2** Polykarbonátový klips  
Polycarbonate clip  
Polycarbonat Federbügel
- 2a** Jednoduchý klips  
Simple clip  
Einfacher Federbügel
- 2b** Kombinovaný klips  
Complex clip  
Mehrzweckbügel
- 2c** Inox klips  
Inox clip  
Inox Federbügel
- 3** Teleso svietidla  
Housing  
Leuchtenkörper
- 4** Polyuretánové tesnenie  
Polyurethane gasket  
Polyurethan-Dichtung
- 5a** Gumová priechodka  
Passing rubber band  
Gummiband
- 5b** PG 13,5  
PG 13,5  
PG 13,5
- 6** Držiak inštalácie dosky  
Gear tray holder  
Geräteplattenhalter
- 7** Priebežná kabeláž  
Through wiring  
Durchverdrahtung
- 8** Svorkovnica  
Terminal block  
Anschlussklemme
- 9** Držiak kabeláže  
Cabel holder  
Kabelhalter
- 10** Doska s elektroinštaláciou  
Gear tray  
Geräteplatte
- 11** Päťica  
Lampholder  
Lampenhalter
- 12** Štartér  
Starter  
Zündgeräte
- 13** Tlmivka  
Magnetic ballast  
Magnetische Vorschaltgeräte
- 14** Kondenzátor  
Capacitor  
Kondensatoren
- 15** Kabeldržiak  
Cabel holder  
Kabelhalter
- 16** Vodič  
Cable  
Kabel
- 17** Inštalčný klips  
Suspension bracket  
Haltebügel
- 18** Držiak závesu  
Suspension holder  
Halter
- 19** Záves  
Suspension  
Aufhängemittel



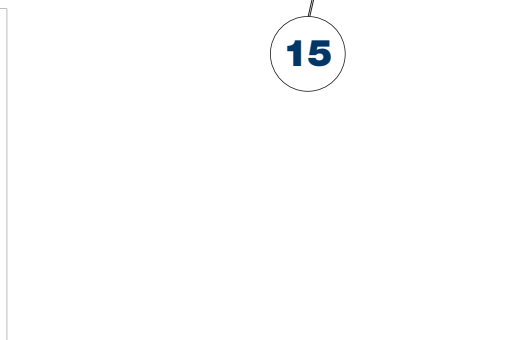
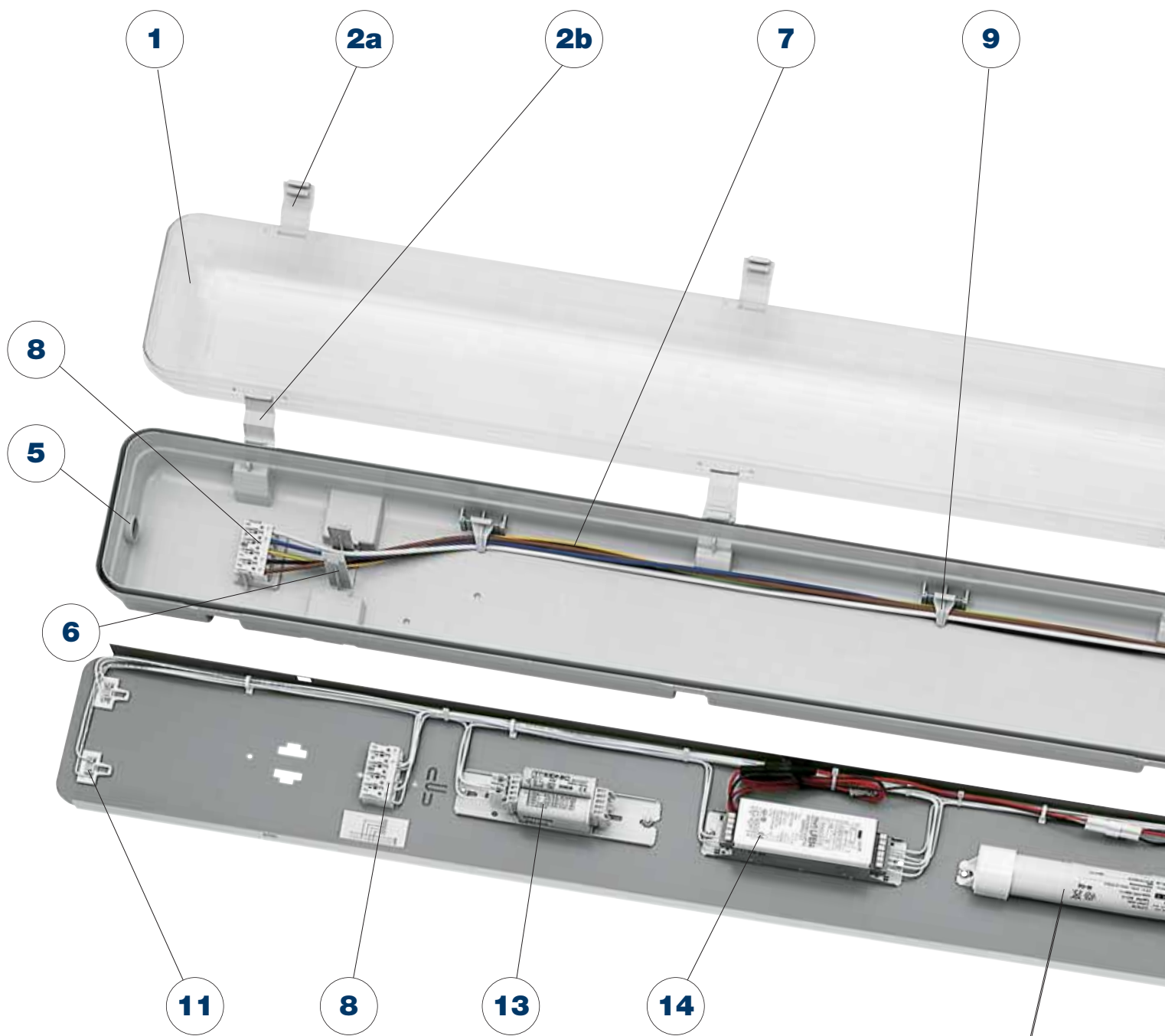
# TORNADO



## PC T8 ELECTRONIC CONTROL GEAR

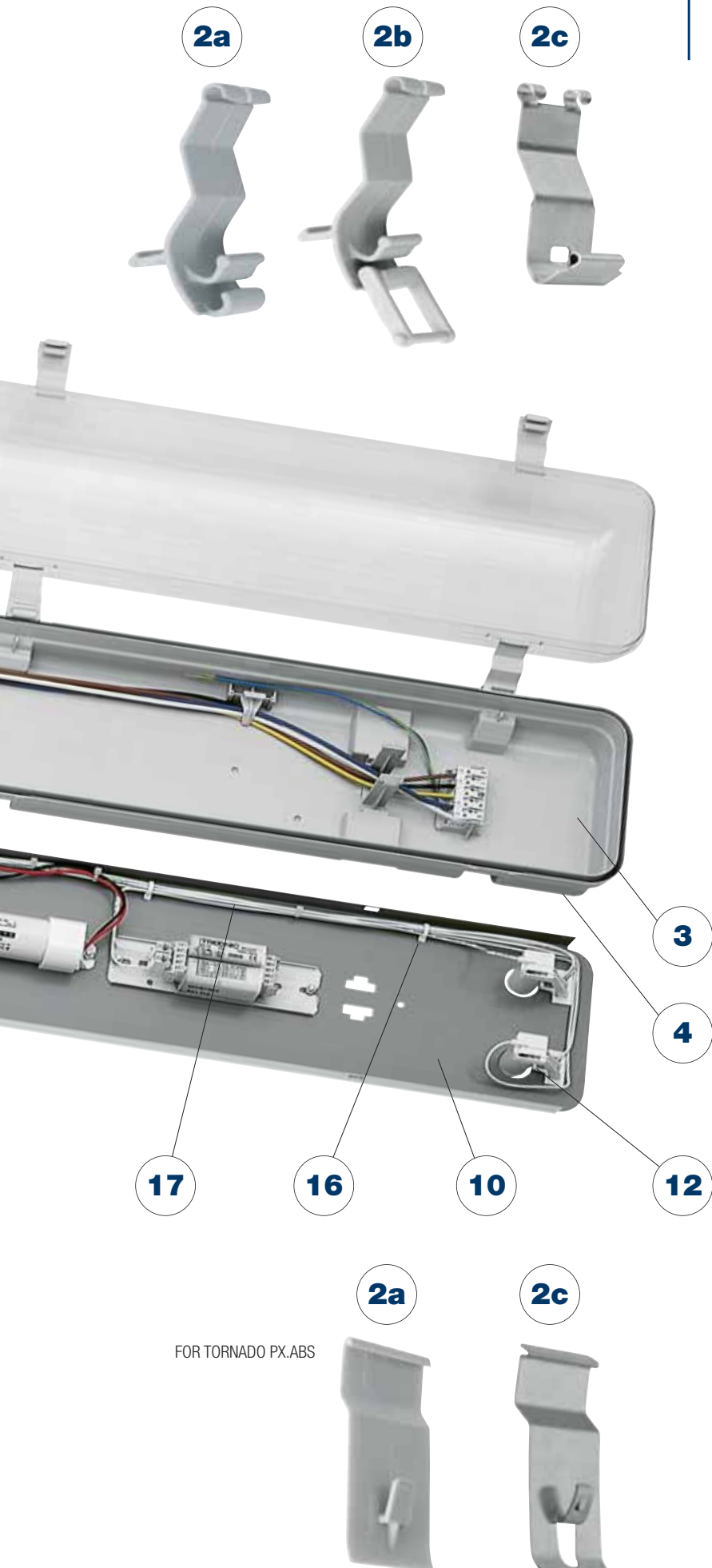
- 1** Difúzor  
Diffusor  
Abdeckwanne
- 2** Polykarbonátový klips  
Polycarbonate clip  
Polycarbonat Federbügel
- 2a** Jednoduchý klips  
Simple clip  
Einfacher Federbügel
- 2b** Kombinovaný klips  
Complex clip  
Mehrzweckbügel
- 2c** Inox klips  
Inox clip  
Inox Federbügel
- 3** Teleso svietidla  
Housing  
Leuchtenkörper
- 4** Polyuretánové tesnenie  
Polyurethane gasket  
Polyurethan-Dichtung
- 5a** Gumová priechodka  
Passing rubber band  
Gummiband
- 5b** PG 11  
PG 11  
PG 11
- 6** Držiak inštaláčnej dosky  
Gear tray holder  
Geräteplattenhalter
- 7** Svorkovnica  
Terminal block  
Anschlussklemme
- 8** Doska s elektroinštaláciou  
Gear tray  
Geräteplatte
- 9** Päťica  
Lampholder  
Lampenhalter
- 10** Elektronický predradník  
Electronic ballast  
Elektronische Vorschaltgeräte
- 11** Držiak vodiča  
Cabel holder  
Kabelhalter
- 12** Vodič  
Cable  
Kabel
- 13** Inštaláčny klips  
Suspension bracket  
Haltebügel
- 14** Držiak závesu  
Suspension holder  
Halter
- 15** Záves  
Suspension  
Aufhängemittel

FOR TORNADO PX.ABS





# TORNADO



FOR TORNADO PX.ABS

## PC / T8 EMERGENCY

- 1** Difúzor  
Diffusor  
Abdeckwanne
- 2** Polykarbonátový klips  
Polycarbonate clip  
Polycarbonat Federbügel
- 2a** Jednoduchý klips  
Simple clip  
Einfacher Federbügel
- 2b** Kombinovaný klips  
Complex clip  
Mehrzweckbügel
- 2c** Inox klips  
Inox clip  
Inox Federbügel
- 3** Teleso svietidla  
Housing  
Leuchtenkörper
- 4** Polyuretánové tesnenie  
Polyurethane gasket  
Polyurethan-Dichtung
- 5a** Gumová priechočka  
Passing rubber band  
Gummiband
- 5b** PG 11  
PG 11  
PG 11
- 6** Držiak inštaláčnej dosky  
Gear tray holder  
Geräteplattenhalter
- 7** Priebežná kabeláž  
Through wiring  
Durchverdrahtung
- 8** Svorkovnica  
Terminal block  
Anschlussklemme
- 9** Držiak kabeláže  
Cabel holder  
Kabelhalter
- 10** Doska s elektroinštaláciou  
Gear tray  
Geräteplatte
- 11** Päťica  
Lampholder  
Lampenhalter
- 12** Štartér  
Starter  
Zündgeräte
- 13** Tlmivka  
Magnetic ballast  
Magnetische Vorschaltgeräte
- 14** Núdzová jednotka  
Emergency unit  
Notlichtversorgungseinheit
- 15** Batéria  
Battery  
Batterie
- 16** Držiak vodiča  
Cabel holder  
Kabelhalter
- 17** Vodič  
Cable  
Kabel
- 18** Inštaláčny klips  
Suspension bracket  
Haltebügel
- 19** Držiak závesu  
Suspension holder  
Halter
- 20** Záves  
Suspension  
Aufhängemittel



# TORNADO

## OPTICS

Rad jedno a dvoj-zdrojových, vodeodolných a prachotesných svetidiel s krytím IP65. Telo svetidla je skonštruované z nárazuodolného polykarbonátu. Svetidlá Tornado nachádzajú najvhodnejšie uplatnenie v prostrediach s prítomnosťou prachu, špiny, plynov, výparov, dymu, so zvýšenou vlhkosťou a rizikom korózie, okrem tých prostredí, v ktorých je problematické použitie plastových materiálov – treba vždy skontrolovať znášanosť polykarbonátu s daným prostredím.

Pre splnenie rozličných požiadaviek na osvetľovaciu sústavu je možné vybrať si z rôznych variantov svetidla Tornado – dostupné pre T5 alebo T8 lineárne žiarivky. Pre sústredené smerovanie svetelného toku smerom nadol je možné prevedenie s prídavnou hliníkovou odrazovou plochou nad žiarivkami.

Všetko elektrické príslušenstvo svetidla je montované na plechovú dosku pripnutú k telesu svetidla. Láhkosť prístupu dovnútra umožňuje skrátiť časy potrebné na údržbu svetidla a výmenu svetelných zdrojov na minimum. Polykarbonátový difúzor je UV stabilizovaný pre vysokú trvácnosť a zabezpečuje vynikajúcu distribúciu svetelného toku. Difúzor môže byť veľmi ľahko a rýchlo demontovateľný bez použitia ďalšieho špeciálneho nástroja pomocou rýchloupínacích klipsov. Polykarbonátová konštrukcia umožňuje dosiahnuť veľmi malú hmotnosť celého svetidla, čo významne uľahčuje manipuláciu so svetidlom pri montáži. Napriek tomu je stupeň ochrany voči vonkajším mechanickým nárazom IK09, čo robí z Tornado PC svetidlo odolné voči vandalizmu. Tornado pomocou úchytovej možnosti tiež závesnú montáž. Systém poskytuje možnosť priebežného prekáblovania pre montáž v rade. Dostupné aj v prevedení s núdzovou jednotkou. Ako lacnejšia varianta je možné vyhotovenie svetidla z materiálu ABS.

**Svetidlá pre osvetľovanie priestorov s možnosťou vzniku výbušnej atmosféry vytvorenej plynmi alebo parami (Tornado EEx)**

Uzatvorené svetidlo, ktoré pri normálnej prevádzke a stanovených abnormálnych podmienkach uvedených v norme zabezpečuje, že nie je schopné vznietiť okolitú výbušnú atmosféru. Musí byť prevádzkované takým spôsobom, aby maximálna povrchová teplota svetidla bola nižšia ako najnižšia teplota vznietenia danej výbušnej atmosféry. Svetidlo má na koncoch káblových vývodky utesnené prechodkami Pg 13,5 tak, aby bol zachovaný typ ochrany proti výbuchu.

### KLASIFIKÁCIA PRIESTOROV S NEBEZPEČENSTVOM VÝBUCHU

**Priestory s výskytom výbušnej atmosféry zloženej zo zmesi horľavých látok vo forme plynu, pary alebo hmly so vzduchom**

**Zóna 0** Priestor, v ktorom je nepretržite alebo počas dlhého času často prítomná výbušná atmosféra zložená zo zmesi horľavých látok vo forme plynu, pary alebo hmly so vzduchom.

**Zóna 1** Priestor, v ktorom je príležitostne za bežnej prevádzky pravdepodobný výskyt výbušnej atmosféry zloženej zo zmesi horľavých látok vo forme plynu, pary alebo hmly so vzduchom.

**Zóna 2** Priestor, v ktorom je za bežnej prevádzky nepravdepodobný výskyt výbušnej atmosféry zloženej zo zmesi horľavých látok vo forme plynu, pary alebo hmly so vzduchom, ale ak sa vyskytne, bude pretrvávajúť iba počas krátkej doby.

**Priestory s výskytom výbušnej atmosféry zloženej zo zmesi horľavého prachu so vzduchom**

**Zóna 20** Priestor, v ktorom je nepretržite alebo počas dlhého času často prítomná výbušná atmosféra vo forme oblaku horľavého prachu vo vzduchu

**Zóna 21** Priestor, v ktorom je príležitostne za bežnej prevádzky pravdepodobný výskyt výbušnej atmosféry vo forme oblaku horľavého prachu vo vzduchu.

**Zóna 22** Priestor, v ktorom je za bežnej prevádzky nepravdepodobný výskyt výbušnej atmosféry vo forme oblaku horľavého prachu vo vzduchu, ale ak sa vyskytne, bude pretrvávajúť iba počas krátkej doby.

### EEx nA II 3GD T4

**EEx** – elektrické zariadenie skonštruované a testované pre účel použitia v prostredí s prítomnosťou výbušného plynu alebo horľavého prachu

**A** – neiskriace zariadenie

**n** – typ ochrany elektrického zariadenia, ktoré pri normálnej prevádzke a stanovených abnormálnych podmienkach uvedených v EN 50021 zabezpečuje, že zariadenie nie je schopné vznietiť okolitú atmosféru

**II** – elektrické zariadenie pre priestory s nebezpečenstvom výbuchu iné ako bane s výskytom banského plynu

**3** – normálna úroveň ochrany, kategória 3

**G** – výbušnú atmosféru spôsobujú plyny, pary alebo hmla

**D** – výbušnú atmosféru spôsobuje prach

**T4** – teplotná trieda, maximálna povrchová teplota svetidla = 135°C

„n“ zariadenia môžu byť používané len v zónach klasifikovaných ako skupina II, t.j. priestoroch, kde nie je pravdepodobný vznik výbušnej atmosféry vytvorenej plynmi a prachovzdušnou zmesou. Vtedy, ak výbušná atmosféra vznikne, bude prítomná iba zriedka a iba v krátkom časovom období.

A range of single and twin lamp IP65 weather resistant and dustproof luminaires. Designed with an impact resistant polycarbonate body, Tornado luminaire is best suited for environmental situations where dust, dirt, gas, vapor, smoke, fumes, moisture, corrosive and wet conditions are present, except those with exhalations/atmospheres that limits the use of plastic materials – please ask for polycarbonate compatibility list.

To meet any requirements consequent the installation, it is possible to choose from wide range of Tornado variants – luminaires are suitable for T5 and T8 fluorescent lamps, available also with aluminium reflector for concentrated light distribution.

All of the control gear is mounted onto the gear-tray which is fitted to the body. Ease of access to the lamps ensures that installation and maintenance times are kept to a minimum.

Polycarbonate diffuser is UV stabilized for durability and provides superior light output. The diffuser can be quickly and easily removed and remounted during installation without the need for any specialized tools via the snap-lock clips. Polycarbonate construction results in a very lightweight fixture that can be easily held in place while being installed, even though degree of protection against external

mechanical impacts is IK09, which makes Tornado full vandal resistant. Tornado also has fasteners for pendant or chain suspension mounting. Whole luminaire offers quick and easy wiring and installation capabilities. Available also with emergency capability.

Cheaper version of Tornado made of ABS material is also possible.

### Luminaires for lighting of premises with presence of explosive powders or gases (Tornado EEx)

A luminaire which is completely enclosed and capable of withstanding an explosion of a specific gas or vapor that may occur within it and preventing the ignition of a specific gas or vapor surrounding the enclosure by sparks, flashes or explosion of the gas or vapor within. It must operate at such an external temperature that a surrounding flammable atmosphere will not be ignited. Luminaire is ended off by the sealing plug with bushing Pg 13,5, designed for the premises with danger of explosion.

### CLASSIFICATION OF PREMISES WITH RISK OF EXPLOSION

**Dangerous environment with presence of explosive gas**

**Zone 0** An area in which an explosive gas atmosphere is present continuously or for long periods

**Zone 1** An area in which an explosive gas atmosphere is likely to occur occasionally during normal operation

**Zone 2** An area in which an explosive gas atmosphere is likely to occur only rarely and then only for a short period

**Dangerous environment with presence of combustible powders**

**Zone 20** An area in which an explosive atmosphere due to a mixture of dust with air is present continuously, for long periods or frequently.

**Zone 21** An area in which an explosive atmosphere due to a mixture of dust with air is to be expected occasionally and for short periods.

**Zone 22** An area in which an explosive atmosphere due to whirled-up dust deposits is not to be expected. However, if such an atmosphere should occur, then in all probability only occasionally and for short periods.

### EEx nA II 3GD T4

**EEx** – electric construction built and tested for use in an atmosphere with presence of explosive gases or combustible powders

**A** – electric construction which does not produce sparks during normal operation

**n** – normal protection mode according to EN 50021

**II** – electric construction for premises with a potentially explosive atmosphere, other than mines with the presence of firedamp

**3** – category 3 fixture

**G** – protection against gas ignition

**D** – protection against powder ignition

**T4** – max. internal or external surface temperature = 135°C

„n“ fixtures can be used only in zones classified as 2, i.e. areas where the atmosphere is unlikely to be explosive due to the presence of gas during normal operation, or if this occurs, it may be present only infrequently and for short periods

Wetterfeste und staubdichte Leuchten in Einlampen- oder Zweilampenausführung, Schutzart IP 65. Schlagzäher Leuchtenkörper aus Polycarbonat. Die Tornado-Leuchten eignen sich für Bereiche, in deren Umgebung Stäube, Schmutz, Gase, Dämpfe, Rauch und Feuchtigkeit auftreten, ausgenommen Bereiche mit Atmosphären, die die Verwendbarkeit von Kunststoffmaterialien beschränken. Hierzu kann als Hilfe die Polycarbonat-Kompatibilitätsliste angefordert werden.

Um den unterschiedlichen Anforderungen gerecht zu werden, ist die Tornado in zahlreichen Ausführungen lieferbar, wie zum Beispiel für Leuchtstofflampen T5 und T8 sowie mit einem Aluminiumreflektor zur Verringerung der Ausstrahlungsbreite.

