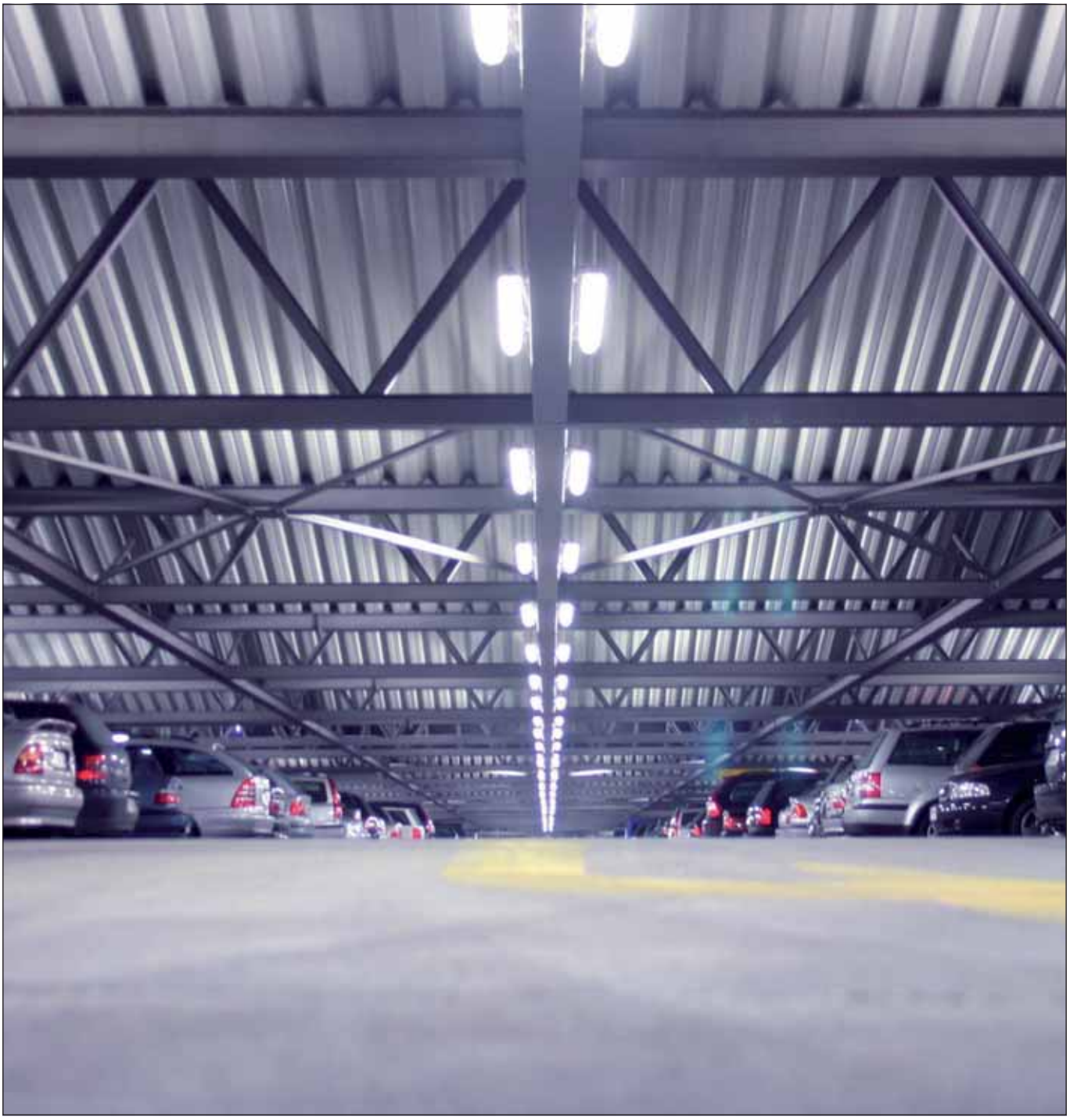


Components for Linear Fluorescent Lamps

Despite the ongoing development of new lamp types outside the family of fluorescent lamps, the majority of artificial light produced nowadays still comes from fluorescent lamps. As linear fluorescent lamps are characterized by both high light output and a long service life they are predominantly used for industrial purposes and in offices. In the last few years, the development of T5 lamps has enabled the positive effect on energy consumption associated with fluorescent lamps to be increased still further.

While T5 fluorescent lamps with a G5 base have been available with outputs of 4, 6, 8 and 13W for over 30 years, they were mainly used in furniture and for signage lighting. The development of the new T5 lamps with higher wattages substantially extended their field of application and heralded a replacement for T8 lamps. The efficiency improvement of up to 20% is achieved through high-frequency operation with electronic ballasts, which are generally prescribed for these types of lamp. Furthermore, the slim shape of these lamps make innovations possible in luminaire design. In addition to the standard light colors, a range of special lamps is also available. Fluorescent lamps with G13 bases are available with different outputs, lamp lengths and light colors. Apart from the classic standard fluorescent lamp, new tri-phosphor fluorescent lamps have been developed that are characterized by considerably higher luminous efficiency and improved color rendition.

Flat Electronic Ballasts for Linear Fluorescent Lamps 14, 21, 24, 28, 35, 39W

Flat Shape USM5

EXUr – Programmed Rapid Start for Miniature Bi-pin HO Lamps T5

Casing: metal, white lacquered
Total harmonic distortion: <10%
Minimum starting temperature t_a: –20°C/–4°F
A 5-year-warranty is granted from the date of manufacture for all ballasts up to a maximum case temperature of 70°C.
Operation greater than 70°C is not warranted.
Quick-connect terminals: 18AWG solid
Inherent thermal protection UL listed class P
Type 1 outdoor; Type CC
Sound rated A
Lamp end-of-life protection
Automatic restart after lamp replacement
Mounting feet slots for #8 screws (M4)
Compatible with frequent starting conditions (up to 50,000 starts) such as occupancy sensor system
Conform with the following standards:
UL, CSA (FKVS/7)
FCC 47 CFR part 18 non-consumer

Lamp				Electronic ballast						System	
Output W	Type	Base	Power consumption W	Type	**Ref. No.**	Input Voltage AC ±10% V (50/60Hz)	Input current 120/277V A	Drawing on page 90	Power factor	Input 120/277V W	Ballast factor %
14W											
14	T5 HO	Miniature Bi-pin	1 x 14.0	EXUr 235.006	**188240**	120–277	0.17–0.06	USM5	≥0.95	16/17	99
2x14	T5 HO	Miniature Bi-pin	2 x 14.0	EXUr 235.006	**188240**	120–277	0.27–0.12	USM5	≥0.96	32/32	100
21W											
21	T5 HO	Miniature Bi-pin	1 x 21.0	EXUr 235.006	**188240**	120–277	0.23–0.09	USM5	≥0.93	23/24	99
2x21	T5 HO	Miniature Bi-pin	2 x 21.0	EXUr 235.006	**188240**	120–277	0.40–0.17	USM5	≥0.98	47/47	100
24W											
24	T5 HO	Miniature Bi-pin	1 x 24.0	EXUr 239.002	**188226**	120–277	0.24–0.12	USM5	≥0.85	29/29	100
2x24	T5 HO	Miniature Bi-pin	2 x 24.0	EXUr 239.002	**188226**	120–277	0.47–0.20	USM5	≥0.97	55/54	100
28W											
28	T5 HO	Miniature Bi-pin	1 x 28.0	EXUr 235.006	**188240**	120–277	0.27–0.12	USM5	≥0.96	32/32	100
2x28	T5 HO	Miniature Bi-pin	2 x 28.0	EXUr 235.006	**188240**	120–277	0.55–0.23	USM5	≥0.98	65/63	100
35W											
35	T5 HO	Miniature Bi-pin	1 x 35.0	EXUr 235.006	**188240**	120–277	0.32–0.14	USM5	≥0.97	38/38	97
2x35	T5 HO	Miniature Bi-pin	2 x 35.0	EXUr 235.006	**188240**	120–277	0.65–0.28	USM5	≥0.98	80/78	100
39W											
39	T5 HO	Miniature Bi-pin	1 x 39.0	EXUr 239.002	**188226**	120–277	0.35–0.14	USM5	≥0.94	42/42	100
2x39	T5 HO	Miniature Bi-pin	2 x 39.0	EXUr 239.002	**188226**	120–277	0.76–0.32	USM5	≥0.98	85/83	100

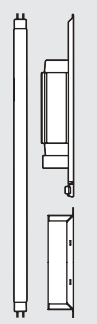
Low Profile Electronic Ballasts for Linear Fluorescent Lamps 54W

EXUr – Programmed Rapid Start for Miniature Bi-pin HO Lamps T5

Case: metal, white lacquered
Total harmonic distortion: <10%
Minimum starting temperature t_a: –20°C/–4°F
Maximum case temperature t_C:
A 5-year-warranty is granted from the date of manufacture stamped on the ballasts for a maximum case temperature of t_C max.: 80°C (85°C for EXUr 454.007)*
A 3-year-warranty is granted from the date of manufacture for all ballasts up to a maximum case temperature of 90°C.
Operation greater than 90°C is not warranted.
Quick-connect terminals: 18AWG solid
Inherent thermal protection UL listed class P
Type 1 outdoor; Type CC
Sound rated A
Lamp end-of-life protection
Automatic restart after lamp replacement
Mounting feet slots for #8 screws (M4)
Compatible with frequent starting conditions (up to 50,000 starts) such as occupancy sensor system
Conform with the following standards:
UL, CSA (FKVS/7)
FCC 47 CFR part 18 non-consumer
For EXUr 454.007 several switching operations are possible:
- 4 to 2 lamps
- 3 to 2 lamps
- 3 to 1 lamp
- 2 to 1 lamp

Low Profile Shape USM3

Low Profile Shape USM4



	Lamp				Electronic ballast						System	
	Output W	Type	Base	Power consumption W	Type	Ref. No.	Input Voltage AC ±10% V (50/60Hz)	Input current 120/277V A	Drawing on page 90	Power factor	Input 120/277V W	Ballast factor %
	54W											
new>>	54	T5 HO	Miniature Bi-pin	1 x 54.0	EXUr 254.008	**188415**	120–277	0.50/0.22	USM4	≥0.96	60/60	101
new>>	2x54	T5 HO	Miniature Bi-pin	2 x 54.0	EXUr 254.008	**188415**	120–277	1.19/0.43	USM4	≥0.96	123/119	106
new>>	3x54	T5 HO	Miniature Bi-pin	3 x 54.0	EXUr 454.007	**188313**	120–277	1.55/0.66*	USM3	≥0.96*	186/183*	100
new>>	4x54	T5 HO	Miniature Bi-pin	4 x 54.0	EXUr 454.007	**188313**	120–277	2.05/0.86*	USM3	≥0.96*	246/238*	100

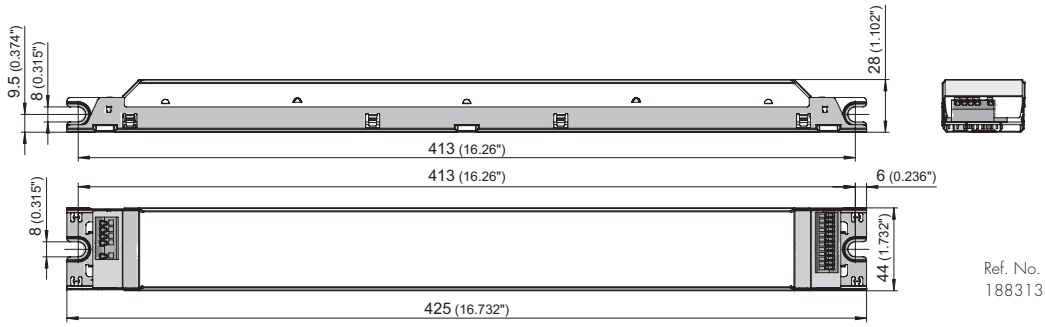
*preliminary data

Electronic Ballasts for Linear Fluorescent Lamps

Product Drawings

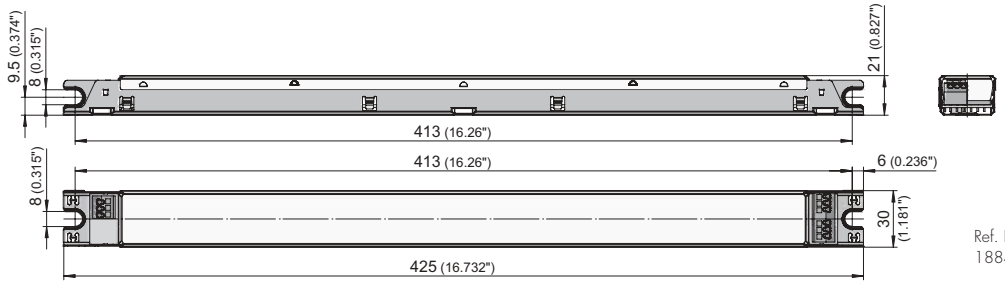
All product drawings are shown in millimeters and inches.

USM3



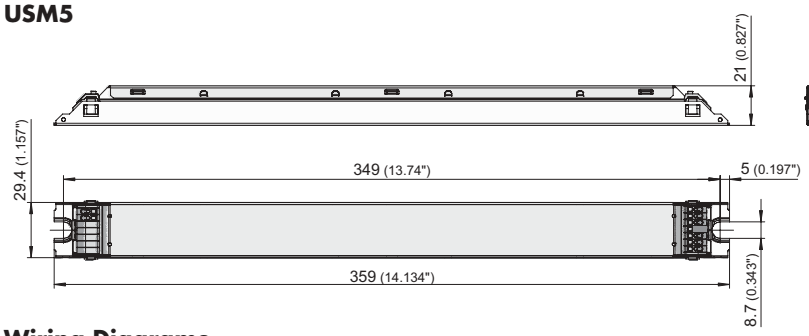
Ref. No.	Type	Page
188313	EXUr 454.007	89

USM4



Ref. No.	Type	Page
188415	EXUr 254.008	89

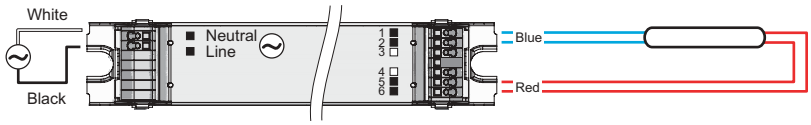
USM5



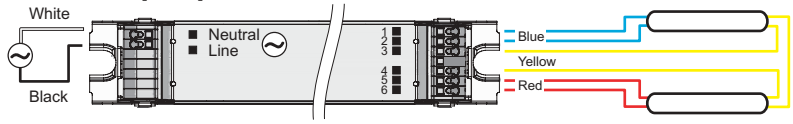
Ref. No.	Type	Page
188226	EXUr 239.002	88
188240	EXUr 235.006	88

Wiring Diagrams

USM5 – 1 Lamp Operation



USM5 – 2 Lamps Operation

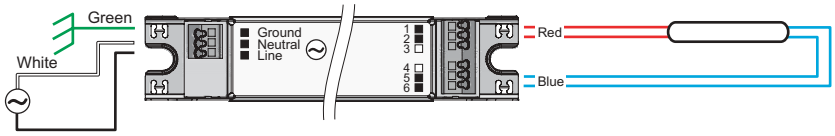


Note: All electronic ballasts for linear fluorescent lamps have quick-connect terminals. They will be supplied without leads.

