



it's cool to be safe
explosion proof solution for the global market

Supermec
explosion proof electrical equipment





EV - EW
EWL
FLDE
FL - FLL - FLP
LFE / LFEE - P
LLE / LLEE - P
LLE / LLEE - S
LLE / LLEE - M
LFN - P
LLN - P
LLEX 3P

it's cool to be safe
explosion proof electrical equipment



SUPER LIGHT

The equipment we introduce in this catalogue are designed to satisfy most of our client's requirements to LIGHT up hazardous areas using our explosion proof electrical equipment.

All equipment are manufactured using the latest technologies, both mechanical and electrical, using materials able to resist in most highly corrosive environments and to ensure a modern functionality solution and a long duration of investment.



LFE / LFEE - P

LFE / LFEE-P series fluorescent light fittings are normally used in the chemical and petrochemical plants, off-shore platforms, refineries and any other industry where hazardous atmospheres (gas and combustible dust) are potentially present.

The LFE / LFEE-P range has been designed to meet the main requirements of illumination of working areas and to grant a safely evacuation of the plant in case of black-outs.



Function

The LFE-P series are used for the standard illumination while LFEE-P series are proposed with two different functions: “normal + emergency” or “only emergency” operation. The LFEE-P “only emergency operation” can be supplied with diffuser showing different safety indications (EXIT, arrows, warnings, etc.) available, on request, also in local languages. The wiring diagram of LFEE-P series is designed to provide a continuous power supply to the emergency unit so to grant its full functionality anytime. Besides a LED unit, well visible from outside, indicates the status of emergency unit through green/yellow/red colours to facilitate the maintenance activity.

The internal wiring is designed to allow any combination of loop-in loop-out installation.

The light fitting can be installed using different mounting types as described in dedicated section of this catalogue.

Construction

The materials used to manufacture the LFE / LFEE-P series have been studied to grant the maximum protection against the highly corrosive agents present in these industries:

- the body in glass fiber reinforced polyester (GRP), provides a very high mechanical strength together with a good resistance against the UV ray effects;
- the transparent diffuser in UV ray resistance polycarbonate has a self-extinguishing property according to Standard UL 94;
- the gasket on cover grants an IP66 protection level ;
- the closing system in one single spot, apart from facilitating greatly the maintenance operations, is itself a guarantee of first-rate holding system since it provides a constant pressure of seals over all the perimeter of the diffuser ;
- the internal electrical components are fully sealed to prevent any corrosive action that could cause electrical faults;
- the body has two cable entries M25x1.5 on one side and one cable entry M25x1.5 on the opposite side so to allow any loop-in loop-out installation. On request it's possible to have two cable entries M25x1.5 on both sides;
- all the light fittings are equipped, as standard, with one cable gland and two stopping plugs in polyamide, IECEx/Atex certified. Other materials or combinations are available as option;
- two kinds of lampholder: G13 for traditional T8 fluorescent tubes and G5 for new generation of T5 fluorescent tubes;
- electronic ballast, equipped with some self-protective functions, works with a multirange voltage and has a two-supply circuit design so to continue to energize one fluorescent tube in case the second one is faulty;
- internal circuit is protected by fuses so to minimize any possible problems caused by over-voltage during normal operation;



The light fitting is equipped with an interlock device mechanically connected with the internal Ex de safety switches, that automatically cut-off the power when the enclosure is opened.

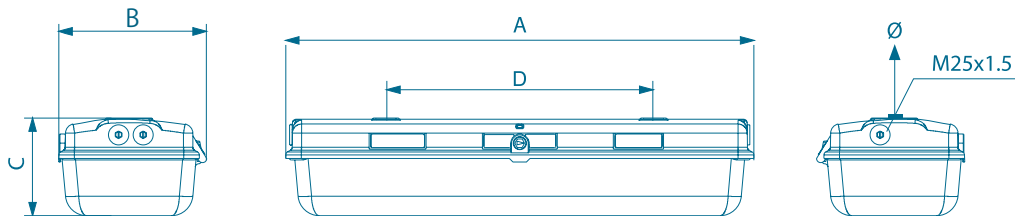
Protection

certificate number:	IECEx CML 17.0098X CML 17 ATEX 1210X
marking:	Ⓔ II 2GD Ex db e mb q IIC T4 Gb Ex tb IIIC T83°C / T98°C Db
ambient temperature:	-25°C +40°C -25°C +55°C
degree of protection:	IP66
conformity:	Directive ATEX 2014/34/EU
standards:	IEC-EN60079-0 / IEC-EN60079-1 / IEC-EN60079-5 IEC-EN60079-7 / IEC-EN60079-18 / IEC-EN60079-31
category:	suitable for Zone 1 – 2 (gas) and Zone 21 – 22 (dust)