Alle Einbaukomponenten sind auf der am Leuchtenkörper angebrachten Geräteplatte angeordnet. Durch die gute Zugänglichkeit der Lampen werden die Installations- und Wartungszeiten auf ein Minimum verkürzt.

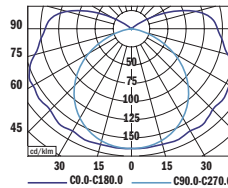
Die Abdeckwanne aus Polycarbonat ist zur Erhöhung der Haltbarkeit UV-stabilisiert und ermöglicht eine sehr hohe Lichtausbeute. Die mit Federbügeln versehene Wanne lässt sich ohne Spezialwerkzeug schnell und einfach entfernen und wieder anbringen. Aufgrund der Polycarbonat-Konstruktion hat die Leuchte ein sehr geringes Gewicht und lässt sich bei der Montage bequem positionieren. Zugleich bietet sie ausgezeichneten Schutz gegen mechanische Einwirkungen gemäß IK09, wodurch die Tornado zerstörungssicher ist. Die Leuchte besitzt weitere Vorrichtungen zur Pendel- oder Kettenmontage, und der elektrische Anschluss ist einfach. Nottlicht-Ausführung ist ebenfalls möglich.

Die Tornado ist auch in einer kostengünstigeren Variante aus ABS-Kunststoff erhältlich.



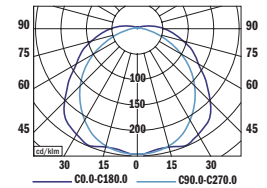
TORNADO  
PC  
T8  
1x36W  
(without reflector)

efficiency 88%



TORNADO  
PC  
AL  
T8  
1x36W  
(with aluminium reflector)

efficiency 87%



### Leuchte zur Beleuchtung von Bereichen, in denen explosionsfähige Stäube oder Gase vorkommen (Tornado EEx)

Vollkommen geschlossene Leuchte, die gegen eine Gas- oder Dampfexplosion in der Leuchte geschützt ist und die Entzündung von das Gehäuse umgebenden Gasen oder Dämpfen durch Funken oder Explosion eines in der Leuchte vorhandenen Gases oder Dampfes verhindert. Sie darf nur bei einer Umgebungstemperatur verwendet werden, bei der gewährleistet ist, dass sich eine entflammbare Umgebungsatmosphäre nicht entzündet. Die Leuchte ist mit einem für diese Anwendungen geeigneten Endverschlussstopfen mit Durchführung Pg 13.5 versehen.

### KLASSIFIKATION VON EXPLOSIONSGEFÄHRDNETEN BEREICHEN

#### Gefährliche Bereiche, in denen explosionsfähige Gase auftreten

- Zone 0** Bereiche, in denen gefährliche explosionsfähige Atmosphäre ständig oder langfristig vorhanden ist.
- Zone 1** Bereiche, in denen damit zu rechnen ist, dass gefährliche explosionsfähige Atmosphäre gelegentlich auftritt.
- Zone 2** Bereiche, in denen damit zu rechnen ist, dass gefährliche explosionsfähige Atmosphäre nur selten und dann auch nur kurzzeitig auftritt.

#### Gefährliche Bereiche, in denen brennbare Stäube auftreten

- Zone 20** Bereiche, in denen gefährliche explosionsfähige Atmosphäre langfristig oder häufig vorhanden ist.
- Zone 21** Bereiche, in denen gefährliche explosionsfähige Atmosphäre gelegentlich durch Aufwirbeln abgelagerten Staubes kurzzeitig auftritt.
- Zone 22** Bereiche, in denen gefährliche explosionsfähige Atmosphäre in Form einer Wolke aus in der Luft enthaltenem brennbaren Staub normalerweise nicht oder nur kurzzeitig auftritt.

### EEx nA II 3GD T4

- EEx** – Geprüftes elektrisches Betriebsmittel zur Verwendung in Atmosphären, in denen explosionsfähige Gase und brennbare Stäube vorkommen
- A** – Elektrisches Betriebsmittel, das bei normalem Betrieb Funkenbildung verhindert
- n** – Zündschutzart gemäß EN 50021
- II** – Elektrisches Betriebsmittel für andere als schlagwettergefährdete Bereiche mit einer möglicherweise explosionsfähigen Atmosphäre
- 3** – Leuchte Kategorie 3
- G** – Schutz gegen Gasentzündung
- D** – Schutz gegen Staubentzündung
- T4** – Maximale innere oder äußere Oberflächentemperatur = 135°C

Mit „n“ gekennzeichnete Leuchten dürfen nur in Bereichen der Zone 2 verwendet werden, also in Bereichen, in denen bei normalem Betrieb damit zu rechnen ist, dass gefährliche explosionsfähige Atmosphäre nur selten und dann auch nur kurzzeitig auftritt.

#### Glare Evaluation According to UGR

p-ceiling		70	70	50	50	30	70	70	50	50	30	
p-walls		50	30	50	30	30	70	30	50	30	30	
p-floor		20	20	20	20	20	20	20	20	20	20	
Room size	Viewing direction at right angles to lamp axis	Viewing direction parallel to lamp axis										
X	Y											
2H	2H	17.5	18.8	18.1	19.3	19.9	13.6	14.9	14.2	15.4	16.0	
	3H	20.7	21.8	21.2	22.4	23.0	14.9	16.1	15.4	16.6	17.2	
	4H	22.3	23.4	22.8	23.9	24.6	15.3	16.4	15.8	16.9	17.6	
	6H	24.0	25.1	24.6	25.6	26.3	15.5	16.5	16.0	17.1	17.7	
	8H	25.0	26.1	25.6	26.6	27.3	15.5	16.5	16.1	17.1	17.7	
12H	26.2	27.2	26.8	27.8	28.5	15.5	16.4	16.1	17.0	17.7		
4H	2H	18.2	19.3	18.7	19.9	20.5	15.6	16.7	16.1	17.2	17.9	
	3H	21.5	22.5	22.2	23.1	23.8	17.3	18.3	17.9	18.9	19.5	
	4H	23.4	24.2	24.0	24.8	25.6	18.0	18.9	18.6	19.5	20.2	
	6H	25.3	26.1	26.0	26.8	27.5	18.4	19.2	19.0	19.8	20.6	
	8H	26.5	27.2	27.2	27.9	28.6	18.5	19.2	19.1	19.9	20.6	
12H	27.8	28.5	28.5	29.2	29.9	18.5	19.2	19.2	19.9	20.6		
8H	4H	23.7	24.4	24.4	25.1	25.8	19.7	20.4	20.4	21.1	21.8	
	6H	26.0	26.6	26.7	27.3	28.1	20.6	21.3	21.3	21.9	22.7	
	8H	27.4	28.0	28.1	28.7	29.5	21.0	21.5	21.7	22.2	23.0	
	12H	29.0	29.5	29.7	30.2	31.1	21.2	21.7	21.9	22.4	23.2	
	12H	4H	23.7	24.4	24.4	25.1	25.8	20.3	20.9	20.9	21.6	22.4
6H		26.1	26.7	26.8	27.4	28.2	21.5	22.1	22.2	22.8	23.6	
8H		27.7	28.1	28.4	28.8	29.7	22.1	22.6	22.6	23.3	24.2	
variation of observer position for the luminaire distances S												
S=		1.0H	+0.1/-0.1				+0.1/-0.0					
	1.5H	+0.2/-0.3				+0.1/-0.1						
	2.0H	+0.3/-0.4				+0.2/-0.3						
Standart table		-				-						
CorrectionSummand		-				-						
corrected glare indices for 5852lm total flux												

#### Glare Evaluation According to UGR

p-ceiling		70	70	50	50	30	70	70	50	50	30	
p-walls		50	30	50	30	30	70	30	50	30	30	
p-floor		20	20	20	20	20	20	20	20	20	20	
Room size	Viewing direction at right angles to lamp axis	Viewing direction parallel to lamp axis										
X	Y											
2H	2H	17.5	18.9	17.9	19.2	19.5	16.0	17.3	16.3	17.6	17.9	
	3H	19.7	20.9	20.1	21.2	21.6	17.0	18.2	17.4	18.6	18.9	
	4H	20.7	21.9	21.1	22.2	22.6	17.3	18.5	17.7	18.8	19.2	
	6H	21.8	22.9	22.2	23.3	23.7	17.5	18.5	17.9	18.9	19.3	
	8H	22.4	23.5	22.9	23.8	24.3	17.5	18.5	17.9	18.9	19.3	
12H	23.1	24.1	23.6	24.5	24.9	17.5	18.5	17.9	18.9	19.3		
4H	2H	18.2	19.3	18.6	19.7	20.0	17.0	18.1	17.4	18.5	18.9	
	3H	20.6	21.5	21.0	21.9	22.4	18.4	19.4	18.9	19.8	20.2	
	4H	21.8	22.6	22.2	23.1	23.5	19.0	19.8	19.4	20.3	20.7	
	6H	23.1	23.8	23.6	24.3	24.8	19.3	20.1	19.8	20.5	21.0	
	8H	23.8	24.5	24.3	25.0	25.5	19.4	20.1	19.9	20.5	21.0	
12H	24.6	25.3	25.2	25.8	26.3	19.4	20.0	19.9	20.5	21.0		
8H	4H	22.1	22.8	22.6	23.3	23.8	19.8	20.5	20.3	20.9	21.4	
	6H	23.7	24.2	24.2	24.7	25.3	20.4	21.0	20.9	21.5	22.0	
	8H	24.6	25.1	25.1	25.6	26.2	20.7	21.2	21.2	21.7	22.3	
	12H	25.7	26.1	26.2	26.6	27.2	20.8	21.3	21.4	21.8	22.4	
	12H	4H	22.1	22.8	22.6	23.2	23.8	20.0	20.6	20.5	21.1	21.6
6H		23.8	24.3	24.3	24.8	25.4	20.8	21.3	21.3	21.8	22.4	
8H		24.8	25.2	25.3	25.8	26.3	21.2	21.6	21.7	22.2	22.7	
variation of observer position for the luminaire distances S												
S=		1.0H	+0.1/-0.1				+0.1/-0.1					
	1.5H	+0.2/-0.3				+0.2/-0.3						
	2.0H	+0.2/-0.3				+0.4/-0.6						
Standart table		BK10				BKFF						
CorrectionSummand		8.1				3.8						
corrected glare indices for 5852lm total flux												

ORDER CODE	TYPE	SPECIFICATION	ORDER CODE	TYPE	SPECIFICATION
<b>TORNADO PC</b>					
<b>TORNADO PC T5</b>					
T21000211480000	TORNADO PC T5	1x14W,ECG A2	T21000317030000	TORNADO PC T8	1x70W,CCG B2
T21000212480000	TORNADO PC T5	1x24W,ECG A2	T21000317080000	TORNADO PC T8	1x70W,ECG A2
T21000212880000	TORNADO PC T5	1x28W,ECG A2	T21000321830000	TORNADO PC T8	2x18W,CCG B2
T21000213580000	TORNADO PC T5	1x35W,ECG A2	T21000321880000	TORNADO PC T8	2x18W,ECG A2
T21000214980000	TORNADO PC T5	1x49W,ECG A2	T21000323630000	TORNADO PC T8	2x36W,CCG B2
T21000215480000	TORNADO PC T5	1x54W,ECG A2	T21000323680000	TORNADO PC T8	2x36W,ECG A2
T21000218080000	TORNADO PC T5	1x80W,ECG A2	T21000325830000	TORNADO PC T8	2x58W,CCG B2
T21000221480000	TORNADO PC T5	2x14W,ECG A2	T21000325880000	TORNADO PC T8	2x58W,ECG A2
T21000222480000	TORNADO PC T5	2x24W,ECG A2	T21000327030000	TORNADO PC T8	2x70W,CCG B2
T21000222880000	TORNADO PC T5	2x28W,ECG A2	T21000327080000	TORNADO PC T8	2x70W,ECG A2
T21000223580000	TORNADO PC T5	2x35W,ECG A2	T21000333630000	TORNADO PC T8	3x36W,CCG B2
T21000224980000	TORNADO PC T5	2x49W,ECG A2	T21000333680000	TORNADO PC T8	3x36W,ECG A2
T21000225480000	TORNADO PC T5	2x54W,ECG A2	<b>TORNADO PC T8 REF</b>		
T21000228080000	TORNADO PC T5	2x80W,ECG A2	T21500311830000	TORNADO PC T8 REF	1x18W,CCG B2
T21000231480000	TORNADO PC T5	3x14W,ECG A2	T21500311880000	TORNADO PC T8 REF	1x18W,ECG A2
T21000232480000	TORNADO PC T5	3x24W,ECG A2	T21500313630000	TORNADO PC T8 REF	1x36W,CCG B2
T21000232880000	TORNADO PC T5	3x28W,ECG A2	T21500313680000	TORNADO PC T8 REF	1x36W,ECG A2
T21000233580000	TORNADO PC T5	3x35W,ECG A2	T21500315830000	TORNADO PC T8 REF	1x58W,CCG B2
<b>TORNADO PC T5 S</b>			T21500315880000	TORNADO PC T8 REF	1x58W,ECG A2
T21000211480KT2	TORNADO PC T5 S	1x14W,ECG A2	T21500317030000	TORNADO PC T8 REF	1x70W,CCG B2
T21000212480KT2	TORNADO PC T5 S	1x24W, ECG A2	T21500317080000	TORNADO PC T8 REF	1x70W,ECG A2
T21000212880KT2	TORNADO PC T5 S	1x28W,ECG A2	T21500321830000	TORNADO PC T8 REF	2x18W,CCG B2
T21000213580KT2	TORNADO PC T5 S	1x35W,ECG A2	T21500321880000	TORNADO PC T8 REF	2x18W,ECG A2
T21000214980KT2	TORNADO PC T5 S	1x49W,ECG A2	T21500323630000	TORNADO PC T8 REF	2x36W,CCG B2
T21000215480KT2	TORNADO PC T5 S	1x54W,ECG A2	T21500323680000	TORNADO PC T8 REF	2x36W,ECG A2
T21000218080KT2	TORNADO PC T5 S	1x80W,ECG A2	T21500325830000	TORNADO PC T8 REF	2x58W,CCG B2
<b>TORNADO PC T5 U</b>			T21500325880000	TORNADO PC T8 REF	2x58W,ECG A2
T21000221480KT1	TORNADO PC T5 U	2x14W,ECG A2,	T21500327030000	TORNADO PC T8 REF	2x70W,CCG B2
T21000222480KT1	TORNADO PC T5 U	2x24W,ECG A2	T21500327080000	TORNADO PC T8 REF	2x70W,ECG A2
T21000222880KT1	TORNADO PC T5 U	2x28W,ECG A2	T21500333630000	TORNADO PC T8 REF	3x36W,CCG B2
T21000223580KT1	TORNADO PC T5 U	2x35W,ECG A2	T21500333680000	TORNADO PC T8 REF	3x36W,ECG B2
<b>TORNADO PC T5 REF</b>			<b>TORNADO PC T8 INOX CLIPS</b>		
T21500211480000	TORNADO PC T5 REF	1x14W,ECG A2	T22000311830000	TORNADO PC T8 INOX CLIPS	1x18W,CCG B2
T21500212480000	TORNADO PC T5 REF	1x24W,ECG A2	T22000311880000	TORNADO PC T8 INOX CLIPS	1x18W,ECG A2
T21500212880000	TORNADO PC T5 REF	1x28W,ECG A2	T22000313630000	TORNADO PC T8 INOX CLIPS	1x36W,CCG B2
T21500213580000	TORNADO PC T5 REF	1x35W,ECG A2	T22000313680000	TORNADO PC T8 INOX CLIPS	1x36W,ECG A2
T21500214980000	TORNADO PC T5 REF	1x49W,ECG A2	T22000315830000	TORNADO PC T8 INOX CLIPS	1x58W,CCG B2
T21500215480000	TORNADO PC T5 REF	1x54W,ECG A2	T22000315880000	TORNADO PC T8 INOX CLIPS	1x58W,ECG A2
T21500218080000	TORNADO PC T5 REF	1x80W,ECG A2	T22000317030000	TORNADO PC T8 INOX CLIPS	1x70W,CCG B2
T21500221480000	TORNADO PC T5 REF	2x14W,ECG A2	T22000317080000	TORNADO PC T8 INOX CLIPS	1x70W,ECG A2
T21500222480000	TORNADO PC T5 REF	2x24W,ECG A2	T22000321830000	TORNADO PC T8 INOX CLIPS	2x18W,CCG B2
T21500222880000	TORNADO PC T5 REF	2x28W,ECG A2	T22000321880000	TORNADO PC T8 INOX CLIPS	2x18W,ECG A2
T21500223580000	TORNADO PC T5 REF	2x35W,ECG A2	T22000323630000	TORNADO PC T8 INOX CLIPS	2x36W,CCG B2
T21500224980000	TORNADO PC T5 REF	2x49W,ECG A2	T22000323680000	TORNADO PC T8 INOX CLIPS	2x36W,ECG A2
T21500225480000	TORNADO PC T5 REF	2x54W,ECG A2	T22000325830000	TORNADO PC T8 INOX CLIPS	2x58W,CCG B2
T21500228080000	TORNADO PC T5 REF	2x80W,ECG A2	T22000325880000	TORNADO PC T8 INOX CLIPS	2x58W,ECG A2
T21500232480000	TORNADO PC T5 REF	3x24W,ECG A2	T22000327030000	TORNADO PC T8 INOX CLIPS	2x70W,CCG B2
T21500232880000	TORNADO PC T5 REF	3x28W,ECG A2	T22000327080000	TORNADO PC T8 INOX CLIPS	2x70W,ECG A2
T21500233580000	TORNADO PC T5 REF	3x35W,ECG A2	T22000333630000	TORNADO PC T8 INOX CLIPS	3x36W,CCG B2
<b>TORNADO PC T5 INOX CLIPS</b>			T22000333680000	TORNADO PC T8 INOX CLIPS	3x36W,ECG A2
T22000211480000	TORNADO PC T5 INOX CLIPS	1x14W,ECG A2	<b>TORNADO PC T8 REF INOX CLIPS</b>		
T22000212480000	TORNADO PC T5 INOX CLIPS	1x24W,ECG A2	T22500311830000	TORNADO PC T8 REF INOX CLIPS	1x18W,CCG B2
T22000212880000	TORNADO PC T5 INOX CLIPS	1x28W,ECG A2	T22500311880000	TORNADO PC T8 REF INOX CLIPS	1x18W,ECG A2
T22000213580000	TORNADO PC T5 INOX CLIPS	1x35W,ECG A2	T22500313630000	TORNADO PC T8 REF INOX CLIPS	1x36W,CCG B2
T22000214980000	TORNADO PC T5 INOX CLIPS	1x49W,ECG A2	T22500313680000	TORNADO PC T8 REF INOX CLIPS	1x36W,ECG A2
T22000215480000	TORNADO PC T5 INOX CLIPS	1x54W,ECG A2	T22500315830000	TORNADO PC T8 REF INOX CLIPS	1x58W,CCG B2
T22000218080000	TORNADO PC T5 INOX CLIPS	1x80W,ECG A2	T22500315880000	TORNADO PC T8 REF INOX CLIPS	1x58W,ECG A2
T22000221480000	TORNADO PC T5 INOX CLIPS	2x14W,ECG A2	T22500317030000	TORNADO PC T8 REF INOX CLIPS	1x70W,CCG B2
T22000222480000	TORNADO PC T5 INOX CLIPS	2x24W,ECG A2	T22500317080000	TORNADO PC T8 REF INOX CLIPS	1x70W,ECG A2
T22000222880000	TORNADO PC T5 INOX CLIPS	2x28W,ECG A2	T22500321830000	TORNADO PC T8 REF INOX CLIPS	2x18W,CCG B2
T22000223580000	TORNADO PC T5 INOX CLIPS	2x35W,ECG A2	T22500321880000	TORNADO PC T8 REF INOX CLIPS	2x18W,ECG A2
T22000224980000	TORNADO PC T5 INOX CLIPS	2x49W,ECG A2	T22500323630000	TORNADO PC T8 REF INOX CLIPS	2x36W,CCG B2
T22000225480000	TORNADO PC T5 INOX CLIPS	2x54W,ECG A2	T22500323680000	TORNADO PC T8 REF INOX CLIPS	2x36W,ECG A2
T22000228080000	TORNADO PC T5 INOX CLIPS	2x80W,ECG A2	T22500325830000	TORNADO PC T8 REF INOX CLIPS	2x58W,CCG B2
T22000231480000	TORNADO PC T5 INOX CLIPS	3x14W,ECG A2	T22500325880000	TORNADO PC T8 REF INOX CLIPS	2x58W,ECG A2
T22000232480000	TORNADO PC T5 INOX CLIPS	3x24W,ECG A2	T22500327030000	TORNADO PC T8 REF INOX CLIPS	2x70W,CCG B2
T22000232880000	TORNADO PC T5 INOX CLIPS	3x28W,ECG A2	T22500327080000	TORNADO PC T8 REF INOX CLIPS	2x70W,ECG A2
T22000233580000	TORNADO PC T5 INOX CLIPS	3x35W,ECG A2	<b>TORNADO PX.ABS</b>		
<b>TORNADO PC T5 S INOX CLIPS</b>			<b>TORNADO PX.ABS T8</b>		
T22000212480KT2	TORNADO PC T5 S INOX CLIPS	1x24W, ECG A2	T23000313630000	TORNADO PX.ABS T8	1x36W,CCG B2
T22000212880KT2	TORNADO PC T5 S INOX CLIPS	1x28W,ECG A2	T23000313680000	TORNADO PX.ABS T8	1x36W,ECG A2
T22000213580KT2	TORNADO PC T5 S INOX CLIPS	1x35W,ECG A2	T23000315830000	TORNADO PX.ABS T8	1x58W,CCG B2
T22000214980KT2	TORNADO PC T5 S INOX CLIPS	1x49W,ECG A2	T23000315880000	TORNADO PX.ABS T8	1x58W,ECG A2
T22000215480KT2	TORNADO PC T5 S INOX CLIPS	1x54W,ECG A2	T23000323630000	TORNADO PX.ABS T8	2x36W,CCG B2
T22000218080KT2	TORNADO PC T5 S INOX CLIPS	1x80W,ECG A2	T23000323680000	TORNADO PX.ABS T8	2x36W,ECG A2
<b>TORNADO PC T5 U INOX CLIPS</b>			T23000325830000	TORNADO PX.ABS T8	2x58W,CCG B2
T22000222480KT1	TORNADO PC T5 U INOX CLIPS	2x24W,ECG A2	T23000325880000	TORNADO PX.ABS T8	2x58W,ECG A2
T22000222880KT1	TORNADO PC T5 U INOX CLIPS	2x28W,ECG A2	<b>TORNADO PX.ABS T8 REF</b>		
T22000223580KT1	TORNADO PC T5 U INOX CLIPS	2x35W,ECG A2	T23500313630000	TORNADO PX.ABS T8 REF	1x36W,CCG B2
<b>TORNADO PC T5 REF INOX CLIPS</b>			T23500313680000	TORNADO PX.ABS T8 REF	1x36W,ECG A2
T22500211480000	TORNADO PC T5 REF INOX CLIPS	1x14W,ECG A2	T23500315830000	TORNADO PX.ABS T8 REF	1x58W,CCG B2
T22500212480000	TORNADO PC T5 REF INOX CLIPS	1x24W,ECG A2	T23500315880000	TORNADO PX.ABS T8 REF	1x58W,ECG A2
T22500212880000	TORNADO PC T5 REF INOX CLIPS	1x28W,ECG A2	T23500323630000	TORNADO PX.ABS T8 REF	2x36W,CCG B2
T22500213580000	TORNADO PC T5 REF INOX CLIPS	1x35W,ECG A2	T23500323680000	TORNADO PX.ABS T8 REF	2x36W,ECG A2
T22500214980000	TORNADO PC T5 REF INOX CLIPS	1x49W,ECG A2	T23500325830000	TORNADO PX.ABS T8 REF	2x58W,CCG B2
T22500215480000	TORNADO PC T5 REF INOX CLIPS	1x54W,ECG A2	T23500325880000	TORNADO PX.ABS T8 REF	2x58W,ECG A2
T22500218080000	TORNADO PC T5 REF INOX CLIPS	1x80W,ECG A2	<b>TORNADO PX.ABS INOX CLIPS</b>		
T22500221480000	TORNADO PC T5 REF INOX CLIPS	2x14W,ECG A2	T24000313630000	TORNADO PX.ABS T8 INOX CLIPS	1x36W,CCG B2
T22500222480000	TORNADO PC T5 REF INOX CLIPS	2x24W,ECG A2	T24000313680000	TORNADO PX.ABS T8 INOX CLIPS	1x36W,ECG A2
T22500222880000	TORNADO PC T5 REF INOX CLIPS	2x28W,ECG A2	T24000315830000	TORNADO PX.ABS T8 INOX CLIPS	1x58W,CCG B2
T22500223580000	TORNADO PC T5 REF INOX CLIPS	2x35W,ECG A2	T24000315880000	TORNADO PX.ABS T8 INOX CLIPS	1x58W,ECG A2
T22500224980000	TORNADO PC T5 REF INOX CLIPS	2x49W,ECG A2	T24000323630000	TORNADO PX.ABS T8 INOX CLIPS	2x36W,CCG B2
T22500225480000	TORNADO PC T5 REF INOX CLIPS	2x54W,ECG A2	T24000323680000	TORNADO PX.ABS T8 INOX CLIPS	2x36W,ECG A2
T22500228080000	TORNADO PC T5 REF INOX CLIPS	2x80W,ECG A2	T24000325830000	TORNADO PX.ABS T8 INOX CLIPS	2x58W,CCG B2
T22500232480000	TORNADO PC T5 REF INOX CLIPS	3x24W,ECG A2	T24000325880000	TORNADO PX.ABS T8 INOX CLIPS	2x58W,ECG A2
T22500233580000	TORNADO PC T5 REF INOX CLIPS	3x35W,ECG A2	<b>TORNADO PX.ABS INOX CLIPS REF</b>		
<b>TORNADO PC T8</b>			T24500313630000	TORNADO PX.ABS T8 INOX CLIPS REF	1x36W,CCG A2
T21000311830000	TORNADO PC T8	1x18W,CCG B2	T24500313680000	TORNADO PX.ABS T8 INOX CLIPS REF	1x36W,ECG A2
T21000311880000	TORNADO PC T8	1x18W,ECG A2	T24500315830000	TORNADO PX.ABS T8 INOX CLIPS REF	1x58W,CCG B2
T21000313630000	TORNADO PC T8	1x36W,CCG B2	T24500315880000	TORNADO PX.ABS T8 INOX CLIPS REF	1x58W,ECG A2
T21000313680000	TORNADO PC T8	1x36W,ECG A2	T24500323630000	TORNADO PX.ABS T8 INOX CLIPS REF	2x36W,CCG B2
T21000315830000	TORNADO PC T8	1x58W,CCG B2	T24500323680000	TORNADO PX.ABS T8 INOX CLIPS REF	2x36W,ECG A2
T21000315880000	TORNADO PC T8	1x58W,ECG A2	T24500325830000	TORNADO PX.ABS T8 INOX CLIPS REF	2x58W,CCG B2
			T24500325880000	TORNADO PX.ABS T8 INOX CLIPS REF	2x58W,ECG A2