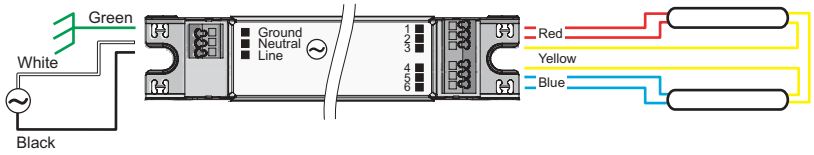
Electronic Ballasts for Linear Fluorescent Lamps

Wiring Diagrams

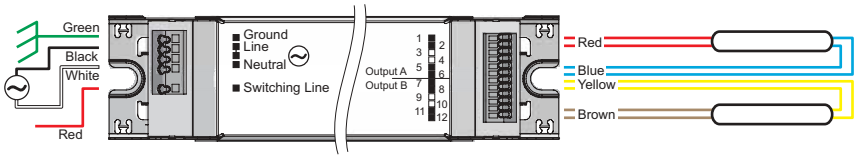
USM4 – 1 Lamp Operation



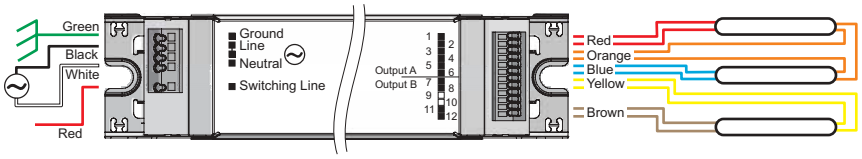
USM4 – 2 Lamps Operation



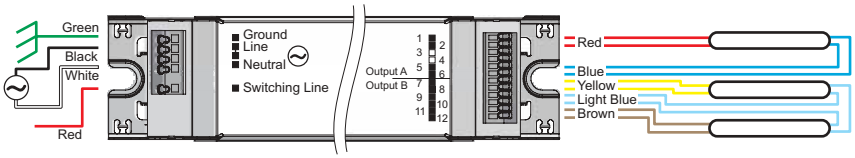
USM3 – 2 Lamps Operation



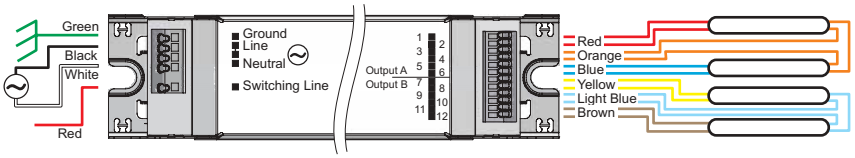
USM3 – 3 Lamps Operation

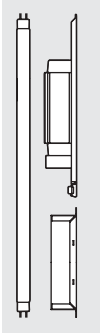


USM3 – 3 Lamps Operation



USM3 – 4 Lamps Operation



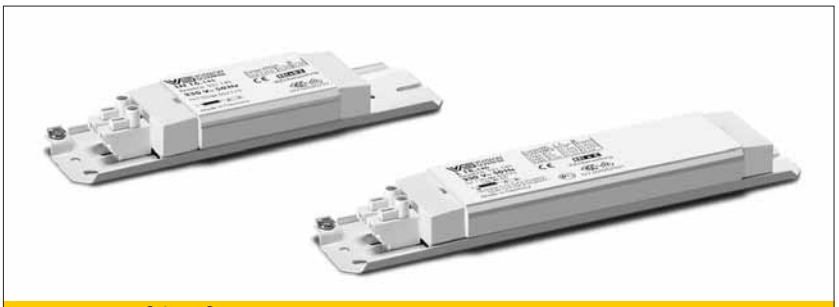


Note: All electronic ballasts for linear fluorescent lamps have quick-connect terminals. They will be supplied without leads.

Electromagnetic Ballasts for Linear Fluorescent Lamps 4, 6, 8W – 120V

Super-thin Shape: 18x41mm
Slim Shape: 28x28mm

For miniature bi-pin fluorescent lamps T5
Vacuum-impregnated with polyester resin
Quick-connect terminals: 20–16AWG solid
In addition for slim shape:
IDC terminals for leads H05V-U 0.5
for the automatic luminaire wiring
With ground screw (super-thin shape)
tw 130



A Super-thin Shape

B Slim Shape

c UL us
E139710 (except 163183)

Lamp				Ballast								Capacitor
Output W	Type	Base	Current mA	Type	**Ref. No.**	V, Hz	Power factor	Shape	Drawing on page 94	Weight kg	$\Delta t/\Delta t_{an.}$ (EN 61347) K	C_P µF ±10%
4W												
4	T5	Miniature Bi-pin	170	L 4/6/8.169	**163183**	120, 60	0.34	Super-thin	A	0.37	25/50	2.5
4	T5	Miniature Bi-pin	170	L 4/6/8.152	**507850**	120, 60	0.35	Slim	B	0.34	25/35	2.5
6W												
6	T5	Miniature Bi-pin	160	L 4/6/8.169	**163183**	120, 60	0.42	Super-thin	A	0.37	25/50	2.5
6	T5	Miniature Bi-pin	160	L 4/6/8.152	**507850**	120, 60	0.44	Slim	B	0.34	25/35	2.5
8W												
8	T5	Miniature Bi-pin	153	L 4/6/8.169	**163183**	120, 60	0.49	Super-thin	A	0.37	25/50	2.5
8	T5	Miniature Bi-pin	153	L 4/6/8.152	**507850**	120, 60	0.52	Slim	B	0.34	25/35	2.5

Electromagnetic Ballasts for Linear Fluorescent Lamps 14, 15, 18, 20W

Slim Shape: 28x28mm
Standard Shape: 28x41mm

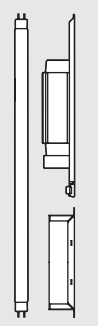
For medium bi-pin fluorescent lamps T8, T12
Vacuum-impregnated with polyester resin
Quick-connect terminals: 20–16AWG solid
For the automatic luminaire wiring:
IDC terminals for leads H05V-U 0.5
tw 130

B Slim Shape

C Standard Shape

c UL us
E139710 (for 163256)

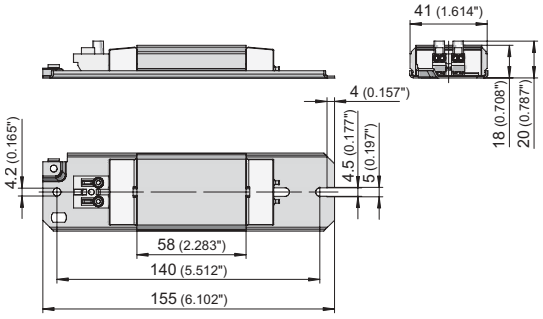
Lamp				Ballast								Capacitor
Output W	Type	Base	Current mA	Type	**Ref. No.**	V, Hz	Power factor	Shape	Drawing on page 94	Weight kg	$\Delta t/\Delta t_{an.}$ (EN 61347) K	C_P µF
14W												
14	T8	Medium Bi-pin	395	L 14.139	**170117**	120, 60	0.43	Standard	C	0.32	55/90	7
15W												
15	T8	Medium Bi-pin	350	L 15.143	**505625**	120, 60	0.47	Slim	B	0.34	40/70	5.5
15	T8	Medium Bi-pin	350	L 15/20.142	**505621**	120, 60	0.47	Slim	B	0.34	50/90	5.5
15	T8	Medium Bi-pin	350	L 15.308	**163702**	120, 60	0.48	Standard	C	0.32	35/65	7
18W												
18	T8	Medium Bi-pin	370	L 15/20.142	**505621**	120, 60	0.55	Slim	B	0.34	50/90	5
18	T8	Medium Bi-pin	370	L 20.122	**163256**	120, 60	0.51	Standard	C	0.32	35/80	5
20W												
20	T12	Medium Bi-pin	370	L 15/20.142	**505621**	120, 60	0.55	Slim	B	0.34	50/90	5
20	T12	Medium Bi-pin	370	L 20.122	**163256**	120, 60	0.51	Standard	C	0.32	35/80	5



Electromagnetic Ballasts for Linear Fluorescent Lamps

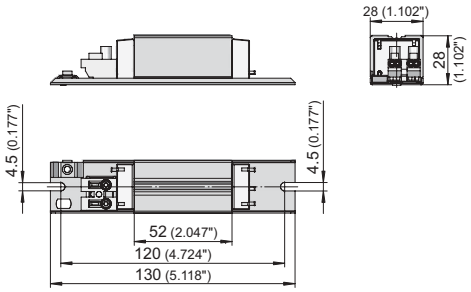
Product Drawings
All product drawings are shown in millimeters and inches.

A Super-thin Shape



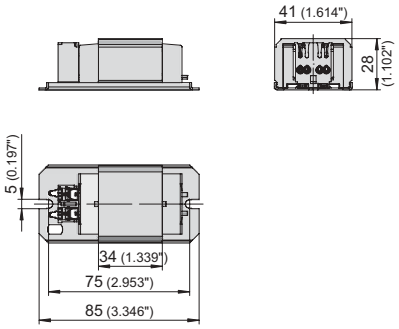
Ref. No.	Type	Page
163183	L 4/6/8.169	92

B Slim Shape



Ref. No.	Type	Page
505621	L 15/20.142	93
505625	L 15.143	93
507850	L 4/6/8.152	92

C Standard Shape

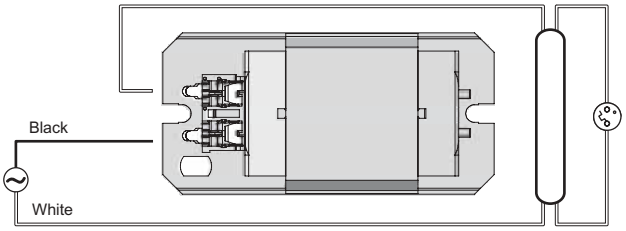


Ref. No.	Type	Page
163256	L 20.122	93
163702	L 15.308	93
170117	L 14.139	93

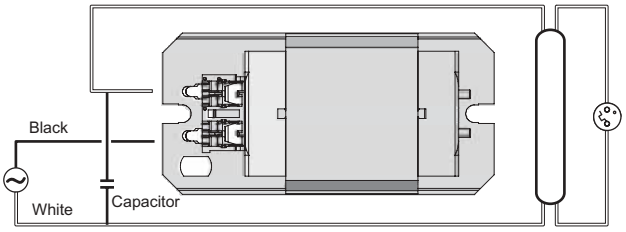
Electromagnetic Ballasts for Linear Fluorescent Lamps

Wiring Diagrams
For illustration of wiring the Standard shape was used. The wiring is the same for all shapes.

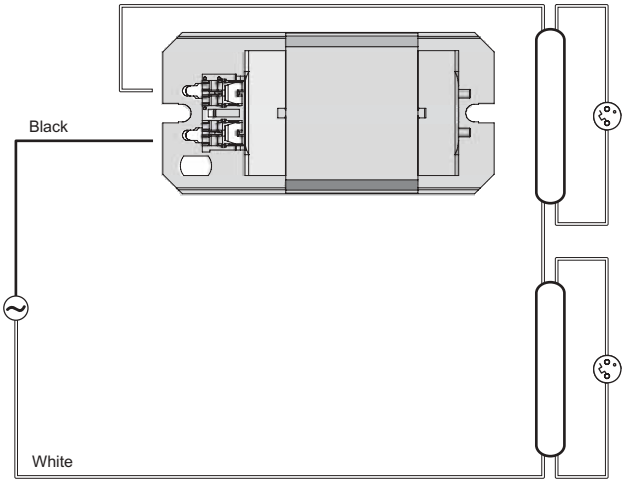
Inductive Single Circuit



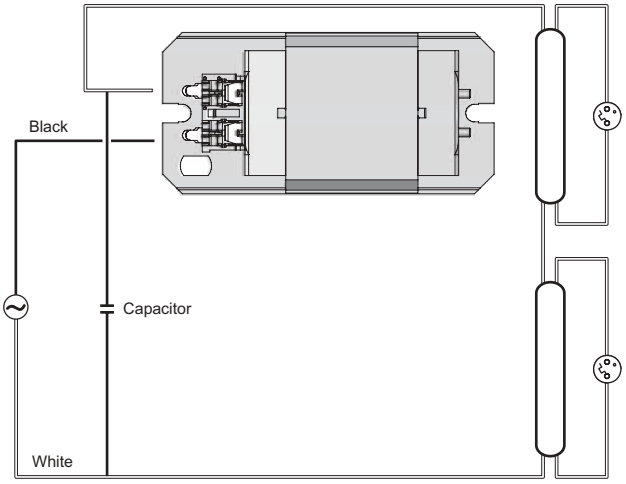
Single Circuit with Parallel Compensation

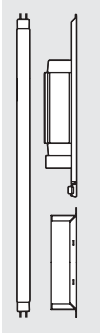


Inductive Tandem Circuit



Tandem Circuit with Parallel Compensation





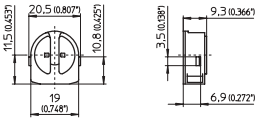
Note: All electromagnetic ballasts for linear fluorescent lamps have quick-connect terminals. They will be supplied without leads.

Lampholders for Miniature Bi-pin Fluorescent Lamps T5

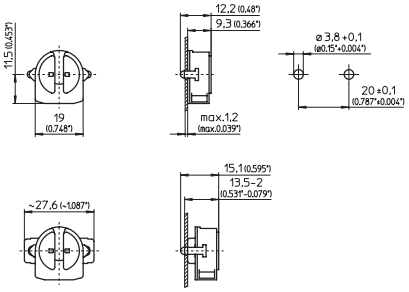
Twist and Lock Lampholders for Miniature Bi-pin Fluorescent Lamps T5

Nominal rating: 120W/600V
Degree of protection: IP20
All T ratings in this chapter refer to IEC standards
US patent 6,824,409 for lampholder series 094 and 098
All lampholders with quick-connect terminals:
18AWG solid or stranded solder-dipped

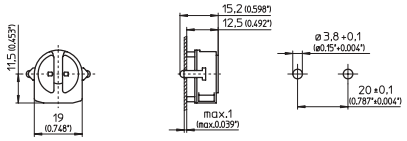
Butt-on lampholders for T5 lamps
Casing: PBT GF, white, rotor: PBT GF, white
T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Lateral fixing clips
Weight: 2.8g, packing qty.: 1000 pcs.
Type: 09404
Ref. No.: 505732
Type: 09804
Ref. No.: 508261 internally shunted



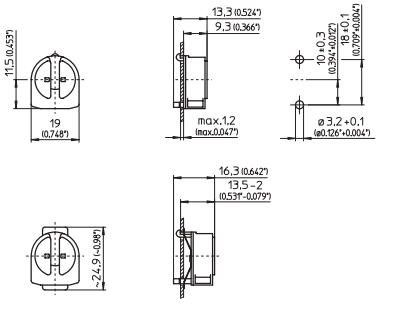
Butt-on lampholders for T5 lamps
Casing: PBT GF, white, rotor: PBT GF, white
T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Rear split pins for wall thickness
up to 1.2mm (0.047"), weight: 2.9/3.3g
Packing qty.: 1000 pcs., type: 09405/09805
Ref. No.: 505733
Ref. No.: 508262 internally shunted
Type: 09406/09806 with spring adjustment
Ref. No.: 505734
Ref. No.: 508263 internally shunted



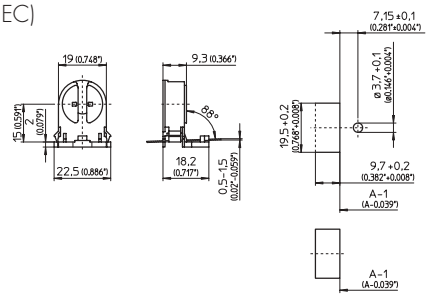
Butt-on lampholders for T5 lamps
Lampholder thickness: 12.5mm (0.492")
Casing: PBT GF, white, rotor: PBT GF, white
T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Rear split pins for wall thickness
up to 1mm (0.039")
Weight: 3g, packing qty.: 1000 pcs.
Type: 09407/09807
Ref. No.: 508590
Ref. No.: 520739 internally shunted



