LIGHTING SOLUTIONS

VS LIGHTING SOLUTIONS

for Professional Appliances

CATALOGUE 2024/25

Vossloh-Schwabe

Vossloh-Schwabe is not merely a provider of top-quality system solutions for the lighting industry, but above all makes a competent and innovative contribution to setting market trends in the field of lighting for professional appliances.

Employing approximately 800 people in more than 20 countries, Vossloh-Schwabe is represented all over the world. VS can draw on extensive resources for R&D as well as for international expansion activities. A highly motivated workforce, comprehensive market knowledge, profound industry expertise as well as eco-awareness and environmental responsibility show Vossloh-Schwabe to be a reliable partner for the provision of optimum and cost-effective lighting solutions. Vossloh-Schwabe's dedication to delivering superior quality is reflected in its ISO 9001 certification.

CUSTOMISED SOLUTIONS

Your project, our solution
We collaborate with our customers and pay attention to their needs in order to develop customised lighting solutions. Whether the task involves the realisation of a single LED module or the creation of a turnkey system, our advanced R&D departments ensure the wishes of our customers come true.

R&D – ideas take shape
Our R&D departments are constantly engaged in testing new materials and innovative technologies in order to offer cutting-edge solutions to create optimum lighting conditions. Using product ideas provided by our customers as a basis, our R&D teams design bespoke solutions that suit the given requirements, that can later be finessed into detailed features and ultimately guide the implementation process to create the customised product.

One stop, one shop – In-house creation of complete products
We offer complete solutions that are made entirely within the Vossloh-Schwabe Group using perfectly matched components with very high efficiency ratings.

In-house photometric testing
All necessary photometric test can be carried out at VS. Cutting-edge equipment is used to measure all optical, chromatic and radiometric values as well as to carry out thermal simulations. These kinds of thermal and optical simulations can help to gear the development of a lighting solution to suit the respective customer specific applications at a very early stage in the planning process. The continuous monitoring process during every single project development step allows us to ensure top quality standards.

Know-how and global presence at your disposal
Using our experience and expertise, we carefully assist our customers – from first prototype production straight through to the final product. In addition, our consolidated production processes make for a highly flexible manufacturing service, enabling anything from just a few pieces right up to a mass production. Moreover, our widespread global presence reflects the importance we attach to staying close to both our customers and the market, which allows us to provide first-class customer and highly efficient logistics services.

www.vossloh-schwabe.com

Contacts

Market	Address	Phone / Email
EMEA Vossloh-Schwabe Italia S.p.A.	Via Strada S. Martino, 15 47027 Sarsina (FC), Italy	Office: +39 0547 98 111 vs-i@vossloh-schwabe.com
USA, Canada, Mexico Vossloh-Schwabe Italia S.p.A.	Via Strada S. Martino, 15 47027 Sarsina (FC), Italy	Office: +39 0547 98 111 vs-i@vossloh-schwabe.com
South America Panasonic do Brasil Limitada Guilherme Covas Frighetto Sales	Av. Do Cafe, 277 – Bloco – A, 8 andar – Jabaquara CEP: 04311-900 Sao Paulo, SP, Brasil	Office: +55 11 3889 4137 Mobile: +55 11 95968 9099 frighetto.guilherme@br.panasonic.com

Contents

LED Solutions

For Professional Ovens

OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Application field

For convection ovens

For in-store deck ovens

For combi ovens

For pizza ovens, industrial deck ovens

Assembly information

Cut-out Ø 35.5 mm / 1.398 in

Cut-out 55x70 mm / 2.165 x 2.756 in

Approvals

CE conformity

ENEC approved

UL recognized

Beam angle types

Narrow
Beams up to 30°

Medium
Beams up to 60°

Wide
Beams up to 90°

Extra Wide
Beams starting from 91°

ASYM
Asymmetrical beam

LED Line

Fixing plate

Colour rendering:	R_a > 80
Fixing:	screw mounting plate

IP20 CE

Application fields

Arvés

For door lighting

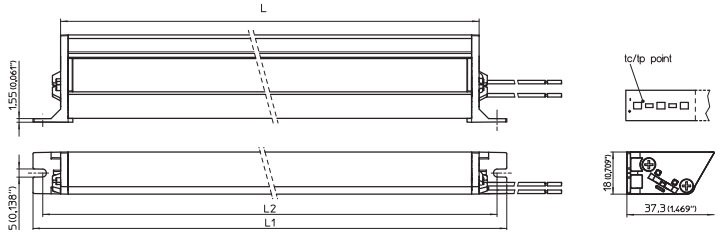
Lens material:	PC-HT, max. 140 °C (284 °F)
Casing material:	PC-HT, max. 140 °C (284 °F)
Fixing plates material:	PBT, max. 180 °C (356 °F)
Beam angle:	50°
Colour temperatures:	4000 K (3000 K on request)
t_c:	120 °C / 248 °F
Lumen maintenance:	L70/B50 5,000 hrs. (t_p = 110 °C / 230 °F)
Leads:	FEP 0.50 mm² / AWG21
Packaging unit:	45 pcs. (LO 013 330), 30 pcs. (LO 013 450), 20 pcs. (LO 013 720)

ASYM

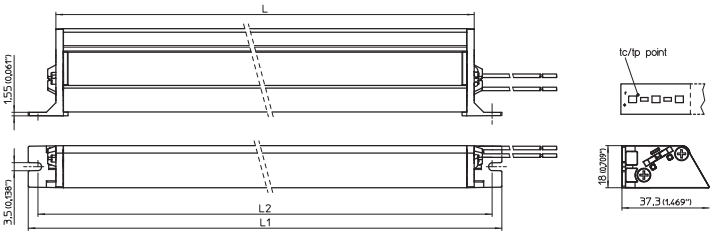
Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Power consumption (W)
LO 013 (330)	12 V	370	380	4.6
LO 013 (450)	12 V	500	525	6.3
LO 013 (720)	12 V	800	840	10

Tolerances of electrical and optical data: ±10%
Emission data at t_a = 25 °C / 77 °F (4000 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.

cable left side



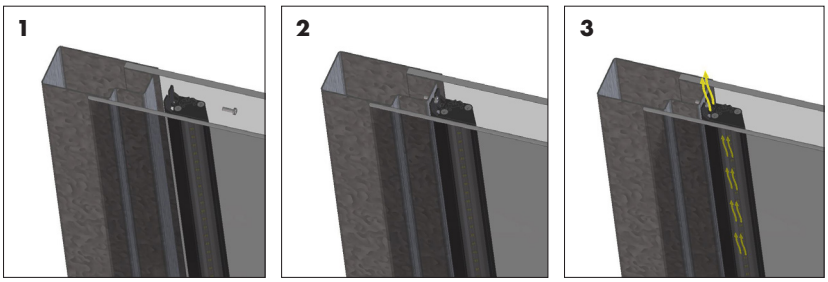
cable right side



	Length L		Length L1		Length L2	
	mm	inch	mm	inch	mm	inch
330	330	13.00	360	14.17	352	13.85
450	450	17.717	480	18.898	472	18.583
720	720	28.347	750	29.528	742	29.213

Mounting instructions

1. Fit the LED luminaire into position and fasten it with two screws onto the door beam.
2. With that firmly in place, connect the leads.
3. Make sure that the LED luminaire is skimmed by the air flow at proper temperature. The luminaire should never be in direct contact with the internal door glass.



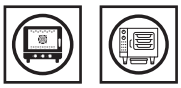
PROFESSIONAL OVENS

LED Line

Colour rendering:	Ra > 80
Fixing:	slot for screws M3

IP20 CE

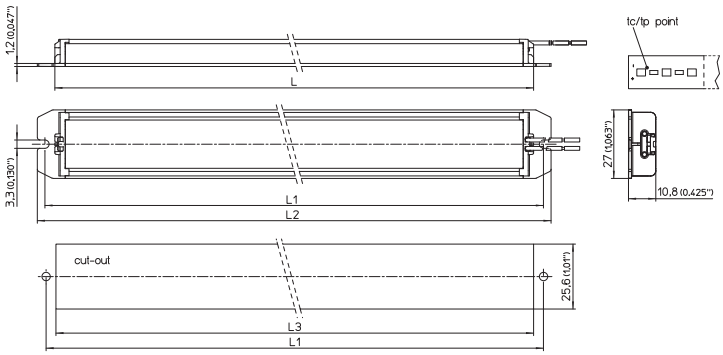
Application fields



AluTen

For door lighting

Diffuser:	Glass tempered
Casing material:	Aluminium
PCB material:	Aluminium
Fixing plates material:	PBT, max. 180 °C (356 °F)
Beam angle:	120°
Colour temperatures:	4000 K (3000 K on request)
t_c:	120 °C / 248 °F
Lumen maintenance:	L70/B50 5,000 hrs. (t_p = 110 °C / 230 °F)
Leads:	FEP 0.50 mm² / AWG21
EPREL Enery Label:	E
Leads length: 200 mm	
Packaging unit:	30 pcs (AluTen 110) 16 pcs (AluTen 210) 45 pcs (AluTen 330) 30 pcs (AluTen 450) 20 pcs (AluTen 720)

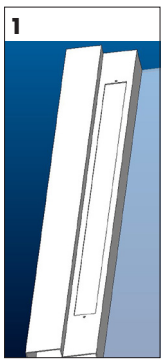


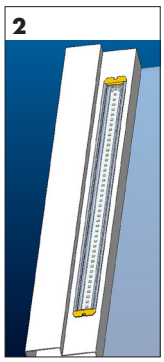
Type	Length L		Length L1		Length L2		Lenght L3	
	mm	inch	mm	inch	mm	inch	mm	inch
AluTen 110	118.7	4.65	126.5	5.0	132.5	5.2	119.5	4.7
AluTen 210	218.7	8.6	226.5	8.9	232.5	9.15	219.5	8.65
AluTen 330	338.7	13.3	366.5	14.4	372.5	14.6	339.5	13.3
AluTen 450	458.7	18.05	466.5	18.3	472.5	18.6	459.5	18.1
AluTen 720	728.7	28.7	736.5	29	742.5	29.2	729.5	28.7

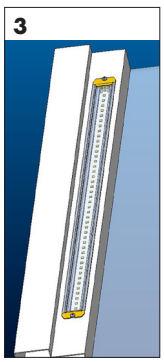
other length on request

Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Power consumption (W)
LO 024 (AluTen 110)	12 V	170	130	1.6
LO 024 (AluTen 210)	12 V	290	215	2.6
LO 024 (AluTen 330)	12 V	460	380	4.6
LO 024 (AluTen 450)	12 V	630	525	6.3
LO 024 (AluTen 720)	12 V	1020	830	10

Tolerances of electrical and optical data: ±10%
Emission data at t_a = 25 °C / 77 °F (4000 K)
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.







Mounting instructions

1. Fit the LED luminaire into cut-out and fasten it with two screws onto the door beam.
2. With that firmly in place, connect the leads.
3. Make sure that the LED luminaire is skimmed by the air flow at proper temperature. The luminaire should never be in direct contact with the internal door glass.

LEDSpots

For cut-out 35.5 mm / 1.398 in

Colour rendering:	R_a > 80
Fixing:	click-in

E501176

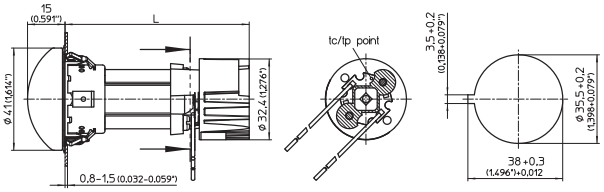
Application fields

steam kit required

Extreme O

For cavity lighting

Lens material:	frosted borosilicate glass
Beam angle:	90°
Colour temperatures	
LO 004:	3000 K or 4000 K
LO 001:	3000 K or 4500 K
t_c:	120 °C / 248 °F
Lumen maintenance:	L70/B50 5,000 hrs. (t_p = 110 °C / 230 °F)
Leads:	FEP 0.50 mm² / AWG21
Packaging unit:	45 pcs.



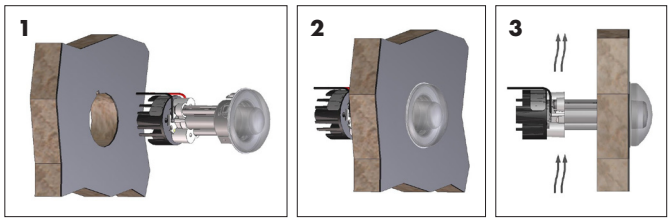
Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LO 004*	12 V	120	175	–	2.1
LO 001	700 mA	165	–	3.0	2.1
LO 001	1050 mA	225	–	3.0	3.3

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 85 °C / 185 °F (4000/4500 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.

Type	Length L	
	mm	inch
H74	73.80	2.90
H114	113.80	4.48

Mounting instructions

1. Push the LED spot into position until it clicks.
2. With that firmly in place, connect the leads.
3. Make sure that the LED oven lamp's heat sink is skimmed by the air flow at proper temperature.



PROFESSIONAL OVENS

LEDSpots

For cut-out 35.5 mm / 1.398 in

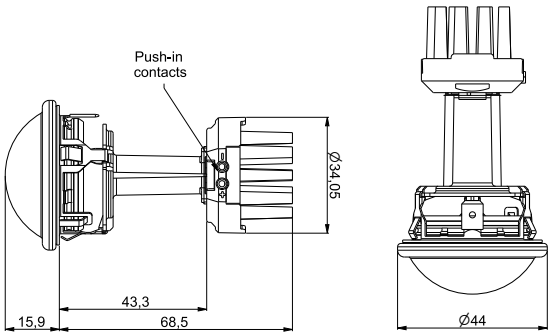
Colour rendering:	$R_a > 80$
Fixing:	click-in

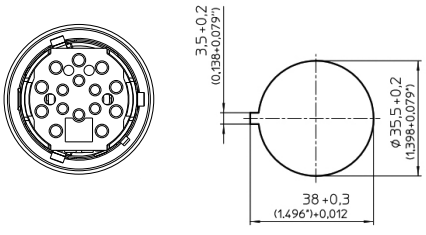
Application fields

EcoLED

For cavity lighting

Lens material:	frosted borosilicate glass
Beam angle:	70°
Colour temperatures	
LO 029:	4000 K
t_c:	120 °C / 248 °F
Lumen maintenance:	L60/B50 4,000 hrs. (t_p = 110 °C / 230 °F)
Connection:	Push-in terminals AWG20-AWG26 (leads on request)
Packaging unit:	45 pcs.





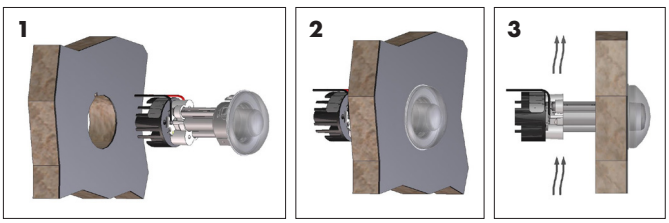
Type	Length L	
	mm	inch
H69	68,5	2.70

Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Power consumption (W)
LO 029	12 V	135	170	2.0

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 85 °C / 185 °F (4000 K)
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Mounting instructions

1. Push the LED spot into position until it clicks.
2. With that firmly in place, connect the leads.
3. Make sure that the LED oven lamp's heat sink is skimmed by the air flow at proper temperature.