ORDER CODE	TYPE	SPECIFICATION
<b>TORNADO STAINLESS STEEL</b>		
<b>TORNADO STAINLESS STEEL T8</b>		
T25000311830000	TORNADO STAINLESS STEEL T8	1x18W,CCG B2
T25000311880000	TORNADO STAINLESS STEEL T8	1x18W,ECG A2
T25000313630000	TORNADO STAINLESS STEEL T8	1x36W,CCG B2
T25000313680000	TORNADO STAINLESS STEEL T8	1x36W,ECG A2
T25000315830000	TORNADO STAINLESS STEEL T8	1x58W,CCG B2
T25000315880000	TORNADO STAINLESS STEEL T8	1x58W,ECG A2
T25000321830000	TORNADO STAINLESS STEEL T8	2x18W,CCG B2
T25000321880000	TORNADO STAINLESS STEEL T8	2x18W,ECG A2
T25000323630000	TORNADO STAINLESS STEEL T8	2x36W,CCG B2
T25000323680000	TORNADO STAINLESS STEEL T8	2x36W,ECG A2
T25000325830000	TORNADO STAINLESS STEEL T8	2x58W,CCG B2
T25000325880000	TORNADO STAINLESS STEEL T8	2x58W,ECG A2
<b>ACCESSORIES</b>		
<b>SUSPENSION</b>		
SUS 1.25 C0/020	SUSPENSION 20	TORNADO PC, PX,ABS
SUS 1.25 C0/021	SUSPENSION 21	TORNADO PC, PX,ABS
<b>XXXXXXXXXXXXXX</b>		
<b>EP5 - THROUGH WIRING 5x2,5mm<sup>2</sup></b>		
<b>EGA - CABLE GLAND PG 13,5mm</b>		
<b>208 - CABLE GLAND PG 13,5mm + THROUGH WIRING 5x2,5mm<sup>2</sup></b>		
<b>XXXXXXXXXXXXXX</b>		
<b>9 - ECG DIM 1-10V</b>		
<b>A - ECG DIM DSI</b>		
<b>B - ECG DALI</b>		





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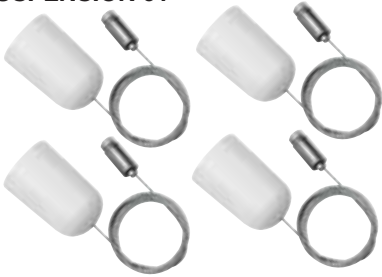




# SUSPENSIONS

ORDER CODE	TYPE	LIGHT	ORDER CODE	TYPE	LIGHT
<b>CLASSIC</b>					
SUS 1.25 C0/001	SUSPENSION 01	Classic AS, ASN, SLIM	SUS 1.35 C0/003	SUSPENSION 03	Modul EN 2x.. Modul EN PRISMA 2x
SUS 1.25 C0/002	SUSPENSION 02	Classic AS, ASN, SLIM	SUS 1.35 C0/006	SUSPENSION 06	Modul EN 2x.. Modul EN PRISMA 2x..
SUS 1.35 C0/003	SUSPENSION 03	Classic AS, ASN, SLIM	SUS 1.25 C0/011	SUSPENSION 11	Modul EN 2x.. Modul EN PRISMA 2x..
SUS 1.35 C0/006	SUSPENSION 06	Classic AS, ASN, SLIM	SUS 1.25 C0/012	SUSPENSION 12	Modul EN 2x.. Modul EN PRISMA 2x..
SUS 1.25 C0/001	SUSPENSION 01	Classic ASN T5 PAR-V	SUS 1.25 C0/001	SUSPENSION 01	Modul EN 1x..
SUS 1.25 C0/002	SUSPENSION 02	Classic ASN T5 PAR-V	SUS 1.25 C0/002	SUSPENSION 02	Modul EN 1x..
SUS 1.35 C0/003	SUSPENSION 03	Classic ASN T5 PAR-V	SUS 1.35 C0/003	SUSPENSION 03	Modul EN 1x..
SUS 1.35 C0/006	SUSPENSION 06	Classic ASN T5 PAR-V	SUS 1.35 C0/006	SUSPENSION 06	Modul EN 1x..
<b>QUADRO</b>			SUS 1.35 C0/014	SUSPENSION 14	Modul EN 1x..
SUS 1.25 C0/001	SUSPENSION 01	Quadro ASN	SUS 1.35 C0/015	SUSPENSION 15	Modul EN 1x..
SUS 1.25 C0/002	SUSPENSION 02	Quadro ASN	SUS 1.25 C0/001	SUSPENSION 01	Modul EN PRISMA 3x
SUS 1.35 C0/003	SUSPENSION 03	Quadro ASN	SUS 1.25 C0/002	SUSPENSION 02	Modul EN PRISMA 3x
SUS 1.35 C0/006	SUSPENSION 06	Quadro ASN	SUS 1.35 C0/003	SUSPENSION 03	Modul EN PRISMA 3x
<b>INDIRECT</b>			SUS 1.35 C0/006	SUSPENSION 06	Modul EN PRISMA 3x
SUS 1.25 C0/001	SUSPENSION 01	Indirect AS	<b>LINE - *SUSPENSIONS</b>		
SUS 1.25 C0/002	SUSPENSION 02	Indirect AS	SUS 1.35 C0/014	SUSPENSION 14	Line LAMBDA
SUS 1.35 C0/003	SUSPENSION 03	Indirect AS	SUS 1.35 C0/023	SUSPENSION 23	Line LAMBDA
SUS 1.35 C0/006	SUSPENSION 06	Indirect AS	SUS 1.35 C0/015	SUSPENSION 15	Line LAMBDA
<b>AVANT</b>			SUS 1.25 C0/001	SUSPENSION 01	Line EN 2x
SUS 1.35 C0/024	SUSPENSION 24	Avant	SUS 1.25 C0/002	SUSPENSION 02	Line EN 2x
SUS 1.35 C0/025	SUSPENSION 25	Avant	SUS 1.35 C0/003	SUSPENSION 03	Line EN 2x
<b>MODUL</b>			SUS 1.35 C0/006	SUSPENSION 06	Line EN 2x
SUS 1.25 C0/001	SUSPENSION 01	Modul ESO	SUS 1.25 C0/011	SUSPENSION 11	Line EN 2x
SUS 1.25 C0/002	SUSPENSION 02	Modul ESO	SUS 1.25 C0/012	SUSPENSION 12	Line EN 2x
SUS 1.35 C0/003	SUSPENSION 03	Modul ESO	SUS 1.25 C0/001	SUSPENSION 01	Line EN 1x..
SUS 1.35 C0/006	SUSPENSION 06	Modul ESO	SUS 1.25 C0/002	SUSPENSION 02	Line EN 1x..
SUS 1.25 C0/011	SUSPENSION 11	Modul ESO	SUS 1.35 C0/003	SUSPENSION 03	Line EN 1x..
SUS 1.25 C0/012	SUSPENSION 12	Modul ESO	SUS 1.35 C0/006	SUSPENSION 06	Line EN 1x..
SUS 1.25 C0/001	SUSPENSION 01	Modul EXE	SUS 1.25 C0/011	SUSPENSION 11	Line EN 1x..
SUS 1.25 C0/002	SUSPENSION 02	Modul EXE	SUS 1.25 C0/012	SUSPENSION 12	Line EN 1x..
SUS 1.35 C0/003	SUSPENSION 03	Modul EXE	SUS 1.25 C0/001	SUSPENSION 01	Line EN 1x..
SUS 1.35 C0/006	SUSPENSION 06	Modul EXE	SUS 1.25 C0/002	SUSPENSION 02	Line EN 1x..
SUS 1.25 C0/011	SUSPENSION 11	Modul EXE	SUS 1.35 C0/003	SUSPENSION 03	Line EN 1x..
SUS 1.25 C0/012	SUSPENSION 12	Modul EXE	SUS 1.35 C0/006	SUSPENSION 06	Line EN 1x..
SUS 1.25 C0/001	SUSPENSION 01	Modul GAMMA	SUS 1.35 C0/014	SUSPENSION 14	Line EN 1x..
SUS 1.25 C0/002	SUSPENSION 02	Modul GAMMA	SUS 1.35 C0/015	SUSPENSION 15	Line EN 1x..
SUS 1.35 C0/003	SUSPENSION 03	Modul GAMMA	SUS 1.35 C0/024	SUSPENSION 24	Line AVANT
SUS 1.35 C0/006	SUSPENSION 06	Modul GAMMA	SUS 1.35 C0/025	SUSPENSION 25	Line AVANT
SUS 1.25 C0/011	SUSPENSION 11	Modul GAMMA	CON 1.35 01/014	SUSPENSION 01/14	Line LAMBDA
SUS 1.25 C0/012	SUSPENSION 12	Modul GAMMA	CON 1.35 02/023	SUSPENSION 02/23	Line LAMBDA
SUS 1.25 C0/001	SUSPENSION 01	Modul NEO	CON 1.35 03/015	SUSPENSION 03/15	Line LAMBDA
SUS 1.25 C0/002	SUSPENSION 02	Modul NEO	CON 1.35 04/014	SUSPENSION 04/14	Line EN 1x..
SUS 1.35 C0/003	SUSPENSION 03	Modul NEO	CON 1.35 05/015	SUSPENSION 05/15	Line EN 1x..
SUS 1.35 C0/006	SUSPENSION 06	Modul NEO	CON 1.35 06/003	SUSPENSION 06/03	Line EN 1x..
SUS 1.25 C0/011	SUSPENSION 11	Modul AAZ	CON 1.35 07/006	SUSPENSION 07/06	Line EN 1x..
SUS 1.25 C0/012	SUSPENSION 12	Modul AAZ	CON 1.35 08/011	SUSPENSION 08/11	Line EN 2x..
SUS 1.25 C0/007	SUSPENSION 07	Modul ASG	CON 1.35 09/012	SUSPENSION 09/12	Line EN 2x..
SUS 1.25 C0/008	SUSPENSION 08	Modul ASG	CON 1.35 10/003	SUSPENSION 10/03	Line EN 2x..
SUS 1.35 C0/009	SUSPENSION 09	Modul ASG	CON 1.35 11/006	SUSPENSION 11/06	Line EN 2x..
SUS 1.35 C0/010	SUSPENSION 10	Modul ASG	CON 1.35 12/024	SUSPENSION 12/24	Line AVANT
SUS 1.35 C0/014	SUSPENSION 14	Modul LAMBDA	CON 1.35 13/025	SUSPENSION 13/25	Line AVANT
SUS 1.35 C0/023	SUSPENSION 23	Modul LAMBDA	<b>PLASTIC</b>		
SUS 1.35 C0/015	SUSPENSION 15	Modul LAMBDA	SUS 1.35 C0/014	SUSPENSION 14	Plast H
SUS 1.35 C0/004	SUSPENSION 04	Modul QUARK	SUS 1.35 C0/015	SUSPENSION 15	Plast H
SUS 1.35 C0/005	SUSPENSION 05	Modul QUARK	<b>SIMPLE</b>		
SUS 1.35 C0/016	SUSPENSION 16	Modul QUARK	SUS 1.25 C0/007	SUSPENSION 07	Simple TS, Simple PS
SUS 1.35 C0/017	SUSPENSION 17	Modul QUARK	SUS 1.25 C0/008	SUSPENSION 08	Simple TS, Simple PS
SUS 1.35 C0/024	SUSPENSION 24	Modul RENDO	SUS 1.35 C0/009	SUSPENSION 09	Simple TS, Simple PS
SUS 1.35 C0/025	SUSPENSION 25	Modul RENDO	SUS 1.35 C0/010	SUSPENSION 10	Simple TS, Simple PS
SUS 1.35 C0/026	SUSPENSION 26	Modul DA	<b>TORNADO</b>		
SUS 1.35 C0/027	SUSPENSION 27	Modul DA	SUS 1.25 C0/020	SUSPENSION 20	Tornado PC/Tornado PX.ABS
SUS 1.5 C0/028	SUSPENSION 28	Modul KA	SUS 1.25 C0/021	SUSPENSION 21	Tornado PC/Tornado PX.ABS
SUS 1.5 E0/029	SUSPENSION 29	Modul KA	<b>* NOTE - ORDERING OF LINE COMPONENTS</b>		
SUS 1.25 C0/001	SUSPENSION 01	Modul EN 2x.. Modul EN PRISMA 2x	<b>1x CODE SUS.... + n-1 CODE CON....</b>		
SUS 1.25 C0/002	SUSPENSION 02	Modul EN 2x.. Modul EN PRISMA 2x	<b>(n - NUMBER OF ORDERED LIGHTING FIXTERES IN A LINE)</b>		

SUS 1.25 C0/001  
SUSPENSION 01



SUS 1.25 C0/002  
SUSPENSION 02



SUS 1.35 C0/003  
SUSPENSION 03



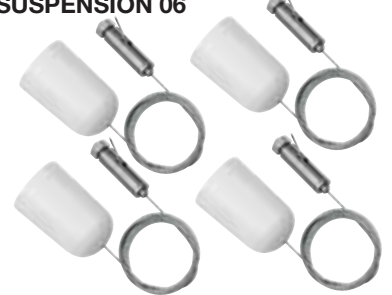
SUS 1.35 C0/004  
SUSPENSION 04



SUS 1.25 C0/005  
SUSPENSION 05



SUS 1.35 C0/006  
SUSPENSION 06



SUS 1.25 C0/007  
SUSPENSION 07



SUS 1.25 C0/008  
SUSPENSION 08



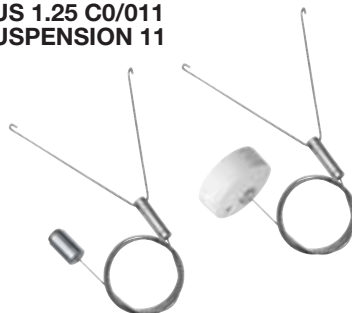
SUS 1.35 C0/009  
SUSPENSION 09



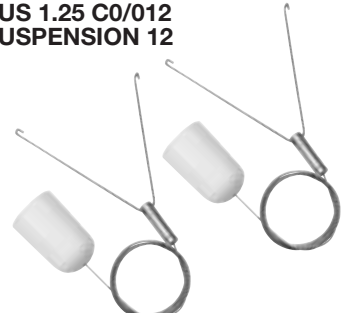
SUS 1.35 C0/010  
SUSPENSION 10



SUS 1.25 C0/011  
SUSPENSION 11



SUS 1.25 C0/012  
SUSPENSION 12



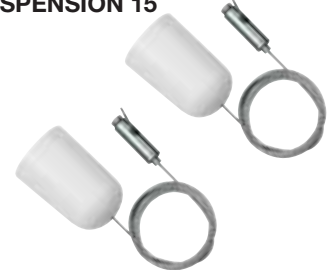
SUS 1.25 C0/013  
SUSPENSION 13



SUS 1.35 C0/014  
SUSPENSION 14



SUS 1.35 C0/015  
SUSPENSION 15



SUS 1.35 C0/016  
SUSPENSION 16



SUS 1.35 C0/017  
SUSPENSION 17



SUS 1.35 C0/018  
SUSPENSION 18



# SUSPENSIONS

**SUS 1.35 C0/019  
SUSPENSION 19**



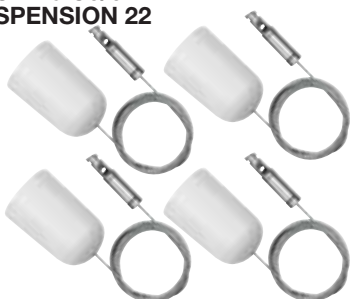
**SUS 1.25 C0/020  
SUSPENSION 20**



**SUS 1.25 C0/021  
SUSPENSION 21**



**SUS 1.25 C0/022  
SUSPENSION 22**



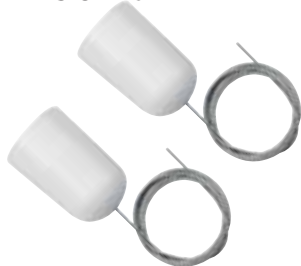
**SUS 1.35 C0/023  
SUSPENSION 23**



**SUS 1.35 C0/024  
SUSPENSION 24**



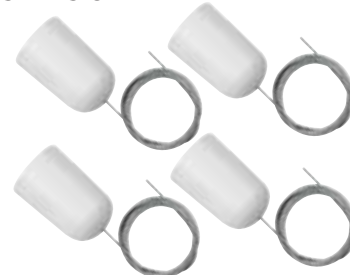
**SUS 1.35 C0/025  
SUSPENSION 25**



**SUS 1.35 C0/026  
SUSPENSION 26**



**SUS 1.35 C0/027  
SUSPENSION 27**



**CON 1.35 01/014  
SUSPENSION 01/14**



**CON 1.35 02/023  
SUSPENSION 02/23**



**CON 1.35 03/015  
SUSPENSION 03/15**



**CON 1.35 04/014  
SUSPENSION 04/14**



**CON 1.35 05/015  
SUSPENSION 05/15**



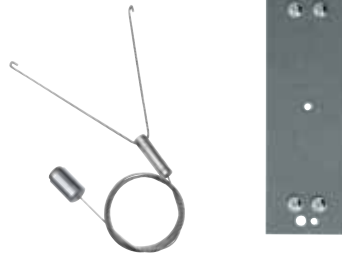
**CON 1.35 06/003  
SUSPENSION 06/03**



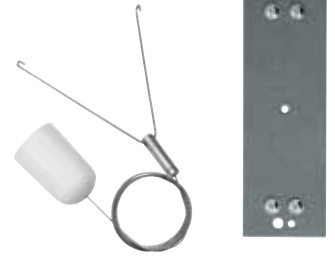
**CON 1.35 07/006  
SUSPENSION 07/06**



**CON 1.35 08/011  
SUSPENSION 08/11**



**CON 1.35 09/012  
SUSPENSION 09/12**



**CON 1.35 10/003  
SUSPENSION 10/03**



**CON 1.35 11/006  
SUSPENSION 11/06**



**CON 1.35 12/024  
SUSPENSION 12/24**



**CON 1.35 13/025  
SUSPENSION 13/25**



**SUS 1.5 C0/028  
SUSPENSION 28**



**SUS 1.5 E0/029  
SUSPENSION 29**



# TECHNICAL PART

## LDC (LIGHT DISTRIBUTION CURVE)

The LDC (Light Distribution Curve) represents the radiating properties of the particular luminaires. All luminaires which feature a light distribution curve have been measured on a measuring system.