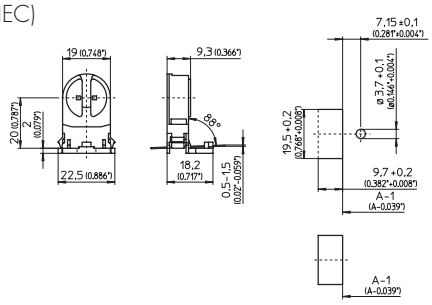
Butt-on lampholders for T5 lamps
Casing: PBT GF, white, rotor: PBT GF, white, T140
(acc. to IEC), quick-connect twin terminals: 18AWG
Rear split pins for wall thickness
up to 1.2mm (0.047"), weight: 2.9/3.2g
Packing qty.: 1000 pcs., type: 09415/09815
Ref. No.: 505735
Ref. No.: 508264 internally shunted
Type: 09416/09816 with spring adjustment
Ref. No.: 505736
Ref. No.: 508265 internally shunted



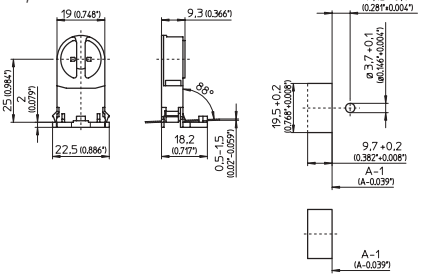
Push-through lampholders for T5 lamps, lamp axis: 15mm (0.591")
Casing: PBT GF, white, rotor: PBT GF, white, T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Lateral fixing clips for wall thickness 0.5–1.5mm (0.020–0.059"), weight: 3.4/3.3g, packing qty.: 1000 pcs., type: 09420/09820 with stop
Ref. No.: 505737
Ref. No.: 508266 internally shunted
Type: 09421/09821 without stop
Ref. No.: 505739
Ref. No.: 508267 internally shunted



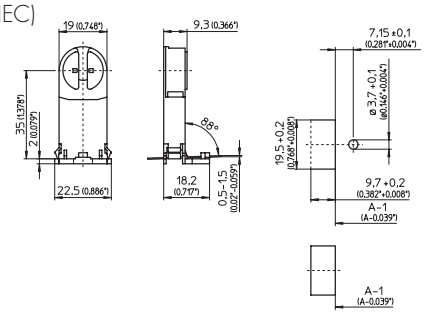
Push-through lampholders for T5 lamps, lamp axis: 20mm (0.787")
Casing: PBT GF, white, rotor: PBT GF, white, T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Lateral fixing clips for wall thickness 0.5–1.5mm (0.020–0.059"), weight: 3.6g, packing qty.: 1000 pcs.
Type: 09422/09822 with stop
Ref. No.: 505740
Ref. No.: 508268 internally shunted
Type: 09423/09823 without stop
Ref. No.: 505741
Ref. No.: 508269 internally shunted

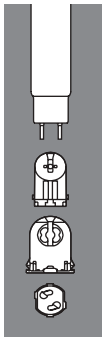


Push-through lampholders for T5 lamps, lamp axis: 25mm (0.984")
Casing: PBT GF, white, rotor: PBT GF, white, T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Lateral fixing clips for wall thickness 0.5–1.5mm (0.020–0.059"), weight: 3.9g, packing qty.: 1000 pcs.
Type: 09424/09824 with stop
Ref. No.: 505742
Ref. No.: 508270 internally shunted
Type: 09425/09825 without stop
Ref. No.: 505744
Ref. No.: 508271 internally shunted

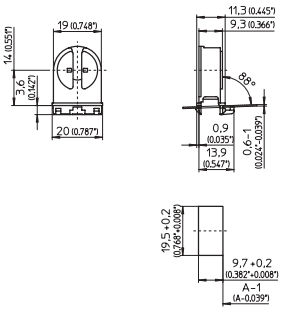


Push-through lampholders for T5 lamps, lamp axis: 35mm (1.378")
Casing: PBT GF, white, rotor: PBT GF, white, T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Lateral fixing clips for wall thickness 0.5–1.5mm (0.020–0.059"), weight: 4.5g, packing qty.: 1000 pcs.
Type: 09426/09826 with stop
Ref. No.: 505745
Ref. No.: 508272 internally shunted
Type: 09427/09827 without stop
Ref. No.: 505746
Ref. No.: 508273 internally shunted

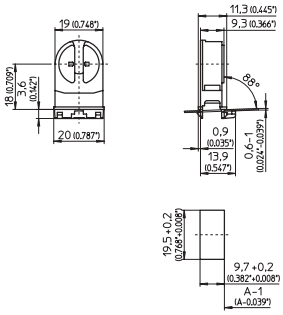




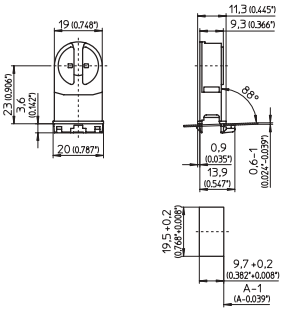
Snap-in lampholders for T5 lamps
Lamp axis: 14mm (0.551")
Casing: PBT GF, white, rotor: PBT GF, white
T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Snap-in foot for wall thickness 0.6–1mm (0.024–0.039")
Option for base or side entry wiring
Weight: 3.3g, packing qty.: 1000 pcs.
Type: 09440/09840
Ref. No.: 505747
Ref. No.: 508274 internally shunted



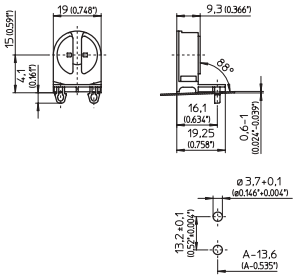
Snap-in lampholders for T5 lamps
Lamp axis: 18mm (0.709")
Casing: PBT GF, white, rotor: PBT GF, white
T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Snap-in foot for wall thickness 0.6–1mm (0.024–0.039")
Option for base or side entry wiring
Weight: 3.5g, packing qty.: 1000 pcs.
Type: 09441/09841
Ref. No.: 505748
Ref. No.: 508275 internally shunted



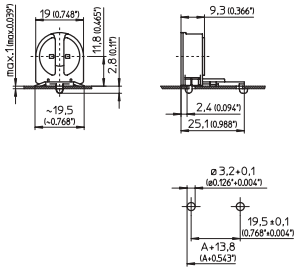
Snap-in lampholders for T5 lamps
Lamp axis: 23mm (0.906")
Casing: PBT GF, white, rotor: PBT GF, white
T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Snap-in foot for wall thickness 0.6–1mm (0.024–0.039")
Option for base or side entry wiring
Weight: 3.8g, packing qty.: 1000 pcs.
Type: 09442/09842
Ref. No.: 505749
Ref. No.: 508276 internally shunted



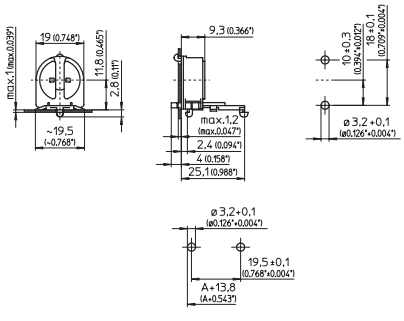
Snap-in lampholders for T5 lamps
Lamp axis: 15mm (0.591")
Casing: PBT GF, white, rotor: PBT GF, white
T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Base split pins for wall thickness 0.6–1mm (0.024–0.039")
Weight: 3.4g, packing qty.: 1000 pcs.
Type: 09450/09850
Ref. No.: 505750
Ref. No.: 508277 internally shunted



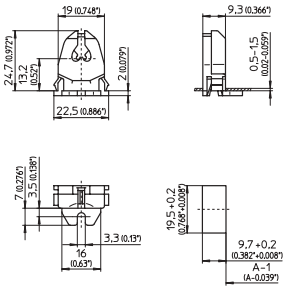
Snap-in lampholders for T5 lamps
Lamp axis: 11.8mm (0.465")
Casing: PBT GF, white, rotor: PBT GF, white
T140 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Base split pins for wall thickness up to 1mm (0.039")
Option for base or side entry wiring
Weight: 3.1g, packing qty.: 1000 pcs.
Type: 09460/09860
Ref. No.: 505751
Ref. No.: 508278 internally shunted



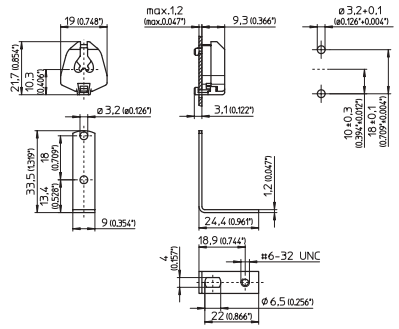
Butt-on/snap-in lampholders for T5 lamps
Lamp axis: 11.8mm (0.465")
Casing: PBT GF, white, rotor: PBT GF, white, T140
(acc. to IEC), quick-connect twin terminals: 18AWG
Rear split pins for wall thickness up to 1.2mm (0.047")
Base split pins for wall thickness up to 1mm (0.039")
Option for side entry wiring
Weight: 3.1g, packing qty.: 1000 pcs.
Type: 09465/09865
Ref. No.: 508314
Ref. No.: 508279 internally shunted



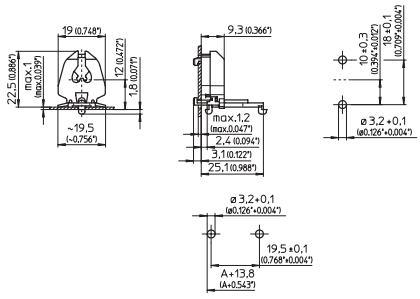
Push-through or flush-mount lampholder for T5 lamps
Lamp axis push-through lampholder: 13.2mm (0.520")
Lamp axis flush-mount lampholder: 15.2mm (0.598")
Casing: PC, white, T110 (acc. to IEC)
Quick-connect terminals: 18AWG
Lateral fixing clips
for wall thickness 0.5–1.5mm (0.020–0.059")
Fixing foot with slot for screw fixing
Weight: 3.2g, packing qty.: 1000 pcs.
Type: 09105
Ref. No.: 100305



Butt-on lampholder for T5 lamps, casing: PC, white
T110 (acc. to IEC), quick-connect terminals: 18AWG
Rear split pins for wall thickness up to 1.2mm
(0.047"), weight: 2.5g, packing qty.: 1000 pcs.
Type: 09205
Ref. No.: 100310
Fixing bracket for lampholder 100310, fixing foot
with mounting hole for #6 screw (M3.5)
Material: zinc-coated polished steel
Weight: 4.2g, packing qty.: 1000 pcs.
Type: 94097 lamp axis: 23.4mm (0.922")
Ref. No.: 109857



Rear or base snap-in lampholder for T5 lamps
Lamp axis: 12mm (0.472")
Casing: PC, white, T110 (acc. to IEC)
Quick-connect terminals: 18AWG
Rear split pins for wall thickness up to 1.2mm (0.047")
Base split pins for wall thickness up to 1mm (0.039")
Weight: 2.8g, packing qty.: 1000 pcs.
Type: 09210
Ref. No.: 106455



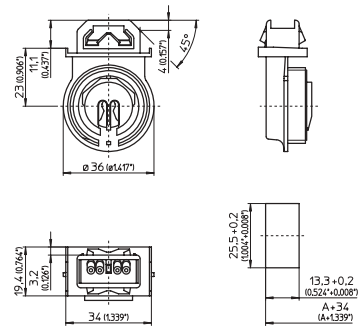
Moisture and Dust Resistant Lampholders for Miniature Bi-pin Fluorescent Lamps T5

For Miniature Bi-pin Fluorescent Lamps T5 (T16)

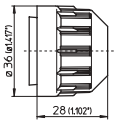
Dust and watertight lampholders (IP67)
Pin support for reliable contact
With spring adjustment

Max. permitted temperature on the
rear side of the lampholder: T_m 110°C
All T ratings in this chapter refer to IEC standards

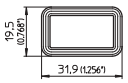
Snap-in lampholders for T5 lamps
Casing: PC, white, interior part: PBT GF, white
T140 (acc. to IEC), nominal rating: 2A/500V
Quick-connect terminals: 18AWG
Fixing clips for wall thickness 1.4–2mm (0.055–0.079")
Weight: 11.2/11.1g, packing qty.: 250 pcs.
Type: 84101 system 153
new>> **Ref. No.: 529832**
new>> **Ref. No.: 529834** internally shunted

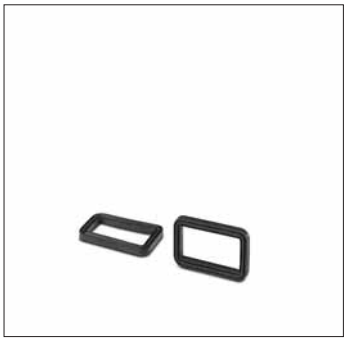


Screw ring for system 153
Ring: PBT GF, gasket: silicone
Weight: 12.5g, packing qty.: 250 pcs.
Type: 84103
new>> **Ref. No.: 529836**

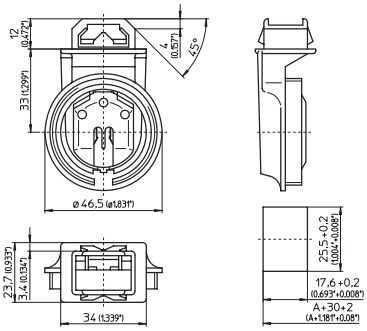


Foot gasket for degree of protection IP67
Material: EPDM, black
Weight: 0.7g, packing qty.: 1000 pcs.
Type: 98087
new>> **Ref. No.: 503773**

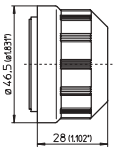




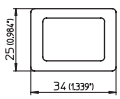
Snap-in lampholder for T5 lamps
Casing: PC, white, interior part: PBT GF, black
T140 (acc. to IEC)
Nominal rating: 2A/500V
Quick-connect terminals: 18AWG
solid or stranded solder-dipped
Fixing clips for wall thickness 1.4–2mm (0.055–0.079")
Weight: 20.3g, packing qty.: 250 pcs.
Type: 84100 system 155
Ref. No.: 507459

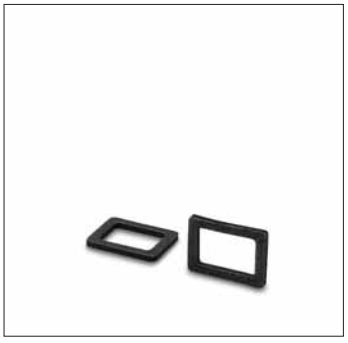


Screw ring for system 155
Ring: PBT GF, gasket: silicone
Weight: 21.8g, packing qty.: 250 pcs.
Type: 84124
Ref. No.: 507461



Foot gasket for system 155
Material: cellular rubber
Weight: 1g, packing qty.: 1000 pcs.
Type: 98084
Ref. No.: 106093



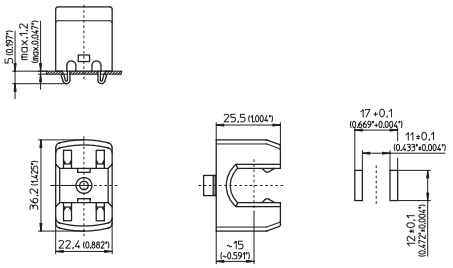


Lampholders for Circline Fluorescent Lamps T-R5

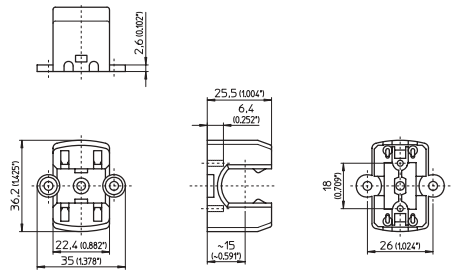
For Circline Fluorescent Lamps T-R5

Nominal rating: 75W/600V
All products in this chapter carry a T rating
of T110 acc. to IEC standards