LFE -P Explosion proof Fluorescent Light Fitting

code	overall dimensions and weight				fixing dimensions		electrical data		
	A	B	C	kg	D	ø	lampholder	power	voltage
LFE 114P	698	222	145	4.8	400	M8	G5 bi-pin	1 x 14 W	AC 110-240V 50/60Hz.
LFE 118P	698	222	145	4.8	400	M8	G13 bi-pin	1 x 18 W	AC 110-240V 50/60Hz.
LFE 128P	1310	222	145	7.7	800	M8	G5 bi-pin	1 x 28W	AC 110-240V 50/60Hz.
LFE 136P	1310	222	145	7.7	800	M8	G13 bi-pin	1 x 36 W	AC 110-240V 50/60Hz.
LFE 214P	698	222	145	5.0	400	M8	G5 bi-pin	2 x 14 W	AC 110-240V 50/60Hz.
LFE 218P	698	222	145	5.0	400	M8	G13 bi-pin	2 x 18 W	AC 110-240V 50/60Hz.
LFE 228P	1310	222	145	7.9	800	M8	G5 bi-pin	2 x 28W	AC 110-240V 50/60Hz.
LFE 236P	1310	222	145	7.9	800	M8	G13 bi-pin	2 x 36 W	AC 110-240V 50/60Hz.

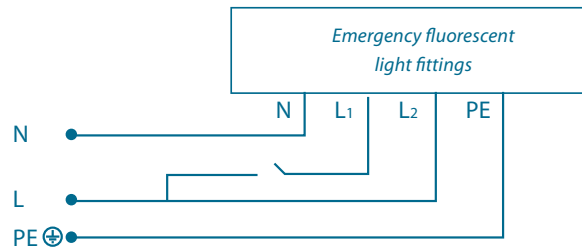
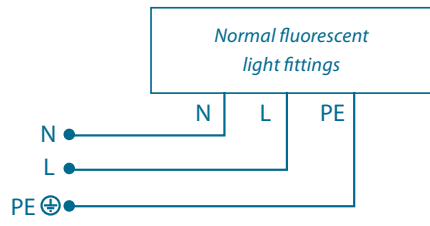