An LDC describes the distribution of the luminosities (I, [cd]), how they are created spatially around a luminaire.

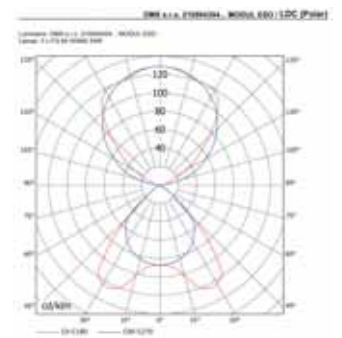
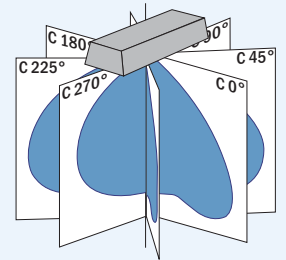
Customarily the room is divided around the luminaire into so-called C planes and the luminosities are measured in these C planes. The most prominent planes are the C0°-C180° plane, which stands vertically to the luminaire's longitudinal axis, and the C90°-C270° plane, which stand parallel to the luminaire's longitudinal axis.

When you see an LDC on the screen or on the printout, these two planes are represented in curve form – in the so-called polar co-ordinate system.

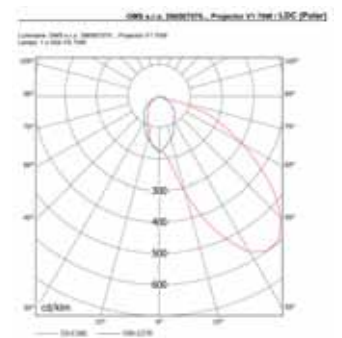
Most luminaires do not radiate their light uniformly in all directions. Which kind of light distribution the luminaire has, is influenced by reflectors and grids, the ensuing light can be very variable. If not otherwise stated, the luminosity values in the LDCs are related to a light flux of 1000 lumen.

Here you see two planes of a light distribution curve. The C0-C180 plane drawn with a red line and the C90-C270 plane drawn with a blue line.

In this case it is a axially symmetrical directly/indirectly radiating luminaire.



There are also asymmetrically radiating luminaires, which can feature a light distribution curve as in the following example:



## COLOUR RENDERING

Coloured objects require light that falls on them to contain components that will faithfully reproduce the correct colour. A degree of fidelity for colour reproduction is given by the colour rendering index (Ra), on a scale of 0-100. The higher the number means the better the reproduction of colour.

### Color rendition classes

The standard defines six color rendition classes, which can be matched with the general color rendering index as follows:

CLASSIFICATION	COLOR RENDITION CLASS	COLOR RENDERING INDEX RA
very good	1A	$Ra \geq 90$
	1B	$80 \leq Ra < 90$
good	2A	$70 \leq Ra < 80$
	2B	$60 \leq Ra < 70$
not so good	3	$40 \leq Ra < 60$
	4	$20 \leq Ra < 40$

Various levels of color rendition are prescribed in the standards, depending on the type of the interior and the activities involved. In general, color rendition Class 1A indicates the best possible quality of color rendition, as required for color testing and monitoring, for example, as well as in critical areas in hospitals and clinics. For office interiors Class 1B is normally adequate.

The decisive factor in the quality of the color rendition available from a lighting system is the choice of lamps. Thermal radiators such as incandescent lamps have very good color rendition characteristics, while fluorescent or discharge lamps come in a variety of quality classes.

COLOR RENDITION CLASS	VERY GOOD 1A	1B	GOOD 2A	2B	NOT SO GOOD 3	4
Color rendering index Ra	Ra ≥ 90	80 ≤ Ra < 90	70 ≤ Ra < 80	60 ≤ Ra < 70	40 ≤ Ra < 60	20 ≤ Ra < 40
Incandescent lamps	•	•				
Compact-fluorescent lamps	•	•				
Fluorescent lamps	•	•	•	•	•	
High-pressure mercury lamps				•	•	•
High-pressure sodium lamps					•	•
Metal halide lamps	•	•	•	•		

## ILLUMINANCE

Illuminance is a measure of luminous flux striking a given surface, i.e. it is the quotient of lumens and area. A luminous flux of 1000 lumens beamed uniformly on a surface measuring 5 square metres, for example, gives an illuminance of 200 lux.

The performance of the human eye is highly dependent on the level of illuminance within the field of vision. But general performance and motivation also improve with increasing illuminance, while the frequency of mistakes decreases.

In the individual case the level of illuminance required will depend on the tasks involved and the precision of visual performance required. Adequate illuminance at the workplace is dependent on the choice of luminaires and lamps, correct calculation of the number of luminaires required, and installation in an efficient configuration.

The required levels of illuminance are defined in the various national standards and guidelines.

Service illuminance is always quoted relative to the position of the plane to be illuminated. Horizontal illuminance, for example, is an expression of the level of illuminance on a horizontal work plane, while vertical illuminance relates to a vertical plane.

The following is a list of typical values for illuminance in our everyday lives:

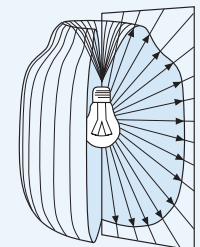
HORIZONTAL ILLUMINANCE OUTDOORS:	
TYPE	ILLUMINANCE [LX]
Sunny summer's day	60.000 to 100.000
Dull summer's day	up to 20.000
Dull winter's day	up to 3.000
Night with full moon	up to 0.25
Starlit sky	up to 0.01

TYPICAL ILLUMINANCE IN INTERIORS:	
TYPE	ILLUMINANCE [LX]
Office	300 to 1000
Industrial plant	100 to 500
Living room	100 to 300
Cellar	50 to 100

## LUMINOUS FLUX

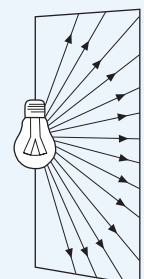
Luminous flux is a photometric measure of radiant flux, i.e. the volume of light emitted from a light source. Luminous flux is measured either for the interior as a whole or for a part of the interior (partial luminous flux for a solid angle). All other photometric parameters are derivatives of luminous flux. Luminous flux is measured in lumens (lm).

The ratio between luminous flux and the power consumed is known as luminous efficacy.



## LUMINOUS INTENSITY

Luminous intensity is an expression of the amount of light beamed in a certain direction within the interior. It is calculated as the ratio of luminous flux to the relevant element of solid angle. The luminous intensity of a lamp or luminaire is not equal in all directions. By plotting luminous intensity in the room (or in planes) around the lamp or luminaire, luminous intensity distribution can be defined. This offers a precise description of the photometric characteristics of the lamp or luminaire. Luminous intensity distribution is normally represented in the form of either a polar or linear diagram.





# TECHNICAL PART

## LIGHTING FOR COMPUTER WORKPLACES – LIMITATION OF THE DIRECT GLARE IN COMPLIANCE WITH EN 12 464, UGR

In order to have a uniform, worldwide system of glare assessment, the CIE (Commission International de l'Eclairage) developed the "Unified Glare Rating" System (UGR). In contrast to the Söllner process, which assesses the glare of individual lights, the UGR process can assess the glare for a specific lighting system.

The cause of glare can be traced back to excessive luminance differences in the field of vision. The field of vision is divided into the working area and the surrounding area. There are two kinds of glare: direct glare and reflective glare. Glare leads to poor work performance, high error frequency, and fatigue. Reflections onto screens, caused by lights, windows or other high luminance surfaces, reduce the readability of the screen and can create problems for workers.

The recommended luminance limits have been brought in line with EN 12464, to 1000 cd/m<sup>2</sup> or 200 cd/m<sup>2</sup> (see table). This can be increased up to 1500 cd/m<sup>2</sup> and 500 cd/m<sup>2</sup> respectively if positive polarity software only is used. The designer needs to select luminaires with the appropriate luminance limit based on the type(s) of screens likely to be used in the space.

In cases where the designer does not have information about the VDT's to be used, luminaires should be selected with a luminance limit of 200cd/m<sup>2</sup> at 65° elevation (old Cat 2), or 55° (old Cat 1) in special circumstances. The default luminance limit is for negative polarity software, and can be increased to 500cd/m<sup>2</sup> or 1500cd/m<sup>2</sup> for positive polarity.

For indirect lighting, the average luminance for surfaces lit directly should not exceed 500cd/m<sup>2</sup>, with the peak intensity not exceeding 1500cd/m<sup>2</sup>. Luminance should vary gradually across the surface.



SCREEN CLASSES IN ACCORDANCE WITH ISO 9241-7 SCREEN QUALITY	I GOOD	II MEDIUM	III POOR
Average luminance of luminaires that are reflected in the screen	≤1000cd/m <sup>2</sup>		≤200cd/m <sup>2</sup>

## MAINTENANCE FACTOR

If you perform your planning on the basis of the newest standard EN 12 464, you must specify the maintenance factor and list all the assumptions that lead to this value. A maintenance plan is required which must contain the interval for changing the light sources and for cleaning the luminaires and the room, and which must also specify the cleaning methods.

The maintenance factor is determined by the type of bulb and luminaire as well as the degree of dust and soiling in the room and also the maintenance method and the maintenance interval.

The maintenance factor is made up of:

- lamp lumen maintenance factor
- lamp service life factor
- luminaire maintenance factor
- room surface maintenance factor

## EULUMDAT

European standard data format for storing the spatial light output distribution for luminaires. A well structured text file format, which stores luminous intensity values in candela per total kilolumens installed in the luminaire. This allows for luminaires with several types of lamps installed next to each other. Eulumdat also offers a practical solution to luminaires that are available with different lamps to choose from. The file extension is \*.ldt.

## PROTECTION CLASS

The mechanical, thermal and safety requirements to be met by luminaires are laid down in the various international and European standards. The provisions of EN 60 598 (Luminaires - General requirements and tests) are of particular relevance. Conformance with this standard guarantees that a luminaire is designed and manufactured in such a way that it will not represent a hazard to life and limb, property or pets as long as it is properly installed, used and serviced. The provisions of the standard are designed to prevent :

- electric shocks when touched
- operating faults in the luminaires
- reduced service life for lamps and luminaires
- fire hazard in the luminaire or its surroundings

Conformance with the standard is indicated by the appropriate markings.

The protection class indicates to what extent the luminaire offers protection against electric shock (short circuit). The protection class may be indicated with Roman numerals or with the help of pictograms. The following classification is in use:

### CLASS I

Basic insulation and protective earthing for all exposed live parts  
Most luminaires are designed to be connected to a protective earth conductor (unless otherwise indicated).



### CLASS II

Basic insulation and additional protective insulation, no protective earthing.



### CLASS III

Operation on and with protective and extra-low voltages (max. 50V)  
e.g. spots for low-voltage trunking.



## IP PROTECTION







The type of protection of a luminaire defines the degree of protection against the ingress of damp, water and dust. The type of protection is expressed as a two-digit IP code. The first digit relates to protection against the ingress of foreign bodies, while the second defines the level of protection against moisture. Every extra-protection luminaire must be marked with both digits of the IP code. Ordinary luminaires (= IP20) do not have to carry the code markings.

1st digit: protection against contact and foreign bodies

DEFINITION	EXAMPLES(CONTACT/INGRES NOT POSSIBLE FOR...)	CODE	
No protection Protection against foreign bodies > 50 mm	no special protection large body surfaces, e.g. a hand (no protection against deliberate contact)	IP 0X IP 1X	
Protection against foreign bodies > 12 mm	fingers	IP 2X	
Protection against foreign bodies > 2,5 mm	tools, rods	IP 3X	
Protection against foreign bodies > 1 mm	wires or strip	IP 4X	
Protection against dust	not completely dust-proof, but adequate for proper operation	IP 5X	
Dust-tight	no ingress of dust	IP 6X	

# TECHNICAL PART

2nd digit: protection against ingress of liquid

DEFINITION	EXAMPLES(CONTACT/INGRES NOT POSSIBLE FOR...)	CODE	
No protection	no special protection	IP X0	
Drip-proof	dripping water (vertical drops)	IP X1	
Drip-proof up to 15°	vertical drops with the housing rotated up to 15° from the normal position	IP X2	
Spray-proof	water spray from an angle of up to 60° from the vertical	IP X3	
Protection against splashwater	splashwater hitting the housing from any direction	IP X4	
Jet-proof	a jet of water hitting the housing from any direction	IP X5	
Protection against high seas	high seas or a jet of water under high pressure	IP X6	
Protection against immersion	ingress of water caused by temporary immersion	IP X7	
Protection against submersion	continuous submersion (precise details to be supplied by the manufacturer)	IP X8	
		--m	

## INDUCTIVE BALLASTS

### OPERATION OF FLUORESCENT LAMPS

The ballast consists of a linear inductor connected in series with the lamp. In parallel to this conductor is connected a starter, which has the function to allow the circulation of preheating current in the lamp cathodes and to supply the correct ignition voltage. The starter can be incorporated in the socket of the fluorescent lamp. This circuit can be used only when mains voltage is nearly the double of lamp voltage. If lamp voltage is particularly low in comparison to mains voltage, two lamps can be connected in series to the same ballast – typical example is 2x18W connection. Since the ballast is an inductive load the circuit has a power factor of about 0.4–0.6.

### OPERATION OF DISCHARGE LAMPS

To start the gas discharge the gas contained in the burner of the lamp must first be ionised in order to facilitate a flow of current. For high-pressure sodium vapour lamps (HS) and metal halide lamps (HI) the necessary high voltage is generated by an igniter. Ordinary high-pressure mercury vapour lamps (HM) ignite without the aid of an igniter as soon as they are connected to the mains voltage.

Once it is ignited the ionised gas possesses an extremely high level of electrical conductivity, so for operation the current flow has to be restricted. The current is usually restricted by the impedance of an inductive ballast. This is connected in series to the lamp and has to be adapted to suit the properties of the lamp and the mains supply because in general high-pressure lamps are susceptible to current fluctuations. Deviations from the nominal value of the current can lead to a reduction in the service life of a lamp and changes in its colour rendering.

As the reference values for lamp current, voltage, and ballast impedance given by the manufacturers for high-pressure sodium vapour (HS) and for metal halide lamps (HI) tend to be identical for any given lamp power, the same ballasts can usually be used for both types of lamp. The colour from HI lamps can change if the impedance varies from the nominal value.

### TEMPERATURE SWITCH

The so-called rectifier effect can occur when discharge lamps reach the end of their service life. This is an asymmetric charge flow in the burner chamber of the lamp resulting from different electron emissions at the electrodes. The proportion of rectified current within the total lamp current that occurs in this way is not restricted by the series connected inductivity. The result is an increase in current flow that lead to an unacceptable temperature rise in the ballasts, igniters, lampholders and leads thus resulting in a destruction of the luminaire. The rectifier effect is especially



known for high-pressure sodium vapour and metal halide lamps. Because this can also cause unacceptable high temperatures at other parts of a luminaire such as lamp-holders and wiring, European version of the luminaire standard EN 60598-1 has been extended to include relevant testings. The new regulations have been in force within Europe since 1st September 2002. Inductive ballasts with integral temperature cut-off can be used as an effective protection against excessive thermal loads on luminaire components, they automatically switch off the power supply to the lamp when a certain threshold temperature is reached.

As before, OMS continues to offer magnetic ballasts with a conventional temperature switch that disables the current flow, when the specified limit temperature of the winding has been achieved.

## POWER FACTOR

All discharge lamps, such as fluorescent lamps, high pressure mercury vapour lamps, sodium lamps, metal halide lamps, etc., require ballasts (chokes) or transformers for their operation. These devices are inductive in nature. When a discharge lamp is switched on, it draws apparent power from the mains. This apparent power (VA) has two components; one is the active power (W) actually being consumed by the lamp for illuminating it, and the other is the reactive power (VAR) feeding the electromagnetic circuit of the control gear.

Power factor is the ratio of Active Power (W) to the Apparent Power (VA) (Figure 1).

$$\text{Power factor} = \frac{\text{Active Power}}{\text{Apparent Power}} \text{ or } \frac{W}{VA}$$

Power factor is also denoted as  $\cos \phi$ . Typical power factor of ballasts is from 0.35 to 0.5.

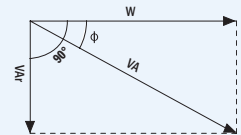


Figure 1

## CAPACITOR

Compensating capacitors are designed for individual correction of the power factor of transformers and magnetic ballasts in discharge lamps (e.g. fluorescent lamps, metal - halid vapour lamps, high-pressure mercury vapour lamps, sodium lamps) in mains with a frequency of 50 or 60Hz. This allows for an improvement of the luminaire's power factor to  $\cos \geq 0.9$ .

### Important remarks on the safety of Type A capacitors

Type A capacitors do not have a specific failsafe device as specified in the applicable standards for type B capacitors. In the event of failure or overload the winding element may overheat and melt, smoke and even ignite; melted material may drip from the capacitor as well. It is therefore necessary to undertake constructional measures on the electrical device to provide reliable safety for people and property when using type A capacitors. The recommendations of the German Association of the Electrical Industry (ZVEI) for the use of type A lighting capacitors say: "Type A capacitors may be used in luminaires only where the capacitor is allocated in uncritical environment (non-inflammable materials)". Only capacitors with break-action mechanism are suitable for use in sensitive environment. In case of doubt regarding the character of the ambient conditions, OMS luminaires should be used with capacitors with break-action mechanism.



## ELECTRONIC BALLASTS

Electronic ballasts are used to run fluorescent lamps at high frequencies (approx. 35 - 40 kHz). This has a number of advantages compared with conventional operation using magnetic ballasts at 50 Hz mains frequency:

### High frequency operation

With high -frequency operation the lamp remains continuously lit and provides flicker-free light, which is a significant improvement in terms of visual comfort. Luminous ripple also occurs at high frequency, which greatly reduces the risks involved in working with rotating machinery (stroboscopic effect). With high-frequency operation, power consumption at the lamp for the same light output is approx. 7 - 11% lower than with conventional operation (higher system efficiency).

### Compensation and ignition

Electronic ballasts incorporate compensation and ignition gear (power factor approx. 0.95), which ensures a gentle lamp start without irritating flicker. The drop in luminous flux is reduced and lamp life is increased by up to 30-50%. At the end of lamp life the electronic ballast switches the system off after 1 - 3 min., and thus puts a stop to the wasteful and annoying attempts at re-ignition. All together electronic ballasts offer up to 30% energy savings compared with conventional ballasts.

### Lighting management and control

Electronic ballasts can be dimmed, or be controlled by wide variety of lighting controls available on the market.

### Service life

With electronic ballasts, service life is much longer than lamp life. In principle all fluorescent lamps can be operated with an electronic ballast.

### Metal halide lamps

Metal - halide lamp can also be run with electronic ballasts. The advantages are similar to those relating to fluorescent lamps. In addition a consistent color appearance can be maintained in spite of fluctuations in the mains voltage.



# TECHNICAL PART

## ENERGY EFFICIENCY REQUIREMENTS FOR BALLASTS FOR FLUORESCENT LIGHTING

The governments that participated in the climate conferences of Rio, Kyoto, The Hague and Bonn aim to reduce emissions of carbon dioxide (CO<sub>2</sub>) as one of the so-called greenhouse gases. CO<sub>2</sub> is a waste product created during production of electrical power. Lighting is estimated to account for around 15% of the electricity consumed in the industrialised world.

A significant amount of electricity consumption in the EU is accounted for by fluorescent lighting. Fluorescent lighting has very different levels of consumption for a given type of lamp, i.e. it differs widely in terms of energy efficiency.

The Directive 2000/55/EC (OJEC L297 - 1 November 2000) aims at reducing the energy consumption of ballasts for fluorescent lighting by moving gradually away from the less efficient ballasts and towards more efficient ones.

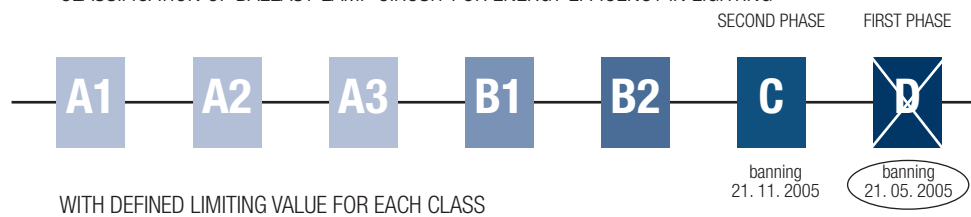
The ballast, however, is only one part of the energy consumption equation. The degree of energy efficiency of fluorescent lighting circuits depends upon the combination of ballast and lamp. As a consequence CELMA has found it necessary to develop a ballast classification system based on this combination.

Luminaire manufacturers now have the possibility to choose the right ballast for the application. The corrected total input power of the lamp-ballast circuit is defined as the „Energy Efficiency Index“ (EEI) of the ballast-lamp combination. The classes are A1, A2, A3, B1, B2, C and D.

### According to the CELMA classification scheme the following classes and typical ballast types exist:

class D: magnetic ballasts with very high losses  
class C: magnetic ballasts with moderate losses  
class B2: magnetic ballasts with low losses  
class B1: magnetic ballasts with very low losses  
class A3: electronic ballasts  
class A2: electronic ballasts with reduced losses  
class A1: dimable electronic ballasts

### CLASSIFICATION OF BALLAST-LAMP CIRCUIT FOR ENERGY EFFICIENCY IN LIGHTING



## LAMPS AND DIMMED OPERATION

For lighting systems with dimmable electronic ballasts, OMS recommends to replace fluorescent lamps as a full complement to guarantee uniform lighting levels and to prevent differing colour impressions. In addition to this, new lamps should be burnt at maximum brightness for approx. 100 hours. A two-lamp dimmable electronic ballast should only be operated with lamps of a single lamp manufacturer.

## LAMP SERVICE PERIOD

Present day discharge lamps and fluorescent lamps will survive for many thousands of hours, but during that time the light output steadily depreciates, so that if lamps were operated until electrical failure, the light output could be half or less of what it was initially. In practice, discharge lamps and fluorescent lamps should be group changed at the most economic time.

Recent developments in lamp and phosphor design have yielded greater lives, together with superior lumen maintenance.

In all but the smallest installations it is sensible to replace discharge lamps and fluorescent lamps as a group at planned intervals. The advantages of planned replacement are as follows:

1. Labour costs can be reduced by phasing the replacement cycle to fit the cleaning cycle.
2. When there would be an interruption to a production process, replacement can be planned for a non-production period.
3. Lamps will be of matching output and colour initially and over the service period, and will be of the latest technology.
4. Replacing lamps before electrical wear-out reduces the possibility of failure of control gear.
5. For design to economic planned maintenance, fewer lighting points may be required.

For many installations the most economic time for group replacement is when the light output of the lamps has fallen below 80% of the initial value and the lamp failures are becoming significant in the loss of average illuminance. The latest time for group replacement is when the designed „maintained illuminance“ has been reached.