Lampholder for circline T-R5 lamps
Casing: PC, white
Quick-connect terminals: 18AWG
solid or stranded solder-dipped
Base push-fit studs
for wall thickness up to 1.2mm (0.047")
Weight: 10g, packing qty.: 500 pcs.
Type: 58110
Ref. No.: 500274



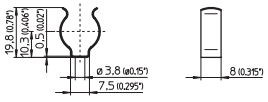
Lampholder for circline T-R5 lamps
Casing: PC, white
Quick-connect terminals: 18AWG
solid or stranded solder-dipped
Rear mounting holes for self-tapping #4 screws
Lateral mounting holes for countersunk flat
head #4 screws (M3)
Weight: 10.6g, packing qty.: 500 pcs.
Type: 58100
Ref. No.: 109037

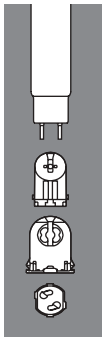


Lamp Supports

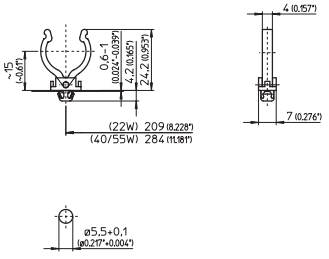
For Miniature Bi-pin Fluorescent Lamps T5 and Circline Fluorescent Lamps T-R5

Lamp support for lamps 16mm (0.630") dia.
Material: polished steel, zinc-coated
Mounting hole for #6 screw (M3.5)
Weight: 1.4g, packing qty.: 1000 pcs.
Type: 94088
Ref. No.: 109685

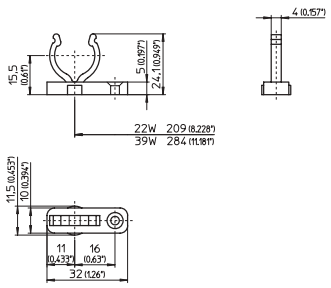




Lamp support for lamps 16mm (0.630") dia.
Material: PC, white, UV-stabilized
Snap-in foot for cut-out 5.5mm (0.217") dia.
Weight: 1.2g, packing qty.: 500 pcs.
Type: 84001
Ref. No.: 500757



Lamp support for lamps 16mm (0.630") dia.
Material: PC, white, UV-stabilized
Lateral mounting hole for countersunk
flat head #8 screw (M4)
Weight: 2g, packing qty.: 500 pcs.
Type: 84000
Ref. No.: 109532



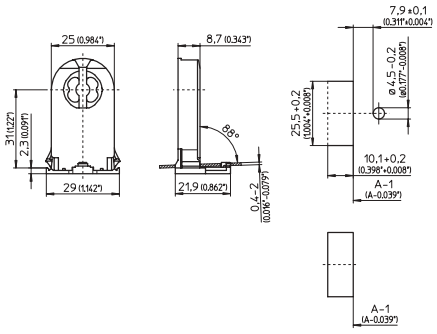
Push-through Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

Twist and Lock Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

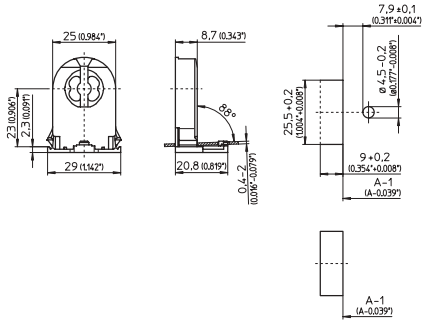
Nominal rating: 660W/600V
Degree of protection: IP20
Frontplate made of heat resistant PBT GF
Pin support for reliable contact
Quick-connect twin terminals: 18AWG
solid or stranded solder-dipped
US patent 6,364,679

Max. permissible temperature at
the rear side of the lampholder: T_m 110°C
Lampholders with integrated starterholder have
quick-connect twin terminals for the lamp circuit
and quick-connect terminals for the starter circuit.
All products in this chapter carry a T rating
of T140 acc. to IEC standards

Push-through lampholders for T8 and T12 lamps
Lamp axis: 31mm (1.220"), casing: PC, white
Lateral fixing clips for wall thickness 0.4–2mm
(0.016–0.079")
Weight: 7.8g, packing qty.: 1000 pcs.
Type: 28700/28725 with stop
Ref. No.: 109342
Ref. No.: 109376 internally shunted
Type: 28701/28726 without stop
Ref. No.: 109343
Ref. No.: 109377 internally shunted



Push-through lampholders for T8 and T12 lamps
Lamp axis: 23mm (0.906"), casing: PC, white
Lateral fixing clips for wall thickness 0.4–2mm
(0.016–0.079")
Weight: 6.6g, packing qty.: 1000 pcs.
Type: 29100/29125 with stop
Ref. No.: 109346
Ref. No.: 109371 internally shunted
Type: 29101/29126 without stop
Ref. No.: 109529
Ref. No.: 109372 internally shunted



Push-through lampholders for T8 lamps
Lamp axis: 16mm (0.630")
Casing: PC, white
Nominal rating: 2A/500V
Lateral fixing clips for wall thickness 0.4–2mm (0.016–0.079")
Weight: 4.7/4.5g, packing qty.: 1000 pcs.
Type: 29300 with stop

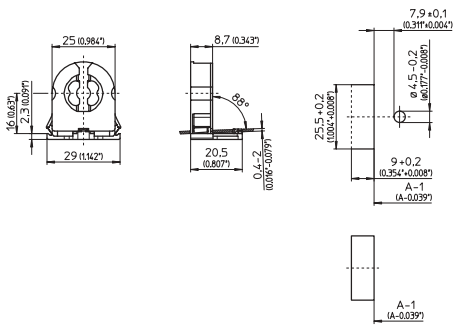
new>> **Ref. No.: 509134**

new>> **Ref. No.: 509136** internally shunted

Type: 29301 without stop

new>> **Ref. No.: 509135**

new>> **Ref. No.: 509137** internally shunted



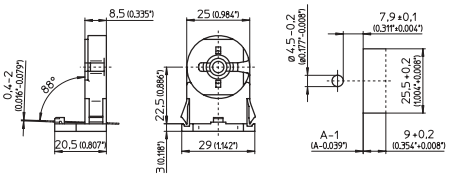
new>>

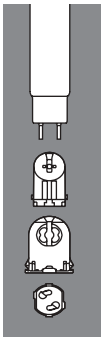
Push-through Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12 with Unique Side Entry Feature

Twist and Lock Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

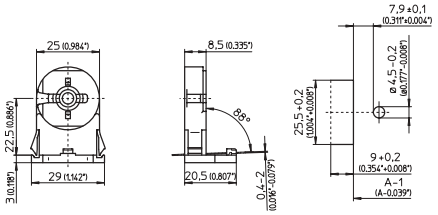
Nominal rating: 660W/600V
Degree of protection: IP20
Max. permissible temperature at the rear side of the lampholder: T_m 110°C
Big rotor made of heat resistant PBT GF
Pin support for reliable contact
All products in this chapter carry a T rating of T130 acc. to IEC standards

Push-through lampholder for T8 and T12 lamps
Lamp axis: 22.5mm (0.886"), casing: PC, white
Quick-connect twin terminals: 18AWG solid or stranded solder-dipped
Lateral fixing clips for wall thickness 0.4–2mm (0.016–0.079")
Right side entry
Ideal use for display and undercabinet application
Weight: 6g, packing qty.: 500 pcs.
Type: 29000 with stop
Ref. No.: 108328





Push-through lampholder for T8 and T12 lamps
Lamp axis: 22.5mm (0.886"), casing: PC, white
Quick-connect twin terminals: 18AWG solid or stranded solder-dipped
Lateral fixing clips for wall thickness 0.4–2mm (0.016–0.079")
Left side entry
Ideal use for display and undercabinet application
Weight: 6g, packing qty.: 500 pcs.
Type: 29010 with stop
Ref. No.: 108331



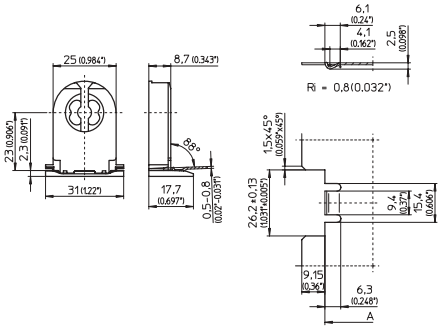
Slide-on Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

Twist and Lock Lampholders for Medium Bi-pin Fluorescent Lamps T8 and T12

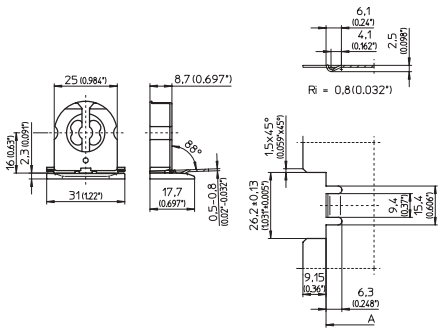
Nominal rating: 660W/600V
Degree of protection: IP20
Front plate made of heat resistant PBT GF
US patent 6,364,679

Max. permissible temperature at the rear side of the lampholder: T_m 110°C
All products in this chapter carry a T rating of T140 acc. to IEC standards

Slide-on lampholders for T8 and T12 lamps
Lamp axis: 23mm (0.906")
Casing: PC, white
Quick-connect twin terminals: 18AWG solid or stranded solder-dipped
Side slots for wall thickness 0.5–0.8mm (0.020–0.031")
Weight: 7g, packing qty.: 1000 pcs.
Type: 29150/29155
Ref. No.: 509609
Ref. No.: 509610 internally shunted



Lampholders for T8 lamps
Lamp axis: 16mm (0.630")
Casing: PC, white
Quick-connect terminals: 18AWG solid or stranded solder-dipped
Slide slots for wall thickness 0.5–0.8mm (0.020–0.031")
Weight: 5g, packing qty.: 1000 pcs.
Type: 29550/29555
Ref. No.: 509138
Ref. No.: 509139 internally shunted



Snap-in Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

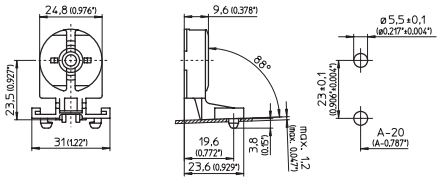
Twist and Lock Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

Nominal rating: 660W/600V
Degree of protection: IP20
Big rotor made of heat resistant PBT GF
Pin support for reliable contact

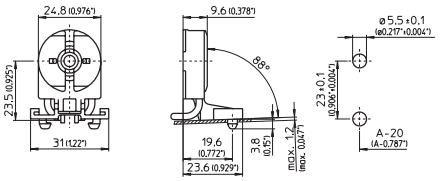
Max. permissible temperature at the rear side of the lampholder: T_m 110°C
All lampholders with quick-connect terminals: 18AWG solid or stranded solder-dipped

All products in this chapter carry a T rating of T130 acc. to IEC standards

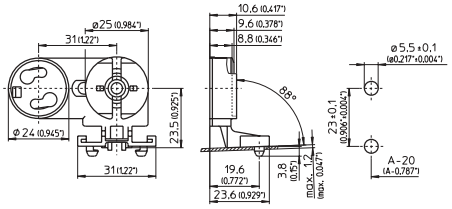
Snap-in lampholder for T8 lamps
Lamp axis: 23.5mm (0.925")
Casing: PC, white
Quick-connect twin terminals: 18AWG
Base split pins for wall thickness up to 1.2mm (0.047"), degree of protection lampholder foot/luminaire: IP40
Bottom wire entry
Weight: 5.8g, packing qty.: 1000 pcs.
Type: 27350
Ref. No.: 100548



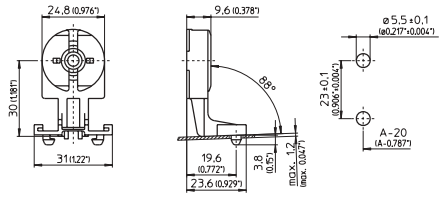
Snap-in lampholder for T8 lamps
Lamp axis: 23.5mm (0.925")
Casing: PC, white
Quick-connect twin terminals: 18AWG
Base split pins for wall thickness up to 1.2mm (0.047"), degree of protection lampholder foot/luminaire: IP40
Bottom wire entry
Weight: 6.1g, packing qty.: 1000 pcs.
Type: 27370
Ref. No.: 108293 externally shunted



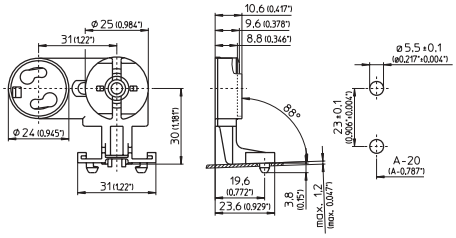
Snap-in lampholder/starter combination for T8 lamps, with starter attachment
Lamp axis: 23.5mm (0.925")
Casing: PC, white
Quick-connect twin terminals: 18AWG
Base split pins for wall thickness up to 1.2mm (0.047"), degree of protection lampholder foot/luminaire: IP40
Weight: 9g, packing qty.: 1000 pcs.
Type: 27450
Ref. No.: 100557

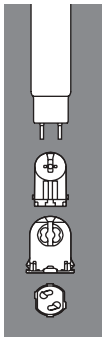


Snap-in lampholder for T8 and T12 lamps
Lamp axis: 30mm (1.181")
Casing: PC, white
Quick-connect twin terminals: 18AWG
Base split pins for wall thickness up to 1.2mm (0.047"), degree of protection lampholder foot/luminaire: IP40
Weight: 6g, packing qty.: 1000 pcs.
Type: 27360
Ref. No.: 100552

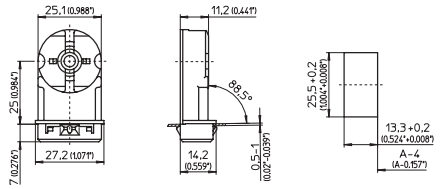


Snap-in lampholder/starter combination for T8 and T12 lamps, with starter attachment
Lamp axis: 30mm (1.181")
Casing: PC, white
Quick-connect twin terminals: 18AWG
Base split pins for wall thickness up to 1.2mm (0.047"), degree of protection lampholder foot/luminaire: IP40
Weight: 9.3g, packing qty.: 1000 pcs.
Type: 27460
Ref. No.: 100559

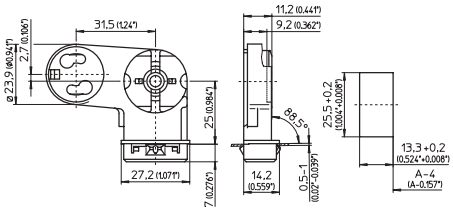




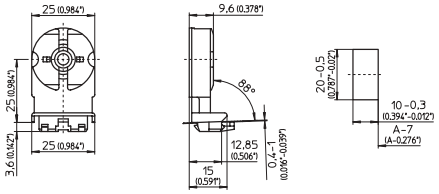
Snap-in lampholders for T8 and T12 lamps
Lamp axis: 25mm (0.984"), casing: PC, white
Quick-connect twin terminals: 18AWG
Wiring through lampholder foot
Degree of protection lampholder foot/luminaire: IP40
Weight: 8g, packing qty.: 500 pcs.
Type: 28100/28101
Ref. No.: 100585 for wall thickness 0.5–1mm (0.020–0.039")
Ref. No.: 100587 for wall thickness 1.5–2mm (0.059–0.079")