LEDSpots

For cut-out 55x70 mm / 2.165x2.756 in

Colour rendering: R_a > 80
Fixing: click-in

*

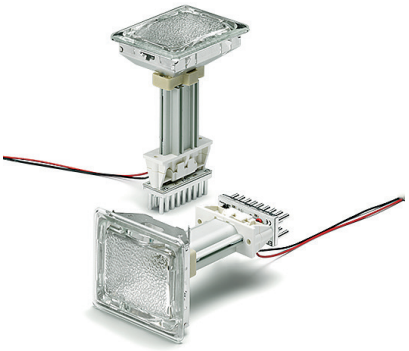
Application fields

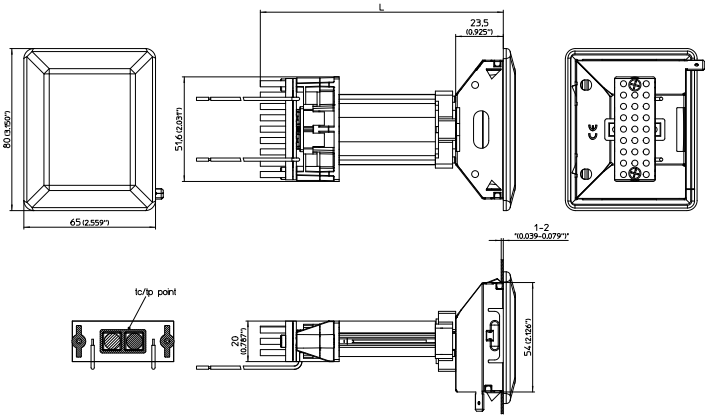
steam kit required

Extreme R2

For cavity lighting

Lens material: clear borosilicate glass (frosted glass on request)
Beam angle: 50°
Colour temperatures
LO 015: 3000 K or 4000 K
LO 021: 3000 K or 4500 K
t_c: 120 °C / 248 °F
Lumen maintenance: L70/B50 5,000 hrs. (t_p = 110 °C / 230 °F)
Leads: FEP 0.50 mm² / AWG21
Packaging unit: 18 pcs. (H120) / 30 pcs. (H150)





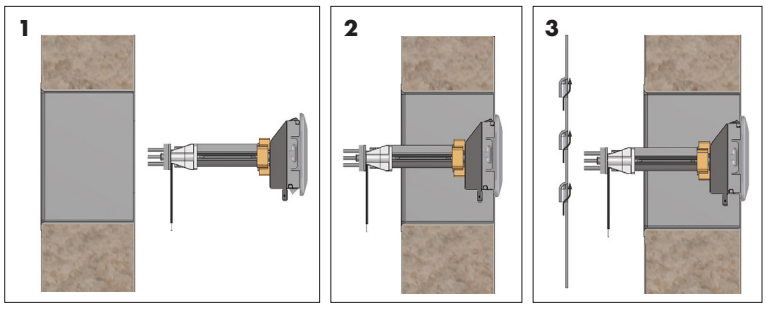
Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LO 015*	12 V	175	358	–	4.3
LO 021	700 mA	305	–	6.0	4.2

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 85 °C / 185 °F (4000/4500 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.
Please refer to LED engine replacement at page 13 on how to change the LED engine.

Type	Length L	
	mm	inch
H90	90	3.543
H100	100	3.937
H120	120	4.724
H150	150	5.906
H250	250	9.843

Mounting instructions

1. Push the LED spot into position until it clicks from the cavity side.
2. With that firmly in place, connect the leads.
3. Make sure that the LED spot's heat sink is skimmed by the air flow at proper temperature.

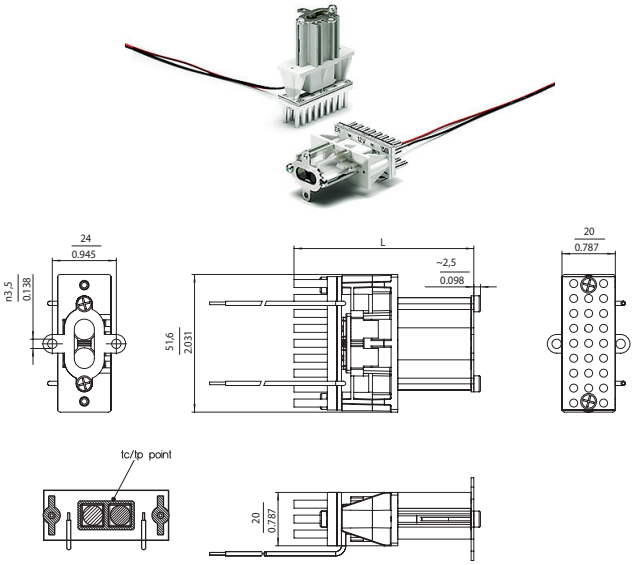


LEDSpots

For screw fixation

Colour rendering:	R_a > 80
Fixing:	holes for screws M3

Application fields



Type	Length L	
	mm	inch
H67	67.4	2.65
H87	87.4	3.44
H97	97.4	3.83
H117	117.4	4.62

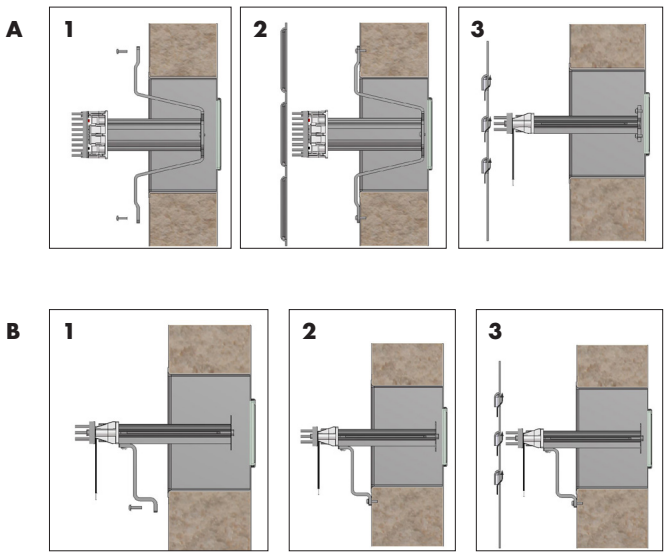
Extreme HT

For cavity lighting

Beam angle:	35°
Colour temperatures	
LO 022:	3000 K or 4000 K
LO 023:	3000 K or 4500 K
t_C:	120 °C / 248 °F
Lumen maintenance:	L70/B50 5,000 hrs. (t_p = 110 °C / 230 °F)
Leads:	FEP 0.50 mm² / AWG21
Packaging unit:	15 pcs. (H97) / 10 pcs. (H67)

Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LO 022*	12 V	215	358	–	4.3
LO 023	700 mA	315	–	6.0	4.2

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 85 °C / 185 °F (4000/4500 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.
Please refer to LED engine replacement at page 13 on how to change the LED engine.



Mounting instructions

1. Fit the metal support* into the LED spot's point of fixation with two screws.
2. Fasten the assembly at the oven cold wall with two screws.
3. Make sure that the LED spot's heat sink is skimmed by the air flow at proper temperature.

* Based on your specific requests you may choose between solution A or B.
The bracket for the mounting is not included.

LEDSpots

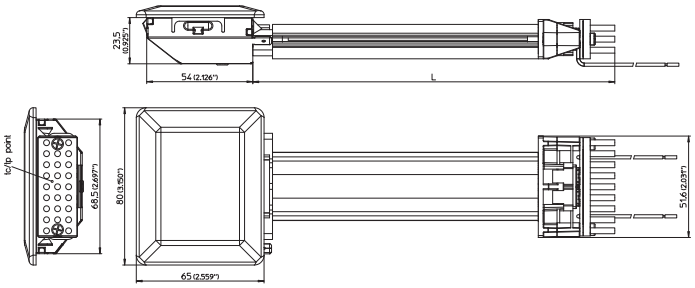
For cut-out 55x70 mm / 2.165x2.756 in

Colour rendering: R_a > 80
Fixing: click-in

Extreme RL

For cavity lighting

Lens material: frosted borosilicate glass (clear glass on request)
Beam angle: 60°
Colour temperatures
LO 010: 3000 K or 4000 K
LO 011: 3000 K or 4500 K
t_c max.: 120 °C / 248 °F
Lumen maintenance: L70/B50 5,000 hrs. (t_p = 110 °C / 230 °F)
Leads: FEP 0.50 mm² / AWG21
Packaging unit: 32 pcs. (H195) / 16 pcs. (H318)



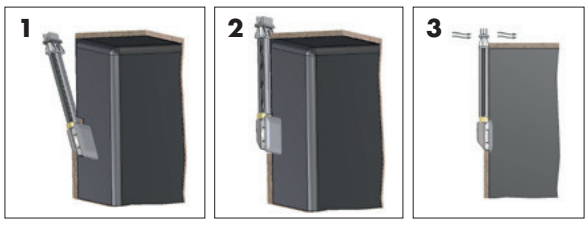
Type	Input supply	Typ. luminous flux (lm)	Typ. current mA	Typ. voltage V	Power consumption W
LO 010 (H195)	12 V	120	358	–	4.3
LO 010 (H318)	12 V	115	358	–	4.3
LO 011 (H195)	700 mA	170	–	6	4.2
LO 011 (H318)	700 mA	160	–	6	4.2

	Length L	
	mm	inch
H195	195	7.68
H318	316	12.44

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 85 °C / 185 °F (4000/4500 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.
Please refer to LED engine replacement at page 13 on how to changethe LED engine.

Mounting instructions

1. Push the LED oven lamp into position until it clicks.
2. With that firmly in place, connect the leads.
3. Make sure that the LED oven lamp's heat sink is skimmed by the air flow at a proper temperature.

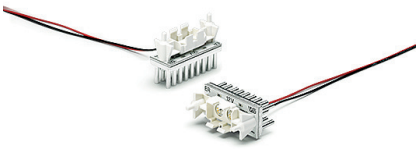


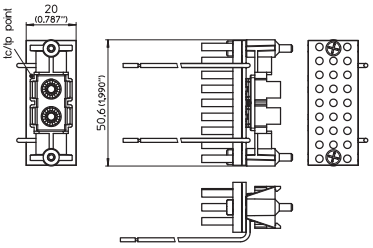
Accessories for LED Solutions

For replacement

Colour rendering:	R_a > 80
Fixing:	click-in

CE cULus*





LED Engine Replacement Extreme RK

For Extreme R2, Extreme HT and Extreme RL

Colour temperatures	
LO 017:	3000 K or 4000 K
LO 018:	3000 K or 4500 K
t_c:	120 °C / 248 °F
Lumen maintenance:	refer to Extreme R2 (p. 10), Extreme HT (p. 11) and Extreme RL (p. 12)
Leads:	FEP 0.50 mm² / AWG21
Packaging unit:	70 pcs.

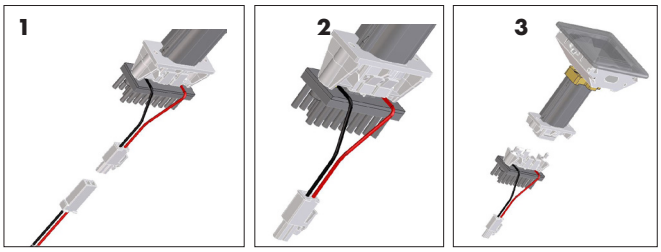
Type	Input supply	Power consumption (W)	Only compatible with
LO 017*	12 V	4.3	LO 015, LO 022, LO 010
LO 018	700 mA	4.2	LO 021, LO 023, LO 011

Tolerances of electrical data: ±10%
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.

Mounting instructions

In case of replacement, follow these steps to use Extreme R2, HT or RL again:

1. Disconnect the leads
2. Bend or break the little four wings and then pull the old engine
3. Push the new engine into postion until it clicks. With that firmly in place, connect the leads.



Lampholders

For Professional Ovens

OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Application field

For convection ovens

For in-store deck ovens

For combi ovens

For pizza ovens, industrial deck ovens

Approvals

CE conformity

ENEC approved

UL recognized

Assembly information

Cut-out Ø 35.5 mm / 1.398 in

Cut-out 55x70 mm / 2.165 x 2.756 in

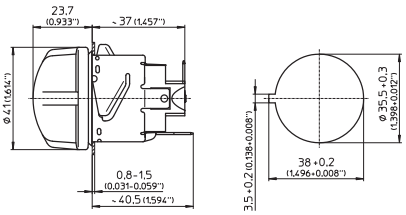
Lampholders

For cut-out 35.5 mm / 1.398 in

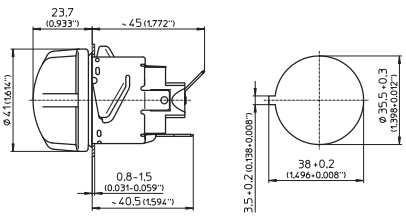
Nominal rating G9:	2/250
Nominal rating G4:	10/24
Contacts:	earth spade connector 6.3x0.8
Fixing:	click-in

Application fields

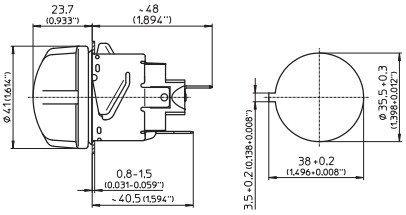
G9 Lampholders



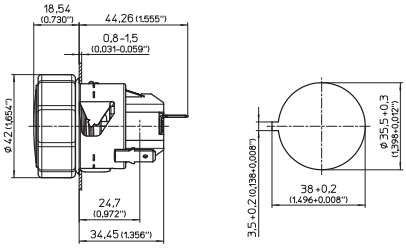
Temperature rating:	T350 (662 °F)
Housing material:	steatite
Lamp:	25 W/40 W
Lens:	soda-lime glass
Connection:	spade connectors
Packaging unit:	96 pcs.
Type:	**33850**



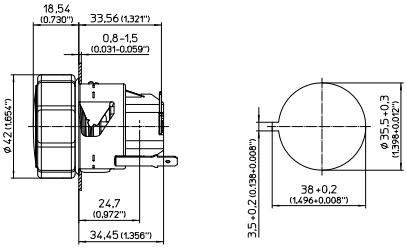
Temperature rating:	T350 (662 °F)
Housing material:	steatite
Lamp:	25 W/40 W
Lens:	soda-lime glass
Connection:	spade connectors
Packaging unit:	96 pcs.
Type:	**33855**



Temperature rating:	T350 (662 °F)
Housing material:	steatite
Lamp:	25 W/40 W
Lens:	soda-lime glass
Connection:	spade connectors
Packaging unit:	96 pcs.
Type:	**33860**



Temperature rating:	T300 (572 °F)
Housing material:	steatite
Lamp:	25 W/40 W
Lens:	soda-lime glass
Connection:	spade connectors
Packaging unit:	200 pcs.
Type:	**34410**



Temperature rating:	T300 (572 °F)
Housing material:	steatite
Lamp:	25 W/40 W
Lens:	soda-lime glass
Connection:	spade connectors
Packaging unit:	200 pcs.
Type:	**34415**

Lampholders

For cut-out 35.5 mm / 1.398 in

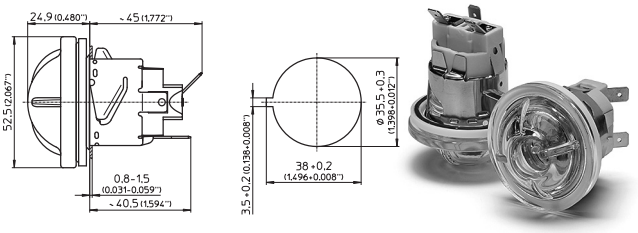
Nominal rating G9:	2/250
Nominal rating G4:	10/24
Contacts:	earth spade connector 6.3x0.8
Fixing:	click-in

Application fields

Compatible Lampholders

Suitable for lampholders					
Type	Base	Material	T-rating	Connection	Lamp
33850	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33855	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33860	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W

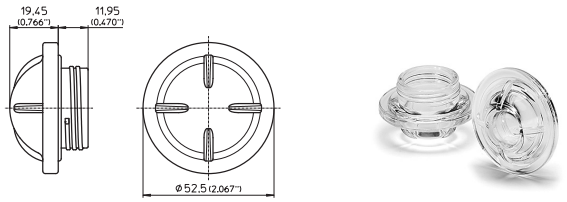
Assembled example – Round steam kit



Accessories

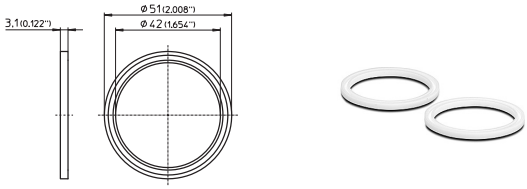
Pagoda glass

Material:	borosilicate glass
Fixing:	screw
Type:	**94052**



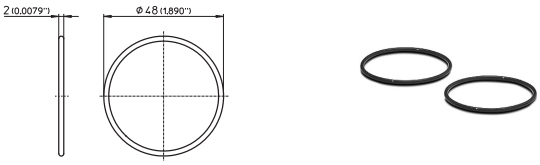
O-ring housing

Material:	PTFE
Type:	**98092**



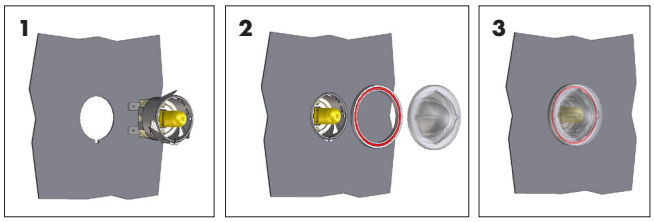
O-ring gasket

Material:	high-temperature silicone
Type:	**98093**



Mounting instructions

1. Push the lampholder into position until it clicks.
2. Push the o-ring gasket into the o-ring housing's groove. Fit this assembly together with the pagoda glass and screw in.
3. With that firmly in place, connect the leads.