If „spot“ replacement of individual lamps is used instead of planned bulk replacement, then it is likely that lumen depreciation, except from lamps with good lumen maintenance, may result in low installation efficacy and unacceptable lighting levels.

## FOUR STEPS TO SAVE ENERGY

### CONVERSION TO ELECTRONIC CONTROL GEAR (ECG) - SAVING 25% IN ELECTRICITY

Not only do lamps consume energy, but so does the control gear operating them. In technical terms, this is called power loss. If we convert a luminaire from magnetic ballasts to one with electronic control gear, energy savings are twofold:

1. Fluorescent lamps operated by ECGs consume approximately 14% less electricity while maintaining the same light output as conventional control gear.
2. ECG power losses are significantly lower than those of CCGs.

**Example:** A luminaire with two 36W T8 fluorescent lamps and CCGs consumes 95W:

$$2 \times 36 \text{ W (lamp)} + 2 \times 11,5 \text{ W (CCG)} = 95 \text{ W}$$

The same luminaire with the same lamps, equipped with a two-lamp ECG consumes only 70W:

$$2 \times 32 \text{ W (lamp)} + 1 \times 6 \text{ W (ECG)} = 70 \text{ W}$$

The 25W of savings are equivalent to more than 25%.

### ELECTRONIC BALLASTS AND DIMMING

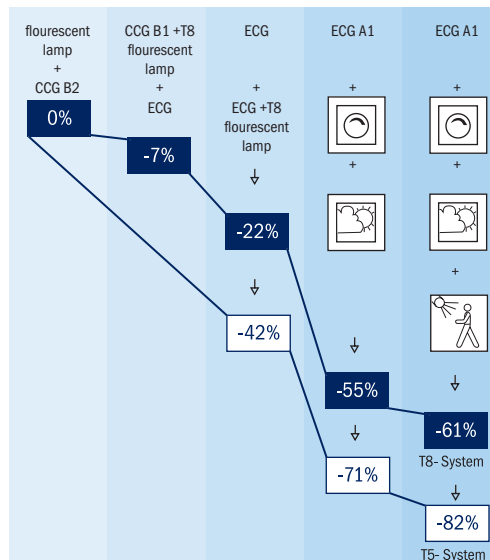
More and more, users want to control their own lighting either because there is enough daylight in the room, or because certain tasks, such as working with VDUs, require lower lighting levels. By using dimmable electronic control gear, lighting levels can be customized for individuals or larger work areas. This function can be carried out manually or through infrared controls or programming. Energy savings of an additional 10% are attainable.

### ELECTRONIC BALLASTS AND DAYLIGHT CONTROL

Dimmable ECGs create new possibilities for saving energy. All that is required is the installation of additional components, such as daylight sensors (photocells) to detect the amount of daylight. Installed correctly in a space, daylight and artificial light can combine together to achieve a constant level of illumination. In the morning when the sun rises, artificial lighting is dimmed automatically. As sunset approaches, artificial illumination increases with only subtle changes occurring. Daylight control is particularly viable for rooms or areas containing a great deal of daylight. Additional energy savings of 30% can be easily achieved.

### DAYLIGHT CONTROL AND OCCUPANCY SENSORS

Most office buildings control their lighting by centrally switching it on and off. As a result, many unoccupied rooms are lit. The last step on our energy saving tour offers a solution for this problem – using occupancy sensors to achieve required light levels. If no motion is detected in a room during a certain period of time as determined by a user, the lighting will be turned off. If a person enters the unlit room, lighting is automatically turned on. The result is an additional 5 to 10% in energy savings.





# LIGHTING CONTROL

## ANALOG CONTROL

Modern dimmable electronic control gears with 1...10V interfaces in combination with the appropriate controllers and sensors provide the basis for simple and cost-effective systems. The system either regulates the voltage or resistance in the control circuit.

Apart from the phase, neutral and protective conductors, two other control circuit wires are connected to the luminaire. The length of the control conductor can affect the control result.

The control power is generated by the ECG and in the simplest form a potentiometer is enough for control. Otherwise control is via an interference-proof dc voltage signal of 10V (maximum brightness; control line open) to 1V (minimum brightness; control line short-circuited). The voltage on the control line is isolated from the power cable but is not at safety extra-low voltage (SELV). All the control lines of an ECG installation must be connected with the correct polarity (+/-), otherwise the lamp will operate at minimum brightness. Regulation does not work correctly if the polarity is crossed on any of the luminaires in a group.

Dimmable ECGs are only dimmed via the 1...10V interface; they are switched on and off via the power line, so the phase conductor should also be connected via the control unit. ECGs connected to different phases can be dimmed via the same controller.

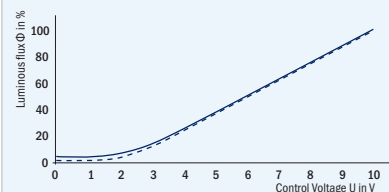
It's always necessary to check the maximum load capacity of the controller (switching output and 1...10V output). Even if the potentiometer is capable of regulating up to 50 HF-ballasts, the capacity of the switch is usually 5-10 luminaires depending on their load. Contactors are needed for greater loads.

## Technical data for manual control units DIM MCU

Reference: DIM MCU P

- Electronic potentiometer for 1...10V
- For 1 control point
- Integrated switching contact
- With rotary button and cover
- Effects of incorrect wiring:
  - 230V at control terminal: Fuse defective or total failure
  - Reversing +/-: always minimum luminous flux
- Load capacity of the signal output: Maximum of 40 mA or a maximum of 50 dimmable ECG or 16 signal amplifiers DIM SA
- Load capacity of switching contact: 250 V/6 A (10 single-lamp or 5 two-lamp dimmable ECGs)

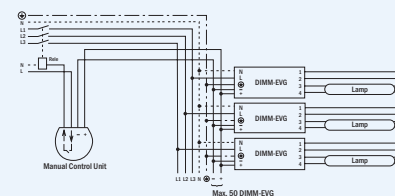
**Note:** Control with a combination of two or more manual control units is not possible.



Graph luminous flux / control voltage



Manual potentiometer DIM MCU P



Wiring scheme analogue control

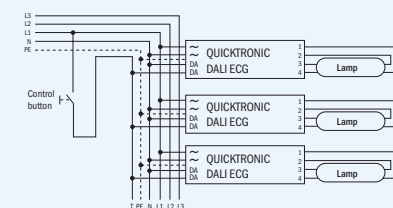
## DIMMING WITH MAINS VOLTAGE

Dimmable ballast normally controlled with DSI, DALI or 1-10V controllers, are also possible to dim and switch on/off directly with mains voltage at the control terminals. It is very simply and economic version of light control.

Only a four core cable to the luminaire is needed. To use this function all that is needed is appropriate wiring of the ECGs. Connecting live and neutral to the control terminals D1 and D2 via a push to make switch (momentary switch) offers the possibility to control the dimming level and the on/off function without any digital devices. With a short push, the luminaire is switched on and off. If you push and hold the button, it is possible to dim the lamp throughout the full dimming range of the ballasts (1 or 3% up to 100%). This connection allows to use unlimited number of push to make switches (momentary switches), so it is ideal for controlling of lighting system from several places in the room. Maximum length of the control wires is unlimited due to 230/240V potential.

The control method can, depending on the brand, be combined with other components such as daylight sensors. The preset lighting level is set using the momentary switch, to the required value. The sensor will then attempt to keep the level constant around the new level.

Maximum numbers of ballast is theoretically unlimited because no power or load is being controlled but due to the possibility of asynchronous function, it is recommend the number of ballasts connected to the switch does not exceed



25 pieces. In the case of a new installation or new ballast installed into an existing installation it is possible that not all ballasts will be synchronous. With a push on the switch longer than 10 seconds all ballasts will synchronise at a 50% light level and have the same point of departure for dimming.

## DIGITAL CONTROL – DALI SIGNAL

Nowadays, light is one of the comfort features of a room and part of an energysaving concept in facility management. The most important thing is to create lighting situations (lighting scenes) that can be stored and recalled, possibly with integrated presence and daylightdependent control. The system must also be very easy to operate and also enable feedback messages to be sent to a building management system. The lighting industry has therefore developed a new digital communication standard for lighting applications. It is called DALI, short for Digital Addressable Lighting Interface. Main advantages of DALI technology:

- In five-wire mains cables, the two wires not needed for power supply can be used for the DALI interface, with no need to worry about the polarity.
- Duplex digital signal is transferred between all units in the system – between ballasts, control panels, sensors and programming units.
- Every ECG in the DALI system can be addressed individually in digital format and therefore interference-free. Maximum 64 addresses/system.
- Every ECG in the DALI system can belong to more than one group at the same time, can store the lighting levels for different lighting scenes and even be switched on and off digitally without the need for relays. Up to 16 groups of luminaires and 16 different light scenes can be created in each system.
- The control signal is transferred in the same way to all luminaires independent of the control conductors' length. Maximum cable length for the control circuit is 300 m.
- Dimming characteristic of ballasts works according logarithmic regulation curve, in which case the human eye observes that the light changes in a linear fashion.
- Status and any error indications from components in the system can be reported by connected software.
- Users can easily program whole system through wall panels, remote controllers or, especially by large lighting installations – with computer software.
- The switches can be connected in parallel so the system can be controlled from different locations.
- All system settings are retained even if there is a lengthy power outage.
- Integration in existing 1-10V or DSI systems is possible, thanks to DALI to 1-10V, or DALI to DSI converters. This solution increases the number of luminaires that can be controlled in a DALI installation (group of 1-10V/DSI controlled luminaires is dedicated to single DALI adress).

## DALI EASY – THE EASIEST WAY OF LIGHTING CONTROL

EASY Color Control is excellent for RGB applications with coloured fluorescent lamps because the DALI electronic ballasts can be connected directly to the DALI EASY II control module without the need for addressing. The DALI EASY lighting controller has four channels. Up to four lighting scenes can be stored and retrieved. All the settings are made from an infra-red remote control. An external switch can also be used to switch all the luminaires on and off and to fade them up and down. With DALI EASY it is possible to set up a coloured light mixing system in which a different lamp colour (red, green, blue and white) is assigned to each group. By setting the individual groups to different values, any colours can be “mixed”. These colours can be stored as lighting scenes and retrieved at any time.

A single control unit permits control of 32 DALI control gear units. If 32 ECG units are not enough for a lighting task, EASY Color Control can be expanded to as many as 16 control units, via a master-slave connection. With 64 DALI channels and up to 512 control gear units, even luminous ceilings with daylight simulation or dynamic facade illumination can be realised in this way.

DALI EASY has three operating modes:

### Lighting control mode

The lighting levels and the lighting scenes are adjusted manually. In lighting control mode up to four static lighting scenes can be stored and retrieved.

### Sequencer mode

In sequencer mode the lighting scenes stored by the user are called up automatically one after the other. With fade times of 0,1 s to 99 minutes it is possible to create a wide range of effects with the integrated sequencer from stunning rapid colour changes to gentle relaxing variations. If DALI EASY is used as a colour mixing system, automatic colour changes are generated.

### Daylight simulation

This is a special operating mode in which it is possible to simulate the natural changes in daylight over a time span of up to 24 hours. Daylight simulation operates in much the same way as the sequencer mode. The difference is in the use of lighting scenes that correspond to the lighting conditions as they change during the course of a day. The duration of the entire cycle (in other words a simulated day) and the predefined lighting scenes can be changed.

If the control units are connected to the USB port of a personal computer via an adapter cable, it is particularly easy to create,



# LIGHTING CONTROL

save and duplicate scenes and sequences via a graphic software interface. Colours can be set, copied and varied by mouse click. All settings are then automatically adopted by the control units.

The simple DALI easy lighting control system offers interesting options for luminaires with changeable colour temperatures, for daylight simulation and for comfortable lighting in offices and conference rooms. DALI Easy is an attractive alternative to far more complex products.

## MODULAR PANELS – COMFORTABLE CONTROL OF LIGHTING SCENES

Panels are available in 2, 5, 7 and 8 button types.

Rubber key mat technology has been used for the buttons, resulting in excellent tactile feedback. Each button is individually back-lit highlighting the current selection and providing ease of access in darkened areas.

By using DALI's message addressing scheme, button panels can work individually or together to control lamps in either the entire network, in groups or individual units. Every control panel in the DIGIDIM range features an IR receiver for use with the remote control. This too is truly versatile providing immediate access to direct level adjustment, scene storing and recall.

There are many advanced features that can be easily programmed by using the DIGIDIM toolbox software. For instance each and every push button can be reconfigured to send any DALI command; this provides the power and flexibility to meet the most challenging of designs. All control panels can also be locked to avoid modification of stored scenes or even temporarily disabled.

The Remote Control is fitted with seven buttons which can be used directly to control basic system functions such as on/off, raising and lowering of the general light level, and selecting from four pre-programmed scenes. The same buttons can be used in combination to provide basic programming functions. These include creating and adding to groups and setting pre-set light levels or scenes. The remote control unit provides a very good first line programming tool for simple systems.



## SOFTWARE – POWERFUL TOOL FOR PROGRAMMING OF LIGHTING SYSTEMS

The DALI-system needs to be programmed and larger systems are ideally programmed using a computer. The DIGIDIM Toolbox is a Microsoft® Windows based application that provides a simple method of configuring of DALI systems. To use the software as a configuration tool, the computer must be connected to the system via the special adapter cable that is provided with the full version of the software.

Based on the familiar look and feel of Windows Explorer, the graphical user interface is intuitive and simple to learn. Scenes are a collection of different light level settings for a number of lamps, which can be recalled at any moment. The Toolbox provides an intuitive method of setting and viewing light levels; it makes the storing of scenes simple, be it for an individual lamp, group of lamps or the entire network.

By using the DIGIDIM Toolbox any button on any DIGIDIM panel can be reconfigured to send a different DALI command. DIGIDIM Toolbox can be used as an online programmer, connected directly to the network. In this instance any change becomes effective immediately. The off-line mode allows DIGIDIM systems to be simulated and configured in advance, away from the installation, by using virtual devices. Once the simulation is complete and the site has been wired the DIGIDIM toolbox guides the user through a simple step-by-step process to transfer the design to the finished installation.



## TOUCHSCREEN

The x-touchPANEL enables task-specific lighting moods and automatic lighting mood sequences to be programmed in all DALI lighting control systems. This plug & play solution offers intelligence in a box – and it's very easy to install. Anyone can define and call up new scenes at minimum cost and with minimum fuss. x-touchPANEL combines simple configuration of lighting moods with simple operation. The control units with integrated sequencers are ideal for lighting systems in which dynamic light, changes of scene or defined sequences are required.

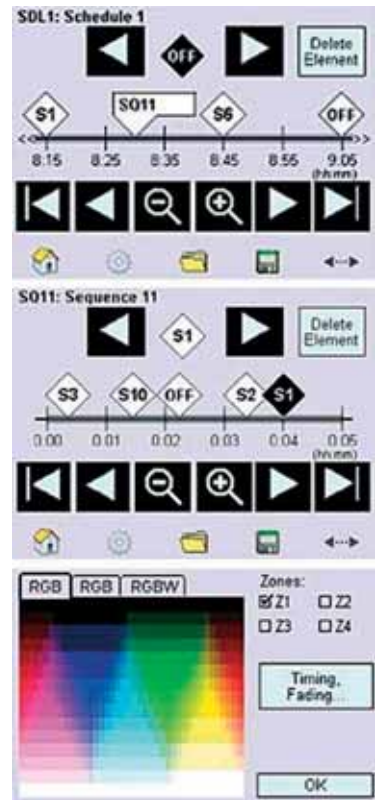
There are two software versions stored in the x-touchPANEL. Users can then choose their favourite. One program focuses on mood lighting with white light and scene selections. The other is designed specifically for time-controlled colour changes and colour sequencing via RGB colour mixing. The special feature is the ease with which colours can be selected. The shade is chosen by touch from a palette of colours and the controller then automatically calculates the light levels for the individual coloured light sources.

The new x-touchBOX has an internal real-time clock which makes setting up scenes and sequences really easy. Up to 128 DALI units can be controlled and 16 lighting groups can be assigned. The brightness values are stored in the control gear, transformers and converters. 99 independent light sequences can be programmed with the x-touchBOX, each capable of calling up to 16 lighting scenes any number of times. The sequences can be called up either manually or under calendar control (schedule).

The "virtual" buttons are not predefined or labelled. Instead, the functions and designations can be configured for the specific application, and reassigned very easily at any time. Twelve different languages are supported.

Touch panel is also a decorative design element - it has extremely low-profile casing and aluminium-framed 5.7 inch colour display. The overall look is further enhanced by a concealed garland of LEDs with RGB colour mixing capability so that the unit can either provide an eyecatching contrast to the wall or blend in with its surroundings.

The x-touchPANEL will add a touch of class to shops, offices, conference rooms, hotels, restaurants and luxury homes.



## SENSORS

Automatic controllers with sensors are ideal for saving of lighting costs. A light sensor measures the brightness in the room and controls it with the appropriate dimmable electronic control gear so that a predefined lighting level is maintained at all times. This means that not only can energy be saved on sunny days but full use can be made of the available daylight on overcast days.

Users can adjust the lighting at any time to a level that meets their specific needs. Energy savings of up to 60% are possible. Potential savings of up to 70% and more can be achieved by using sensors with automatic disconnection, motion detectors and time switches.

# LIGHTING CONTROL

## DIM PICO

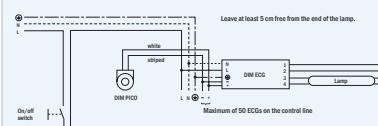
DIM PICO is a simple light sensor for dimmable ECGs with a 1...10 V interface for installation in a single luminaire or for applications in individual offices.

This mini light sensor has a light control function that reduces the amount of artificial light by approximately 50% measured against the increase in daylight. DIM PICO is most suitable for single luminaires or individual offices. The light sensor should be mounted on the lamp with a T8 clip or a T5 clip.

### Technical data for DIM PICO

- 1...10V mini light sensor for single luminaires in single and open-plan offices
- Up to 50% energy savings
- Simple clip-on fitting for T8 and T5 lamps
- Direct connection to the 1...10V interface
- Compensates for 50% of the incoming daylight
- Easy to adjust by turning the casing
- Load capacity of the signal output: max. 6 mA (maximum of 10 dimmable ECGs)
- Cable length 700 mm
- Measurement angle 50°

Two plastic clips (for T8 and T5 lamps) are included.

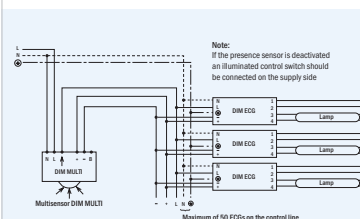


## DIM MULTI

Multisensor DIM MULTI is designed for lighting control at workplaces or in rooms. It maintains the light at a constant level. If sufficient daylight is available the lighting system is switched off. It has an integrated motion detector so that the lighting is only switched on if there is at least one person in the room. This is the most efficient form of lighting control and achieves energy savings of 70% and more.

### Technical data for multisensor DIM MULTI

- 1...10V sensor for daylight-dependent control with automatic shutdown at adequate daylight
- Integrated motion sensor (can be disabled)
- Energy savings: up to 70%
- Compensates for 100% of the incoming daylight
- Easy to adjust with three trimmers on the sensor
- Power input: approx. 1W
- Adjustable light value: Approx. 50-800 lux (directly on the unit)
- Detection angle of the light sensor: approx. 100°
- Monitoring range of the motion sensor: Approx. 7m diameter at a height of 3 m
- Supply and load connections: L, N, switched L
- Load capacity of the signal output: 50 mA (approx. 50 dimmable units)
- Load capacity of switching contact: 5 A ohmic load or 20 1-lamp ECGs or 10 2-lamp ECGs
- Switch-off delay range: 5-30 minutes
- Maximum cable length: 100 m (control lines 0.5mm<sup>2</sup>, load and supply lines 1.5mm<sup>2</sup>)
- Design: Plastic housing for installation on ceilings or in louvre luminaires

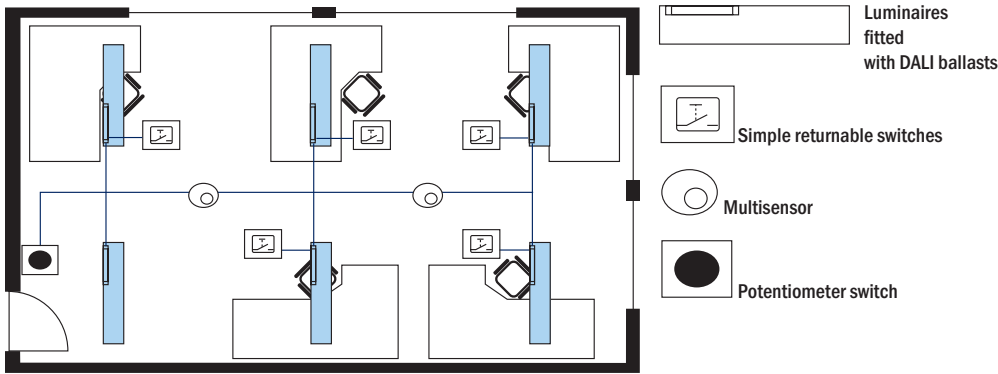


## MULTI-SENSOR

The DIGIDIM multi-sensor module is a compact DALI unit containing the sensors required to provide the energy saving benefits of an automated lighting control system. It contains a constant light sensor, a PIR presence detector and an infrared receiver that allows the multi-sensor to be operated by the DIGIDIM hand held remote control. The PIR and constant light sensors allow the system to detect when a room is occupied and to measure the levels of light available.



The IR receiver operates in conjunction with the DIGIDIM IR hand held remote control to select desired light levels and to carry out basic system programming functions. The multi-sensor can be installed in the ceiling or within a luminaire. It can also be fitted with a local wall switch, which will provide a manual dimming function if required.



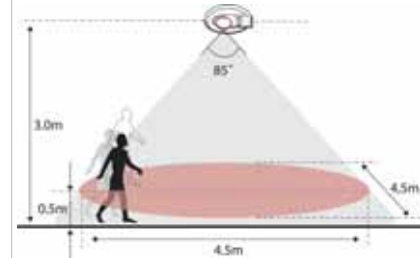
Open plan office – central control from one or more locations in the area. Advanced control and energy saving features are achieved by constant light functionality, presence detection and remote control provided by the multi-sensor(s). Independent individual control for each luminaire increases user comfort.

**Technical data for Multisensor**

- Programmable constant light control for maximum energy efficiency range 50 to 5000 lx detect. angle 100o (40o with restrictor)
- Complete control using the hand held remote
- Manual switch settings can be overridden by DIGIDIM Toolbox software to eliminate the need for acces to multi-sensor after installation
- Most multi-sensor functions are programmable using the hand held remote, but full system acces is available by using the DIGIDIM Toolbox software
- If multiple linked PIR sensors are connected in one system, they will communicate with each other and only switch off the loads when all are non-detecting



Multi-sensor



PIR detection range

**ACTILUME – EASY LIGHTING CONTROL**

The Philips ActiLume lighting control system consists of a small, lightweight sensor and controller. ActiLume is a true Plug and Play solution designed for all office applications, from open plan to cell offices, lobbies or toilets, and from corridor to small meeting rooms. It is used in a master and slave luminaire concept, easy to use and easy to install.