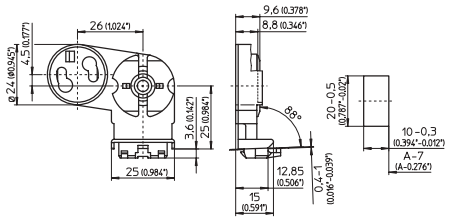
Snap-in lampholder/starter combinations
for T8 and T12 lamps, with starter attachment
Lamp axis: 25mm (0.984"), casing: PC, white
Quick-connect twin terminals: 18AWG
Wiring through lampholder foot
Degree of protection lampholder foot/luminaire: IP40
Weight: 11g, packing qty.: 500 pcs.
Type: 28200/28201
Ref. No.: 100588 for wall thickness 0.5–1mm (0.020–0.039")
Ref. No.: 100590 for wall thickness 1.5–2mm (0.059–0.079")



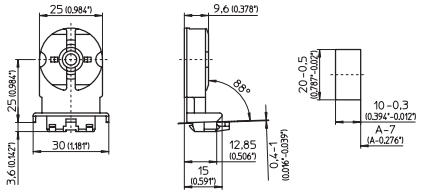
Snap-in lampholders for T8 and T12 lamps
Lamp axis: 25mm (0.984")
Casing: PC, white
Quick-connect twin terminals: 18AWG
Snap-in foot for wall thickness 0.4–1mm (0.016–0.039")
Weight: 5.5/6g, packing qty.: 500 pcs.
Type: 28901 side and bottom wire entry
Ref. No.: 108436
Type: 28903 bottom wire entry
Ref. No.: 108408 continuous rear cover plate



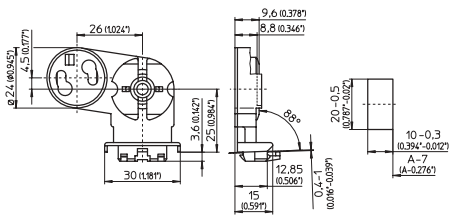
Snap-in lampholder/starter combination
for T8 lamps, with starter attachment
Lamp axis: 25mm (0.984")
Casing: PC, white
Quick-connect terminals: 18AWG
Snap-in foot for wall thickness
0.4–1mm (0.016–0.039")
Side and bottom wire entry
Weight: 6g, packing qty.: 500 pcs.
Type: 28900
Ref. No.: 108435



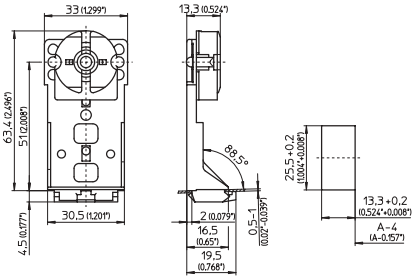
Snap-in lampholder for T8 and T12 lamps
Lamp axis: 25mm (0.984")
Casing: PC, white
Quick-connect terminals: 18AWG
Snap-in foot for wall thickness
0.4–1mm (0.016–0.039")
Side and bottom wire entry
Weight: 6g, packing qty.: 500 pcs.
Type: 28921
Ref. No.: 108438



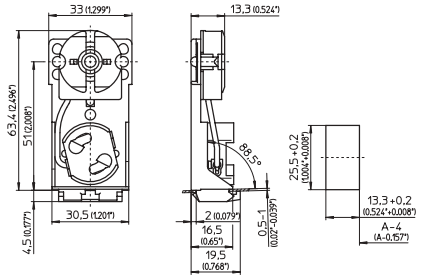
Snap-in lampholder/starter combination
for T8 lamps, with starter attachment
Lamp axis: 25mm (0.984")
Casing: PC, white
Quick-connect twin terminals: 18AWG
Snap-in foot for wall thickness
0.4–1mm (0.016–0.039")
Side and bottom wire entry
Weight: 8.5g, packing qty.: 500 pcs.
Type: 28920
Ref. No.: 108437

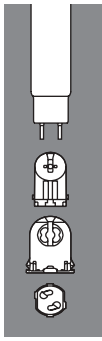


Snap-in lampholder for T8 and T12 lamps
Lamp axis: 51mm (2.008")
Casing: PC, white
Quick-connect twin terminals: 18AWG
Snap-in foot for wall thickness
0.5–1mm (0.020–0.039")
Side entry wiring or through bracket foot
Weight: 10g, packing qty.: 500 pcs.
Type: 47520
Ref. No.: 101758



Snap-in lampholder/starter combination
for T8 and T12 lamps, with starter attachment
Lamp axis: 51mm (2.008")
Casing: PC, white
Quick-connect terminals: 18AWG
Snap-in foot for wall thickness
0.5–1mm (0.020–0.039")
Side entry wiring or through bracket foot
Weight: 14g, packing qty.: 500 pcs.
Type: 47620
Ref. No.: 101777





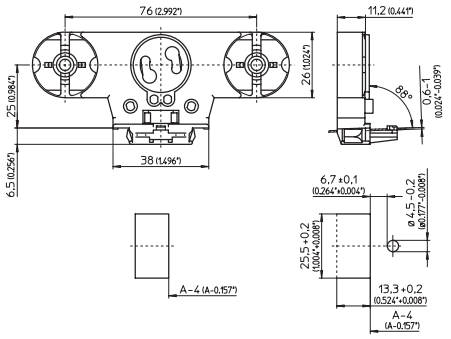
Snap-in Twin Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

Twist and Lock Lampholders for Medium Bi-pin Fluorescent Lamps T8 and T12

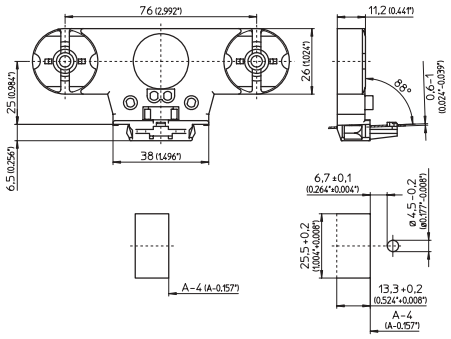
Nominal rating: 660W/600V
Degree of protection: IP20
Max. permissible temperature at the rear side of the lampholder: T_m 110°C
Big rotor made of heat resistant PBT GF
Pin support for reliable contact
Wiring through lampholder foot
Snap-in foot for wall thickness 0.6–1mm (0.024–0.039")
Lamp axis: 25mm (0.984")

Lampholders with integrated starter attachment have quick-connect twin terminals for the lamp circuit and quick-connect terminals for the starter circuit.
All products in this chapter carry a T rating of T130 acc. to IEC standards

Snap-in twin lampholders for T8 and T12 lamps
With starter attachment
Distance between two lamp axis: 76mm (2.992")
Casing: PC, white
Quick-connect twin terminals: 18AWG solid or stranded solder-dipped
Weight: 21.5g, packing qty.: 200 pcs.
Type: 22600 with stop
Ref. No.: 100484
Type: 22601 without stop
Ref. No.: 100486



Snap-in twin lampholders for T8 and T12 lamps
Casing: PC, white
Distance between two lamp axis: 76mm (2.992")
Quick-connect terminals: 18AWG solid or stranded solder-dipped
Weight: 21g, packing qty.: 200 pcs.
Type: 22604 with stop
Ref. No.: 108816
Type: 22602 without stop
Ref. No.: 100487



Butt-on Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

new>>

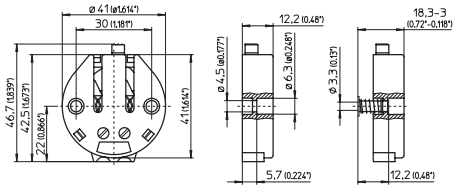
Lampholders for Medium Bi-pin Fluorescent Lamps T8 and T12

Nominal rating: 660W/600V
Degree of protection: IP20
Max. permissible temperature at the rear side of the lampholder: T_m 110°C

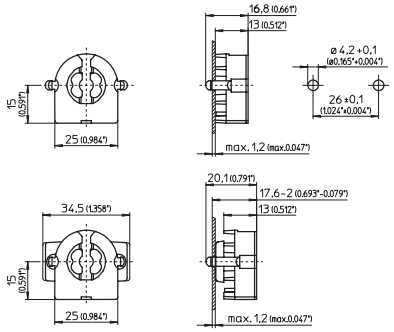
Lampholders with integrated starter attachment have quick-connect twin terminals for the lamp circuit and quick-connect terminals for the starter circuit. All lampholders with quick-connect terminals: 18AWG solid or stranded solder-dipped

All T ratings in this chapter refer to IEC standards

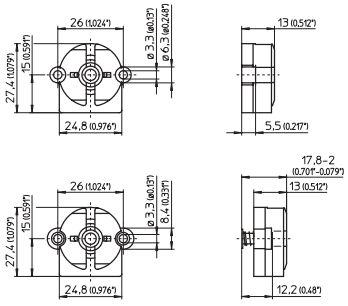
Butt-on lampholders for T8 and T12 lamps
Casing: PBT GF, white, T130 (acc. to IEC)
Locking mechanism
Double edge wipe contacts
Terminals: bushings with set screws 18–14AWG solid
Mounting holes for #4 screws (M3)
Weight: 13/14g, packing qty.: 500 pcs.
Type: 46100/46101
Ref. No.: 101643
Ref. No.: 101647 with spring adjustment

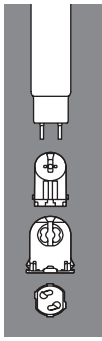


Butt-on lampholders for T8 and T12 lamps
Lampholder thickness: 13mm (0.512")
Casing: PC, white, frontplate: PBT GF, white T140 (acc. to IEC), quick-connect terminals: 18 AWG
Rear split pins for wall thickness up to 1.2mm (0.047"), US patent 6,364,679, weight: 4.6/5.4g
Packing qty.: 1000 pcs., type: 47105
new>> **Ref. No.: 509152**
Ref. No.: 509153 internally shunted
Type: 47106 with spring adjustment
Ref. No.: 509154
new>> **Ref. No.: 509155** internally shunted

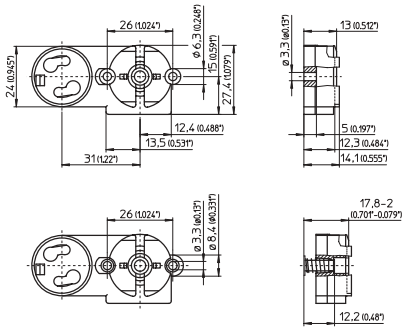


Butt-on lampholders for T8 and T12 lamps
Casing: PC, white, rotor: PBT GF, T130 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Thickness of lampholder: 13mm (0.512")
Mounting holes for #4 screws (M3)
Weight: 5/6g, packing qty.: 1000 pcs.
Type: 47100/47102
Ref. No.: 101674
Ref. No.: 101681 with spring adjustment





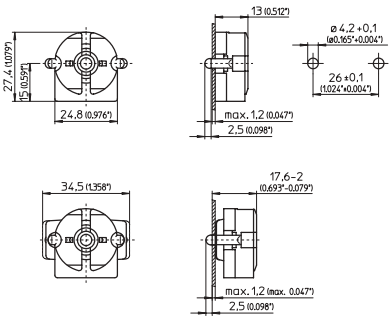
Butt-on lampholder/starter combinations for T8 and T12 lamps, with starter attachment
Casing: PC, white, rotor: PBT GF, T130 (acc. to IEC)
Quick-connect terminals: 18AWG
Thickness of lampholder: 13mm (0.512")
Mounting holes for #4 screws (M3)
Weight: 9/10g, packing qty.: 1000 pcs.
Type: 47200/47202
Ref. No.: 101706
Ref. No.: 101708 with spring adjustment



Butt-on lampholders for T8 and T12 lamps
Casing: PC, white, rotor: PBT GF, T130 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Thickness of lampholder: 13mm (0.512")
Rear split pins for wall thickness up to 1.2mm (0.047")
Weight: 5/6g, packing qty.: 1000 pcs.
Type: 47105/47106

Ref. No.: 101685

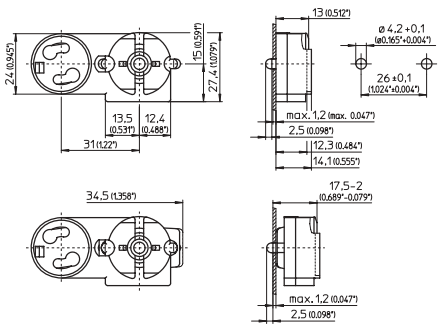
Ref. No.: 101690 with spring adjustment



Butt-on lampholder/starter combinations
for T8 and T12 lamps, with starter attachment
Casing: PC, white, rotor: PBT GF, T130 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Thickness of lampholder: 13mm (0.512")
Rear split pins for wall thickness up to 1.2mm (0.047")
Weight: 9/10g, packing qty.: 1000 pcs.
Type: 47205/47206

Ref. No.: 101712

Ref. No.: 101716 with spring adjustment



Butt-on lampholders for T8 and T12 lamps
Casing: PC, white, frontplate: PBT GF, white
T140 (acc. to IEC), quick-connect terminals: 18AWG
Thickness of lampholder: 9.5mm (0.374")
Rear split pins for wall thickness up to 1.2mm (0.047")
US patent 6,364,679, weight: 4.4/5.1g
Packing qty.: 1000 pcs., type: 47505

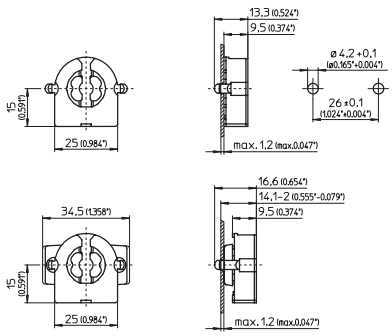
new>> Ref. No.: 509162

new>> Ref. No.: 509163 internally shunted

Type 47506 with spring adjustment

new>> Ref. No.: 509164

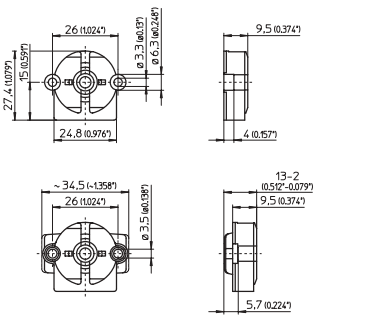
new>> Ref. No.: 509165 internally shunted



Butt-on lampholders for T8 and T12 lamps
Casing: PC, white, rotor: PBT GF
T130 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Thickness of lampholder: 9.5mm (0.374")
Mounting holes for #4 screws (M3)
Weight: 5/5.5g, packing qty.: 1000 pcs.
Type: 47500/47502

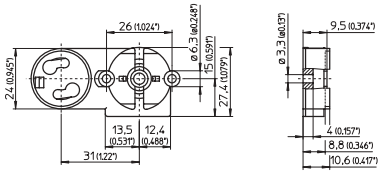
Ref. No.: 101738

Ref. No.: 101740 with spring adjustment

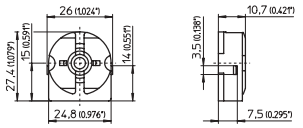


Butt-on lampholder/starter combination
for T8 and T12 lamps, with starter attachment
Casing: PC, white, rotor: PBT GF
T130 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Thickness of lampholder: 9.5mm (0.374")
Mounting holes for #4 screws (M3)
Weight: 8g, packing qty.: 1000 pcs.
Type: 47600