LFEE -P Explosion proof Emergency Fluorescent Light Fitting

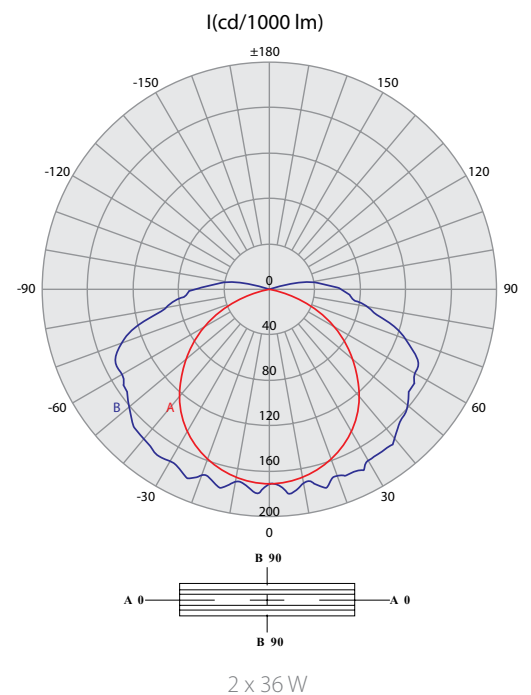
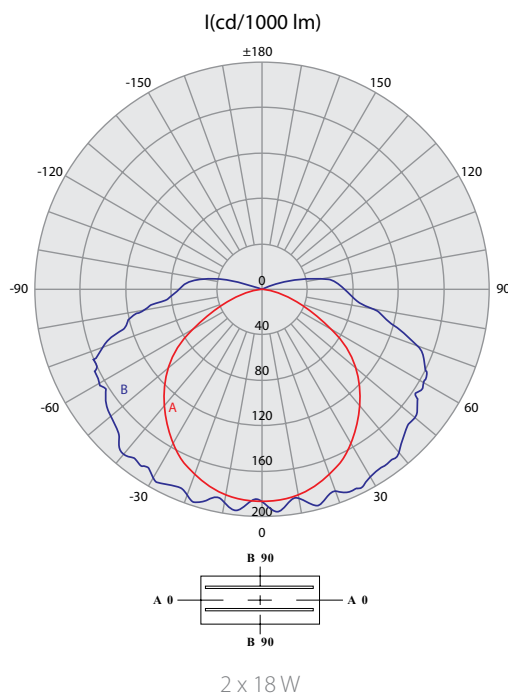
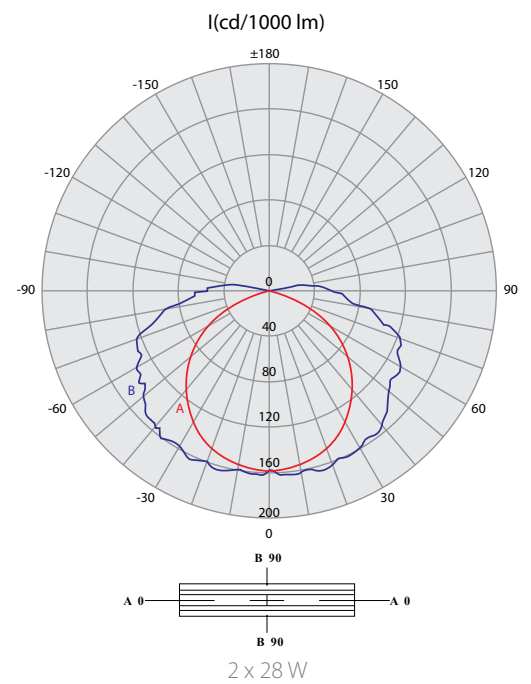
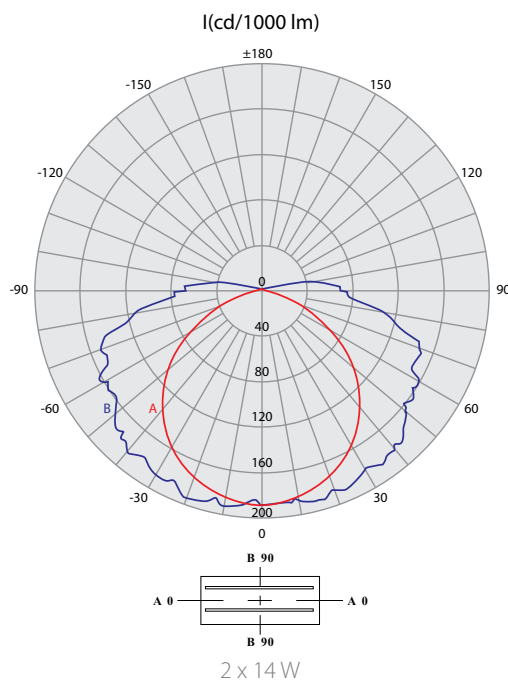
code	overall dimensions and weight				fixing dimensions		electrical data		
	A	B	C	kg	D	ø	power normal	power emergency	emergency time
LFEE 014P	698	222	145	6.6	400	M8	1 x 14 W	1 x 14 W	120 minutes
LFEE 018P	698	222	145	6.6	400	M8	1 x 18 W	1 x 18 W	120 minutes
LFEE 028P	1310	222	145	9.7	800	M8	1 x 28W	1 x 28W	120 minutes
LFEE 036P	1310	222	145	9.7	800	M8	1 x 36 W	1 x 36 W	120 minutes
LFEE 114P	698	222	145	6.6	400	M8	1 x 14 W	1 x 14 W	120 minutes
LFEE 118P	698	222	145	6.6	400	M8	1 x 18 W	1 x 18 W	120 minutes
LFEE 128P	1310	222	145	9.7	800	M8	1 x 28W	1 x 28W	120 minutes
LFEE 136P	1310	222	145	9.7	800	M8	1 x 36 W	1 x 36 W	120 minutes
LFEE 214P	698	222	145	6.8	400	M8	2 x 14 W	1 x 14 W	120 minutes
LFEE 218P	698	222	145	6.8	400	M8	2 x 18 W	1 x 18 W	120 minutes
LFEE 228P	1310	222	145	9.9	800	M8	2 x 28W	1 x 28W	120 minutes
LFEE 236P	1310	222	145	9.9	800	M8	2 x 36 W	1 x 36 W	120 minutes