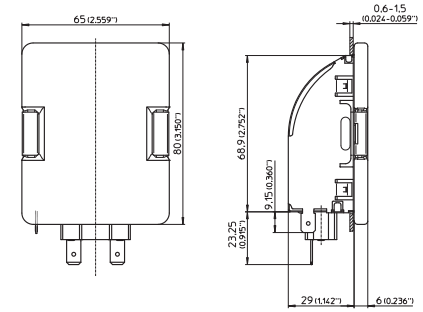
Lampholders

For cut-out 55x70 mm / 2.165x2.756 in

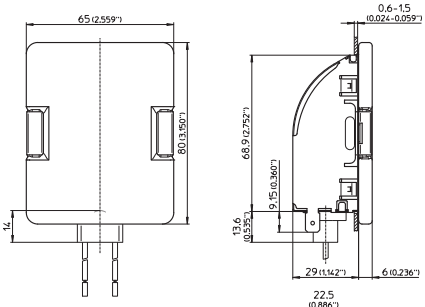
Nominal rating G9:	2/250
Contacts:	earth spade connector 6.3x0.8
Reflector:	aluminium plated steel
Fixing:	click-in

Application fields

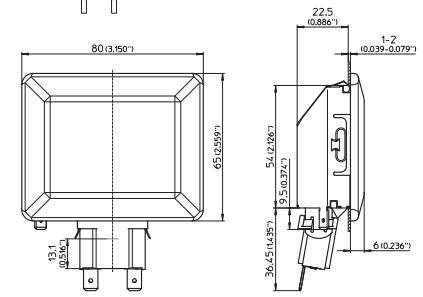
G9 Lampholders



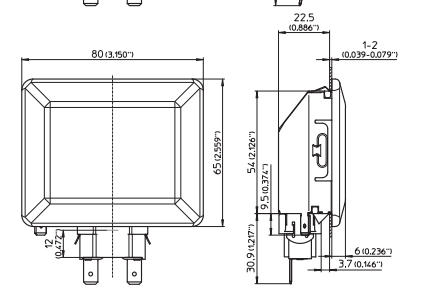
Temperature rating:	T350 (662 °F)
Housing material:	steatite
Lamp:	25 W/40 W
Lens:	borosilicate glass
Connection:	spade connectors
Packaging unit:	70 pcs.
Type:	**33840**



Temperature rating:	T350 (662 °F)
Housing material:	steatite
Lamp:	25 W/40 W
Lens:	borosilicate glass
Leads:	PTFE 0.75 mm² / cURus: FEP AWG20
Packaging unit:	70 pcs.
Type:	**33940**



Temperature rating:	T350 (662 °F)
Housing material:	steatite
Lamp:	25 W/40 W
Lens:	borosilicate glass
Connection:	spade connectors
Packaging unit:	70 pcs.
Type:	**33880**



Temperature rating:	T350 (662 °F)
Housing material:	steatite
Lamp:	25 W/40 W
Lens:	borosilicate glass
Connection:	spade connectors
Packaging unit:	75 pcs.
Type:	**33885**

Lampholders

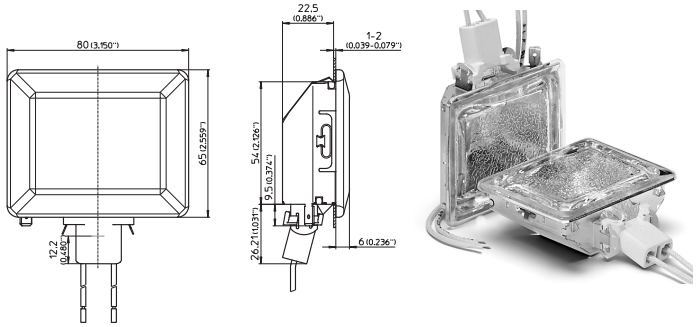
For cut-out 55x70 mm / 2.165x2.756 in

Nominal rating G9:	2/250
Nominal rating G4:	10/24
Contacts:	earth spade connector 6.3x0.8
Reflector:	aluminium plated steel
Fixing:	click-in

Application fields

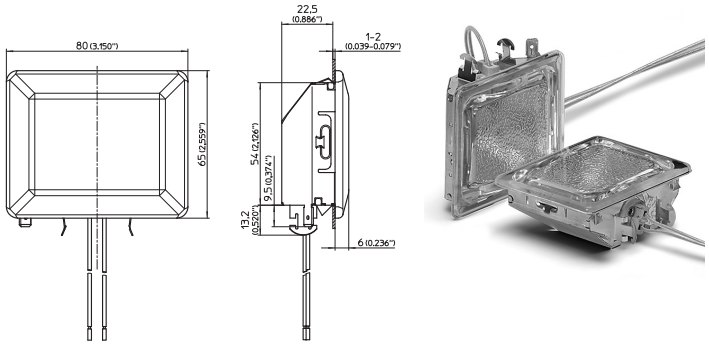
G9 Lampholders

Temperature rating:	T350 (662 °F)
Housing material:	steatite
Lamp:	25 W/40 W
Lens:	borosilicate glass
Leads:	PTFE 0.75 mm² / cURus: FEP AWG20
Packaging unit:	75 pcs.
Type:	**33980**



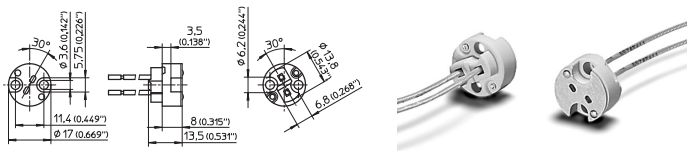
G4 Lampholders

Temperature rating:	T300 (572 °F)
Housing material:	porcelain
Lamp:	20 W
Lens:	borosilicate glass
Leads:	PTFE 0.75 mm² / cURus: FEP AWG20
Packaging unit:	36 pcs.
Type:	**32777**



Temperature rating:	T350 (662 °F)
Contacts:	Ni
Packaging unit:	500 pcs.
Type:	**32400**

Temperature rating:	T300 (572 °F)
Multipoint contacts:	CuNiZn
Packaging unit:	1000 pcs.
Type:	**32700**



PROFESSIONAL OVENS

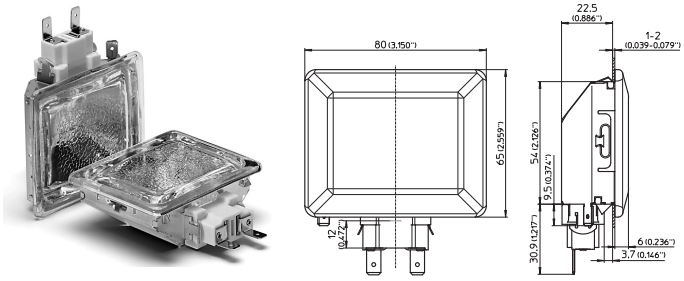
Lampholders and Accessories

For cut-out 55x70 mm / 2.165x2.756 in

Nominal rating G9:	2/250
Nominal rating G4:	10/24
Contacts:	earth spade connector 6.3x0.8
Fixing:	click-in

Application fields

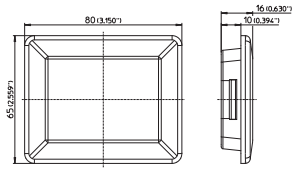
Mounted lampholder with gasket and glass



Compatible Lampholders

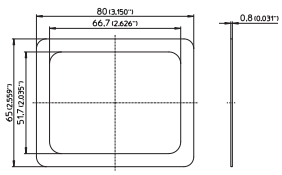
Suitable for lampholders					
Type	Base	Material	T-rating	Connection	Lamp
33880	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33885	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33980	G9	steatite	T350 (662 °F)	leads	25 W / 40 W
32777	G4	porcelain	T300 (572 °F)	leads	20 W

Accessories



Cover glass

Material:	borosilicate glass
Type:	**94037**



Silicone gasket

Material:	high-temperature silicone
Type:	**98091**

Lampholders and Accessories

For cut-out 55x70 mm / 2.165x2.756 in

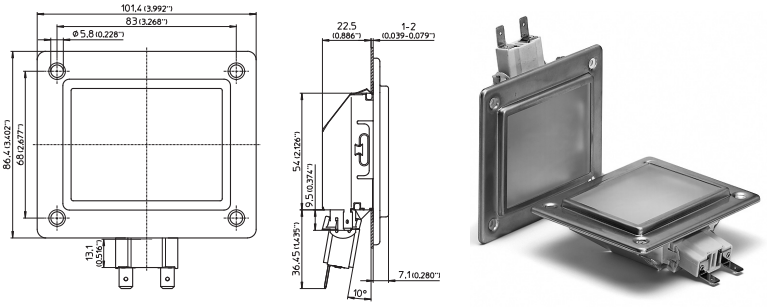
Nominal rating G9:	2/250
Nominal rating G4:	10/24
Contacts:	earth spade connector 6.3x0.8
Fixing:	click-in

Application fields

Compatible Lampholders

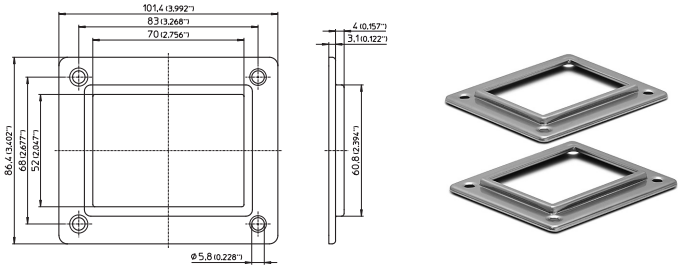
Suitable for lampholders					
Type	Base	Material	T-rating	Connection	Lamp
33840	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33940	G9	steatite	T350 (662 °F)	leads	25 W / 40 W
33880	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33885	G9	steatite	T350 (662 °F)	spade connectors	25 W / 40 W
33980	G9	steatite	T350 (662 °F)	leads	25 W / 40 W
32777	G4	porcelain	T300 (572 °F)	leads	20 W

Assembled example – Rectangular steam kit

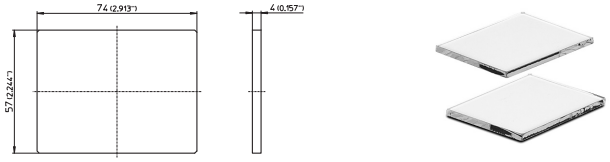


Accessories

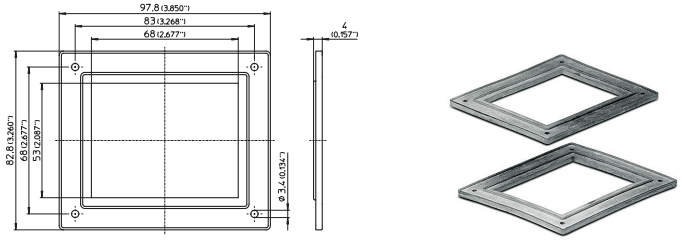
Metal frame
Material: inox
Type: 93195



Flat glass
Material: tempered glass (clear or frosted)
Type: 94090

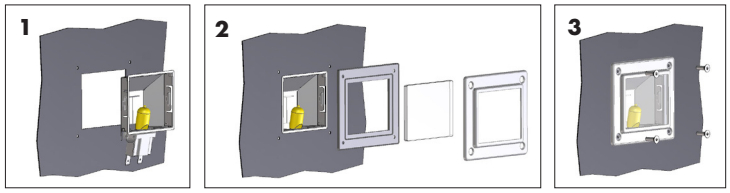


Silicone gasket
Material: high-temperature silicone
Type: 98090



Mounting instructions

1. Push the lampholder into position until it clicks.
2. Fit the flat glass and the silicone gasket together into the metal frame's slot with the four screws, and fasten the assembly at the oven wall.
3. With that firmly in place, connect the leads.



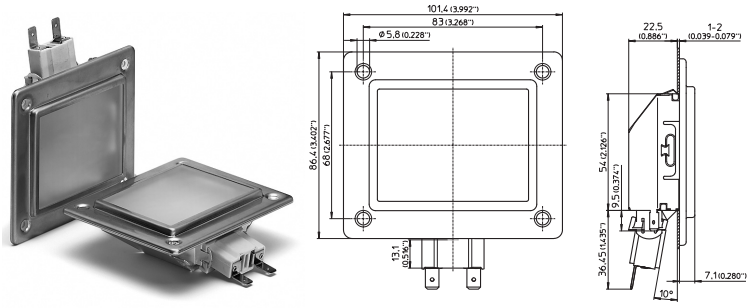
Lampholders and Accessories

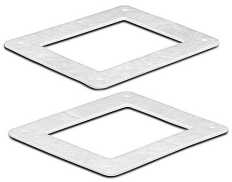
For cut-out 55x70 mm / 2.165x2.756 in

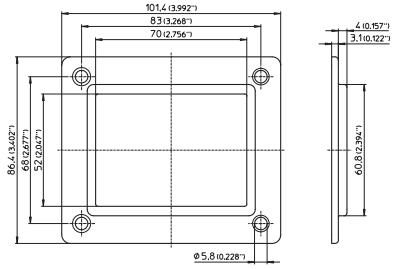
Nominal rating G9:	2/250
Nominal rating G4:	10/24
Contacts:	earth spade connector 6.3x0.8
Fixing:	click-in

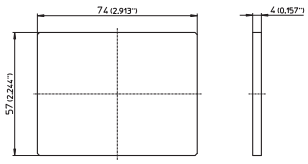
Application fields

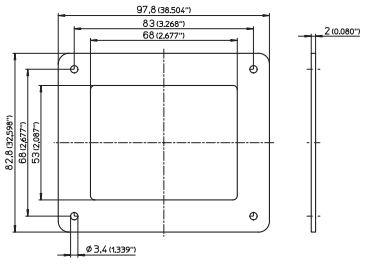
Assembled example – Rectangular lytherm kit











Compatible Lampholders

Suitable for lampholders					
Type	Base	Material	T-rating	Connection	Lamp
33840	G9	steatite	T350	spade connectors	25 W / 40 W
33940	G9	steatite	T350	leads	25 W / 40 W
33880	G9	steatite	T350	spade connectors	25 W / 40 W
33885	G9	steatite	T350	spade connectors	25 W / 40 W
33980	G9	steatite	T350	leads	25 W / 40 W
32777	G4	porcelain	T300	leads	20 W

Accessories

Metal frame

Material:	inox
Type:	**93195**

Flat glass

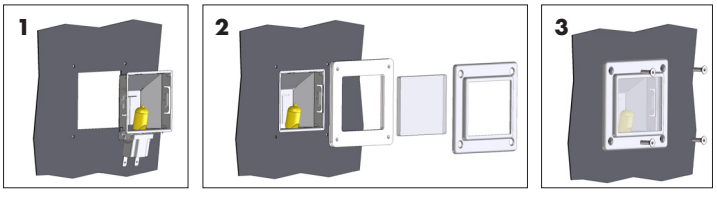
Material:	tempered glass (clear or frosted)
Type:	**94090**

Lytherm gasket

Material:	lytherm
Type:	**98096**

Mounting instructions

1. Push the lampholder into position until it clicks.
2. Fit the flat glass and the lytherm gasket together into the metal frame's slot with the four screws, and fasten the assembly at the oven wall.
3. With that firmly in place, connect the leads.