It has three sensors:

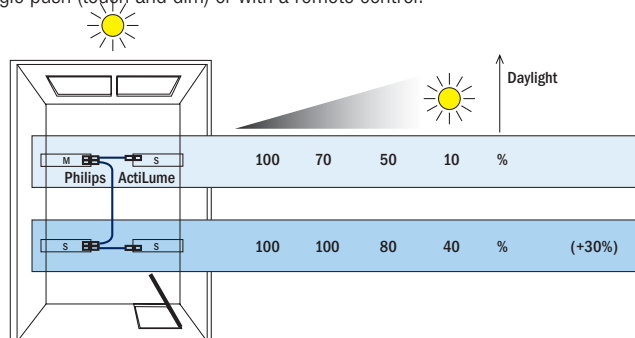
- a light sensor for daylight depending regulation - the light sensor is sensitive for visible radiation (matching the human eye) providing automatic savings with daylight depending regulation, without any visible discomfort for the user
- a movement detector for occupancy control - the movement detector is very sensitive to human movements and is combined with extended delays to provide optimal functionality in an office environment
- an IR receiver for remote control - in this way the settings can be manually overruled according to personal preferences

Furthermore the sensor unit contains a small push button to change the mode and for calibration.

**Cell office application**

When enough daylight enters the room, the amount of artificial light will be automatically reduced at the window side. The corridor side will follow the window side with a 30% light offset.

ActiLume system switches the lights in an office automatically on and off on occupancy and regulates the lights down when enough daylight enters the room, resulting in a overall saving of up to 75%. Optionally the lights can be controlled manually, either by a wired switch with a single push (touch and dim) or with a remote control.



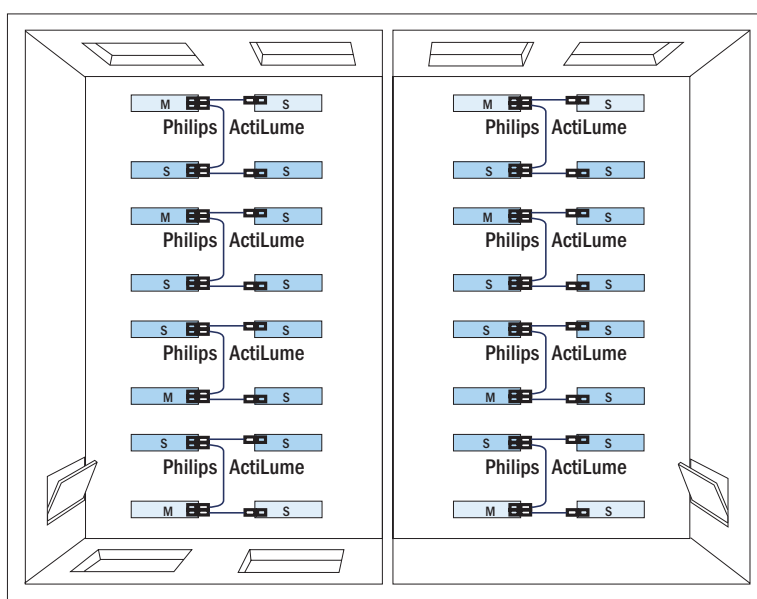


# LIGHTING CONTROL

## Open plan office application

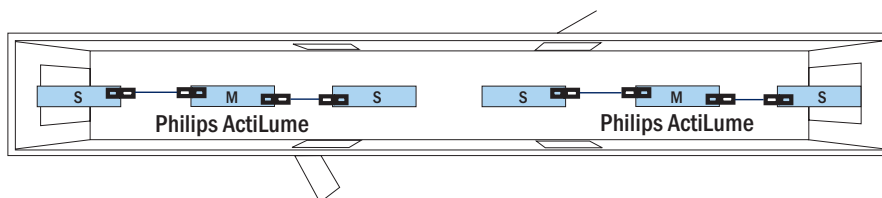
When enough daylight enters the room, the amount of artificial light will be automatically reduced at the window side. The corridor side will follow the window side with a 30% light offset.

When a person enters the office, the lights will go on automatically. 15 minutes after the last movement has been detected, the light level will be reduced to 20%. This level will be maintained for 120 minutes before the lights will be completely switched off.



## Corridor application

The ActiLume system will switch the lights on and off on occupancy. 15 minutes after the last movement has been detected, lights will be dimmed to 20%, and will stay at that level for 60 minutes more. Then the lights will be switched off. If somebody is detected during that period of 60 minutes, lights will go up to 100% again. There is no daylight regulation, therefore the amount of artificial light will not be reduced when enough daylight is detected in the corridor.



## Direct/indirect lighting modes application

The ActiLume system has two direct/indirect lighting modes, one for cell offices and one for open plan offices.

### Cell offices

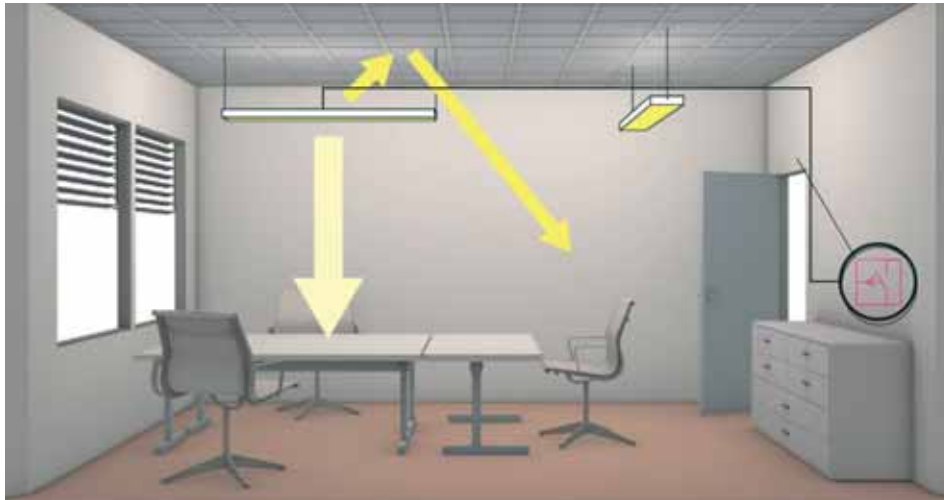
When enough daylight enters the room, the amount of artificial direct light will be automatically reduced. The indirect light will stay at a predetermined light level. Actilume system will automatically switch all the lights on and off on occupancy (both lights will be switched off 15 minutes after the last movement has been detected).

### Open plan offices

When enough daylight enters the room, the amount of direct light will be automatically reduced. The indirect light will stay at a predetermined level. ActiLume system will switch all the lights on and off on occupancy, but indirect lights will be switched off 120 minutes after the direct lights have been switched off for increased visual comfort (direct lights will be

switched off 15 minutes after the last movement has been detected).

Optionally the lights can be controlled manually for both modes, either by a wired switch with a single push (touch and dim) or with a remote control.



Thanks to the two outputs (window and corridor side), the settings of the lighting control are preprogrammed according to the place of the luminaire. Therefore the ActiLume system does not require any programming or commissioning.

The system can control maximum nine ballasts and can be extended with two additional movement detectors or an extension sensor.

## COMPARISON OF LIGHTING CONTROL SYSTEMS

POSSIBILITIES	1-10V	PHASE CONTROL	DSI	RADIO CONTROL	DALI
individually addressable components	no	no	no	no	64 addresses
addressing of luminaire groups	no	no	no	yes	16 groups
light scenes	no	no	no	no	16 scenes
logarithmic control **	no	yes	yes	yes	yes
control circuit polarity dependant	yes	–	no	–	no
switching on/off off via the control circuit	no	yes	yes	yes	yes
number of conductors to the luminaire	5	4	5	4	5
max length of control circuit	300 m	unlimited	250 m	20 – 300 m *	300 m
controlling via an interface by a computer	no	no	yes	no	yes
length of the control conductor can affect the control result	yes	no	no	–	no
light/motion sensor connection	yes	yes	yes	yes	yes
status response	no	no	no	no	yes

\* depends on number of obstacles between the transmitter and the receiver

\*\* logarithmic control – The DALI standard determines the light levels so that they comply with the logarithmic regulation curve in which case the human eye observes that the light changes in a linear fashion.

All DALI ballasts and controllers adhere to the same logarithmic curve irrespective of their absolute minimum level.

# LIGHTING CONTROL

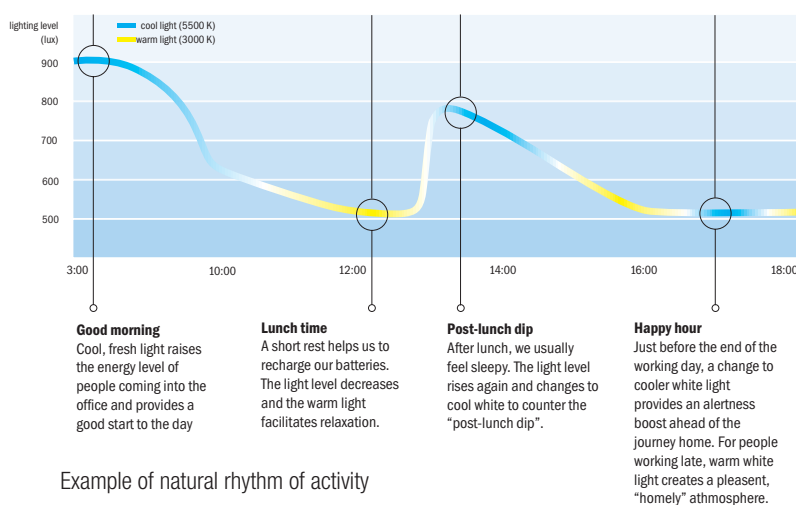
## DYNAMIC LIGHTING

Research has shown that lighting level and colour temperature influence our mood. A lighting installation with individual options for controlling the level and/or colour temperature gives a person a sense of autonomy. One of the simplest ways to enable people to adjust their working environment so that they can perform better is to install controllable lighting. Being able to modify lighting to suit our visual needs not only improves our visual performance, it also makes us feel good. In a work situation, a positive mood makes people more likely to help others, improves memory, gives rise to more efficient decision-making, increases innovation and enhances creative problem-solving skills.

Thus, we can use central control – to create lighting rhythms where the illuminance and spectral distribution of light change according to our photo-biological needs or rhythms and where the colour temperature follows the rhythms of the day to make us feel more comfortable. This will in turn have a positive impact on our work performance.

Dynamic Lighting is an advanced solution that brings the dynamics of daylight into the working environment. Following the rhythm of daylight, Dynamic Lighting creates a stimulating, 'natural' lighting ambience and enables individuals to control the lighting

according to their personal preference. Dynamic Lighting enhances people's sense of well-being and therefore their motivation and performance.



Example of natural rhythm of activity

Warm white light (3000 K) facilitates relaxation and improves people's well-being, while daylight-white light (5600 K) stimulates and activates the human body. Dynamic Lighting can be applied in office environments through lighting scenarios that change the light automatically during the day. These scenarios can improve people's general sense of well-being by catering to their needs at different times of the day.

## Daylight simulation with fluorescent lamps

White fluorescent lamps with different colour temperatures of 2700 K to 8000 K are suitable for daylight simulation in window-less areas, light ceilings and task lighting with variable colour temperatures. The DALI ECG is the perfect platform for this applications, too. Intelligent control of electrode preheating in dimming operations ensures that the lamps achieve their maximum life. The digital DALI interface translates the dimming values precisely into the required mixing ratios. DALI control is the optimum system for these applications because it allows very slow crossfades that are almost imperceptible to the human eye. Slow cross-fades from 2700 K to 8000 K can be configured via a graphical user interface.

## FLUORESCENT LAMPS FOR SPECIAL PURPOSES

### FLUORESCENT LAMPS WITH AN INTERNAL REFLECTOR

#### Product Features

- Internal reflector directs the light via a 160° 'window'
- Reflector directs 85% of the light downwards avoiding wasted light
- Direct retrofit for all standard fluorescent lamps operating on conventional or electronic control gear

#### Product Benefits

- internal reflector directs the light where it is needed
- energy savings of 30-50% in non-reflector luminaires without loss of light
- internal reflector is not affected by dust accumulation (in contrast to normal linear lamps)

#### Application

- luminaires without reflectors or with only simple reflectors, mainly found in industry and shops / supermarkets
- large halls where qualitative good lighting is required against the lowest possible costs (warehouses, industry halls, parking areas, hypermarkets, etc.)
- perfectly suited for dusty environments

### FLUORESCENT LAMPS WITH PROTECTIVE COATING

#### Product Features

- Protective coating around the entire lamp
- Blue ring around one end
- Direct retrofit for all standard fluorescent lamps operating on conventional or electronic control gears, available in various colour designations.

#### Product Benefits

- Special protective coating in the lamp, prevents products from contamination in case of accidental lamp breakage
- Easy identification in audit situations by blue ring at one end
- Protects products from discolouring and loss of taste by 90% lower UV emission

#### Application

- For use where contamination resulting from lamp breakage must be prevented, e.g. in food preparation, health care, pharmaceuticals, shops etc.
- Suitable for use in environments with increased risk of breakage, e.g. sports halls
- Suitable for use in environments where UV emission should be reduced (museums, libraries, archives, food industry, fashion shops, etc.)

### FLUORESCENT LAMPS WITH HIGH-QUALITY FLUORESCENT COATING

#### Product Features

- High-quality fluorescent coating
- Direct retrofit for all standard fluorescent lamps operating on conventional or electronic control gears, available in various colour designations

#### Product Benefits

- Very good colour rendering. Making colours appear rich, deep and enhanced as they do in daylight, making products appear more attractive

#### Application

- Used in applications where good colour rendering is crucial, such as shops (flower, fashion), museums, hospitals, printing industry, etc.

### FLUORESCENT LAMPS WITH ENHANCED BLUE LIGHT CONTENT TO PROMOTE WELL-BEING

#### Product Features

- Enhanced blue light content positively influences well-being
- Unique phosphor coating generates a light spectrum with an optimal balance between light for vision and blue light to promote well-being. Direct retrofit for all standard fluorescent lamps operating on conventional or electronic control gears.

#### Product Benefits

- Tests show that ActiViva lighting makes people feel more alert, awake and energized, indicating an increase in their performance of 10% or more
- Contains 25% more blue light than daylight (can be combined well with other light sources in existing installations)

#### Application

- Indoor working areas (call centers, industry, schools, healthcare etc.), especially where an energizing environment needs to be created

## **FLUORESCENT LAMPS WITH LONGER LIFETIME AND LESS EARLY FAILURES**

### **Product Features**

- Significant reduction of early failures based upon a new technology
- Extra long and reliable lifetime
- Direct retrofit for all standard fluorescent lamps operating on conventional or electronic control gears, available in various colour designations

### **Product Benefits**

- Longer lifetime and less early failures lead to less hassle and lower maintenance costs and facilitate the change from spot to group replacement
- Less waste and disposal cost at end-of-life
- Good environmental choice because of long reliable life (380% better than T8 standard), low waste (only 1 lamp compared to 4 T8 standard), lowest mercury content and lead-free

### **Application**

- Suitable for use in applications where maintenance costs (high ceilings, difficult to reach) and disruptive costs are high (stopping of production process), or where lamp failure is not acceptable for e.g. safety reasons: process, food and petrochemical industries

## **FLUORESCENT LAMPS WITH INSIDE A CLEAR T12 TUBE FOR LOW AMBIENT TEMPERATURE**

### **Product Features**

- Improved lumen output in low ambient temperatures
- Robust lamp construction due to strong, temperature-resistant assembly kit

### **Product Benefits**

- High lighting level in low ambient temperature applications compared with other fluorescent tubes
- Fully temperature-resistant in all conditions; no temperature-related relamping problems
- Good environmental choice because of highest energy efficiency in colder conditions (<10°C)

### **Application**

- Indoor: cold stores and other refrigerated areas
- Outdoor: petrol stations, car parks, industry

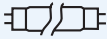
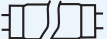
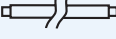
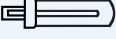


## RESISTANCE TO CHEMICAL AGENTS







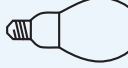
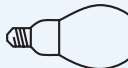
Before mounting a fitting, the local environment must be checked for chemical agents that might attack the material making up the fitting: polycarbonate, metacrylate and polyester. The chemical agents listed in the table below apply where ambient temperature is 25°C and where there is no mechanical stress that may cause permanent deformations.

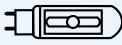


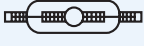
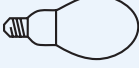
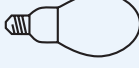
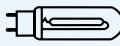
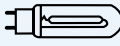
Chemical substance	Polyester	Acrylic glass (diffusor PMMA)	Polycarbonate (diffusor/housing PC)
Acetone	not resistant	not resistant	not resistant
Aliphatic hydrocarbons	partially resistant	partially resistant	resistant
Alcohol up to 30%	resistant	resistant	resistant
Alcohol concentrated	partially resistant	not resistant	not resistant
Ammonia 25%	not resistant	resistant	not resistant
Accumulator acid	resistant	resistant	resistant
Aniline	not resistant	not resistant	not resistant
Aromatic hydrocarbons	partially resistant	not resistant	not resistant
Ether	partially resistant	not resistant	not resistant
Ethyl acetate	not resistant	not resistant	not resistant
Benzene	resistant	resistant	resistant
Benzole	not resistant	not resistant	not resistant
Beer	resistant	resistant	resistant
Blood	resistant	resistant	resistant
Bromine acid	not resistant	not resistant	not resistant
Chloroform	not resistant	not resistant	not resistant
Chlorophenol	not resistant	not resistant	not resistant
Diesel oil, crude oil	resistant	resistant	partially resistant
Dioxane	resistant	not resistant	not resistant
Acetic acid up to 5%	resistant	partially resistant	resistant
Acetic acid up to 30%	resistant	not resistant	partially resistant
Glycerine	resistant	resistant	partially resistant
Glycol	resistant	resistant	resistant
Glysantine	resistant	resistant	resistant
Carbon dioxide	resistant	resistant	resistant
Carbon monoxide	resistant	resistant	resistant
Lime water	resistant	resistant	partially resistant
Saline	resistant	resistant	resistant
Ketone	not resistant	not resistant	not resistant
Lysol	not resistant	not resistant	not resistant
Sea water	resistant	resistant	resistant
Methylene chloride	not resistant	not resistant	not resistant
Methyl alcohol	not resistant	not resistant	not resistant
Metal salts and their watery solutions	resistant	resistant	resistant
Sodium hydroxide 2% partially	resistant	resistant	not resistant
Sodium hydroxide 10%	not resistant	resistant	not resistant
Petroleum ether	resistant	resistant	partially resistant
Pyridine	not resistant	not resistant	not resistant
Phenol	not resistant	not resistant	not resistant
Nitric acid up to 10%	resistant	resistant	resistant
10 to 20%	partially resistant	partially resistant	partially resistant
over 20%	not resistant	not resistant	not resistant
Hydrochloric acid up to 20%	resistant	resistant	resistant
over 20%	resistant	resistant	partially resistant
Sulphuric acid up to 50%	resistant	resistant	resistant
up to 70%	resistant	partially resistant	partially resistant
over 70%	not resistant	not resistant	not resistant
Sulphurous acid up to 5%	partially resistant	partially resistant	not resistant
Hydrogen sulphide	resistant	resistant	resistant
Soapsuds	resistant	resistant	resistant
Soda	resistant	resistant	resistant
Synth. suds	resistant	resistant	partially resistant
Oil of turpentine	resistant partially	resistant	partially resistant
Carbon tetrachloride	resistant	not resistant	resistant
Water up to 60° C	resistant	resistant	resistant
Hydrogen peroxide up to 40%	not resistant	not resistant	partially resistant
over 40%	not resistant	partially resistant	partially resistant
Xylene	not resistant	not resistant	not resistant

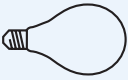
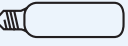