Wiring Diagrams



Polar Diagrams





LLE / LLEE -P

LLE / LLEE -P series LED linear light fittings are normally used in the chemical and petrochemical plants, off-shore platforms, refineries and any other industry where hazardous atmospheres (gas and combustible dust) are potentially present.

The LLE / LLEE -P range has been designed to meet the main requirements of illumination of working areas and to grant a safely evacuation of the plant in case of black-outs.



Function

The LLE -P series are used for the standard illumination while LLEE -P series are proposed with function “normal + emergency” in order to grant a sufficient illumination to leave the area in case of temporary black-out. The wiring diagram of LLEE -P series is designed to provide a continuous power supply to the emergency unit to grant its full functionality anytime. Besides a LED unit, well visible from outside, indicates the status of emergency unit through green/yellow/red colours to facilitate the maintenance activity.

The internal wiring is designed to allow any combination of loop-in loop-out installation.

The light fitting can be installed using different mounting types as described in dedicated section of this catalogue.

Construction

The materials used to manufacture the LLE / LLEE -P series have been studied to grant the maximum protection against the highly corrosive agents present in these industries:

- the body in glass fiber reinforced polyester (GRP), provides a very high mechanical strength together with a good resistance against the UV ray effects;
- the transparent diffuser in UV ray resistance polycarbonate has a self-extinguishing property according to Standard UL 94;
- the gasket on cover grants an IP66 protection level ;
- the closing system in one single spot, apart from facilitating greatly the maintenance operations, is itself a guarantee of first-rate holding system since it provides a constant pressure of seals over all the perimeter of the diffuser ;
- the internal electrical components are fully sealed to prevent any corrosive action that could cause electrical faults;
- the body has two cable entries M25x1.5 on one side and one cable entry M25x1.5 on the opposite side so to allow any loop-in loop-out installation. On request it's possible to have two cable entries M25x1.5 on both sides;
- all the light fittings are equipped, as standard, with one cable gland and two stopping plugs in polyamide, ATEX/IECEx certified. Other materials or combinations are available as option;
- the LED modules are fixed on internal frame and are available with or without diffuser; the diffuser is anyway available as option;
- electronic ballast, equipped with some self-protective functions, works with a multirange voltage and has a two-supply circuit design so to continue to energize one LED module in case the second one is faulty;
- internal circuit is protected by fuses so to minimize any possible problems caused by over-voltage during normal operation;



Supermec, always pays special attention to local problems inside the plants.

For installation in tropical environments, LLE -P Series can be provided with breather to avoid water condensation that, mixed with chemical agents, is the first cause of corrosion of electrical components inside the enclosures.

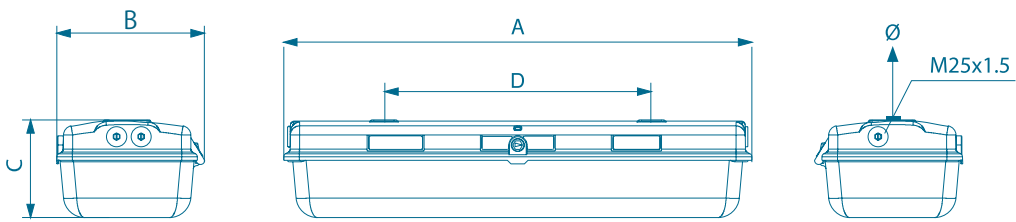
Protection

certificate number:	IECEx CML 17.0087X CML 17 ATEX 1171X
marking:	Ⓜ II 2GD Ex db eb mb op is q IIC T4/T5 Gb Ex tb op is IIIC T80°C Db
ambient temperature:	-25°C +40°C -25°C +55°C
degree of protection:	IP66
conformity:	Directive ATEX 2014/34/EU
standards:	IEC-EN60079-0 / IEC-EN60079-1 / IEC-EN60079-5 / IEC-EN60079-7 IEC-EN60079-18 / IEC-EN60079-28 / IEC-EN60079-31
category:	suitable for Zone 1 – 2 (gas) and Zone 21 – 22 (dust)