LED Solutions

For Dishwasher Applications

OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Application field

For dishwasher applications

Approvals

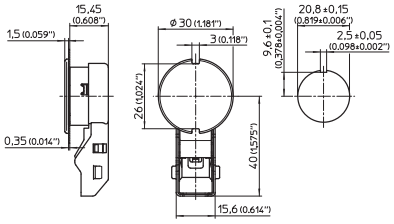
CE conformity

DISHWASHERS

LEDSpots for Dishwashers

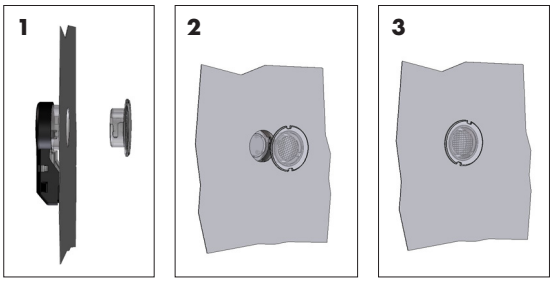
For cut-out Ø 20.8 mm / 0.819 in

Colour rendering:	R_a > 80
Fixing:	bayonet



Mounting instructions

1. Put the back assembly in place behind of the dishwasher wall.
2. Fit the lens and back assembly together, and screw the lens clockwise until it stops.
3. With that firmly in place, connect the leads.

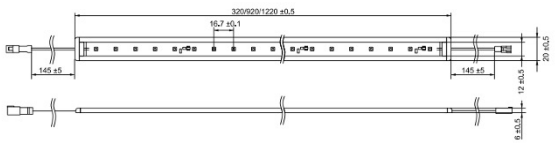


DW

Lens material:	PSU
Gasket:	silicone
Colour temperatures:	6500 K
t_c max.:	100 °C / 212 °F
Lumen maintenance:	L70/B50 50,000 hrs. (t_p = 85 °C / 185 °F)
Electrical connection:	RAST 2.5 – 3 ways
Packaging unit:	160 pcs.

Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LDW002	6 V	35	122	–	0.7

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 85 °C / 185 °F (4000 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.



Mounting instructions

1. Put the back assembly in place behind of the dishwasher wall.
2. Fit the lens and back assembly together, and screw the lens clockwise until it stops.
3. With that firmly in place, connect the leads.

AluLED IP66/67

Coating:	Silicone
Voltage supply:	24 V DC
Beam angle:	120°
Lumen maintenance:	L70/B20 50,000 hrs (t_p = 50 °C / 122 °F)
Packaging unit:	20 pcs.
Fixing:	mounting clips (brackets) and screws (included)

Suitable for lampholders					
Type	Length mm	Current mA	Colour	Luminous flux lm	Power W
320-4000-II	320	135	4000	320	3.2
520-4000-II	520	225	4000	533	5.3
920-4000-II	920	405	4000	960	9.6
1220-4000-II	1220	540	4000	1280	12.8
320-6000-II	320	135	6000	302	3.2
520-6000-II	520	225	6000	503	5.3
920-6000-II	920	405	6000	906	9.6
1220-6000-II	1220	540	6000	1208	12.8

LED Solutions

For Professional Coffee Machines

OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Application field

Safety information

IP20 IP65

Assembly information

Cut-out Ø 16 mm / 0.629 in

Cut-out Ø 67.5x25.5 mm / 2.657x1.004 in

Approvals

CE conformity

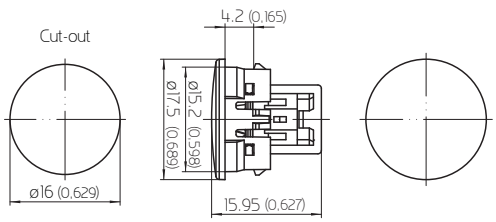
Coffee Spot

PCB:	FR4
Power supply:	12V DC
Colour temperatures:	4000 K
t_c max.:	100 °C / 212 °F
Lumen maintenance:	L70/B50 50,000 hrs. (t_p = 85 °C / 185 °F)
Connector:	CJT
Fixing:	snap-in clips

CE 16 IP20

Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH036	12 V	14	114	–	1.4

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 85 °C / 185 °F (4000 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.



COFFEE MACHINES

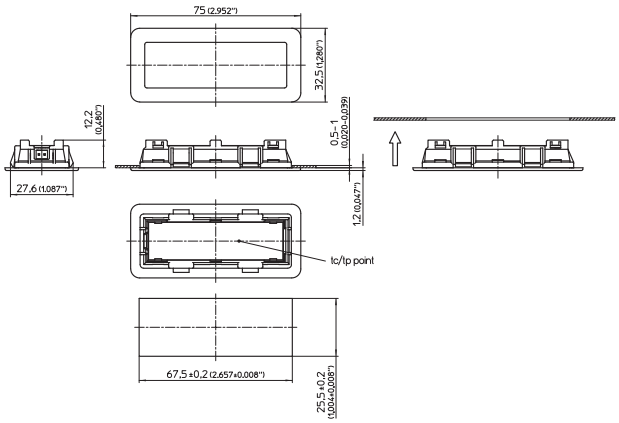
LEDSpots

Colour rendering:	R_a > 80
Fixing:	snap-in clips

Application fields

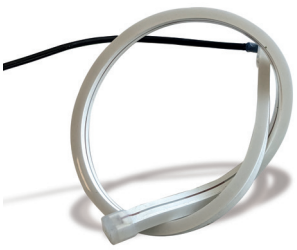
Revo P

Lens material:	PC
Beam angle:	100°
Colour temperatures:	3000 K or 4000 K
t_c max.:	100 °C / 212 °F
Lumen maintenance:	L70/B50 50,000 hrs. (t_p = 85 °C / 185 °F)
Leads on request:	PVC 0.35 mm² / AWG22
Packaging unit:	162 pcs.



Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH034	12 V	120	114	–	1.4
LCH058	350 mA	110	–	3.2	1.1
LCH040	700 mA	210	–	3.2	2.3
LCH037	24 V	200	100	–	2.2

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 85 °C / 185 °F (4000 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.



UniRim

Coating:	Silicone
Power supply:	12V / 24 V DC or 700mA
Power consumption:	5 or 10 W/meter
Casing:	Silicone
Colour temperatures:	4000 K or 6500 K
Lumen maintenance:	L70/B50 36,000 hrs. (t_p = 45 °C / 113 °F)
Leads on request:	PVC 0.35 mm² / AWG22
Customizable Lengths	

LED Solutions

For Refrigerated Cabinets, Food Display Units & Deli Counters

OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Application field

For vertical multi-deck cabinets

For ice cream and pastry cabinets

For wine cabinets

Safety information

IP20 protection

Approvals

CE conformity

Assembly information

Cut-out Ø 67.5x25.5 mm / 2.657x1.004 in

Cut-out Ø 63.5x20.5 mm / 2.5x0,807 in

Cut-out Ø 56 mm / 2.205 in

Cut-out Ø 26 mm / 1.024 in

Beam angle types

Narrow
Beams up to 30°

Medium
Beams up to 60°

Wide
Beams up to 90°

Extra Wide
Beams starting from 91°

LED Line

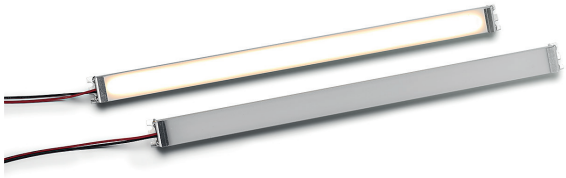
Fixing plate

Colour rendering: $R_a > 80$

Fixing: screw mounting plate

IP20

Application fields



Extreme L

For canopy and undershelf lighting

Lens material: PC

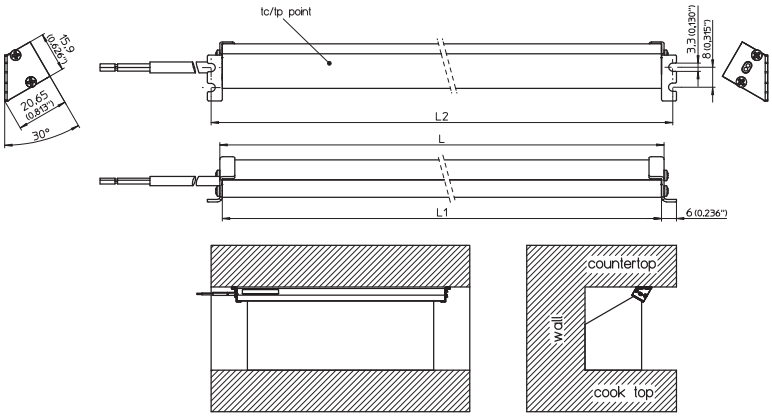
Beam angle: 130°

Colour temperatures: 3000 K (4000 K on request)

t_c: 75 °C / 167 °F

Lumen maintenance: L70/B50 36,000 hrs. (t_p = 45 °C / 113 °F)

Leads: double core FEP/PVC 0.35 mm² / AWG22



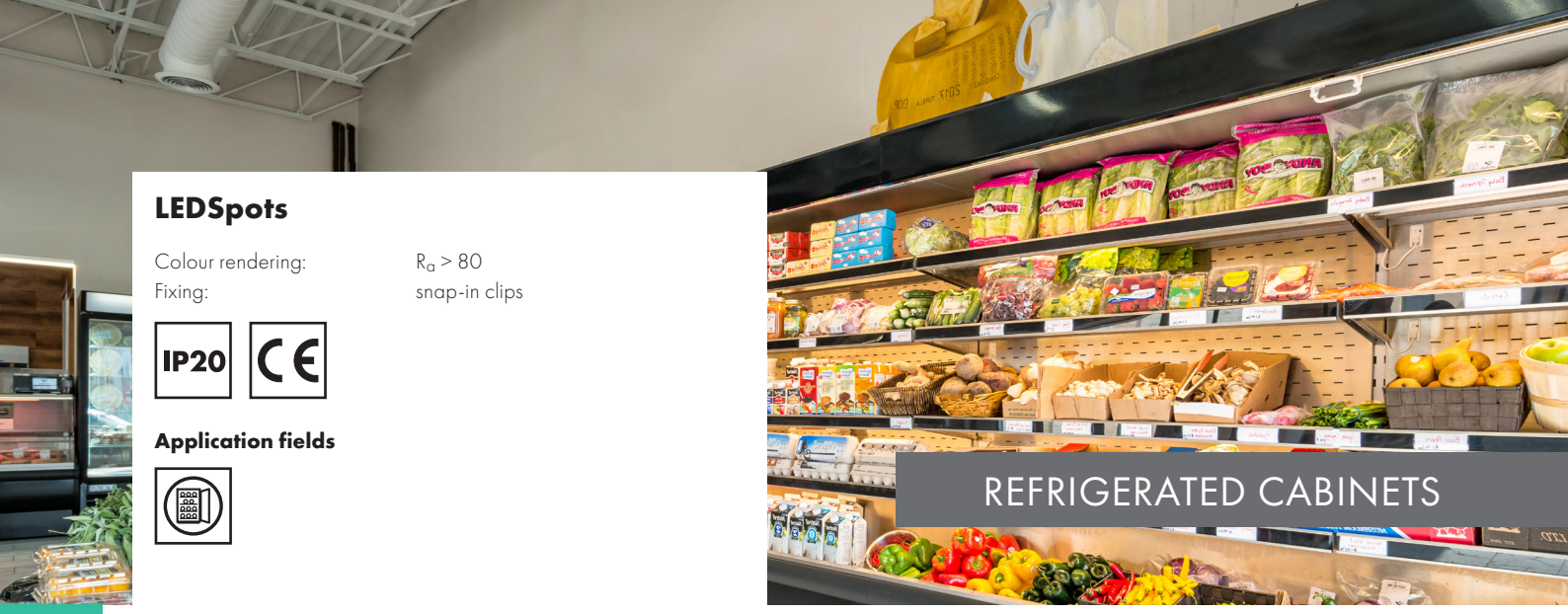
Type	Length L mm	Length L inch	Length L1 mm	Length L1 inch	Length L2 mm	Length L2 inch
250 (LO005)	262	10.31	250	9.85	259	10.2
400 (LO005)	412	16.22	400	15.75	409	16.1
700 (LO005)	712	28.03	700	27.56	709	27.9
800 (LO005)	812	31.96	800	31.5	809	31.85
1000 (LO005)	1012	39.84	1000	39.37	1009	38.72
1050 (LO005)	1062	41.81	1050	41.33	1059	41.7
1300 (LO005)	1312	51.65	1300	51.18	1309	51.53

Type	Input supply	Typ. luminous flux (lm)	Power consumption (W)
250 (LO005)	12 V	210	4.5
400 (LO005)	12 V	300	7.1
700 (LO005)	12 V	570	12.6
800 (LO005)	12 V	650	14.2
1000 (LO005)	12 V	810	18
1050 (LO005)	12 V	840	18.9
1300 (LO005)	12 V	1100	23.4

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 45 °C / 113 °F (4000 K)
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Mounting instructions

1. Arrange the LED luminaire into position under the shelf.
2. Fasten it with two screws.
3. With that firmly in place, connect the leads.



LEDSpots

Colour rendering: $R_a > 80$
Fixing: snap-in clips

IP20 CE

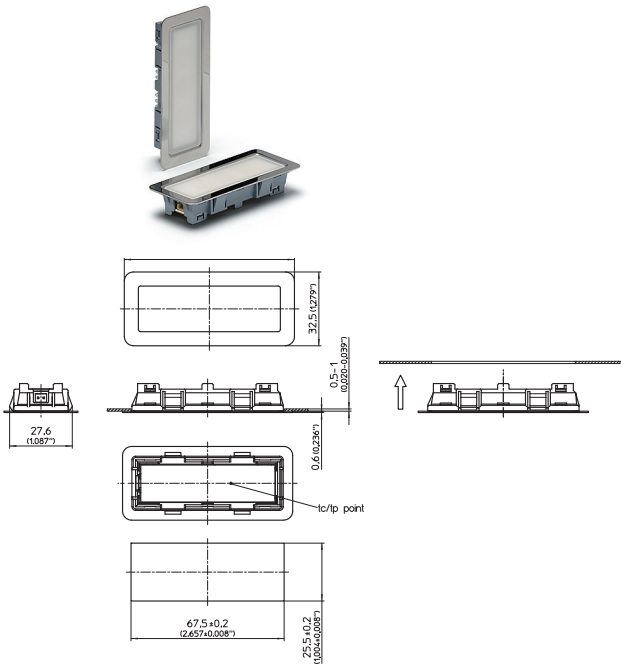
Application fields

Revo / Revo TW

Lens material: PC
Beam angle: 100°
Colour temperatures: 3000 K or 4000 K
t_c: 100 °C / 212 °F
Lumen maintenance: L70/B50 50,000 hrs. (t_p = 85 °C / 185 °F)
Leads on request: PVC 0.35 mm² / AWG22
Packaging unit: 162 pcs.