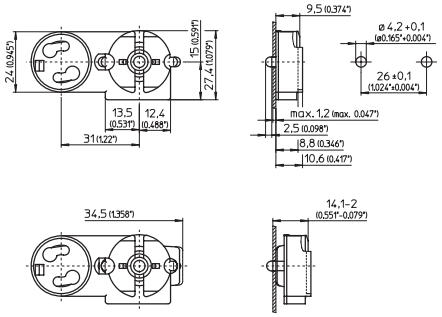
Ref. No.: 101765



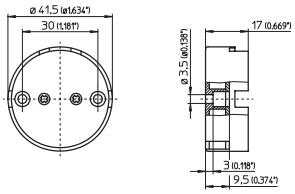
Butt-on lampholder for T8 and T12 lamps
Casing: PC, white, rotor: PBT GF
T130 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Thickness of lampholder: 10.7mm (0.421")
Lateral fixing clips
Weight: 5g, packing qty.: 1000 pcs.
Type: 47504
Ref. No.: 101745



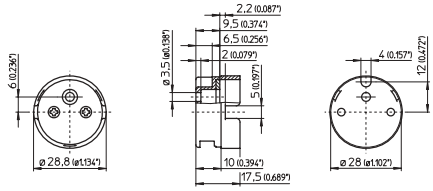
Butt-on lampholder/starter combinations
for T8 and T12 lamps, with starter attachment
Casing: PC, white, rotor: PBT GF, T130 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Thickness of lampholder: 9.5mm (0.374")
Rear split pins for wall thickness up to 1.2mm
(0.047")
Weight: 8/8.5g, packing qty.: 1000 pcs.
Type: 47605/47606
Ref. No.: 101769
Ref. No.: 101773 with spring adjustment

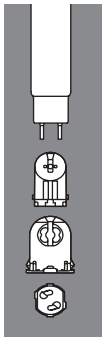


Snap-in lampholder for T12 lamps
For push-fitting onto the lamp
Casing: PC, white, T110 (acc. to IEC)
Front cover plate: PBT GF, white
Quick-connect twin terminals: 18AWG
Thickness of lampholder: 9.5mm (0.374")
Mounting holes for #4 screws (M3)
Weight: 10.5g, packing qty.: 1000 pcs.
Type: 47700
Ref. No.: 101781

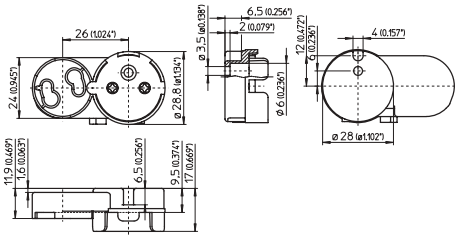


Snap-in lampholders for T8 lamps
For push-fitting onto the lamp
Casing: PC, white, front cover plate: PBT GF, white
T110 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Thickness of lampholder: 9.5mm (0.374")
Mounting hole for #4 screw (M3)
Weight: 6g, packing qty.: 1000 pcs.
Type: 47900/47905
Ref. No.: 101784
Ref. No.: 507854 externally shunted





Snap-in lampholder/starter combination
for T8 lamps
For push-fitting onto the lamp
Casing: PC, white, front cover plate: PBT GF, white
T110 (acc. to IEC)
Quick-connect twin terminals: 18AWG
Thickness of lampholder: 9.5mm (0.374")
Mounting hole for #4 screw (M3)
Weight: 8.1g, packing qty.: 1000 pcs.
Type: 47920
Ref. No.: 101785



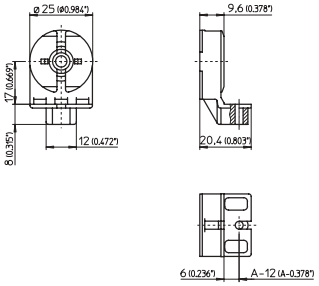
Flush-mount Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

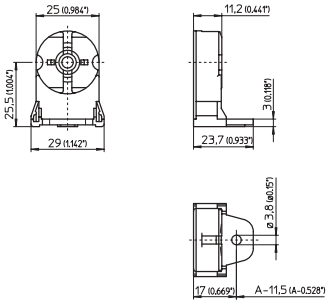
Nominal rating: 660W/600V
Degree of protection: IP20
Max. permissible temperature at the rear side of the lampholder: T_m 110°C

All products in this chapter carry a T rating of T130 acc. to IEC standards
All lampholders with quick-connect terminals: 18AWG solid or stranded solder-dipped

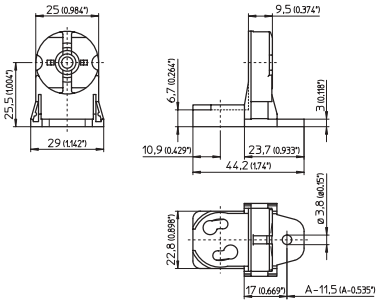
Flush-mount lampholder for T8 lamps
Lamp axis: 17mm (0.669")
Casing: PC, white, rotor: PBT GF
Quick-connect terminals: 18AWG
Mounting foot with slot for self-tapping #6 screw
Weight: 5.4g, packing qty.: 1000 pcs.
Type: 27356
Ref. No.: 100551



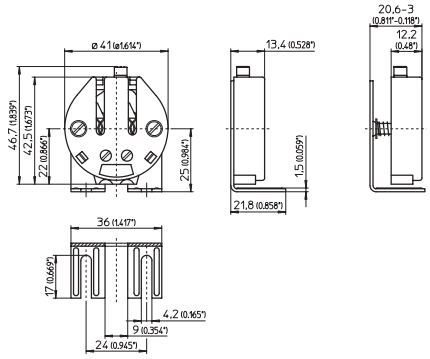
Flush-mount lampholder for T8 and T12 lamps
Lamp axis: 25.5mm (1.004")
Casing: PC, white, rotor: PBT GF
Quick-connect twin terminals: 18AWG
Mounting hole 3.8mm (0.150") dia.
Weight: 7g, packing qty.: 500 pcs.
Type: 27722
Ref. No.: 100572



Flush-mount lampholder for T8 and T12 lamps
With starter attachment
Lamp axis: 25.5mm (1.004")
Casing: PC, white, rotor: PBT GF
Quick-connect twin terminals: 18AWG
Mounting hole 3.8mm (0.150") dia.
Weight: 9g, packing qty.: 500 pcs.
Type: 27822
Ref. No.: 100583

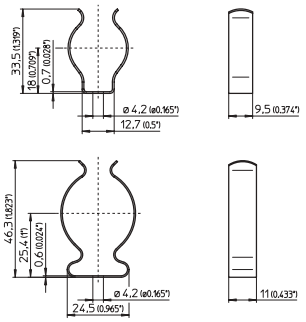


Flush-mount lampholders for T8 and T12 lamps
Casing: PBT GF, white, locking mechanism
Double edge wipe contacts
Terminals: bushings with set screws 18–14AWG solid
Zinc-coated polished steel bracket with slots
Weight: 35/38g, packing qty.: 500 pcs.
Type: 46102/46103
Ref. No.: 101651
Ref. No.: 101655 with spring adjustment

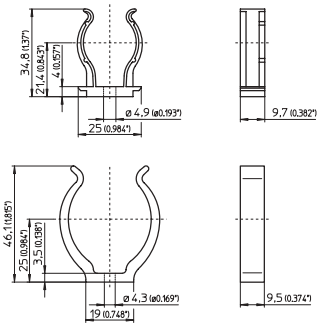


Lamp Supports for Medium Bi-pin Fluorescent Lamps T8, T12

Lamp supports for T8 or T12 lamps
Mounting hole for #8 screw (M4)
Weight: 4.5/7g, packing qty.: 500 pcs.
Type: 20400 material: polished zinc-coated steel
Ref. No.: 100442 for T8 lamps
Type: 20401 material: CrNi steel
Ref. No.: 100444 for lamps T12



Lamp supports for T8 or T12 lamps
Material: PC, crystal-clear
Mounting hole for #8 screw (M4)
Weight: 2/4.5g, packing qty.: 1000 pcs.
Type: 20501
Ref. No.: 100448 for T8 lamps
Type: 20500
Ref. No.: 100447 for T12 lamps

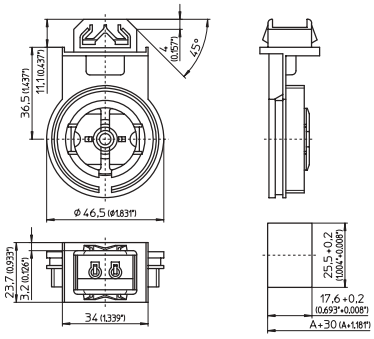


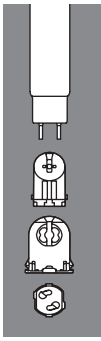
Moisture and Dust Resistant Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

Nominal rating: 660W/600V
Degree of protection IP65/IP67
Max. permissible temperature at the rear side of the lampholder: T_m 110°C

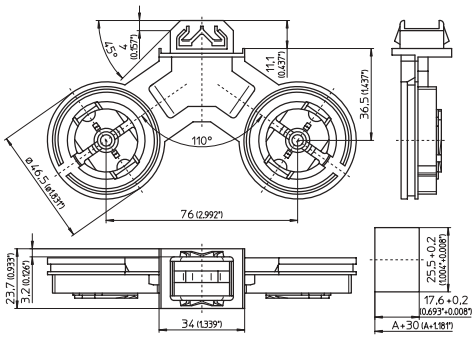
Pin support for reliable contact
Length compensation
All T ratings in this chapter refer to IEC standards

Snap-in lampholders for T8 and T12 lamps
Casing: PC, interior part: PBT GF
Rotor: PBT GF, white, T140 (acc. to IEC)
Quick-connect terminals: 18AWG solid or stranded solder-dipped
Fixing clips for wall thickness 1.4–2mm (0.055–0.079")
For screw rings 26, 38, 50mm (1.024, 1.496, 1.969") dia.
Weight: 17.3g, packing qty.: 500 pcs.
Type: 84172 system 163
Ref. No.: 107958 white
Ref. No.: 108666 grey

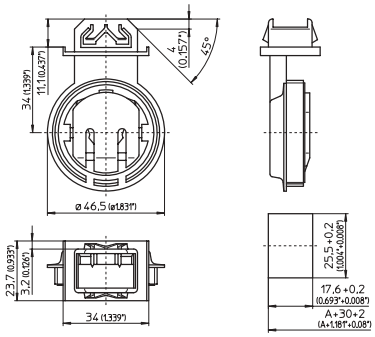




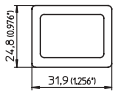
Snap-in twin lampholders for T8 and T12 lamps
Casing: PC, interior part: PBT GF
Rotor: PBT GF, white, T140 (acc. to IEC)
Quick-connect terminals: 18AWG solid or stranded solder-dipped, fixing clips for wall thickness 1.4–2mm (0.055–0.079"), for screw rings 26, 38, 50mm (1.024, 1.496, 1.969") dia.
Weight: 34.2g, packing qty.: 250 pcs.
Type: 84174 system 164
Ref. No.: 107960 white
Ref. No.: 108669 grey

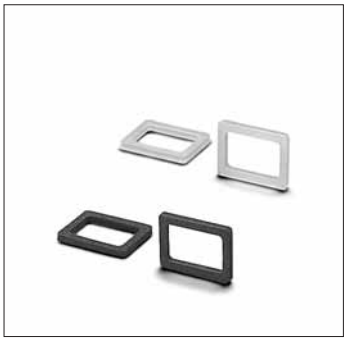


Snap-in lampholders for T8 and T12 lamps
Casing: PC, interior part: PBT GF, T140 (acc. to IEC)
Quick-connect terminals: 18AWG solid or stranded solder-dipped, fixing clips for wall thickness 1.4–2mm (0.055–0.079"), with slot insertion
For screw rings 26, 38, 50mm (1.024, 1.496, 1.969") dia.
Weight: 14.2g, packing qty.: 250 pcs.
Type: 84175 system 165
Ref. No.: 108608 white
Ref. No.: 108614 grey

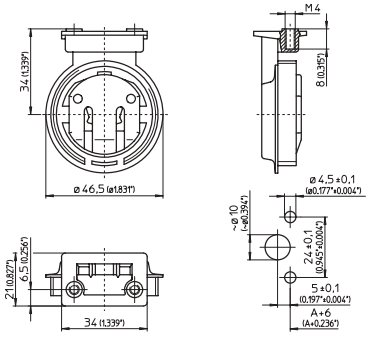


Foot gaskets
For lampholder systems 163, 164, 165
Weight: 0.34/0.75g
For degree of protection: IP65
Material: cellular rubber
Type: 98004
Ref. No.: 108267
For degree of protection: IP67
Type: 98011
Material: silicone, clear
Ref. No.: 504078

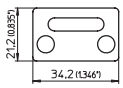




Lampholder for T8 and T12 lamps
Casing: PC, interior part: PBT GF, T140 (acc. to IEC)
Quick-connect terminals: 18AWG solid or stranded solder-dipped, screw fixing foot with tapped holes for #8 screws (M4)
For screw rings 26, 38, 50mm (1.024, 1.496, 1.969") dia.
With slot insertion
Weight: 13.7g, packing qty.: 250 pcs.
Type: 84105 system 152
new>> **Ref. No.: 521123** white



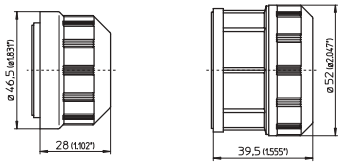
Foot gasket for degree of protection IP65/IP67
For lampholder system 152
Material: EPDM, black
Weight: 1.4g, packing qty.: 1000 pcs.
Type: 98085
new>> **Ref. No.: 106094**



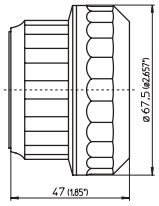
Screw Rings for Moisture and Dust Resistant Lampholders for Medium Bi-pin Fluorescent Lamps T8, T12

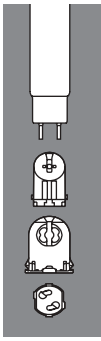
Screw Rings for Medium Bi-pin Fluorescent Lamps T8, T12 and Protection Tube 38mm (1.496") dia.