LLE -P Explosion proof LED Light Fitting

code	overall dimensions and weight				fixing dimensions		electrical data		
	A	B	C	kg	D	ø	LED module	power	voltage
LLE 130P	698	222	145	4.8	400	M8	without diffuser	1 x 30 W	AC 100-250V 50/60Hz.
LLE 230P	1310	222	145	7.7	800	M8	without diffuser	2 x 30 W	AC 100-250V 50/60Hz.
LLE 130PD	698	222	145	4.8	400	M8	with diffuser	1 x 30 W	AC 100-250V 50/60Hz.
LLE 230PD	1310	222	145	7.7	800	M8	with diffuser	2 x 30 W	AC 100-250V 50/60Hz.

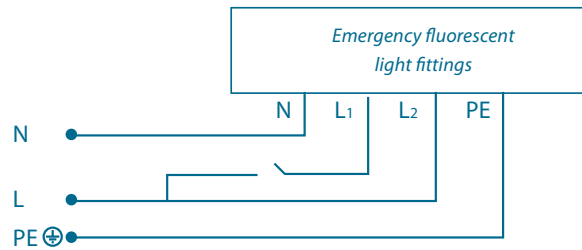
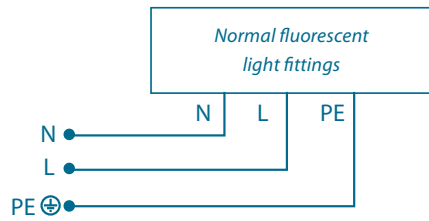


LFEE -P Explosion proof Emergency LED Light Fitting

code	overall dimensions and weight				fixing dimensions		electrical data		
	A	B	C	kg	D	ø	power normal	power emergency	emergency time
LLEE 130P	698	222	145	6.6	400	M8	1 x 30W	1 x 10 W	120 minutes
LLEE 230P	1310	222	145	9.7	800	M8	2 x 30 W	2 x 10 W	120 minutes
LLEE 130PD	698	222	145	6.6	400	M8	1 x 30W	1 x 10 W	120 minutes
LLEE 230PD	1310	222	145	9.7	800	M8	2 x 30 W	2 x 10 W	120 minutes

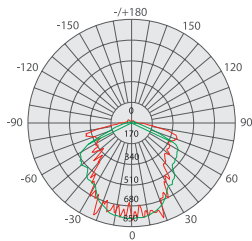
Note: the codes with final "PD" indicated that LED module is including the diffuser

Wiring Diagrams



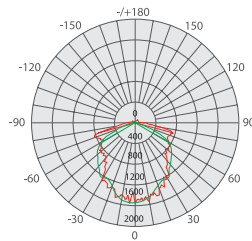
Polar Diagrams

without diffuser



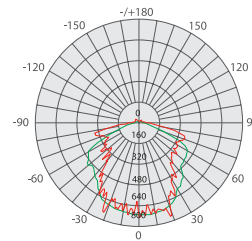
The average beam angle (50%) : 112.2°

LLE 130P



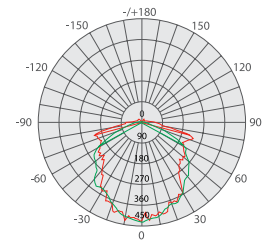
The average beam angle (50%) : 133.5°

LLE 230P



The average beam angle (50%) : 123.0°

LLEE 130P

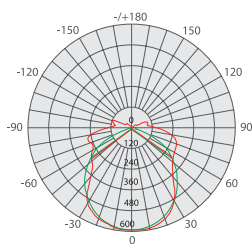


The average beam angle (50%) : 134.8°

LLEE 230P

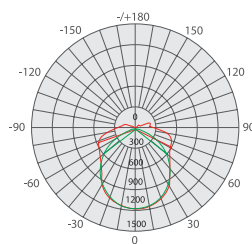
— CO/180
— C90/270

with diffuser



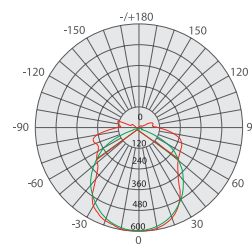
The average beam angle (50%) : 108.9°

LLE 130PD



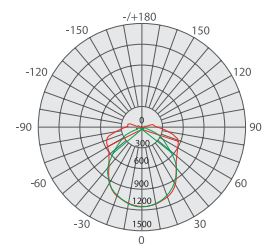
The average beam angle (50%) : 118.5°

LLE 230PD



The average beam angle (50%) : 108.9°

LLEE 130PD



The average beam angle (50%) : 117.8°

LLEE 230PD

— CO/180
— C90/270



ACCESSORIES AND SPARE PARTS LFE - LLE - LFN - LLN

Mounting and Electrical accessories are available on request.