67.5x 25.5

Type	Input supply	Typ. luminous flux (lm)	Tunable white	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH035	12 V	120	-	114	-	1,4
LCH046	12V	120/135	2700K-4000K	185/191	-	2,2/2,3
LCH038	24 V	200	-	100	-	2,2
LCH053	350 mA	110	-	-	3,2	1,1
LCH041	700 mA	210	-	-	3,2	2,3

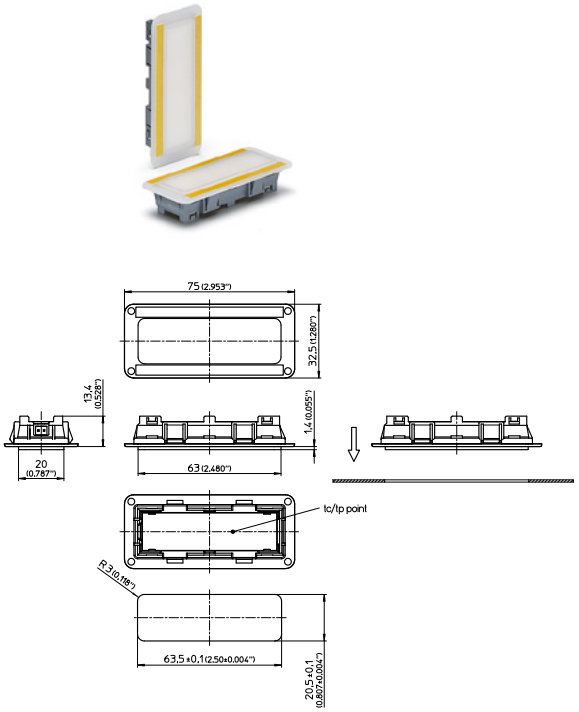


Revo G / Revo G TW

Lens material: PC
Beam angle: 100°
Colour temperatures: 3000 K or 4000 K
t_c max.: 100 °C / 212 °F
Lumen maintenance: L70/B50 50,000 hrs. (t_p = 85 °C / 185 °F)
Leads on request: PVC 0.35 mm² / AWG22
Packaging unit: 162 pcs.

63.5x 20.5

Type	Input supply	Typ. luminous flux (lm)	Tunable white	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH036	12 V	120	-	114	-	1,4
LCH047	12 V	120/135	2700K-4000K	185/191	-	2,2/2,3
LCH042	350 mA	110	-	-	3,2	1,1
LCH054	700 mA	210	-	-	3,2	2,3



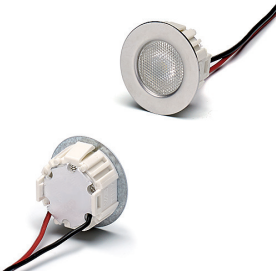
Tolerances of electrical and optical data: ±10%
Emission data at t_p = 85 °C / 185 °F (4000 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.

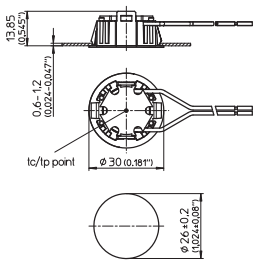
REFRIGERATED CABINETS

LEDSpots

Colour rendering:	R_a > 80
Fixing:	snap-in clips

Application fields





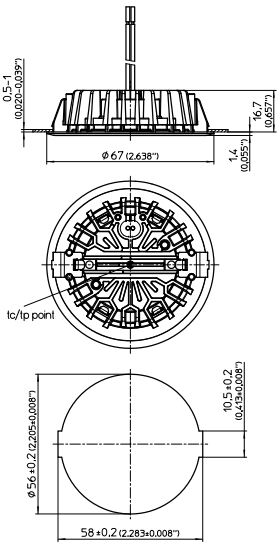
Tiny

Lens material:	PC
Beam angle:	45°
Colour temperatures	
LCH050:	3000 K or 4000 K
LCH044:	3000 K, 4500 K or 5000 K
t_c:	100 °C / 212 °F
Lumen maintenance:	L70/B50 50,000 hrs. (t_p = 85 °C / 185 °F)
Leads on request:	PVC 0.35 mm² / AWG22
Packaging unit:	40 pcs.

IP20 | 26

Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH050	12 V	100	100	–	1.2
LCH044	350 mA	125	–	2.8	1

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 85 °C / 185 °F (4000 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.



IPLine COB

Lens material:	glass
Beam angle:	42° / 54°
Colour temperatures	3000 K or 4500 K
tc max.:	100 °C / 212 °F
Lumen maintenance:	L70/B50 50,000 hrs. (t_p = 85 °C / 185 °F)
Leads:	PVC 0.35 mm² / AWG22
Packaging unit:	45 pcs.

IP54 | 56

Type	Input supply	Typ. luminous flux (lm)	Typ. current (mA)	Typ. voltage (V)	Power consumption (W)
LCH022	350 mA	125/110	–	3.0	1.1
LCH022	700 mA	240/210	–	3.0	2.1

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 85°C / 185 °F (4000 K)
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.

LED Solutions and Lampholders

For Pest Controlling

OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Application field

For pest controlling

Safety information

IP20 protection

IP65 protection

IP67 protection

UV radiation hazard

Assembly information

Cut-out 26 x 111.6 mm / 1.024 x 4.394 in

Cut-out 25.5 x 17.6 mm / 1.004 x 0.693 in

Approvals

CE conformity

ENEC approved

UL approved

PEST CONTROLLING

LED Solution for Pest Controlling

For cut-out 26x111.6 mm / 1.024x4.394 in

Fixing:	holes for screws M3
Wall thickness:	1.4–2 mm

Application fields

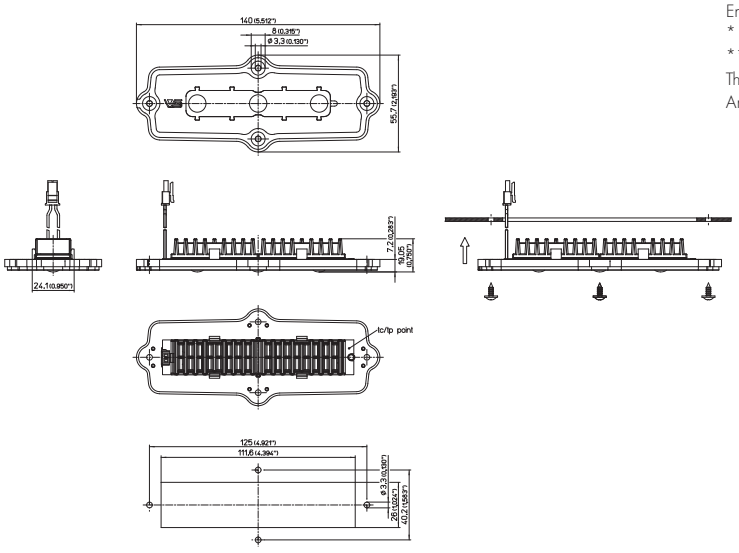
VIO365 S

PATENTED

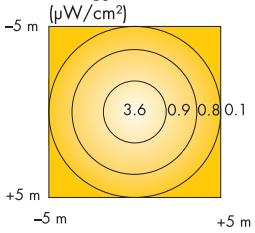
Lens material:	Silicone + PA6
Beam angle:	90°
Typ. peak wavelength:	365 nm
t_C:	85 °C / 185 °F
Radiant flux maintenance:	L70 / 33,000 hrs.*
Leads:	FEP
Packaging unit:	48 pcs.

Type	Input supply	Typ. radiant flux (W)	Av. irradiance** (W/m²)	Typ. voltage (V)	Power consumption (W)
LUV002	350 mA	1.52	0.55	10.8	3.8

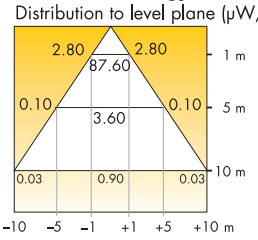
Tolerances of electrical and optical data: ±10%
Emission data at t_p = 65 °C / 149 °F
* Refers to the only LED module
** At 1 m distance on a 1x1 m² surface
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.



Energy distribution
(µW/cm²)



Irradiation energy
Distribution to level plane (µW/cm²)

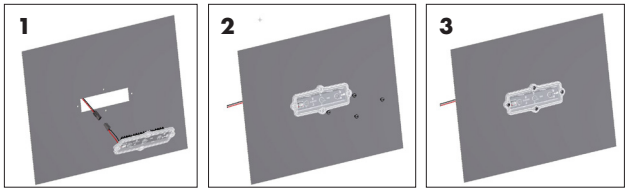


CAUTION

- UV LEDs emit high intensity UV light
- Do not look directly into the UV light during operation
- This can be harmful to your eyes and skin
- Wear protective eyewear to avoid exposure to UV light
- Attach caution labels to your products with contain UV LEDs
- Avoid direct eye and skin exposure to UV light
- Keep out of reach of children and animals

Mounting instructions

1. Connect the leads.
2. Fit the luminaire into position and fasten it with four screws onto the pest controlling machine.
3. Make sure that the radiant flux of the luminaire is not blocked by any means.



PEST CONTROLLING

LED Solution for Pest Controlling

For cut-out 26x111.6 mm / 1.024x4.394 in

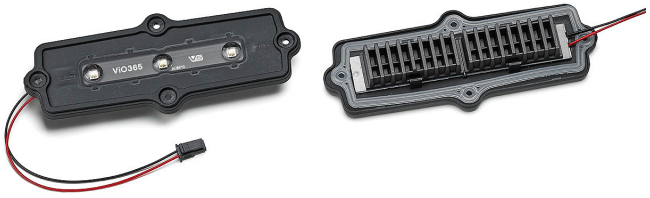
Fixing:	holes for screws M3
Wall thickness:	1.4–2 mm

Application fields

VIO365 S IP67

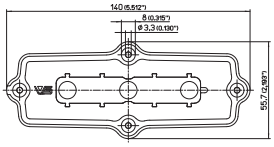
Lens material:	Silicone + PA6
Beam angle:	90°
Typ. peak wavelength:	365 nm
t_c:	85 °C / 185 °F
Radiant flux maintenance:	L70 / 33,000 hrs.*
Leads:	FEP
Packaging unit:	48 pcs.

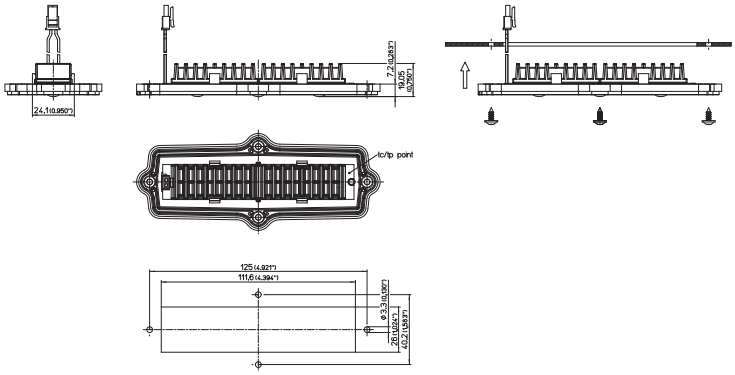
PATENTED



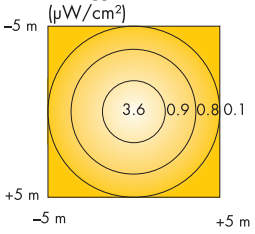
Type	Input supply	Typ. radiant flux (W)	Av. irradiance** (W/m²)	Typ. voltage (V)	Power consumption (W)
LUV002	350 mA	1.52	0.55	10.8	3.8

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 65 °C / 149 °F
* Refers to the only LED module
** At 1 m distance on a 1x1 m² surface
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.

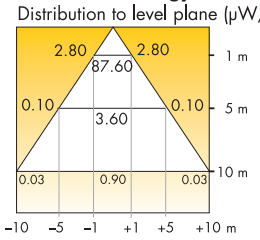




Energy distribution (µW/cm²)

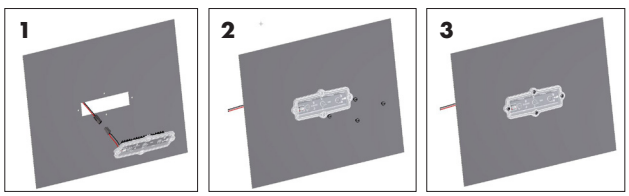


Irradiation energy
Distribution to level plane (µW/cm²)



Mounting instructions

1. Connect the leads.
2. Fit the luminaire into position and verify the correct positioning of the gasket. Than fasten it with four screws onto the pest controlling machine.
3. Make sure that the radiant flux of the luminaire is not blocked by any means.



CAUTION

- UV LEDs emit high intensity UV light
- Do not look directly into the UV light during operation
- This can be harmful to your eyes and skin
- Wear protective eyewear to avoid exposure to UV light
- Attach caution labels to your products with contain UV LEDs
- Avoid direct eye and skin exposure to UV light
- Keep out of reach of children and animals

PEST CONTROLLING

LED Solution for Pest Controlling

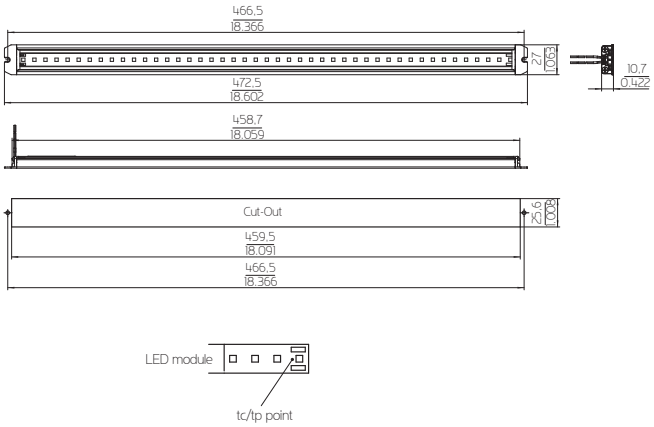
For cut-out 25.6x459.5 mm / 1.008x18.091 in

Fixing: holes for screws M3

Application fields

BLADE 365 UVA

PCB:	Aluminium
Casing:	Aluminium
Typ. peak wavelength:	365 nm
Angle:	120° typical
Lifetime:	L70/33.000 hrs.* (t_p = 65 °C / 149 °F)
t_c max:	85 °C / 185 °F
Leads:	FEP 0,41mm² / AWG21
Leads lenght:	200 mm



Type	Input supply	Typ. radiant flux (W)	Typ. voltage (V)	Power consumption (W)
LUV007	350 mA	2.7	34	12

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 65 °C / 149 °F
* Refers to the only LED module
** At 1 m distance on a 1x1 m² surface
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.