# LAMP INDEX

Category	Destination		Power	Lamp-holder (W)	Luminous flux	Colour Temperature (lm)	Colour Rendering	OSRAM	Philips	Sylvania	GE	
	(LBS)											
<b>Fluorescent Lamps</b> <b>Leuchtstofflampen</b> <b>Lineárne žiarivky</b> 	T 16	(T5)	14	G 5	1220	ww, nw, tw	1B	FH 14 W/8..	TL5 14 W HE/8..	–	–	
	T 16	(T5)	21	G 5	1890	ww, nw, tw	1B	FH 21 W/8..	TL5 21 W HE/8..	–	–	
	T 16	(T5)	28	G 5	2610	ww, nw, tw	1B	FH 28 W/8..	TL5 28 W HE/8..	–	–	
	T 16	(T5)	35	G 5	3290	ww, nw, tw	1B	FH 35 W/8..	TL5 35 W HE/8..	–	–	
	T 16	(T5)	24	G 5	1760	ww, nw, tw	1B	FQ 24 W/8..	TL5 24 W HO/8..	–	–	
	T 16	(T5)	39	G 5	3080	ww, nw, tw	1B	FQ 39 W/8..	TL5 39 W HO/8..	–	–	
	T 16	(T5)	49	G 5	4900	ww, nw, tw	1B	–	TL5 49 W HO/8..	–	–	
	T 16	(T5)	54	G 5	4400	ww, nw, tw	1B	FQ 54 W/8..	TL5 54 W HO/8..	–	–	
	T 16	(T5)	80	G 5	6160	ww, nw, tw	1B	FQ 80 W/8..	–	–	–	
		T 26	(T8)	18	G 13	1000	ww, nw, tw	1A	L 18 W/..	TL-D 18 W/9..	F18 W/9..	F18 W/9..
		T 26	(T8)	18	G 13	1350	ww, nw, tw	1B	L 18 W/..	TL-D 18 W/8..	F18 W/8..	F18 W/8..
		T 26	(T8)	36	G 13	2350	ww, nw, tw	1A	L 36 W/..	TL-D 36 W/9..	F36 W/9..	F36 W/9..
		T 26	(T8)	36	G 13	3350	ww, nw, tw	1B	L 36 W/..	TL-D 36 W/8..	F36 W/8..	F36 W/8..
		T 26	(T8)	38	G 13	3000	ww, nw, tw	1B	L 38 W/..	TL-D 38 W/8..	F38 W/8..	F38 W/8..
		T 26	(T8)	58	G 13	3750	ww, nw, tw	1A	L 58 W/..	TL-D 58 W/9..	F58 W/9..	F58 W/9..
		T 26	(T8)	58	G 13	5200	ww, nw, tw	1B	L 58 W/..	TL-D 58 W/8..	F58 W/8..	F58 W/8..
		T 7	(T2)	6	W 4,3	330	ww, nw, tw	1B	FM 6W/..	–	–	–
		T 7	(T2)	8	W 4,3	540	ww, nw, tw	1B	FM 8W/..	–	–	–
		T 7	(T2)	11	W 4,3	750	ww, nw, tw	1B	FM 11W/..	–	–	–
	T 7	(T2)	13	W 4,3	930	ww, nw, tw	1B	FM 13W/..	–	–	–	
<b>Compact-Fluorescent Lamps</b> <b>Kompakt-Leuchtstofflampen</b> <b>Kompaktné žiarivky</b> 	TC	(TC-S)	5	G 23	250	ww, nw	1B	Dulux S 5 W/...	PL-S 5 W/.../2P	CF-S 5 W/...	F5BX/...	
	TC	(TC-S)	7	G 23	400	ww, nw	1B	Dulux S 7 W/...	PL-S 7 W/.../2P	CF-S 7 W/...	F7BX/...	
	TC	(TC-S)	9	G 23	600	ww, nw	1B	Dulux S 9 W/...	PL-S 9 W/.../2P	CF-S 9 W/...	F9BX/...	
	TC	(TC-S)	11	G 23	900	ww, nw	1B	Dulux S 11 W/...	PL-S 11 W/.../2P	CF-S 11 W/...	F11BX/...	
	TC-EL	(TC-SE)	5	2 G7	250	ww, nw	1B	Dulux S/E 5 W/...	PL-S 5 W/.../4p	CF-SE 5 W/...	F5BX/.../4p	
	TC-EL	(TC-SE)	7	2 G7	400	ww, nw	1B	Dulux S/E 7 W/...	PL-S 7 W/.../4p	CF-SE 7 W/...	F7BX/.../4p	
	TC-EL	(TC-SE)	9	2 G7	600	ww, nw	1B	Dulux S/E 9 W/...	PL-S 9 W/.../4p	CF-SE 9 W/...	F9BX/.../4p	
	TC-EL	(TC-SE)	11	2 G7	900	ww, nw	1B	Dulux S/E 11 W/...	PL-S 11 W/.../4p	CF-SE 11 W/...	F11BX/.../4p	
		TC-D		10	G24 d-1	600	ww, nw	1B	Dulux D 10 W/...	PL-C 10 W/.../2P	CF-D 10 W/...	F10DBX/...
		TC-D		13	G24 d-1	900	ww, nw	1B	Dulux D 13 W/...	PL-C 13 W/.../2P	CF-D 13 W/...	F13DBX/...
		TC-D		18	G24 d-2	1200	ww, nw	1B	Dulux D 18 W/...	PL-C 18 W/.../2P	CF-D 18 W/...	F18DBX/...
		TC-D		26	G24 d-3	1800	ww, nw	1B	Dulux D 26 W/...	PL-C 26 W/.../2P	CF-D 26 W/...	F26DBX/...
		TC-DEL		10	G24 q-1	600	ww, nw	1B	Dulux D/E 10 W/...	PL-C 10 W/.../4p	CF-DE 10 W/...	F10DBX/.../4p
		TC-DEL		13	G24 q-1	900	ww, nw	1B	Dulux D/E 13 W/...	PL-C 13 W/.../4p	CF-DE 13 W/...	F13DBX/.../4p
	TC-DEL		18	G24 q-2	1200	ww, nw	1B	Dulux D/E 18 W/...	PL-C 18 W/.../4p	CF-DE 18W/...	F18DBX/.../4p	
	TC-DEL		26	G24 q-3	1800	ww, nw	1B	Dulux D/E 26 W/...	PL-C 26 W/.../4p	CF-DE 26W/...	F26DBX/.../4p	
		TC-T		13	GX 24 d-1	900	ww, nw	1B	Dulux T 13 W/...	–	–	F13TBX/...
		TC-T		18	GX 24 d-2	1200	ww, nw	1B	Dulux T 18 W/...	(N) PL-T 18 W/.../2P	CF-T 18 W/...	F18TBX/...
		TC-T		26	GX 24 d-3	1800	ww, nw	1B	Dulux T 26 W/...	(N) PL-T 26 W/.../2P	CF-T 26 W/...	F26TBX/...
		TC-TEL		13	GX 24 q-1	900	ww, nw	1B	Dulux T/E 13W/...	–	–	F13TBN/.../A/4p
TC-TEL			18	GX 24 q-2	1200	ww, nw	1B	Dulux T/E 18 W/...	(N) PL-T 18 W/.../4p	CF-TE 18 W/...	T18TBX/.../A/4p	
TC-TEL			26	GX 24 q-3	1800	ww, nw	1B	Dulux T/E 26 W/...	(N) PL-T 26 W/.../4p	CF-TE 26 W/...	T26TBX/.../A/4p	
TC-TEL			32	GX 24 q-3	2400	ww, nw	1B	Dulux T/E 32 W/...	(N) PL-T 32 W/.../4p	CF-TE 32 W/...	T32TBX/.../A/4p	
TC-TEL			42	GX 24 q-4	3200	ww, nw	1B	Dulux T/E 42 W/...	(N) PL-T 42 W/.../4p	–	–	

Category	Destination (LBS)	Power	Lamp- holder (W)	Luminous flux	Colour Temperature (lm)	Colour Rendering	OSRAM	Philips	Sylvania	GE
<b>Compact-Fluorescent Lamps</b> <b>Kompakt-Leuchtstofflampen</b> <b>Kompaktné žiarivky</b> 	TC-TEL	60	2G8	4000	ww, nw	830/840	–	–	PL-H 60 W/.../4PA	–
	TC-TEL	85	2G8	6000	ww, nw	830/840	–	–	PL-H 85 W/.../4PA	–
	TC-TEL	120	2G8	9000	ww, nw	830/840	–	–	PL-H 120 W/.../4PA	–
	TC-L	18	2 G 11	1200	ww, nw	1B	Dulux L 18 W/...	PL-L 18 W/.../4p	CF-L 18 W/...	F18BX/...
	TC-L	18	2 G 11	750	ww, nw, tw	1A	Dulux L 18 W/...	PL-L 18 W/.../4p	CF-L 18 W/...	F18BX/...
	TC-L	24	2 G 11	1800	ww, nw	1B	Dulux L 24 W/...	PL-L 24 W/.../4p	CF-L 24 W/...	F24BX/...
	TC-L	24	2 G 11	1200	ww, nw, tw	1A	Dulux L 24 W/...	PL-L 24 W/.../4p	CF-L 24 W/...	F24BX/...
	TC-L	36	2 G 11	2900	ww, nw	1B	Dulux L 36 W/...	PL-L 36 W/.../4p	CF-L 36 W/...	F36BX/...
	TC-L	36	2 G 11	1900	ww, nw, tw	1A	Dulux L 36 W/...	PL-L 36 W/.../4p	CF-L 36 W/...	F36BX/...
	TC-L	40	2 G 11	3500	ww, nw	1B	Dulux L 40 W/...	PL-L 40 W/.../4p	CF-LE 40 W/...	F40BX/...
	TC-L	55	2 G 11	4800	ww, nw	1B	Dulux L 55 W/...	PL-L 55 W/.../4p	CF-LE 55 W/...	F55BX/...
	TC-L	55	2 G 11	3000	ww, nw	1A	Dulux L 55 W/...	PL-L 55 W/.../4p	–	F55BX/...
<b>Circular Fluorescent Lamps</b> <b>Ringform Leuchtstofflampen</b> <b>Kruhové žiarivky</b> 	T-R 16 (T-R 5)	22	2GX 13	1800	ww, nw, tw	1B	FC 22	TL 5 C 22W	–	–
	T-R 16 (T-R 5)	40	2GX 13	3200	ww, nw, tw	1B	FC 40	TL 5 C 40W	–	–
	T-R 16 (T-R 5)	55	2GX 13	4000	ww, nw, tw	1B	FC 55	TL 5 C 55W	–	–
	T-R 16 (T-R 5)	60	2GX 13	5000	ww, nw, tw	1B	–	TL 5 C 60W	–	–
<b>Low-voltage Halogen Lamps free Glare</b> <b>Nieder Volt-Halogen-Glühlampe-</b> <b>Niskonapätové halogénové</b> <b>žiarivky.</b> 	QT LP tr 9	5	G 4	60	ww	1A	64405S	13283	–	(HP)
	QT LP tr 9	10	G 4	140	ww	1A	64415	(ax)	–	(HP)
	QT LP tr 9	20	G 4	320	ww	1A	64425	(ax)	–	(ax)
	QT LP ax 12(QT 12)	20	GY 6,35	320	ww	1A	64427S	13104	Halogen Axial 20 W	Q20T3/12V
	QT LP ax 12(QT 12)	35	GY 6,35	600	ww	1A	64432S	13103	Halogen Axial 35 W	Q35T3/12V
	QT LP ax 12(QT 12)	50	GY 6,35	930	ww	1A	64440S	13102	Halogen Axial 50 W	Q50T3/12V
	QT LP ax 12(QT 12)	75	GY 6,35	1450	ww	1A	64450S	13101	Halogen Axial 75 W	Q75T3/12V
	QT LP ax 12(QT 12)	90	GY 6,35	1800	ww	1A	64458S	–	–	–
QT LP ax 12(QT 12)	100	GY 6,35	2200	ww	1A	–	13100/12302	Halogen Axial 100 W	–	
<b>Low-voltage Halogen Lamps with closed dichroic reflector</b> <b>Nieder Volt mit Kaltlichtrefl.</b> <b>geschlossene</b> <b>Niskonapätové halogénové žia-</b> <b>rovky s dichroickým reflektorom</b> <b>(uzatvorené)</b> 	QR-CBC 35/10°–38°	20	GU 4 ca.	320	ww	1A	44890 SP/WFL	12300/12314	FTB/FTD 12V/20W	Precise MR 11
	QR-CBC 35/10°–38°	35	GU 4 ca.	600	ww	1A	44892 SP/WFL	12312	FTE/FTH 12V/35W	Precise MR 11
	QR-CBC 51/8°–60°	20	GU 5,3 ca.	320	ww	1A	44860 SP/WFL	6642/6643/6644	ESX/BAB 12V/20W	Precise MR 16
	QR-CBC 51/8°–60°	35	GU 5,3 ca.	600	ww	1A	44865 SP/WFL	6645/6646/6647	FMT/FMW 12V/35W	Precise MR 16
QR-CBC 51/8°–60°	50	GU 5,3 ca.	930	ww	1A	44870 SP/WFL	6648/6649/6650/6685	EXT/EXZ/EXN/FNW 12V/30W	Precise MR 16	
<b>Low-voltage Halogen Lamps with open dichroic reflector</b> <b>Nieder Volt mit Kaltlichtrefl.</b> <b>offen</b> <b>Niskonapätové halogénové žia-</b> <b>rovky s dichroickým reflektorom</b> <b>(otvorené)</b> 	QR-CB51/10°–38°	20	GU 5,3 ca.	320	ww	1A	41860SP/FL	–	–	33071..
	QR-CB51/10°–38°	35	GU 5,3 ca.	600	ww	1A	41865SP/FL	–	–	33071..
	QR-CB51/10°–38°	50	GU 5,3 ca.	930	ww	1A	41870SP/FL	–	–	33071..
<b>Low-voltage Halogen Lamps with aluminium reflector</b> <b>Nieder Volt mit Alu-Reflector</b> <b>Niskonapätové halogénové žia-</b> <b>rovky s hliníkovým reflektorom</b> 	QR-LP 111 (AR111)	35	G 53 ca.	600	ww	1A	41832 SP/FL	–	–	–
	QR-LP 111 (AR111)	50	G 53 ca.	930	ww	1A	41835 SP/FL	–	–	–
	QR 111 (AR111)	75	G 53 ca.	1450	ww	1A	41840 SP/FL/WFL	–	–	–
	QR 111 (AR111)	100	G 53 ca.	2200	ww	1A	41850 SP/FL/WFL	–	–	–
<b>High-pressure Metal Halide va-</b> <b>pour lamps</b> <b>Halogen Metaldampf-lampen,</b> <b>– with Quarzbrenner</b> <b>– mit Quarzbrenner</b> <b>Vysokotlakové metal halogeni-</b> <b>dové výbojky s kremíkovým ho-</b> <b>rákom</b> 	HIE	70	E 27	4500	ww, nw	1B	HQI-E 70/...	–	HSI-MP 75 W/...	–
	HIE	100	E 27	8200	ww, nw	1B	HQI-E 100/...	–	HSI-MP 100 W/...	–
	HIE	150	E 27	11400	nw	1B	HQI-E 150/...	HPI Plus 250 W BU	HSI-MP 150 W/CL U	–
	HIE	250	E 40	19000	nw	2B	HQI-E 250/D	HPI Plus 400 W BU	–	ARC250/D/H/VBU/960
	HIE	400	E 40	43000	ww, nw	2B	HQI-E 400/N	–	HSI-MP 400 W/C/BU	–
	HIE	1000	E 40	90000	nw	2B	HQI-E 1000/N	–	–	–
<b>– with Ceramicburner</b> <b>– mit Keramikbrenner</b> <b>– s keramickým horákom</b> 	HIE-CE 70W E27	70	E 27	5700	NDL,WDL	1A/1B	HCI-E/P 70/...	–	–	–
	HIE-CE 100W E27	100	E27	8600	WDL	1A/1B	HCI-E/P 100/...	–	–	–
	HIE-CE 150W E27	150	E27	12500	NDL,WDL	1A/1B	HCI-E/P 150/...	–	–	–

Category	Destination (LBS)	Power	Lamp- holder (W)	Luminous flux	Colour Temperature (lm)	Colour Rendering	OSRAM	Philips	Sylvania	GE
- with Quartzburner - mit Quarzbrenner - s kremíkovým horákom 	HIT	70	G 12	5500	ww, nw	1B	HQI-T 70/...	–	HSI-T 70 W/WDL	ARC70/T/U/...
	HIT	150	G 12	13000	ww, nw	1B	HQI-T 150/...	–	HSI-T 150 W/WDL	ARC150/T/U/...
	HIT	70	PG 12-2	5300	nw	1B	–	MHN-T 70 W	–	–
	HIT	250	E 40	20000	nw, tw	1A	HQI-T 250/D	HPI-T 250W	HSI-T 250 W/D	ARC 250/T..
	HIT	400	E 40	42000	nw	2B	HQI-T 400/N	HPI-T 400W	HSI-T 400 W/D	ARC 400/T..
- with Ceramicburner - mit Keramikbrenner - s keramickým horákom 	HIT-CRI	35	G 12	3400	ww	1B	HCI-T 35/WDL	CDM-T 35W / 830	–	–
	HIT-CRI	70	G 12	6400	ww, nw	1B	HCI-T 70/WDL	CDM-T 70 W	–	CMH70/T/...
	HIT-CRI	150	G 12	13000	ww, nw	1B	HCI-T 150	CDM-T 150 W	–	CMH150/T/...
	HIT-CRI	35	G8,5	3300	ww	–	HCI-TC 35	CDM-TC 35W / 830	–	–
	HIT-CRI	70	G8,5	6000	ww, nw	–	HCI-TC 70	CDM-TC 70W / 830	–	–
	HIT-CRI	70	E 27	6300	ww	1B	–	CDM-TT 70W	–	–
- with Quartzburner - mit Quarzbrenner - s kremíkovým horákom 	HIT-DE	70	RX 7s	5000	ww, nw, tw	1B	HQI-TS 70/...	MHN-TD 70 W	HSI-TD 70 W/...	ARC70/TD/...
	HIT-DE	150	RX 7s-24	11000	ww, nw, tw	1B	HQI-TS 150/...	MHN-TD 150	W HSI-TD 150 W/...	ARC150/TD/...
	HIT-DE	250	Fc 2	20000	ww, nw, tw	1B	HQI-TS 250/...	MHN-TD 250	W HSI-TD 250 W/...	ARC250/TD/...
	HIT-DE	400	Fc 2	35000	ww, nw, tw	1B	HQI-TS/NDL	–	–	–
	HIT-DE	1000	Kabel	90000	nw, tw	1A	HQI-TS/1000/D/S	kein Produkt	–	–
	HIT-DE	2000	Kabel	200000	nw, tw	1A	HQI-TS/2000/D/S	derzeit kein Produkt	–	–
- with Ceramicburner - mit Keramikbrenner - s keramickým horákom 	HIT-DE-CRI	70	RX 7s	6300	ww, nw	1B	HCI-TS 70	CDM-TD 70 W	–	CMH70/TD/...
	HIT-DE-CRI	150	RX 7s	13500	ww, nw	1B	HCI-TS 150	CDM-TD 150 W	–	CMH150/TD/...
<b>High-pressuremercury-vapour lamps</b> <b>Quecksilber-dampf lampen</b> <b>Ortuťové výbojky</b> 	HME	50	E 27	1600	ww	2B	HQL 50 Super De Luxe	–	–	–
	HME	50	E 27	2000	ww	3	HQL 50 De Luxe	HPL-Comfort 50 W	HSL-SC 50 W	H50N/DX
	HME	50	E 27	1800	nw	3	HQL 50	HPL-N 50 W	HSL-BW 50 W	H50
	HME	80	E 27	3400	ww	2B	HQL 80 Super De Luxe	–	–	–
	HME	80	E 27	4000	ww	3	HQL 80 De Luxe	HPL-Comfort 80 W	HSL-SC 80 W	H80N/DX
	HME	80	E 27	3800	nw	3	HQL 80	HPL-N 80 W	HSL-BW 80 W	H80
	HME	250	E 40	14000	nw	3	HQL 250 De Luxe	HPL-Comfort 250 W HG	HSL-SC 250 W	HR250NDX
	HME	400	E 40	24000	nw	3	HQL 400 De Luxe	HPL-Comfort 400 W HG	HSL-SC 400 W	HR400NDX
<b>High-pressure sodium-vapour lamps</b> <b>Natriumdampf-hochdrucklampen</b> <b>Vysokotlakové sodíkové výbojky</b>  	HSE-E	50	E 27	3500	ww	4	NAV-E 50/E	SON 50 W-E	SHP 50 W/CO/E	LU50/90/D/1
	HSE-E	70	E 27	5600	ww	4	NAV-E 70/E	SON 70 W-E	SHP 70 W/CO/E	LU70/90/D/1
	HSE	150	E 40	14000	ww	4	NAV-E 150	SON 150 W	SHP 150 W	LU150/100/D
	HSE	250	E 40	25000	ww	4	NAV-E 250	SON 250 W	SHP 250 W	LU250/D
	HSE	400	E 40	47000	ww	4	NAV-E 400	SON 400 W	SHP 400 W	LU400/D
	HSE	1000	E 40	128000	ww	4	NAV-E 1000	SON 1000 W	–	LU1000/110/D
	HST	70	E 27	5900	ww	4	NAV-T 70	SON-T 70W	SHP-TS 70W	LU 70/90/T
	HST	150	E 40	14500	L	4	NAV-T 150	SON-T 150W	SHP-TS 150W	LU 150/100/T
	HST	250	E 40	27000	ww	4	NAV-T 250	SON-T 250W	SHP-TS 250W	LU 250/T
	HST	400	E 40	48000	ww	4	NAV-T 400	SON-T 400W	SHP-TS 400W	LU 400/T
	HST-MF	600	E 40	90000	ww	4	NAV-T 600 SUPER	SON-T PLUS 600W	SHP-TS 600W	LU 600/H0/T
	HST	1000	E 40	130000	ww	4	NAV-T 1000	SON-T 1000W	SHP-T 1000W	LU 1000/110/T
	HST-DE	70	RX 7s	6800	ww	4	NAV-TS 70 SUPER	–	–	–
	HST-DE	150	RX 7s-24	15000	ww	4	NAV-TS 150 SUPER	–	–	–
HST-DE	250	Fc 2	25500	ww	4	NAV-TS 250	–	–	–	
HST-DE	400	Fc 2	48000	ww	4	NAV-TS 400	–	–	–	
<b>High-pressure sodium-vapour lamps</b> <b>Natriumdampf-hochdrucklampen</b> <b>Vysokotlakové sodíkové výbojky</b> 	HST-CRI	35	PG12-1	1300	2500K	Ri 83	–	SDW-T 35	–	–
	HST-CRI	50	PG12-1	2300	2500K	Ri 83	–	SDW-T 50	–	–
	HST-CRI	100	PG12-1	5000	2550K	Ri 83	–	SDW-T 100	–	–
	HST-CRI	50	GX12-1	2400	2550 K	Ri 81	–	SDW-TG 50W	–	–
	HST-CRI	100	GX12-1	4900	2550 K	Ri 83	–	SDW-TG 100W	–	–

Category	Destination (LBS)	Power	Lamp- holder (W)	Luminous flux	Colour Temperature (lm)	Colour Rendering	OSRAM	Philips	Sylvania	GE
<b>Incandescent Lamps</b> <b>Allgebrauchs Glühlampen</b> <b>Žiarovky</b> 	A 60	40	E 27	430	ww	1A	A CL 40/A FR 40	40 W E27 Klar/Matt	40 W E27 Klar/Satin	40A1/FR
	A 60	60	E 27	730	ww	1A	A CL 60/A FR 60	60 W E27 Klar/Matt	60 W E27 Klar/Satin	60A1/CL
	A 60	75	E 27	960	ww	1A	A CL 75/A FR 75	75 W E27 Klar/Matt	75 W E27 Klar/Satin	75A1/CL
	A 60	100	E 27	1380	ww	1A	A CL 100/A FR 100	100 W E27 Klar/Matt	100 W E27 Klar/Satin	100A1/CL
	A 65	150	E 27	2200	ww	1A	A CL 150/A FR 150	150 W E27 Klar/Matt	150 W E27 Klar/Satin	150A1/CL
	A 80	200	E 27	3150	ww	1A	A CL 200/A FR 200	200 W E27 Klar/Matt	200 W E27 Klar/Satin	200A1/CL
<b>Tabular Incandescent Lamps</b> <b>Röhrenform-Glühlampe</b> <b>Žiarovky</b> 	IT	15	E 14	90	ww	1A	SPC.T25/85CL15	T 17 clear	7314	–
	IT	25	E 14	190	ww	1A	SPC.T25/85CL25	T 25 clear	7350	–
	IT	40	E 14	380	ww	1A	SPC.T30/73FR40	–	–	–
<b>High-voltage (230V)</b> <b>Halogen Lamps</b> <b>Halogen-Glühlampen für 230 V</b> <b>Halogénové žiarovky (230V)</b> 	QT 18	60	B 15d	820	ww	1A	64469 KL/AM	–	–	–
	QT 18	75	B 15d	1100	ww	1A	64473 KL/AM	12123/12120	–	–
	QT 18	100	B 15d	1500	ww	1A	64475 KL/AM	12122/12119	–	–
	QT 18	150	B 15d	2500	ww	1A	64471 KL/AM	12121/12118	–	–
	QT 26	25	E 14	250	ww	1A	64860T	–	–	–
	QT 26	40	E 14	490	ww	1A	64861T/TIM	14001	–	–
	QT 26	60	E 14	820	ww	1A	64862T/TIM	14005	–	–
	QT 32	60	E 27	840	ww	1A	64472 KL/IM	13656	60 W DLX/BTT Klar/Satin	Halo BTT 60 ES 230 CL
	QT 32	75	E27	1050	ww	1A	64474 KL/IM	–	–	–
	QT 32	100	E 27	1400	ww	1A	64476 KL/IM	13662	100 W DLX/BTT Klar/Satin	Halo BTT 100 ES 230 CL
	QT 32	150	E 27	2500	ww	1A	64478 KL/IM	13946	150 W DLX/BTT Klar/Satin	–
	QT 32	250	E 27	4200	ww	1A	64480 KL/IM	–	–	–
	QT-DE 12	60	R7s	840	ww	1A	64688	60 T3Q/CL/P	Halogenstab 60 W	–
	QT-DE 12	100	R7s	1650	ww	1A	64690	100 T3Q/CL/P	Halogenstab 100 W	29112
	QT-DE 12	150	R7s	2600	ww	1A	64695	150 T3Q/CL/P	Halogenstab 150 W	29123
	QT-DE 12	200	R7s	3200	ww	1A	64698	200 T3Q/CL/P	Halogenstab 200 W	29134
	QT-DE 12	250	R7s	5500	ww	1A	63467 IRC	–	–	–
	QT-DE 12	300	R7s	5000	ww	1A	64701	300 T3Q/CL/P	Halogenstab 300 W	29159
	QT-DE 12	400	R7s	9500	ww	1A	63469 IRC	–	–	–
	QT-DE 12	500	R7s	9500	ww	1A	64702	500 T3Q/CL/P	Halogenstab 500 W	29165

LONG GUARANTE OSRAM BALLAST and TUBES GUARANTEE 5 YEARS.