They have been divided into categories with a cross-reference table to recognize the models of Light Fittings where they can be used.





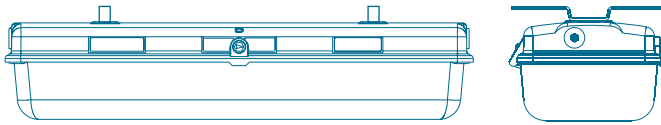
Code	Mounting Type Description	Material	LFE - P	LFE - P	LLE - P	LLE - P	LLE - S	LLE - S	LFE - P	LLE - P	Image
			●	●	●	●			●	●	
ULS 1G	Chain Support Set for Ceiling Mounting Short / Long Body	G	●	●	●	●			●	●	
ULS 1S		S	●	●	●	●			●	●	
ULS2G	Pendant Support Set for Ceiling Mounting Short / Long Body	G	●	●	●	●			●	●	
ULS 2S		S	●	●	●	●			●	●	
ULS 3G	Rigid Support Set for Flat Ceiling Mounting Short / Long Body	G	●	●	●	●			●	●	
ULS 3S		S	●	●	●	●			●	●	
ULS 4G	Rigid Support Set for Frame Mounting Short / Long Body	G	●	●	●	●			●	●	
ULS 4S		S	●	●	●	●			●	●	
ULS 5G	Multi-Angle Support Set for Wall / Ceiling Mounting Short / Long Body	G	●	●	●	●	●	●	●	●	
ULS 5S		S	●	●	●	●	●	●	●	●	
ULS 6G	Frame Support for False Ceiling Mounting Short Body	G					●	●			
ULS 6S		S					●	●			
ULS 7G	Frame Support for False Ceiling Mounting Long Body	G					●	●			
ULS 7S		S					●	●			
ULS 8G	Clamp Support Set for Poles Ø 42 mm.	G	●	●	●	●			●	●	
ULS 8S		S	●	●	●	●			●	●	
ULS 9G	Pole Ø 42 mm. - Wall Mounting - Short Body	G	●	●	●	●			●	●	
ULS 10G	Pole Ø 42 mm. - Wall Mounting - Long Body	G	●	●	●	●			●	●	
ULS 11G	Pole Ø 42 mm. - Fence Mounting - Short Body	G	●	●	●	●			●	●	
ULS 12G	Pole Ø 42 mm. - Fence Mounting - Short Body	G	●	●	●	●			●	●	
ULS 13G	Pole Ø 42 mm. - Basement Mounting - Short Body	G	●	●	●	●			●	●	
ULS 14G	Pole Ø 42 mm. - Basement Mounting - Short Body	G	●	●	●	●			●	●	
ULS 15G	Bracket Support for poles Ø 47 mm. - Short Body	G	●	●	●	●			●	●	
ULS 16G	Bracket Support for poles Ø 47 mm. - Long Body	G	●	●	●	●			●	●	
ULS 17G	Pole Ø 47 mm. - Fence Mounting for Bracket Support	G	●	●	●	●			●	●	
ULS 18G	Pole Ø 47 mm. - Basement Mounting for Bracket Support	G	●	●	●	●			●	●	

Legenda Materials:

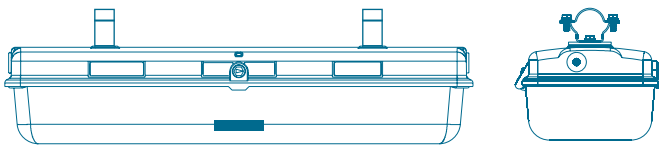
G . Galvanized Steel

S : Stainless Steel

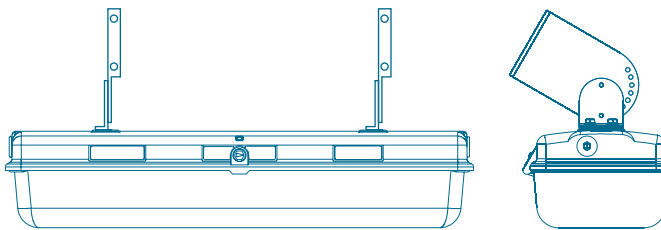
Mounting Examples - GRP Light Fittings



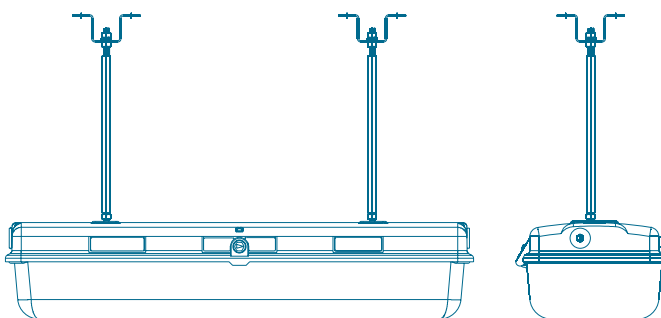
Ceiling Type
 Accessory code : ULS 3
 Normally used for wall and ceiling mounting
 with a limited installation space



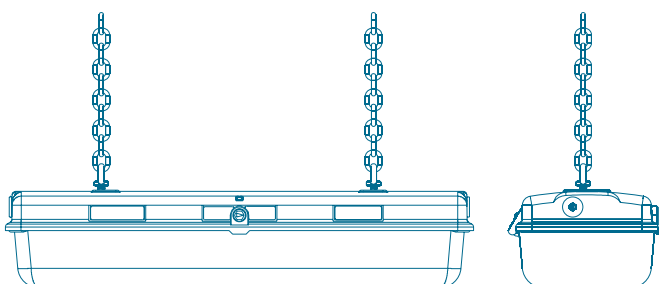
Clamp Type
 Accessory code : ULS 8
 Normally used for pole installation.
 Available, on request, with different range of
 clamping diameters



Multi-angle Type
 Accessory code: ULS 5
 Normally used for wall and ceiling mounting
 when it's requested a particular illumination spot



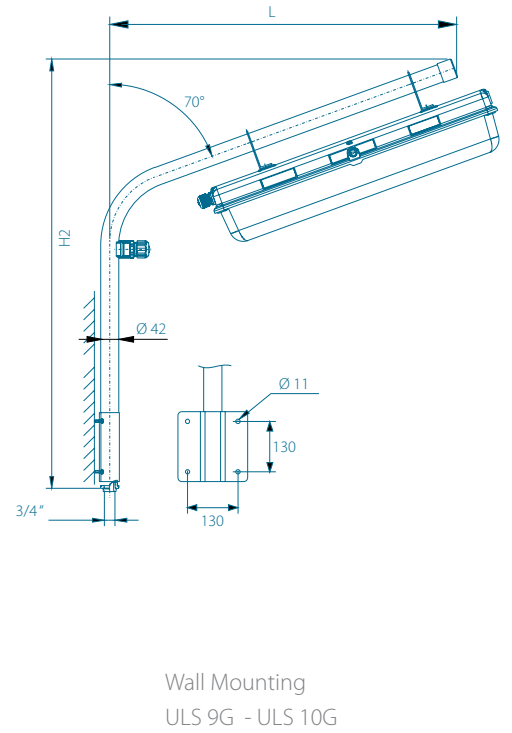
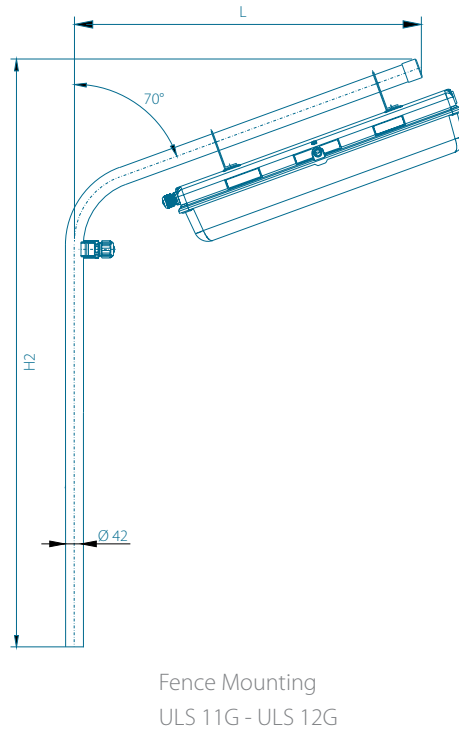
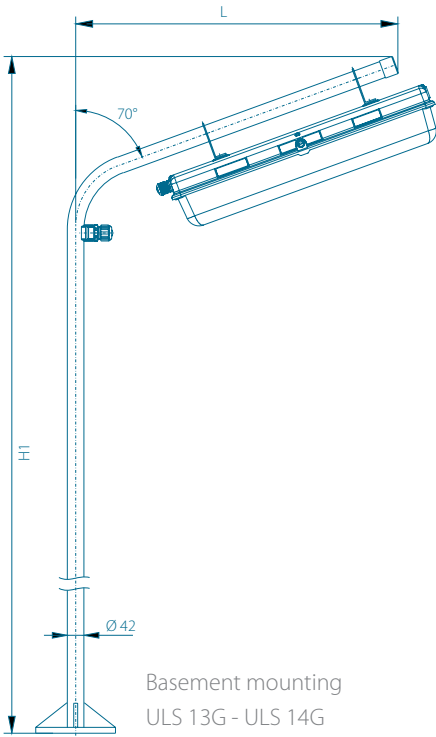
Pendat Type
 Accessory code: ULS 2
 Normally used for ceiling mounting
 Distance ceiling to light fittings: 300 mm.