Screw rings for systems 152, 161, 162, 163, 164, 165
Material: PBT GF, gasket: silicone
Weight: 17/20g, packing qty.: 500/250 pcs.
Type: 84122 for lamps 26mm (1.024") dia.
Ref. No.: 103709 grey
Ref. No.: 103710 white
Type: 84123 for lamps 38mm (1.496") dia. or for lamps 26mm (1.024") dia. with protection tube 38mm (1.496") dia.
Ref. No.: 103711 grey
Ref. No.: 103712 white



Screw rings for systems 161, 162, 163, 164, 165
For protection tube 50mm (1.969") dia.
Material: PBT GF
Gasket: EPDM
Weight: 43g, packing qty.: 125 pcs.
Type 84159
Ref. No.: 103749 grey
Ref. No.: 103750 white



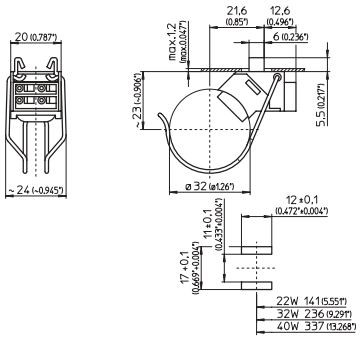


new>>

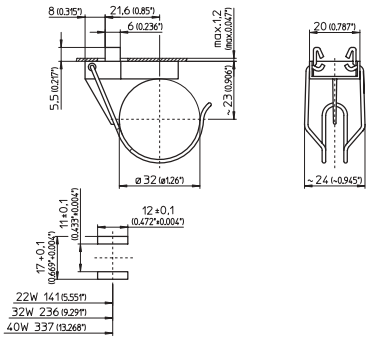
G10q Lampholder for Circline Fluorescent Lamps T-R9, Accessories

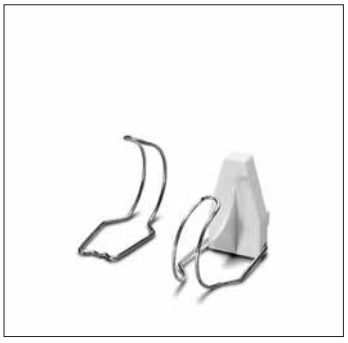
Degree of protection: IP20
All products in this chapter carry a T rating of T110 acc. to IEC standards

G10q snap-in lampholder
Casing: PC, white
Lamp shackle: spring steel, tinned
Nominal rating: 660W/600V
Quick-connect terminals: 18AWG solid or stranded solder-dipped
Lamp axis: 23mm (0.906")
Snap-in foot for wall thickness up to 1.2mm (0.047")
Weight: 9g, packing qty.: 500 pcs.
Type: 40100
Ref. No.: 101528



Lamp support
For lampholder 101528, casing: PC, white
Lamp shackle: spring steel, tinned
Lamp axis: 23mm (0.906")
Snap-in foot for wall thickness up to 1.2mm (0.047")
Weight: 4/2g, packing qty.: 500 pcs.
Type: 40150 lamp support
Ref. No.: 101532
Type: 94113 lamp shackle, suspendable
Ref. No.: 104835



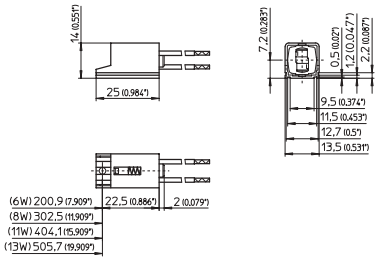


W4.3x8.5d Lampholders for Subminiature Fluorescent Lamps T2

Degree of protection: IP20
Mounting hole: 2.6mm (0.102") dia.
Additional lead lengths upon request
Mounting distance varies for different lamp wattages (see drawing)

The products in this chapter carry a T rating of T110 acc. to IEC standards

W4.3x8.5d flush-mount lampholders for T2 lamps
Casing: PC, white, nominal rating: 75W/600V
Leads: 20AWG, stranded conductor, PVC insulation, ferrule on bare end of core
Spring supported insert for reliable contact
Weight: 9g, packing qty.: 500 pcs.
Type: 09010
Ref. No.: 509253 lead length: 450mm (17.7")
new>> **Ref. No.: 509254** lead length: 800mm (31.5")

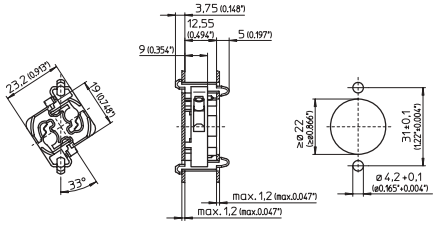


Starterholders

For Starters (acc. to IEC 60155)

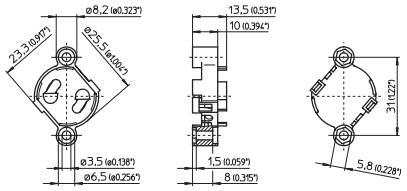
Nominal rating: 660W/250V
Degree of protection: IP20
All products in this chapter carry a T rating of T110 acc. to IEC standards

Snap-in starterholder
Material: PC, white
Quick-connect terminals: 18AWG solid
Front and base split pins for wall thickness up to 1.2mm (0.047")
Degree of protection starterholder foot/ luminaire: IP40
Weight: 2.7g, packing qty.: 1000 pcs.
Type: 02110
Ref. No.: 109784



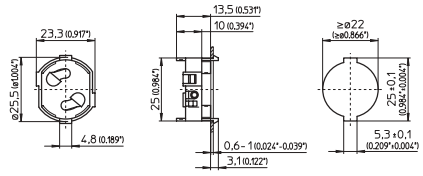
c UL us
E100358

Flush-mount starterholder
Material: PC, white
Quick-connect terminals: 18AWG
Mounting holes for #4 screws (M3)
Weight: 4g, packing qty.: 1000 pcs.
Type: 02150
Ref. No.: 100069

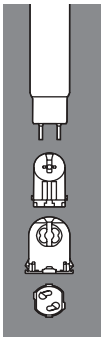


c UL us
E100358

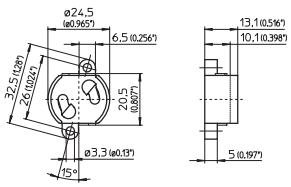
Snap-in starterholder
Material: PC, white
Quick-connect terminals: 18AWG
Front fixing clips for wall thickness 0.6–1mm (0.024–0.039")
Weight: 3.1g, packing qty.: 1000 pcs.
Type: 02170
Ref. No.: 106818



c UL us
E100358

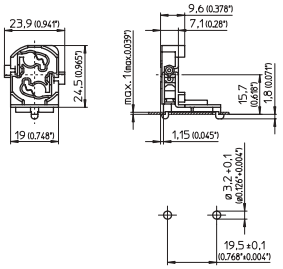


Flush-mount starterholder
Material: PC, white
Quick-connect terminals: 18AWG
Mounting holes for #4 screws (M3)
Weight: 3.7g, packing qty.: 1000 pcs.
Type: 43100
Ref. No.: 101631

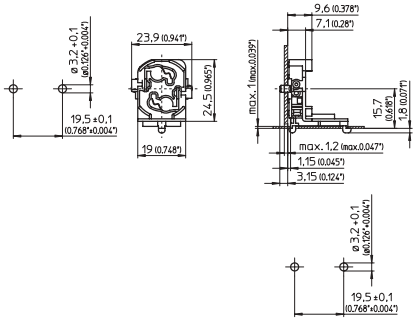


c UL us
E100358

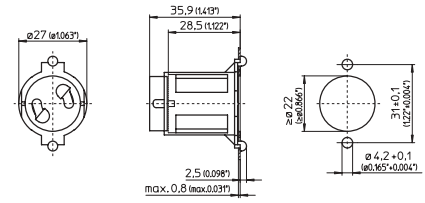
Snap-in starterholder
Material: PC, white
Quick-connect terminals: 18AWG solid
Lateral split pins for wall thickness up to 1mm (0.039")
Degree of protection
starterholder foot/luminaire: IP40
Weight: 3.7g, packing qty.: 1000 pcs.
Type: 43200
Ref. No.: 109790



Snap-in starterholder
Material: PC, white
Quick-connect terminals: 18AWG solid
Rear split pins for wall thickness up to 1.2mm (0.047")
Lateral split pins for wall thickness up to 1mm (0.039")
Degree of protection
starterholder foot/luminaire: IP40
Weight: 3.7g, packing qty.: 1000 pcs.
Type: 43210
Ref. No.: 109792



Snap-in starterholder
Material: PC, white
Quick-connect terminals: 18AWG
Front split pins for wall thickness up to 0.8mm (0.031")
Weight: 6g, packing qty.: 1000 pcs.
Type: 43300
Ref. No.: 101636

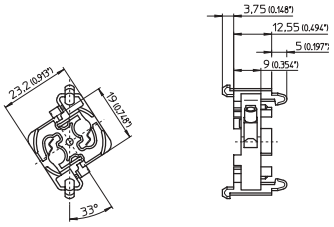


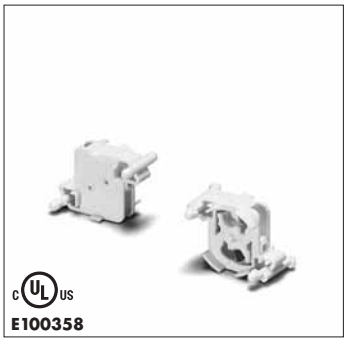
Starterholders and Accessories for Moisture and Dust Resistant Luminaires

For Starters (acc. to IEC 60155)

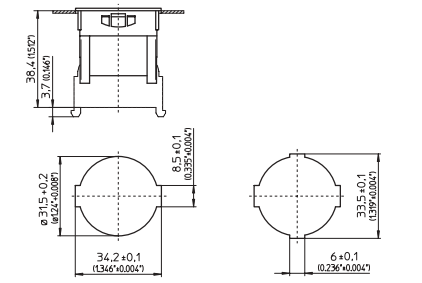
Degree of protection: IP20
Sealing screw cap/luminaire casing: IP67
T rating in this chapter refers to IEC standards

Starterholder
Casing: PC, white, T110 (acc. to IEC)
Nominal rating: 660W/250V
Quick-connect terminals: 18AWG solid
Front split pins for extension piece 105482
for wall thickness up to 1.2mm (0.047")
Weight: 2.7g, packing qty.: 1000 pcs.
Type: 02111
Ref. No.: 109785





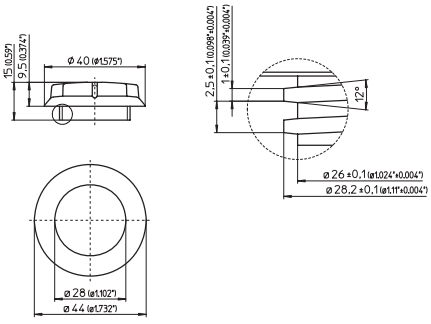
Snap-in extension piece
For use with starterholder 109785
For screw caps 97065
Material: PC, white
For snap into the luminaire
Weight: 3g, packing qty.: 500 pcs.
Type: 97064
Ref. No.: 105482

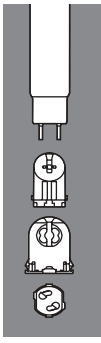


Cut-out for wall thickness:
0.7–1.2mm (0.028–0.047")

Cut-out for wall thickness:
1.5–2mm (0.059–0.079")

Screw caps for degree of protection
IP54/IP65/IP67
For extension piece 105482
Material: PP, gasket: EPDM cellular rubber
Weight: 3/0.3g, packing qty.: 500 pcs.
Type: 97065 screw cap
Ref. No.: 105483 white
Ref. No.: 109575 grey
Ref. No.: 105484 black
Type: 98086 gasket
Ref. No.: 106095





Technical Details for Components for Fluorescent Lamps – Compact and Linear

Electronic Ballasts for Fluorescent Lamps

All VS electronic ballasts are Underwriters Laboratories (UL) listed, Class P, Type 1 CSA or cUL certified (where applicable). Ballasts meet FCC standard for EMI/RFI (FCC 47CFR Part 18 Non-consumer), ensuring suitability for both commercial and industrial installations. Ballasts comply with applicable ANSI/IEEE standards/guides for harmonic distortion and line voltage transient protection. All ballasts have an audible noise rating of Class A. Leaded and connector style ballasts are color-coded to ANSI standard C82.11 (where applicable).

Assembly Instructions for Mounting and Installing Electronic Ballasts for Fluorescent Lamps

Ballasts should be installed and operated in compliance with the National Electric Code (NEC), Underwriters Laboratories Inc. (UL) requirements, and all applicable codes and regulations.
As it is possible to come in contact with potentially hazardous voltages, only qualified personnel should perform ballast installation. All installation, inspection, and maintenance of the ballast should be done with the power to the luminaire turned off.

All Vossloh-Schwabe ballasts contain inherent electrical protection. Although there is no need to externally fuse the ballast, should code or regulation require one, 3 amp slow-blow fuses are recommended.

Ballast operating characteristics

Vossloh-Schwabe electronic ballast employ a programmed method of starting fluorescent lamps where cathode heat is applied prior to lamp ignition, then removed or reduced once the lamp has ignited. EXUr type ballasts maximize the number of lamp starting cycles while maintaining energy efficiency. This is the preferred mode of lamp starting for applications with occupancy sensors or several ON/OFF cycles per day. Additionally, the lamps will strike reliably in cold conditions down to –20°C (–4°F).

- Ballasts operate lamps at frequencies above 20kHz and lamps have no detectable flicker.
- Ballasts operate on 60 or 50Hz input source ±10% nominal ballast line voltage.
- All Vossloh-Schwabe ballasts are universal voltage (120–277V) ballasts.
- Ballasts have total harmonic distortion of <10%.
- Ballasts provide lamp starting conditions and operating parameters consistent with all major lamp manufacturers' recommendations.
- All Vossloh-Schwabe ballasts operate lamps in series.
- All Vossloh-Schwabe ballasts have dynamic end-of-lamp life sensing helping protect against overheated lamp bases and lampholders.
- Ballasts have internal electrical protection to prevent catastrophic failure.

Grounding — The ballast case and luminaire must always be grounded. The grounding helps assure safety, proper lamp starting, and acceptable EMI/RFI performance. Install ballast in accordance with national and local electrical codes.

Lamp current crest factor (LCCF)

The ratio of peak lamp current to the RMS (average) lamp current.
Lamp manufacturers require a LCCF of less than 1.7 in order to achieve full lamp life.
Values less than 1.7 may not achieve higher than rated lamp life.

Lamp flicker — High frequency electronic ballasts provide a minimal level of lamp flicker.
Lamp flicker from magnetic ballasts may cause eye fatigue for some people.

Assembly Instructions for Mounting and Installing Electronic Ballasts for Fluorescent Lamps

Power factor
A measure of the effectiveness with which an electrical device converts volt-amperes to watts; devices with power factors (>0.90) are "high power factor" devices.

Total harmonic distortion (THD)
THD is a measure of the distortion of an electrical wave form. Excessive THD (defined by ANSI as greater than 32%) may cause adverse effects to the electrical system. <20% THD ballasts are fine for most applications. However, in buildings with neutral problems caused by high THD loads such as computers, printers, DC supplies, etc., the <10% THD products can help reduce the overall % of total harmonic distortion.

K-Factor
A measurement that quantifies the effect of non-linear equipment, such as lighting ballasts, on an electrical system. Lighting systems should be designed so that the transformer rating is sufficient for the ballasts used (typically K-Factor <4).
All Vossloh-Schwabe ballasts meet this specification.

EMI/RFI
Electronic ballasts contain circuits that limit electrical noise conducted onto the power line or radiated through the air, otherwise referred to as EMI/RFI.
Vossloh-Schwabe ballasts comply with FCC 47 CFR Part 18, non-consumer limits for commercial applications.
Ballasts for residential applications must meet consumer limits.

Transient protection
Vossloh-Schwabe ballasts meet ANSI 62.41 Category A. This helps ensure immunity to electrical disturbances such as power line transients and temporary line voltage dropouts, surges and sags.

Maximum case temperature
All EXUr electronic ballasts have a maximum allowable case temperature as stated on the ballast. Applications in which the case temperature exceeds this maximum void all warranties.

Remote mounting
The mounting distance between the lamp and the electronic ballast is limited. With an increase in distance the capacitance of the lead wires increases. If the capacitance is too high there will not be sufficient voltage to ignite the lamp. The increase of capacitance will also cause a decrease in current and a lower lumen output.
Maximum remote mounting distances for all types of VS electronic ballast for CFL and linear lamps shown below. All values are listed for ballast operating with full lamp load.

Ballasts	Red meters (feet)	Orange meters (feet)	Blue meters (feet)	Brown meters (feet)	Light Blue meters (feet)	Yellow meters (feet)
EXUr 213.009	5 (16.4)		5 (16.4)			5 (16.4)
EXUr 254.008	5 (16.4)		5 (16.4)			5 (16.4)
EXUr 454.007*	1.8 (6)	5 (16.4)	5 (16.4)	1.8 (6)	5 (16.4)	5 (16.4)
EXUr 218.006	5 (16.4)		5 (16.4)			5 (16.4)
EXUr 142.005	5 (16.4)		5 (16.4)			5 (16.4)
EXUr 242.000	5 (16.4)		5 (16.4)			5 (16.4)

* Data for EXUr 454.007 is preliminary data.

Metal-clad cable and conduit may significantly increase the capacitance of the lead wires and reduce the length at which the lamps will ignite and functionally properly. Please consult with VS for any concerns regarding remote mounting.

Technical Details for Components for Fluorescent Lamps – Compact and Linear

Assembly Instructions for Mounting and Installing Electronic Ballasts for Fluorescent Lamps

Potting compound
Vossloh-Schwabe ballasts are partly encapsulated with potting compound or employ the use of thermally conductive tape. This ensures thermal as well as structural integrity. Ballasts without potting compound or thermally conductive tape may have lower maximum allowable case temperature and if not properly thermally designed may shorten ballast life.