CAUTION

- UV LEDs emit high intensity UV light
- Do not look directly into the UV light during operation
- This can be harmful to your eyes and skin
- Wear protective eyewear to avoid exposure to UV light
- Attach caution labels to your products with contain UV LEDs
- Avoid direct eye and skin exposure to UV light
- Keep out of reach of children and animals

LED Solution for Pest Controlling

For cut-out 25.5x17.6 mm / 1.004x0.693 in

Nominal rating:	2/500
Fixing:	fixing clips
Wall thickness:	1.4–2 mm / 0.055–0.079 in
Connection:	for solid and stranded conductors 0.5–1 mm² / AWG20

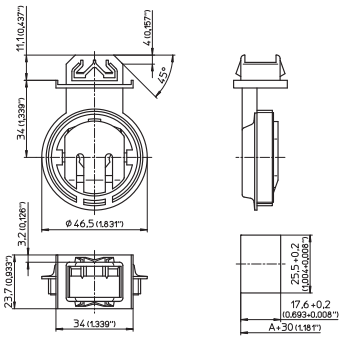
For luminaires of protection class I and II

IP65 IP67

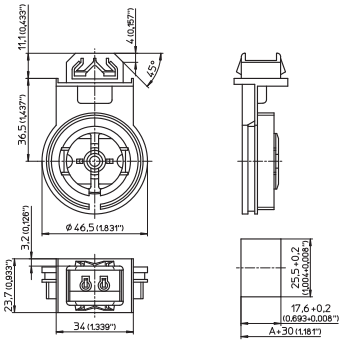
Application fields

G13 Lampholders

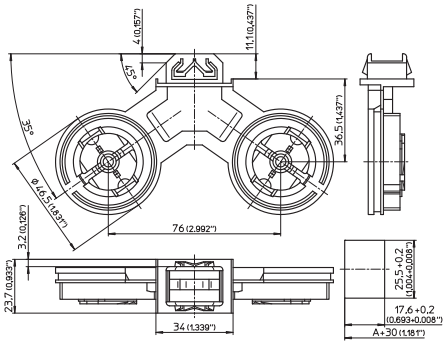
Temperature rating:	T140 (284 °F)
Casing material:	PC
Interior part material:	PBT GF
Connection:	push-in terminals
Packaging unit:	250 pcs.
Type:	**84175**

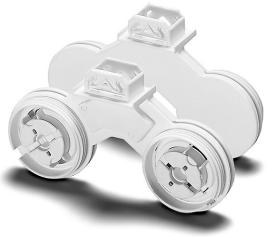


Temperature rating:	T140 (284 °F)
Casing material:	PC
Interior part material:	PBT GF
Connection:	push-in terminals
Packaging unit:	500 pcs.
Type:	**84172**



Temperature rating:	T140 (284 °F)
Casing material:	PC
Interior part material:	PBT GF
Connection:	push-in terminals
Packaging unit:	250 pcs.
Type:	**84174**





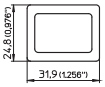
PEST CONTROLLING

Accessories for G13 Lampholders

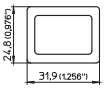
CE

Application fields

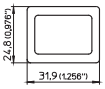
Accessories



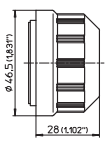
Foot gasket (IP65)
Material: cellular rubber
Compatible lampholders: 84172, 84174, 84175
Type: 98004

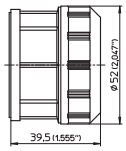


Foot gasket (IP67)
Material: transparent silicone
Compatible lampholders: 84172, 84174, 84175
Type: 98011

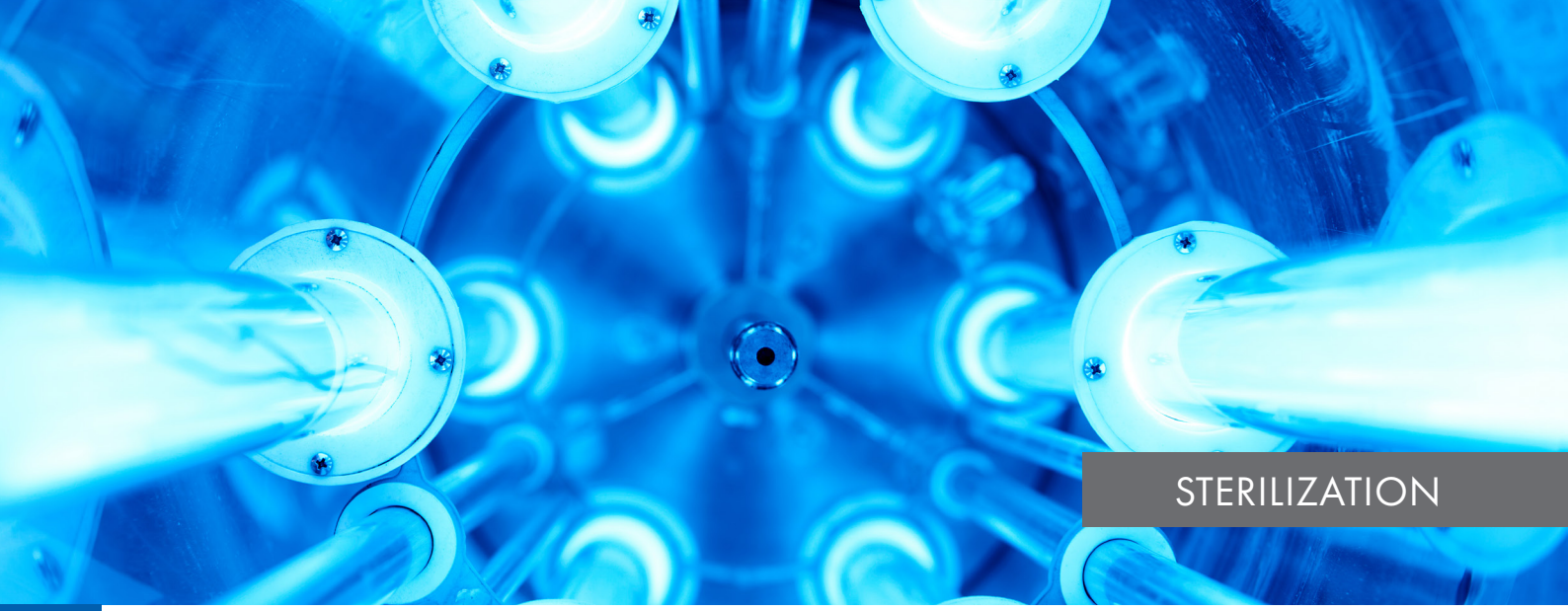


Profiled foot gasket (IP67)
Material: EPDM
Compatible lampholders: 84172, 84174, 84175
Type: 98008





Screw ring (IP65/IP67)
Ring material: PBT GF
Gasket material: silicone
Compatible lampholders: 84172, 84174, 84175
Type T8 lamp: 84122
Type T12 lamp: 84123



LED Solutions

For Sterilization

OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Application field

For sterilization

Approvals

CE conformity

Safety information

IP20 protection

IP 54 protection

IP67 protection

UV radiation hazard

Assembly information

Cut-out 26 x 111.6 mm / 1.024 x 4.394 in

STERILIZATION

LED Solution for Sterilization

Application fields

About ultraviolet rays

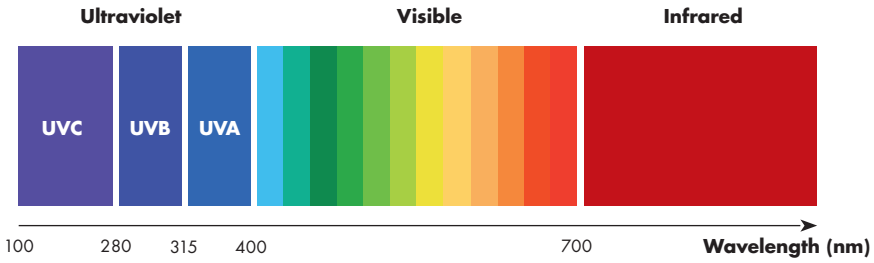
UVC rays are the most efficient rays to disinfect surfaces in a short time

Germicidal ultraviolet radiation is a tested and effective technology for killing microorganisms and ensures bacteriologically controlled surfaces. The spectral range of ultraviolet radiation is between 100 and 400 nm and is invisible to the human eye. The wavelength of UVC rays is between 100 and 280 nm and are the most efficient rays to disinfect surfaces in a short time.

Scientific research has shown that ultraviolet rays are a valid disinfection system (physical and not chemical). All microorganisms that live in water or in the airborn (bacteria, viruses, fungi, algae, etc.) undergo an action by ultraviolet rays which stops their development process. UV rays act on the nucleus of the cell that, when properly irradiated, is subjected to a reaction that prevents the reproduction process in a completely natural way (damaging their protein structure to alter their DNA/RNA).

Caution – Be aware of dangers when using UVC rays

The use of UVC sources requires special attention from the user, as exposure to these rays can cause inflammation and permanent damage. The absence of people or animals during their operation is therefore essential (through sensors, timers, SMART systems etc.). Before installing any UV source, be sure to contact a qualified technician for the design stage. In addition, the VS team of experts can assist customers with any need.



Applications of UVC light

The LED solutions for sterilization can be used in many applications, where it is necessary to provide desinfected and clean surfaces. Due to waterproof versions, it is possible to implement the UVC lighting technology even in dishwashers, refrigerators and laundry washing machines.

Support from the beginning

- Correct design stage
- Simulation of the design stage
- Data collection on the stage
- Microbiological test by accredited labs

LED Solution for Sterilization

For cut-out 26x111.6 mm / 1.024x4.394 in

Fixing:	holes for screws M3
Wall thickness:	1.4–2 mm

Application fields

VIO275 S

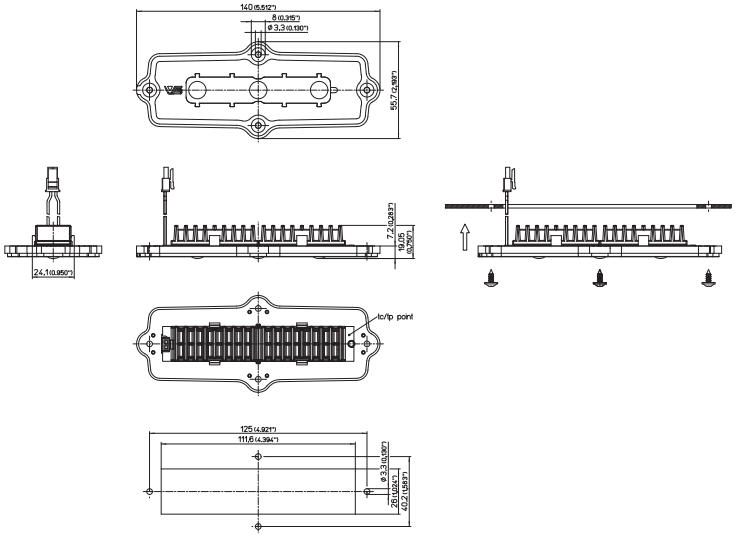
Lens material:	Silicone + PA6
Beam angle:	90°
Typ. peak wavelength:	275 nm
t_c:	75 °C / 167 °F
Radiant flux maintenance:	L70 / 11,000 hrs.*
Leads:	FEP
Packaging unit:	48 pcs.

Type	Input supply	Typ. radiant flux (mW)**	Av. irradiance*** (W/m²)	Typ. voltage (V)	Power consumption (W)
LUV004	350 mA	25	0.16	6	2.1

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 65 °C / 149 °F
* Refers to the only LED module
** Refers to 1 Vio275 S. More radiant flux power are on request.
*** At 0.5 m distance on a 0.5x0.5 m² surface with 4 Vio275 S
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.

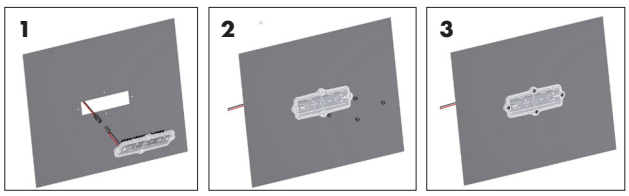
Certified against SARS-COV-2
99.99 % off in < 500 seconds

Tested by the University of Padova



Mounting instructions

1. Connect the leads.
2. Fit the luminaire into position and fasten it with four screws onto the pest controlling machine.
3. Make sure that the radiant flux of the luminaire is not blocked by any means.



CAUTION

- UV LEDs emit high intensity UV light
- Do not look directly into the UV light during operation
- This can be harmful to your eyes and skin
- Wear protective eyewear to avoid exposure to UV light
- Attach caution labels to your products with contain UV LEDs
- Avoid direct eye and skin exposure to UV light
- Keep out of reach of children and animals

LED Solution for Sterilization

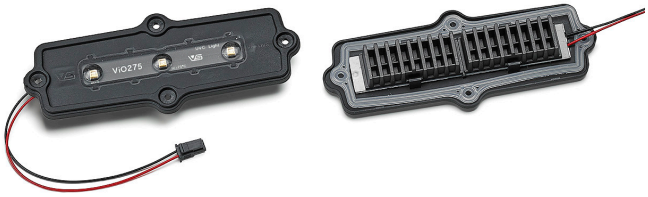
For cut-out 26x111.6 mm / 1.024x4.394 in

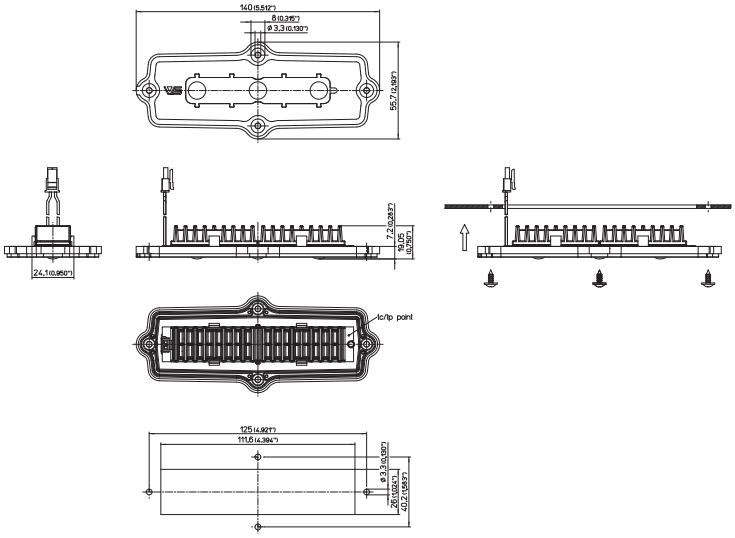
Fixing:	holes for screws M3
Wall thickness:	1.4–2 mm

Application fields

Certified against SARS-COV-2
99.99 % off in < 500 seconds

Tested by the University of Padova





VIO275 S IP67

Lens material:	Silicone + PA6
Beam angle:	90°
Typ. peak wavelength:	275 nm
t_C:	75 °C / 167 °F
Radiant flux maintenance:	L70 / 11,000 hrs.*
Leads:	FEP
Packaging unit:	48 pcs.

Type	Input supply	Typ. radiant flux (mW)**	Av. irradiance*** (W/m²)	Typ. voltage (V)	Power consumption (W)
LUV004	350 mA	25	0.16	6	2.1

Tolerances of electrical and optical data: ±10%
Emission data at t_P = 65 °C / 149 °F
* Refers to the only LED module
** Refers to 1 Vio275 S. More radiant flux power are on request.
*** At 0.5 m distance on a 0.5x0.5 m² surface with 4 Vio275 S
The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.