LANGE GARANTIE OSRAM VORSCHALTGERAT und OSRAM LAMPENART GARANTIE 5 JAHRE.

# REFERENCES

## AMERICA

### CANADA:

- Artissimo Prints in Montreal, Quebec

### CHILE:

- Golden Frost Santiago Chile
- Metro Santiago Chile
- Metro Linea Santiago Chile

### URUGUAY:

- Uruguayan American School Montevideo

## ASIA

### BAHRAIN:

- Hotel at Sanabis Manama
- Post Office at Budaiyah Manama
- B.D.F. HQ Admin Building Manama
- Al Safar Building Manama
- Dr. Tariqs Hospital at Mahooz Manama
- Al Rosais Tower Manama
- Almoayyed Tower Manama

### HONG KONG:

- Citibank Private Banking Hong Kong
- California Fitness Hong Kong
- Service Center at China Plaza Hong Kong
- Serenity Place at TKO 13 Hong Kong

### CHINA:

- Asian Game Office China

### ISRAEL:

- High Tech office Bldg Jerusalem
- Municipality offices Jerusalem
- Hill Yaffe Jerusalem
- Hadera Israel
- Tel Hasomer Hospital
- Arts-workshops at Haifa University Haifa
- Assouta clinics Haifa

### KUWAIT:

- Ministry of Health Kuwait City
- Al-Sabha Hospital Kuwait City
- Al-Jahra Hospital Kuwait City
- Al-Farwaniya Hospital Kuwait City
- Al-Dan Hospital Kuwait City
- Mubarak Hospital Kuwait City
- Al-Sayer Head Quarters-Free Zone Kuwait City
- Kuwait National Bank Kuwait City
- Kuwait Fire Bridge Kuwait City
- Kuwait oil Company Kuwait City
- Ministry of Republic Kuwait City
- Hateen N.Hood Center
- Sarah Complex
- Munahi Al Ossaimi Clinic
- Ardiya Stores
- Al Zahra & Reqie Neighbourhood center
- US Army - 182 Troop Barracks
- US Army - Apache Helicopter Facility
- Mowasat Hospital
- Oncology Hospital
- Sahara Golf Club

- Dar Al Awadi Tower

### LEBANON:

- Saradar Bank HQ Beirut

### MALAYSIA:

- Twin Towers Office Ortiz Lighting Kuala Lumpur
- KLCC Public Area Kuala Lumpur
- Senoko Power Limited
- Volvo Truck Showroom at Hicom Shah Alam, Selangor D.E,Malaysia
- Digi Telecommunication Office at Subang Hi-Tech, Selangor D.E,Malaysia
- Markota Parade,Food Court at Melaka,Malaysia

### OMAN:

- ROP Border Posts at Wadi Jizzi & Hafeet Muscat
- Mr. Ahmed Al Abri Villa Muscat
- Yemen Embassy Muscat
- Waljat Collage Muscat
- Training Centre Muscat
- Warehouse & workshop at Ibri Muscat
- Muscat Collage Muscat
- Mr. Ahmed Al Abri Villa Muscat
- Yemen Embassy Muscat
- Information Technology Park (IT Park) Rusayl
- ROP Border Posts at Wadi Jizzi & Hafeet Rusayl
- Court at Ibra
- Court at Ibri
- Higher Technical College at Ibri
- Royal Oman Police - Central Prison at Sumail

### QATAR:

- General Motor Cars Showroom Doha Qatar
- TRAGS Building Doha
- Al Udeid Project - Qatar Armed Forces

### PAKISTAN

- Extension British Deputy High Commission Karachi

### SYRIA:

- Al-kadmous filling Station Tartous Syria

### U.A.E.:

- Air Traffic Control Area Renovation Int'l Airport Abu Dhabi
- Al Hamed Residential Compound Al Ain
- Knowledge Village Dubai
- Emaar Emirates Hills Development the Springs Dubai
- Mortuary Police Building in Dubai
- Dubai Police Clinic and CID bldgs Dubai
- New Medical Center in Dubai
- MPW & H Head Quarters Dubai
- Al Salam Tower Dubai
- Emirates stud farm Dubai
- Parking Area Cum Office Dubai
- Shopping Center Dubai
- DAFZA - Dubai Airport Free Zone Authority
- Estithmar Realty - office Bldg.at Health Care City

- Villas at Arabian Ranches Dubai
- DAMAC 3 towers at Lake Jumeirah Dubai
- Jumeirah Beach Residence
- AL Fattan Towers
- The Waves Residential Towers
- Jumeirah Lake Tower
- Sheikhha Sheikhha Bint Saeed Al Maktoum Complex,Dubai

## AUSTRALIA

- ATO Government Offices Canberra - ACT
- Ikea - Sth Aust
- Woollaware Shore Retirement Village - NSW
- St Patricks College Campbelltown - NSW
- Nossa Shopping Centre - QLD
- South Park Office Suites - Sth Aust

## NEW ZEALAND

- Gene (shop) Hamilton
- Mount Roskill Grammar School
- National Bank branch fitouts
- Middlemore hospital theatre
- Waikato hospital Clinical cading Dept
- Middlemore hospital
- Auckland airport
- Frucor
- Canpac
- PlaceMakers store Christchurch
- PlaceMakers store Auckland
- Railway Station Wellington

## AFRICA

### KENYA:

- Royal Court Hotel Mombasa
- The Aga Khar Academy Mombasa
- African Re-insurancecomporation Multistorey Mombasa
- Building Nairobi Nairobi
- Mombasa Road Nairobi
- Uchumi supermarket Nairobi

### MAROCCO:

- Ministry of finance Casablanca

## EUROPE

### AUSTRIA:

- Sacrereur Wien
- Sozialbau-Projektbau Wien
- Chrysler Austria Kindergarten NÖ
- Raiffeisen Bank Wien
- Druckerei OÖ Nachrichten Passing
- Spital Otto-Wagner Wien
- Hotel Astor Flughafen Schwechat
- Privatklinik Rudolfinerhaus Wien
- Shopping Center-Nord Wien

### BOSNA & HERCEGOVINA:

- Customs-headquarters

**DENMARK:**

- General office building in Viborog
- Lundbeck Denmark
- Valby Denmark
- Pfizer Denmark
- Ballerup Viborog Business
- Academy Warehouse Denmark
- Construction company Aarhus
- Warehouses Vestas
- Wind Systems

**FINLAND:**

- Finnish New Digi TV Head office Helsinki
- BMW car center Helsinki
- Univercity library Tampere
- Tecnopolish business park Vantaa
- Kuriirinmuuri business park Vantaa
- Ifi insurance head office Espoo
- Car parking Hall Kerava
- Kodin Anttila Retail park Vantaa
- Exhibition hall Lahti
- Blue 1 head office and Plain hall Vantaa
- Retail Park Lappeenranta
- 2 new Gigantti Shops Hämeenlinna and

**Kotka**

- K-rauta retail shop Kotka
- 4 new Laattapiste shops Raisio, Lahti, Seinäjoki and Joensuu
- Sale shop Humppila
- Park Hall Lahti
- Seinäjoki Hospital
- Tampere Hospital
- Porvoo Hospital
- Innoteknia Honeywell Finnish head office

**Kuopio**

- Motonet retail shop Helsinki
- Government house Hämeenlinna
- School Omnia Vantaa
- Sokos Hakaniemi Helsinki
- Panoramataower business park Helsinki

**FRANCE:**

- Post office Bordeaux France
- Intersport Lomme Dept59
- Gare TGV EST
- Post office TGV Est Pagny
- Maison Decots Pecots Nancy
- Thales Limours
- Amerson Paris
- Lostic St Denis
- College St Denisasat Nancy

**GERMANY:**

- Rommelkaserne Dornstadt
- Geschäftshaus Muenster
- Hauptzollamt Ulm
- Charite Klinik Berlin
- LVA Düsseldorf
- Verwaltungsgebäude Carlstrasse Düsseldorf
- Siemens Arena Hamburg
- IBM Mainz
- Frisenius Klinik Wiesbaden

**GREECE:**

- Pantechniki New Building Athens
- Vasilakis Group of Companies (SAAB showroom) Marousi

**HUNGARY:**

- Toyota Budaörs
- SMART Budapest
- Azúr Hotel Siófok Budapest
- Opel Budapest, Fóti út.
- AUDI Debrecen
- Kossuth Lajos University Debrecen
- City prosecutor's office Kecskemét
- Elektro-Word department store Soroksár
- Hospital Szeged
- Peugeot Szolnok
- ENERGIE Regional Centre
- ERSTE Bank filiales on ten places
- Hospital of Hatvan
- The Office of Prime Minister
- Store house of Auchan

**CROATIA:**

- Duty office Rijeka
- Port of ferry Rijeka
- VDM Promet Zagreb
- ULJANIK Pula
- EITING Zagreb
- T-com center Split
- T-com center Starigrad
- Bishop palace Split
- Dominican cloister Split
- EURO shopping Split
- Magma Split
- Brico store Kastela
- Image Haddad Split
- Bonita Nuova Rijeka, áakovec, Sisar, Zadar

**ISLAND:**

- Department of Immigration
- Eimskip Warehouse Offices
- Hospital of Akureyri
- Hotel Esja
- Offices for the Icelandic Bureau of Economy
- Securitas
- Snaelandsschool

**LATVIA:**

- Dati head office Riga
- Latvijas Finieris production shop Riga
- Narvesen warehouses Riga
- Rimi supermarket Riga
- Unifex warehouse Riga

**LITUANIA:**

- Manure Factory Achema Jonava
- Elekrenai Ship work Klaipeda
- Academic ambulanc hospital Vilnius
- Airport Vilnius
- Capital Bank Vilnius
- Exhibition Center Litexpo Vilnius
- Hotel Conte Vilnius
- Hotel Naujasis Vilnius
- Chemistry factory Biopa Vilnius
- Shopping Center Akropolis Vilnius
- Plane repair shop Vilnius
- Plane repair shop of airport Istros Vilnius
- Panevezys Power stat Vilnius

**LUXEMBOURG:**

- Ciepa de Dudelange
- Maison de Soins sacre coeur Diekirch
- Internat Diekirch
- Bureau Arbedd
- Ecostart
- Delphi

**NORWAY:**

- House of Oslo - Oslo
- IF Hovedkontor - Lyskaker
- Nasjonalt Folkehelseinstitutt - Oslo
- Eidskog ungdomskole - Skotterud
- Radisson SAS - Gardemoen
- Nasjonal biblioteket - Oslo
- Haraldsvang skole - Haugesund
- Roa Senter - Oslo
- St.Haugen Bo og Behandlingscenter
- P4 Radio - Oslo
- Royken VGS Skole

**POLAND:**

- Biedronka supermarket Bydgoszcz
- Tan-Viet Gdajfska
- Martifer production of construction Gliwice
- Zaklady Miesne Racibórz Racibórz
- Blue cityhypermarket Warszawa
- Polservice Warszawa
- TV Polsat Warszawa
- Polskie radio Warszawa
- Avon Warszawa Garwolin

**PORTUGAL:**

- Hotel Fénix Lisboa
- Alvaláxia shopping center Lisboa
- Pavillion of football stadium Lisboa
- Portugal Telecom Lisboa

- Airport Lisboa
- Waljat Collage
- Shopping center Forum Montijo
- Cine Teatro de Esterreja
- Escola Roberto Ivens
- Santa Casa da Misericórdia do Fundao
- Lar de Idosos do Fundao
- Shopping Dolce Vita Coimbra
- Vodafone Call Center Braga
- Mercedes Benz Abrunheira
- Football stadium Multiusos de Alvalade Lisboa

**RUSSIA:**

- Mega 3 IKEA Kazan

**ROMANIA:**

- Urgency hospital Bukurest
- Saint Maria hospital Bukurest
- Fundeni hospital Bukurest
- Many schools Bukurest
- Iveco\_s head offices Bukurest
- Red Dragon-Trade Centre Bukurest
- Romanian Comercial Bank Bukurest
- Raifeisen Bank Bukurest

**SLOVENIA:**

- Albatros -warehouse
- Dragonja - border crossing
- City vilas over Kalvarja -vilas
- Izum - offices
- E-STATIC - offices and production

**SCHWEIZ:**

- BMW Geneve
- McDonald Zürich
- Sankt Gotthardt Tunnel
- Coiffure Elegance, Kloten
- Saal Kirchgemeinde Schleinikon
- Geschäftshaus Filtext, St.Gallen
- Laden Sound + Vision , Wädenswil
- Geschäftshaus Masora AG, Zuzwil
- Laden Senn TV/Video/HIFI, Kronbühl
- Einkaufszentrum , Regensdorf
- Schulhaus Ruggenacher, Regensdorf
- Trutmann + Co Betonwerk, Regensdorf
- Hofer 2-Rad Center, Meilen
- F+ G Automobile, Dübendorf
- Werkhof WSG, Rafz
- Qualipet Tiernahrung Discount, Dietlikon

**SPAIN:**

- Abama Hotel Resort Canary Islands



# GENERAL TERMS & CONDITIONS OF SALE

## **GENERAL TERMS & CONDITIONS OF SALE VALID FROM APRIL 2008**

### **1. APPLICABILITY**

These General Terms and Conditions of Sale shall govern all sales of products from OMS LTD. and its subsidiaries, affiliated companies, branches, other companies which belong to the same group of companies, distributors and agents (the "seller") to any buyer.

These General Terms and Conditions of Sale shall not override individual terms and conditions expressly agreed between the parties in any particular written sales contract.

The seller reserves the right to modify these General Terms and Conditions of Sale at any time.

### **2. SALES ORDERS**

The buyer shall place written orders for the products with the seller.

Orders shall be binding on the seller only if accepted in writing by the seller. The seller may either accept or reject the buyer's order.

### **3. PRODUCT INFORMATION**

Samples of products are submitted only as indicative of the class, size or colour of products. Any measurements of size, weight or finish of products are approximate only and may vary.

Catalogues, brochures and price lists are intended for general guidance only and do not form part of any sales contract.

The obtaining of any necessary consent for the installation of the products shall not be the responsibility of the seller.

Specially designed drawings or plans provided by the seller shall be checked for accuracy and suitability by the buyer and finally confirmed by the buyer.

### **4. GUARANTEE**

The seller's liability for defects in the products shall be limited to the terms of this guarantee.

The guarantee covers defects in materials or workmanship. The seller shall not be liable for defects due to natural wear and tear, damage in transport, faulty use, maintenance, storage or any other circumstances beyond the seller's immediate control.

The guarantee is valid provided that the product has been used and installed according to given instructions and existing regulations. The guarantee ceases immediately if anybody other than a person authorised and approved by the seller repairs, changes or opens the product.

The guarantee is valid as follows:

- (a) For lighting fixtures with electronic ballasts OSRAM + lamp OSRAM, 60 months from date of delivery.
- (b) For lighting fixtures with electronic ballasts other manufactures or with magnetic ballasts, 36 months from date of delivery.
- (c) For construction defects, (welding, painting and so on) one year from date of delivery.

All defects shall be notified to the seller in writing within 14 days from the date of delivery or, if the defect could not have been discovered through a careful inspection of the product, immediately after discovery of the defect and in no event later than the expiry of the guarantee period as specified in (a), (b) or (c) above. The seller reserves the right to make the final decision regarding claim validity.

All undertakings, warranties, conditions, liabilities and remedies relating to any qualities or defects in the products other than those expressly contained herein above are expressly excluded. In particular, any implied warranties and conditions of merchantability and fitness for a particular purpose are expressly disclaimed.

### **5. PRICES**

The products shall be considered sold at the seller's prices and payment terms prevailing at the time of the seller's order confirmation or any other written acceptance of order.

Unless otherwise specified by the seller, all prices quoted are ex works (seller's named place, Incoterms 2000) in unit boxes.

Any applicable value-added tax, duties or other public charges paid or payable by the seller shall be added to the price and shall be paid or reimbursed by the buyer.

Firm price quotations are valid for a period of one month only from the date of quotation.

The seller reserves the right to increase any agreed prices.

### **6. TERMS OF PAYMENT**

The seller shall, at its discretion, always be entitled to demand payment either in advance, through a Documentary Credit (D/C) or through an irrevocable Letter of Credit (L/C) confirmed by a bank acceptable to the seller. The L/C shall include partial shipments and transshipments, and be payable at sight in the seller's

country upon each partial shipment against the first presentation of documents.

Where payment is by D/C or L/C all related costs shall be at the buyer's account. Where the seller has granted the buyer a credit facility, terms of payment are thirty (30) days net from date of invoice, unless otherwise agreed in writing. The buyer agrees to settle the seller's invoice in full without any deductions or set-offs. All crediting shall be issued by the seller. If payment is made by cheque, all related costs will be debited from the buyer.

The seller reserves the right to withdraw or modify credit facilities at any time by written notice to the buyer.

#### **7. DELAYED PAYMENT**

When payment of any of the seller's invoices is overdue, the seller may suspend the contract to which the invoice relates and any other contract then subsisting between the seller and the buyer. No deliveries will take place if invoices are overdue.

Interest on overdue amounts shall accrue without notice at the statutory rate prevailing in the seller's country according to the actual banking rate in National Slovak Bank.

If the seller is required to bring legal action for collecting overdue accounts the buyer agrees to pay reasonable attorney fees and legal costs.

#### **8. ORDER AND DELIVERY TIME OF PRODUCTS**

The seller will deliver products in full packages and in minimum quantities of 5 pieces (not applicable for moduls/samples) as determined by the seller. Unless expressly stated otherwise in writing, the seller will accept. Order of a minimum amount of 6.000 EURO net .

Unless otherwise specified by the seller, the products shall be delivered ex works (seller's named place, Incoterms 2000) as stated in the seller's acceptance of order at such times as the parties agree. Any dates quoted for delivery of the products are approximate only.

The seller reserves the right to make partial shipments and to make deliveries by or through its subsidiaries, affiliated companies, branches, other companies which belong to the same group of companies, distributors and agents.

By order cancelation within 48 hours below agreed delivery date, a penalty of 30% of net order value will be charged.

#### **9. RISK AND TITLE**

The risk of loss deterioration shall pass to the buyer immediately upon delivery.

Title to and ownership of the products shall pass to the buyer only upon seller's receipt of all payments due to the seller for the products delivered.

The buyer shall not be entitled to pledge or in any way charge by way of security for any indebtedness any of the products that remain the property of the seller.

#### **10. INDUSTRIAL PROPERTY RIGHTS**

The buyer acknowledges that all trademarks, trade names, patents, industrial designs, drawings, plans and other intellectual property, whether registered or not, as well as the seller's or its suppliers' know-how, relating to the products or provided by the seller are and shall remain, the exclusive property of the seller and shall not be used, distributed, licensed, disclosed or registered by the buyer or any third party without prior written consent from the seller.

The buyer shall not use or disclose any of the seller's trade secrets or know-how relating to the products.

#### **11. FORCE MAJEURE**

The seller shall not be held liable for any failure to perform caused by reason of force majeure events or other circumstances or impediments beyond the seller's control. This shall include, but not be limited to industrial or labour disputes, riots, fires, floods, wars, embargoes, shortage of labour, raw materials, energy or means of transportation, whether affecting the seller or any subcontractor, or for circumstances caused by reason of laws, regulations, orders or acts of any government or authority.

The buyer shall not be liable for failure to take delivery of the products if the buyer is prevented from doing so by unforeseen governmental import restrictions or similar force majeure reasons.

#### **12. GENERAL LIMITATIONS OF LIABILITY**

The seller shall in no event be liable for any special, incidental, indirect or consequential losses or damages such as loss of profits, loss of contract, damage to property, loss of use, purchase in replacement, or liabilities to third parties.

The seller shall be liable for personal injury and damage to property (product liability) only if it is proved that such injury or damage was caused by the seller's gross negligence.

No action shall be brought against the seller more than one year after the cause of action has occurred and in no case later than three years after the delivery of the products.

#### **13. INSOLVENCY**

The seller shall have the right to terminate forthwith any and all sales contracts for any products that have not been delivered if the buyer becomes insolvent, bankrupt, makes arrangements with its creditors, or enters into liquidation or rearrangement of debts. In such cases also the price for all products delivered and work done shall become immediately due and payable.

#### **14. APPLICABLE LAW**

These General Terms and Conditions of Sale and all sales contracts shall be governed by and constructed in accordance with the United Nations Convention on Contracts for the International Sale of Goods (1980) and the laws of the country of the seller.

#### **15. JURISDICTION**

All disputes arising out of or in connection with these General Terms and Conditions of Sale and any sales contracts shall be submitted to the exclusive jurisdiction of the ordinary courts at the domicile of the seller.

#### **16. WRITTEN FORM**

Whenever a notice, acceptance, consent or other communication is required to be in writing according to these General Terms and Conditions of Sale, this requirement shall be considered fulfilled also when such communication is given or made by facsimile or electronic mail.