Ballast life
EXUr ballasts are designed to have a life expectancy of 50,000 hours. To maximize life, ambient temperature should be kept as low as possible. It is also important to maintain effective dissipation of heat using the luminaire body as a heat sink for the ballast enclosure.

Audible noise (sound)
All fluorescent lamp ballasts produce some noise. Vossloh-Schwabe brand ballasts are sound rated A and are acceptable for most applications. Care should be taken when mounting the ballast to reduce vibration.

Polychlorinated Biphenyls
This material, formerly used in ballast capacitors, is now considered hazardous and disposal is regulated. A ballast should be assumed to contain polychlorinated biphenyls unless stated otherwise on the ballast label (contact manufacturer for confirmation). Vossloh-Schwabe ballasts do not contain polychlorinated biphenyls.

Warranty

For detailed information please refer to the chapter "General Technical Details" on page 215 to 216.

Installations with Electromagnetic Ballasts

Electromagnetic (inductive) ballasts are electrical components which generate vibrations in the 100 to 500Hz and above 1000Hz frequency. VS ballasts are normally inaudible as the hum frequency wave length has been optimized. Since, however, the vibrations can be transmitted via the large contact surface to the luminaire sheet metal, the luminaire designer should reinforce this area, where the ballast is mounted, to ensure proper dispersion of the vibrations.

The service life of an inductive ballast depends on the durability of the coil insulation.
The coil temperature limits designate the temperature (tw) which the insulation, operated in a typical 12 hour day and within rated conditions, withstands for 10 years. Marked tw 130, electromagnetic ballasts from Vossloh-Schwabe are assured of a long life.

Every inductive ballast has some leakage current which is discharged via the ground conductor.
The maximum permitted leakage current is 0.5mA per ballast and all Vossloh-Schwabe ballasts fall well short of this. Since the values accumulate with the number of installed ballasts, this should be taken into account when calculating the effect of the lighting installation.

Connecting Terminals on Electromagnetic Ballasts

Electromagnetic ballasts from Vossloh-Schwabe are supplied as standard with quick-connect terminals. These are approved for solid conductors with cross sections of 0.5 to 1mm^2/18AWG and for a current load of 3A (strip length 8±1mm). In order to maximize the possibilities of highly efficient automation using the ALF system, many designs are also available with IDC terminals (0.5mm^2/2A) and quick-connect terminals. Furthermore, many types can be equipped upon request with screw terminals for conductor cross sections of 0.5 to 2.5mm^2 (14–20AWG, current load 10A).

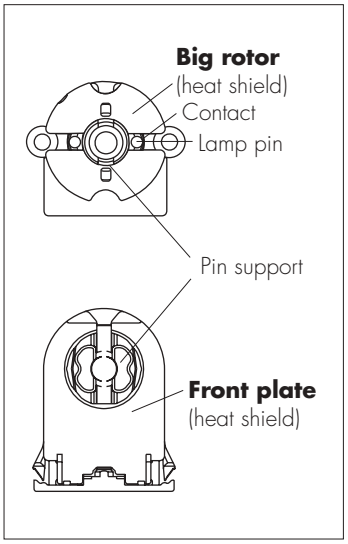
Remarks on Starters

In order to start fluorescent lamps operated with an inductive ballast, starters are required. A distinction is made between standard glow starters, which are also available with automatic switch-off, and electronic starters. It is important to choose the right voltage and power range. Starters are available for 220–240V and 110–127V line voltage. The latter are also required for twin-lamp operation (e.g. 2x18W run on 230V).

Technical Details for Components for Fluorescent Lamps – Compact and Linear

Lampholders for Compact Fluorescent Lamps

Vossloh-Schwabe produces the majority of lampholders for compact fluorescent lamps using PBT, a thermoplastic material. This highly heat resistant material is responsible for the T140 temperature rating acc. to IEC. Leading lamp manufacturers also use PBT for the lamp bases they produce. This material matching in conjunction with fatigue-free, stainless steel lamp mounting springs ensure a secure lamp fit. Some of these lampholders are available with internally shunted contacts for use with instant-start ballasts.



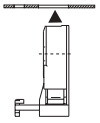
Lampholders for Linear (Double-ended) Fluorescent Lamps

VS lampholders for linear fluorescent lamps are characterized by a number of technical features that guarantee a high degree of reliability and safety. The big rotor is made partly of extremely heat resistant PBT, which has temperature rating of T140 (acc. to IEC). This rotor act as a shield against the heat of the lamp base. In addition, Vossloh-Schwabe produces another series of integrated rotor lampholders with a complete front plate is made of PBT. These lampholders also boasts a temperature rating of T140 acc. to IEC. The second key feature of both lampholders is a highly effective lamp pin support that reliably prevents base pin deflection even on older lamps and guarantees a durable and firm contact. Many of these lampholders are available with internally shunted contacts for use with instant-start ballasts.

Push-through/Slide-on Lampholders

Push-through lampholders are inserted easily from below through a cut-out in the lampholder panel and are held by lateral fixing clips. Slide-on lampholders have slots at the side that fit into standard panel gauges. Both lampholder types have an additional support below the lampholder panel which gives the lampholder a spring-like function and ensures that the front of the lampholder is always in contact with the lamp base (lamp length tolerance compensation). This guarantees a safe and reliable mechanical fixation and electrical connection of lamp and lampholder. The push-through lampholder are also available with stop. This ensures that the lampholder does not loosen during assembly of the panel.

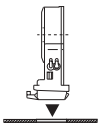
Push-through Lampholder



Snap-in Lampholders

This lampholder type, which is frequently found in surface-mounted ceiling and built-in luminaires, is pushed into the luminaire casing from above. The lampholder foot should protrude by no more than 4mm (0.157") to match the usual height of the spacing cams in the luminaire casing. These lampholders are mostly wired above the luminaire casing to the side of the lampholder. However, there are also lampholders on which the wiring runs through the lampholder foot, with the leads laid beneath the luminaire casing.

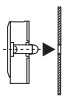
Snap-in Lampholder



Butt-on Lampholders

This design is also predominantly used for recessed ceiling and surface-mounted luminaires. However, unlike snap-in lampholders, butt-on lampholders are usually fitted at the ends of the luminaire boxes. In addition to the usual fixing with split pins attached to the rear, there are also countless versions with fixing clips, push-fit studs or screw-in holes, which are also available with spring-loaded lamp length compensation.

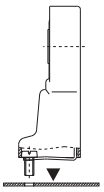
Butt-on Lampholder



Flush-mount Lampholders

The fastening system of flush-mount lampholders usually consists of screws or rivets above a fixing level, along which the wiring is also laid. As this type of installation is usually too costly nowadays for large unit numbers, these lampholders are used almost exclusively for special applications, e.g. displays or illuminated advertisements.

Flush-mount Lampholder



Key to Lamp Designations

TC-S	Tubular Compact-Single
TC-SEL	Tubular Compact-Single Electronic
TC-D	Tubular Compact-Double
TC-DEL	Tubular Compact-Double Electronic
TC-T	Tubular Compact-Triple
TC-TEL	Tubular Compact-Triple Electronic
TC-Q	Tubular Compact-Quad
TC-QEL	Tubular Compact-Quad Electronic
TC-DD	Tubular Compact-Double D-Shape
TC-L	Tubular Compact-Long
TC-F	Tubular Compact-Flat
T2 (T7)	Tubular Ø 2/8" (7mm)
T5 (T16)	Tubular Ø 5/8" (16mm)
T8 (T26)	Tubular Ø 8/8" (26mm)
T12 (T38)	Tubular Ø 12/8" (38mm)
T-U	Tubular, U-Shape
T-R	Tubular, Ring-Shape (circular)
T-R5 (T-R16)	Tubular, Ring-Shape Ø 5/8" (16mm) (circular)

Technical Details for Components for Fluorescent Lamps – Compact and Linear

Explanation of the IP Numbers for the Degrees of Protection in Accordance with DIN IEC 60598/VDE 0711

IP20 generally applies to T and TC lampholders whose protection class is not specified.

Code	1. Code		Brief description	Brief explanation of which foreign bodies must not be permitted to penetrate the casing.
	2. Code		Brief description	Details on the protection to be provided by the casing.
IP20	1. Code	2	Protected against foreign bodies	Fingers or similar foreign bodies up to 80mm in length, solid foreign bodies larger than 12mm in diameter.
	2. Code	0	Unprotected	No special protection.
IP...1	2. Code	1	Drip-proof	The device must be protected against damage due to dripping water (vertically falling drops).
IP...3	2. Code	3	Spray-proof	The device must be protected against damage due to water being sprayed against the vertical plane at angles of up to 60°.
IP...4	2. Code	4	Splash-proof	The device must be protected against damage due to water splashing against the casing from any given direction.
IP...5	2. Code	5	Jet-proof	The device must be protected against damage due to jets of water being shot against the casing by a nozzle from any given direction.
IP...7	2. Code	7	Immersion-proof	The device must be protected against water entering in damaging quantities if the casing is immersed in water under predefined conditions regarding pressure and time.
IP...8	2. Code	8 ...m	Submersion-proof	The device is suitable for long-term submersion in water. The conditions are to be specified by the manufacturer.
IP4...	1. Code	4	Protected against solid foreign bodies larger than 1mm	Wires or strips thicker than 1mm, solid foreign bodies larger than 1mm in diameter.
IP5...	1. Code	5	Dust-protected	Dust is not completely protected from entering, but dust cannot enter in large enough quantities to hinder normal operation of the device.
IP6...	1. Code	6	Dust-proof	Dust is prevented from entering the device.

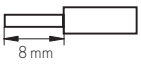
Connecting Terminals

In the production of its connecting terminals, Vossloh-Schwabe attaches importance to the use of high-grade materials for plastic and metal parts to ensure a firm contact and a long component life. These quality features apply both to the luminaire connecting terminals from Vossloh-Schwabe and to the terminals on ballasts and lampholders.

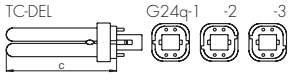
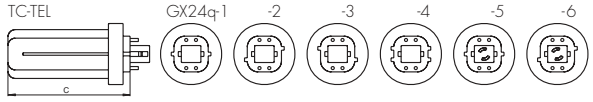
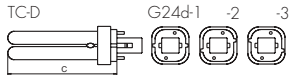
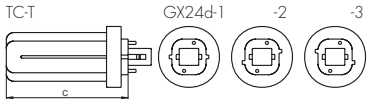
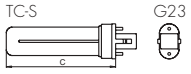
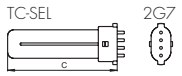
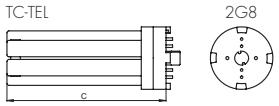
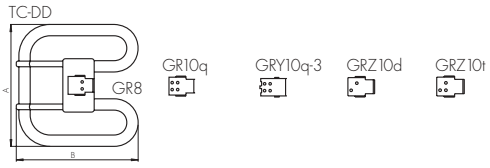
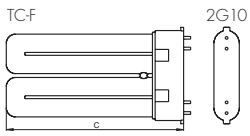
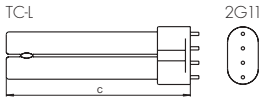
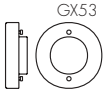
Connecting Terminals on Lampholders

Vossloh-Schwabe usually equips lampholders for linear and compact fluorescent lamps and starter lampholders with installation-friendly quick-connect terminals for solid conductors from 0.5 to 1mm²/18AWG.
The majority of lampholders have quick-connect twin terminals and thus permit through-wiring.
The required wire stripping length is 8^{+1}mm (0.315") on all types.

Stripping the conductor for quick-connect terminals 0.5–1mm²/18AWG

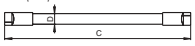
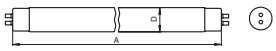
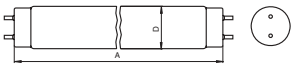
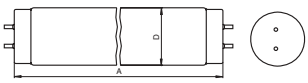


Lamp Table – Fluorescent Lamps

Lamp type/lamp base	Base	Output (W)	Max. length (C) acc. to IEC	
	G24q-1	10 13	95 130	
	G24q-2	18	140	
	G24q-3	26	160	
	GX24q-1	13	90	
	GX24q-2	18	110	
	GX24q-3	26 32	130 145	
	GX24q-4	42	155	
	GX24q-5	57	181 *	
	GX24q-6	70	178 *	
	G24d-1	8 10 13	73 * 95 130	
	G24d-2	18	140	
	G24d-3	26	160	
	GX24d-1	13	90	
	GX24d-2	18	110	
	GX24d-3	26	130	
	G23	5 7 9 11	85 115 145 215	
	2G7	5 7 9 11	85 115 145 215	
	2G8	60 85 120	167 * 208 * 285 *	
			A	B
	GR8	16 28	138 205	141 207
	GR10q	10 16 21 28 38	92 138 138 205 205	95 141 141 207 207
	GRY10q-3	55	205	205 *
	GRZ10d	18	137	141
	GRZ10t	30	202	206
	2G10	18 24 36	122 165 217	
	2G11	18 24 34 36 40 55 80	225 320 533 * 415 535 535 565	
	GX53	7		

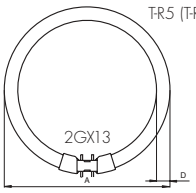
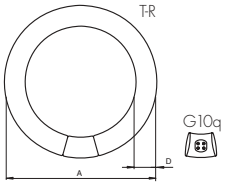
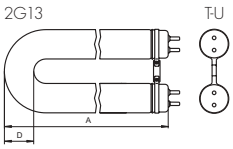
*not yet included in IEC standard

Lamp Table – Fluorescent Lamps

Lamp type/lamp base	Base	Output (W)	Ø D (mm)	Length A/C (mm) acc. to IEC 60081/ 60901 (for circular lamps B)
T2 (T7)  W4,3	W4.3x8.5d	6	7	219.3
		8	7	320.9
		11	7	422.5
		13	7	524.1
T5 (T16)  G5	G5	4	16	135.9
		6	16	212.1
		8	16	288.3
		13	16	516.9
		14	16	549.0
		21	16	849.0
		24	16	549.0
		28	16	1149.0
		35	16	1449.0
		39	16	849.0
		49	16	1449.0
		54	16	1149.0
		80	16	1449.0
T8 (T26)  G13	G13	10	26	470.0 *2
		14	26	360.0 *2
		15	26	437.4
		16	26	589.8
		16	26	720.0 *2
		18	26	589.8
		20 *1	26	438.0
		20	26	589.8
		23	26	970.0
		30	26	894.6
		32	26	1199.4
		33	26	1149.0
		34	26	1047.0
		36	26	1199.4
		36	26	970.0 *2
		38	26	1047.0
		50	26	1500.0
		58	26	1500.0
		70	26	1763.8
T12 (T38)  G13	G13	20	38	589.8
		25	38	970.0
		30	38	894.6
		40	38	1199.4
		65	38	1500.0
		75	38	1763.8
		80 *1	38	1500.0
		85	38	2374.3
		85 *1	38	1763.8
		100	38	2374.3
		100 *1	38	1800.0
		115	38	1200.0
		125	38	2374.3
		140	38	1500.0
		140 *1	38	1800.0
		160 *1	38	1800.0

*1 UV solarium lamps

*2 not yet included in IEC standard

Lamp type/lamp base	Base	Output (W)	Ø D (mm)	A (mm)
	2GX13	22 40 55 60	16 16 16 16	230* 305* 305* 379*
	G10q	22 32 40 60	28 30 30 30	215.9 311.2 412.8 408.8
	2G13-92	18 36 58	26 26 26	304* 566, 601* 566, 759*

* not yet included in IEC standard

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