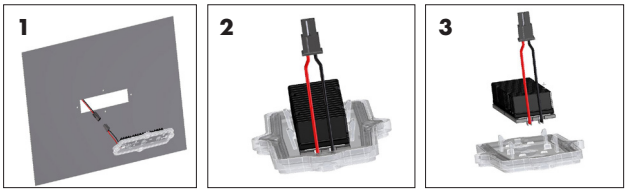
CAUTION

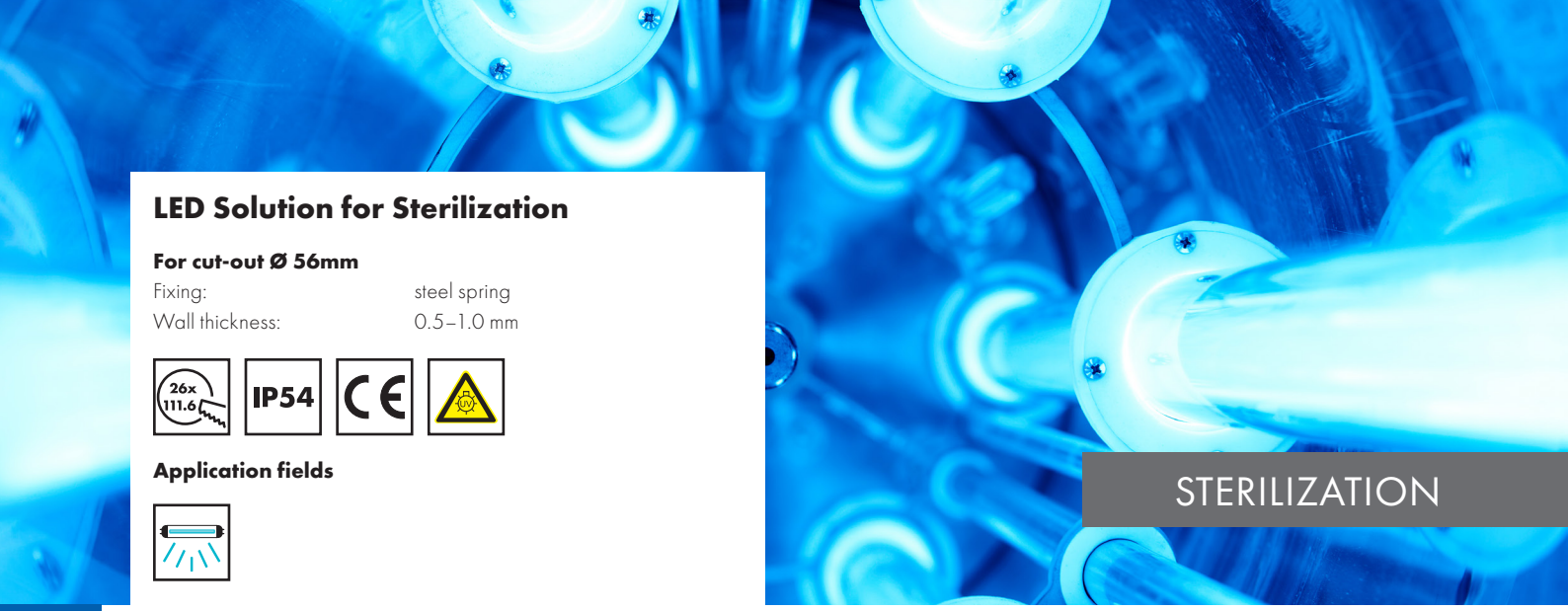
- UV LEDs emit high intensity UV light
- Do not look directly into the UV light during operation
- This can be harmful to your eyes and skin
- Wear protective eyewear to avoid exposure to UV light
- Attach caution labels to your products with contain UV LEDs
- Avoid direct eye and skin exposure to UV light
- Keep out of reach of children and animals

Mounting instructions

In case of replacement please follow these steps:

1. Disconnect the LED solutions from mains voltage. Then disconnect and leads.
2. Bend or break the little four wings of the old lens and then pull the LED engine.
3. Push the LED engine into the new lens until it clicks. With that firmly in place, connect the leads and reposition the complete LED solution into position.





LED Solution for Sterilization

For cut-out Ø 56mm

Fixing:	steel spring
Wall thickness:	0.5–1.0 mm

Application fields

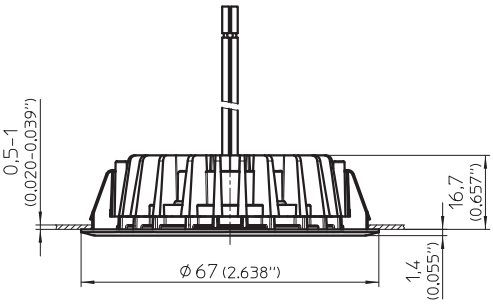
IPLine UV IP54

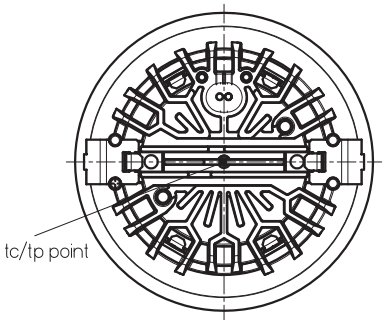
PCB:	Aluminium
Casing:	thermally conductive plastic
Diffuser:	Quartz Glass
Typ. peak wavelength:	275 nm
Angle:	120° typical
Lifetime:	L70/11.000 hrs.*
t_c:	75 °C / 167 °F
Leads:	PVC 0.35 mm² / AWG22
Leads lenght: 250 mm	
Packaging unit:	45 pcs.

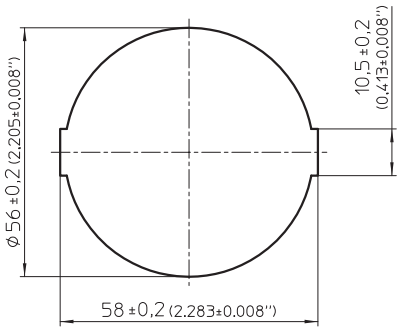
Type	Version	Input supply	Typ. radiant flux (mW)	Power consumption (W)	Typ. voltage (V)
LUV006	IPLine IP54	350 mA	30	2.1	6

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 65 °C / 149 °F
* Refers to the only LED module

The values contained in this data sheet can change due to technical innovations.
Any such changes will be made without separate notification.







CAUTION

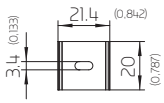
- UV LEDs emit high intensity UV light
- Do not look directly into the UV light during operation. This can be harmful to your eyes and skin
- Wear protective eyewear to avoid exposure to UV light
- Attach caution labels to your products with contain UV LEDs
- Avoid direct eye and skin exposure to UV light
- Keep out of reach of children and animals

LED Solution for Sterilization

Fixing: by brackets (see drawings)

Application fields

bracket for screw mounting



bracket with magnet for magnetic mounting

BLADE 275 UVC

PCB:	Aluminium
Casing:	Aluminium
Coating:	Silicone
Typ. peak wavelength:	275 nm
Angle:	120° typical
Lifetime:	L70/11.000 hrs.* (t_p = 65 °C / 149 °F)
t_C:	75 °C / 167 °F
Leads:	PVC 0.35 mm² / AWG22
Leads lenght:	370 mm

Type	Input supply	Typ. radiant flux (mW)	Typ. voltage (V)	Power consumption (W)
LUV008	350 mA	120	18	6

Tolerances of electrical and optical data: ±10%
Emission data at t_p = 65 °C / 149 °F
* Refers to the only LED module
** At 1 m distance on a 1x1 m² surface
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

CAUTION

- UV LEDs emit high intensity UV light
- Do not look directly into the UV light during operation. This can be harmful to your eyes and skin
- Wear protective eyewear to avoid exposure to UV light
- Attach caution labels to your products with contain UV LEDs
- Avoid direct eye and skin exposure to UV light
- Keep out of reach of children and animals

LED Constant-voltage and LED Constant-current Drivers

OVERVIEW OF PICTOGRAMS

The following overview of all used pictograms in this chapter should support you to find the right meaning:

Technology

Constant-voltage operation 12 V

Constant-voltage operation 24 V

Safety information

IP protection (f.e. IP20)

SELV (Safety Extra Low Voltage)


Protection class I


Protection class II


Independent operation


Doubled short-circuit protection

Temperature protection up to 100 °C

Temperature protection up to 110 °C Suitable for installation in furniture and on combustible surfaces

Overload protection


Overtemperature protection

Protection against "no load" operation

Suitable for emergency lighting

Service life and warranty

Minimum service life 50,000 hrs.

Minimum service life 30,000 hrs.

Product guarantee 5 years

Approvals


CE conformity


EAC conformity


ENEC approved


RCM approved


TÜV approved


UL approved


CCC approved

UKCA approved

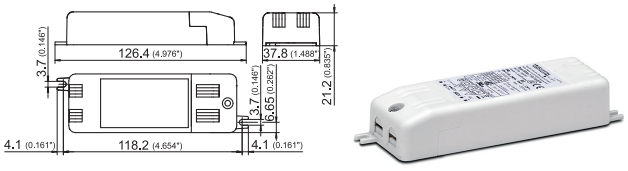
LED Drivers CV 12 V

Output: max. 10, 12, 20 or 60 W
Mains voltage: 110–240 V or 220–240 V, 50–60 Hz
Safety functions: electronic short-circuit protection, overload protection, protection against "no load" operation

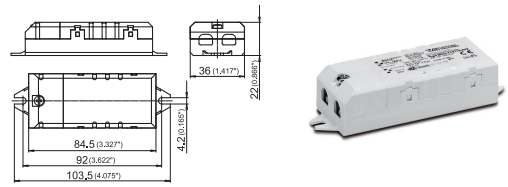
Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V ± 10%	Output voltage V ± 5%	Output current A	Power factor at full load (230 V)	Efficiency at full load % (230 V)	Max. service life at t_p 65 °C/149 °F	t_c max. °C/°F	Ambient temperature t_a (°C/°F)	Connection Screw terminals
10	EDXe 110/12.074	**186981**	110–240	12	0–0.834	> 0.6 C	> 75	100,000 h	80/176	–25 to +50 / –13 to +122	0.5–2.5 mm² / AWG24/AWG15
12	EDXe 112/12.033	**186204**	220–240	12	0–1	> 0.57 C	> 89	100,000 h	75/167	–20 to +50 / –4 to +122	0.2–1.5 mm² / AWG24/AWG15
20	EDXe 120/12.053	**186620**	220–240	12	0–1.68	> 0.5 C	> 85	50,000 h	75/167	–15 to +45 / +5 to +113	0.5–1.5 mm² AWG24/AWG15
60	EDXe 160/12.054	**186621**	220–240	12	0–5	> 0.9 C	> 87	50,000 h	90/194	–15 to +45 / –5 to +113	0.75–1.5 mm² / AWG24/AWG15

186981

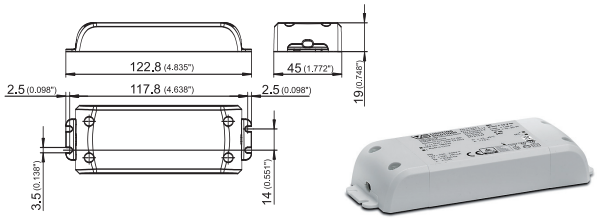
Compliant with EN 60335 requirements



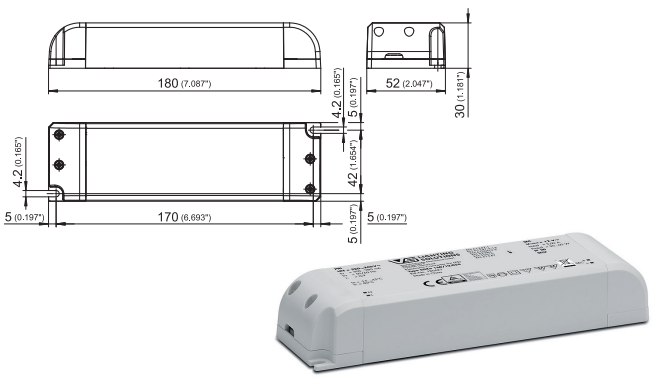
186204



186620



186621

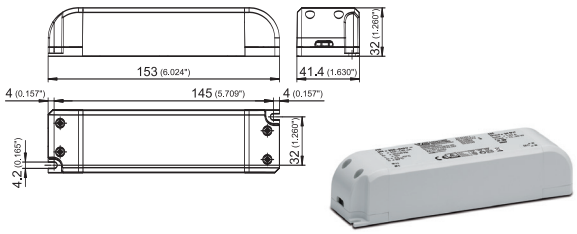


LED Drivers CV 24 V

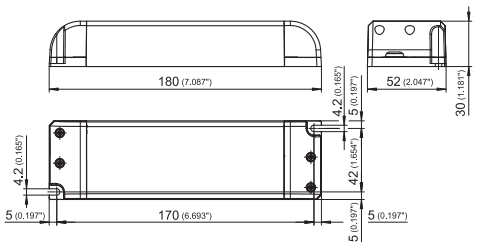
Output: max. 30, 60, 75 or 120 W
Mains voltage: 220–240 V, 50–60 Hz
Safety functions: electronic short-circuit protection, overload protection, protection against "no load" operation

Max. output W	Type	Ref. No.	Output voltage V ± 5%	Output current A	Power factor at full load (230 V)	Efficiency at full load % (230 V)	Max. service life at t_p 65 °C/149 °F	t_c max. °C/°F	Ambient temperature t_a (°C/°F)	Connection terminals
30	EDXe 130/24.057	**186624**	24	0–1.25	> 0.95 C	> 88	60,000 h	80/176	–15 to +45 / +5 to +113	0.5/0.75–1.5 mm² AWG24/AWG15
60	EDXe 160/24.058	**186625**	24	0–2.50	> 0.95 C	> 89	60,000 h	85/185	–15 to +45 / +5 to +113	0.75–1.5 mm² AWG24/AWG15
75	EDXe 175/24.059	**186626**	24	0–3.125	> 0.95 C	> 88	60,000 h	90/194	–15 to +45 / +5 to +113	0.75–1.5 mm² AWG24/AWG15
120	EDXe 1120/24.060	**186627**	24	0–5	> 0.95 C	> 90	60,000 h	90/194	–20 to +45 / –4 to +113	0.75–1.5 mm² AWG24/AWG15

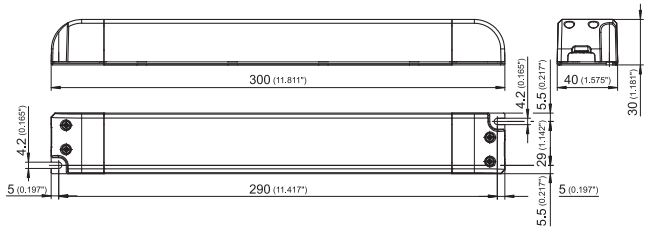
186624



186625, 186626



186627

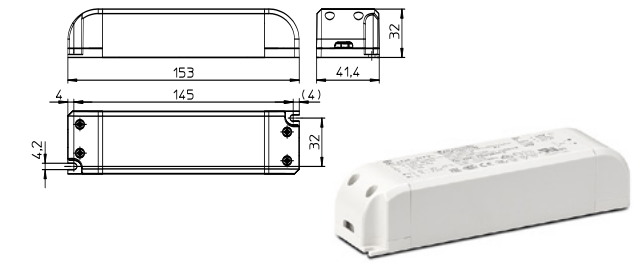


LED Drivers CV 24 V

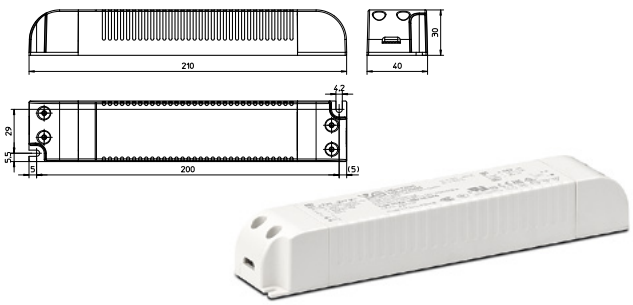
Output: max. 20, 40, 60 or 100 W
Mains voltage: 120–277 V, 50–60 Hz
Safety functions: electronic short-circuit protection, overload protection, protection against "no load" operation

Max. output W	Type	Ref. No.	Output voltage V ± 5%	Output current A	Power factor at full load (230 V)	Efficiency at full load % (230 V)	Max. service life at t_p 65 °C/149 °F	t_c max. °C/°F	Ambient temperature t_a (°C/°F)	Connection terminals
20	EDXe 120/24.075	**187036**	24	0–0.833	> 0.96 C	> 87	60,000 h	75/167	–15 to +45 / +5 to +113	0.75–2.5 mm² AWG20/AWG11
40	EDXe 140/24.076	**187037**	24	0–1.67	> 0.98 C	> 87	60,000 h	85/185	–15 to +45 / +5 to +113	0.75–2.5 mm² AWG20/AWG11
60	EDXe 160/24.077	**187038**	24	0–2.5	> 0.97 C	> 88	60,000 h	85/185	–15 to +45 / +5 to +113	0.75–2.5 mm² AWG20/AWG11
100	EDXe 1100/24.078	**187039**	24	0–4.0	> 0.96 C	> 88	60,000 h	85/185	–20 to +45 / –4 to +113	0.75–2.5 mm² AWG20/AWG11

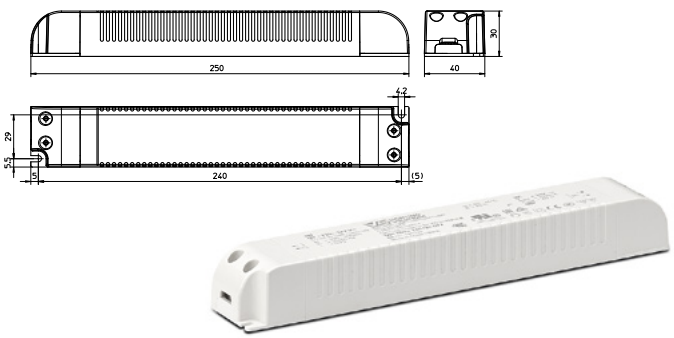
187036



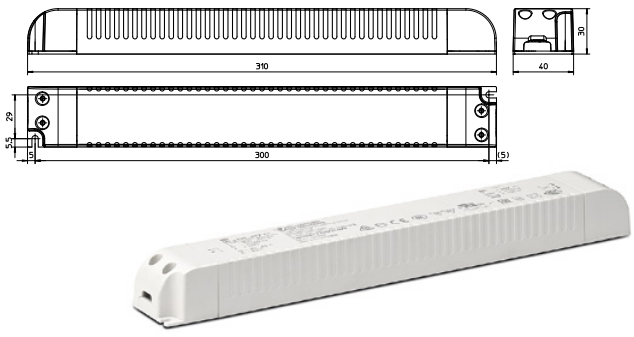
187037



187038



187039



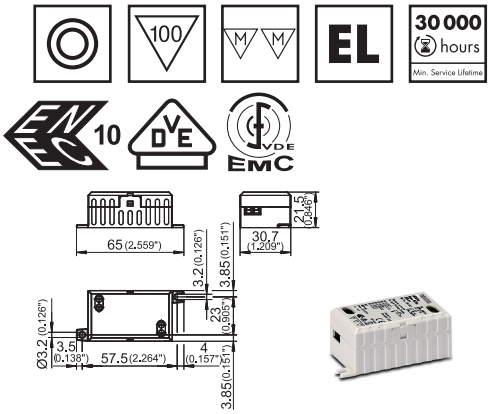
LED CC Drivers

Output: min. 8.75 W – max. 32 W
Mains voltage: 100–240 or 220–240 V, 50–60 Hz
Safety functions: electronic short-circuit protection, overload protection, protection against "no load" operation

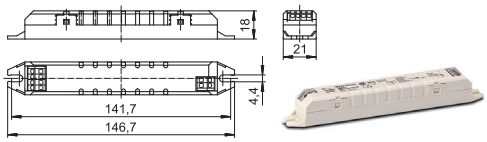
IP20 | SELV | OVERLOAD PROTECTION | 0% NO LOAD OPERATION | Guarantee 5 years | CE

Max. output W	Type	Ref. No.	Mains voltage 50–60 Hz V (±10%)	Output current mA	Voltage output DC (V)	Power factor at full load (230 V)	Efficiency at full load % (230 V)	Max. service life at max. t_p point temp. hrs.	°C/°F	t_c max. °C/°F	Ambient temperature t_a (°C/°F)	Connection terminals/ leads
350 mA												
8.75	ECXe 350.192	**186519**	220–240	350 ±5%	3–25	> 0.6	> 78	100.000	70/158	80/176	–25 to +50 / –13 to +122	screw 2.5 mm² / AWG13
13	ECXe 350.586	**187260**	120–277	350 ±5%	2–38	> 0.9	> 84	80.000	75/167	80/176	–15 to +50/ +5 to +122	push-in 0.5–1.5 mm² / AWG24/AWG15
15	ECXe 350.031	**186229**	176–264 220–240	350 ±5%	2–40	> 0.55	> 81	100.000	70/158	80/176	–25 to + 50 / –13 to + 122	push-in 0.2–1.5 mm² / AWG24/AWG15
700 mA												
9	ECXe 700.645	**187359**	100–240	700 ±7.5%	5–13	> 0.94	> 81	50.000	75/167	85/185	–15 to +45 / +5 to +113	push-in 0.5–1.5 mm² / AWG24/AWG15
1050 mA*												
32	ECXe 1050.585	**187259**	220–240	350/500/ 700/1050 ±7.5%	2–32	> 0.9	> 86	50.000	70/158	80/176	–15 to +45 / +5 to +113	push-in 0.5–1.5 mm² / AWG24/AWG15

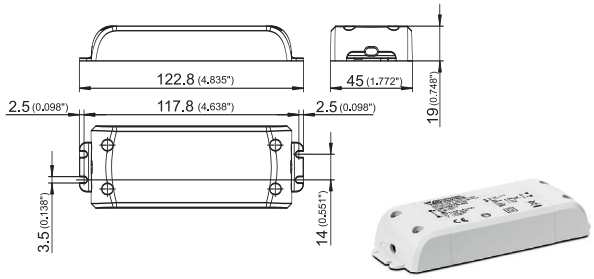
186519



186229



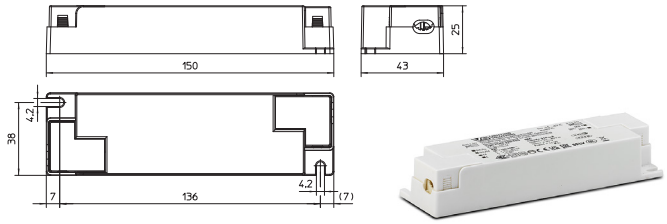
187359



187259*

187260

Compliant with EN 60335 requirements

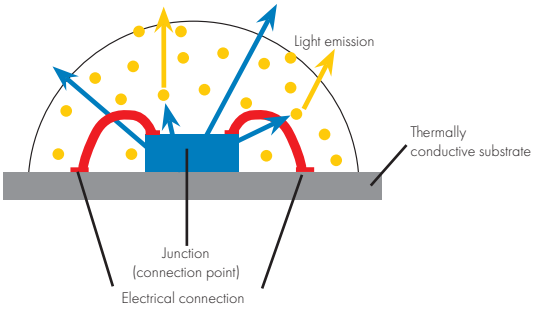


*factory setting 700 mA

Notes

Service life of an LED in extreme conditions

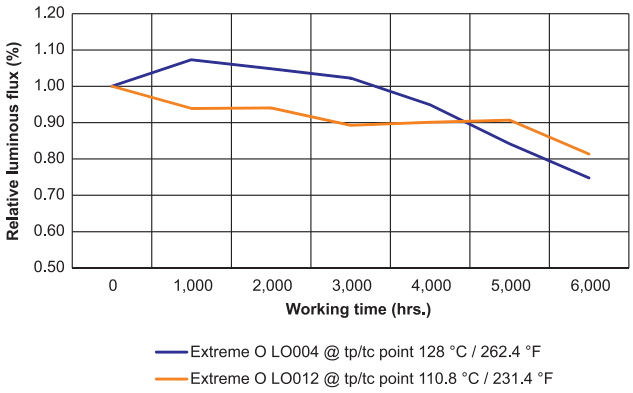
An LED – or Light Emitting Diode – is a semiconductor component that only lets current pass in one direction. If forward current is applied, the LED will emit light, dependent on the semiconductor material and doping (i.e. the inclusion of "foreign atoms").

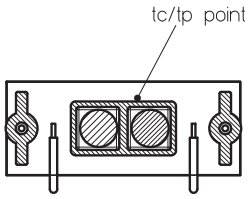


The decrease in luminous flux over the service life determines the quality of an LED solution. Based on the tests carried out in Vossloh-Schwabe's laboratory, the LED solutions' service life, even in extreme conditions such as professional ovens, exceeds 5,000 hrs.

Due to chemical and physical changes, LEDs lose some of their luminance over their service life. This process (known as degradation) is denoted by L, and a common value for L is approx. 30%. Consequently, 70% of the initial luminous flux will be retained after 5,000 hours (L70). The B value is directly dependent on the L value and denotes how many LEDs (in percentage) are permitted to fall short of the L value. A common value is B50, which means that 50% of all LEDs can fall short of the L70 value after 5,000 hours.

Degradation
A comparison between "Extreme O" LO 004 and LO012.
The graph shows that the relative luminous flux is dependent on the LED module (different LED, different PCB construction) and t_p/t_c point temperature. The decrease in luminous flux is affected by material's degradation as well.





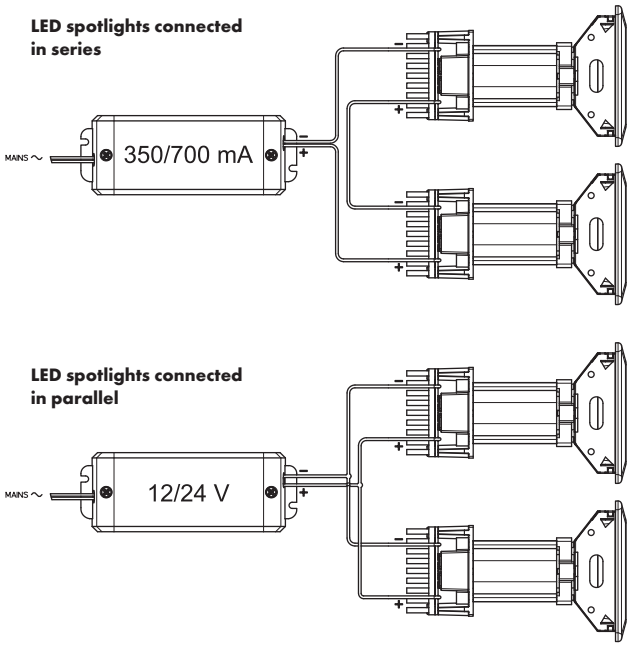
Which temperature must be measured to guarantee the proper functioning of the LED?
The temperature on the t_c/t_p point as showed in the figure below must to be measured. This measurement should be equal or below the t_p in the lumen maintenance section of each lighting solution and must never overstep t_c max. to guarantee its integrity.

Conductors for installations

All conductors must be selected to suit the lighting application conditions (see table) in terms of material, cross-section and insulation. Testing these conductors under worst case conditions is essential as the commonly occurring high temperatures considerably reduce the conductivity of the conductor and hence its current-carrying capacity.

Insulation	Conductor Material	Cross-section mm²	Cross-section inch²	Mains voltage V	Max. temperature °C / °F
PVC	Cu/Cu tin-plated	0.35	0.0542	300	105 / 221
SI	Cu tin-plated	0.75	0.1162	300	180 / 356
FEP	Cu tin-plated	0.75	0.1162	300	180 / 356
PTFE	Cu nickel-plated	0.75	0.1162	500	250 / 482
PTFE	Cu nickel-plated	1	0.0016	500	250 / 482
PTFE	Ni	1	0.0016	500	250 / 482
PTFE	Ni	1.5	0.0232	500	250 / 482

For consultation only



Wiring Diagrams for LED

LED spotlights driven by a constant current source are highlighted with the 350 mA or 700 mA lettering. The constant current driven LED spotlights must be connected in series.

LED spotlights driven by a constant voltage source are highlighted with the 12 V or 24 V lettering. The constant voltage driven LED spotlights must be connected in parallel.

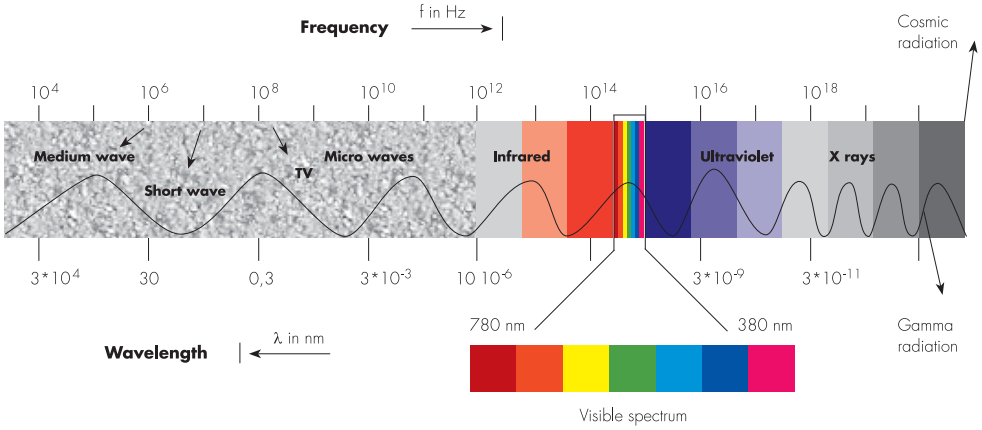
Failing to observe these directions lead to the irreparable damage of LEDs. LED spotlights may be destroyed if the polarity of the converter's output and LED's input is incorrect. Installation must be carried out in a voltage-free state (i.e. disconnected from the mains).

UV light

The UV light is a portion of the electromagnetic spectrum ranging from 10 nm to 400 nm and it is conventionally referred also as invisible light.

The UV light is not described using the photometric units used for visible light (e.g. luminous flux, illuminance) where the radiometric parameters are weighted for a typical human eye response. UV light instead is described using radiometric units such as radiant flux (W) and irradiance (W/m²). Radiometry measures the entire radiant power across the total electromagnetic spectrum.

UVA: 315 – 400 nm | UVB: 280 – 315 nm | UVC: 100 – 280 nm



Could UV light be harmless under certain conditions of use?

UV light is a known cause of skin cancer, skin ageing, eye damage, and may affect the immune system. People or animals exposed to non-solar UV light sources can suffer health damage from exposure to UV radiation. Nevertheless, when used in a specific context, following the safe levels of radiation permitted in a specific application, UV light can be harmless for human beings and/or animals. In case of not defined safe radiation levels, UV light must be securely screened to protect human beings and/or animals from UV radiation exposure.

What is UV light used for?

Depending on the wavelength, UV light can be used in multiple applications. Below some of them:

- Attraction of flying insects
- Activation of photoinitiators
- Bodycare and tanning
- Generation of Ozone
- Sanitization, disinfection and sterilization of simple and non-porous surfaces, fluid flows, and recirculated air flows

Does UV light cause any degradation on thermoplastic polymers?

Thermoplastic polymers such as ABS, PC, PP, PE and PMMA suffer a progressive color and mechanical degradation when exposed to UV light. The degradation depends not just on the irradiance applied on the polymer surface but also on the wavelength. The shorter the wavelength, the faster the degradation appears.

Notes

LIGHTING SOLUTIONS

Vossloh-Schwabe Italia S.p.A.
Via Strada S. Martino,15 - 47027 - Sarsina (FC) Italy
Phone +39 0547.98111 - Fax +39 0547.98260
vs-i@vossloh-schwabe.com
www.vossloh-schwabe.com