Chain Type
 Accessory code: ULS 1
 Normally used for ceiling mounting
 Distance ceiling to light fittings: 500 mm.



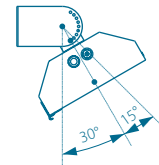
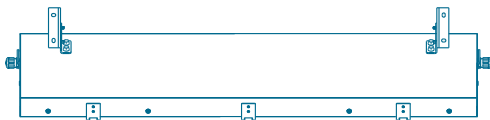
Pole Installation Examples - GRP Light Fittings



Supermec proposes a standardized range of poles Ø 42 mm. complete with fixing accessories and cable passages for different installation purposes of short and long body of our GRP Light Fittings. On request, our technical staff is pleased to assist our client for special requirements.

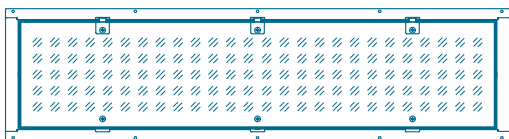
Size	L	H1	H2	H3
Short Body	800	2500	2500	1050
Long Body	1300	2500	2500	1050

Mounting Installation - Metal Light Fittings

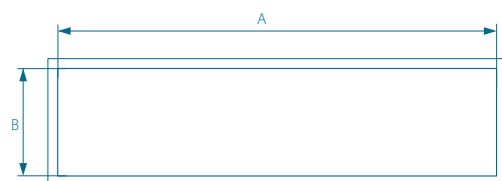


The metal body series LLE(E) light fittings are normally installed through a multi-angle support set ULS 5 used for ceiling and wall mounting.

The recessed model LLE(E)/R is provided with external frame for a direct installation on false-ceiling. The frame is also available on request as accessory in both materials.



Cutting Sizes for False-Ceiling		
Model / Size	A	B
Short Body	750	325
Long Body	1385	325





ULSP - Pole Installation System for GRP Light Fittings

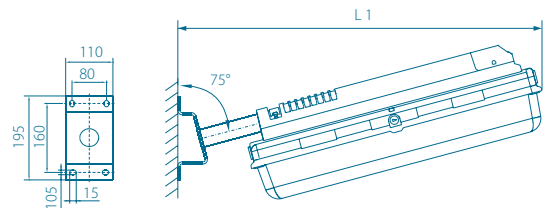
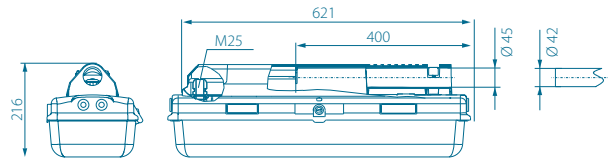
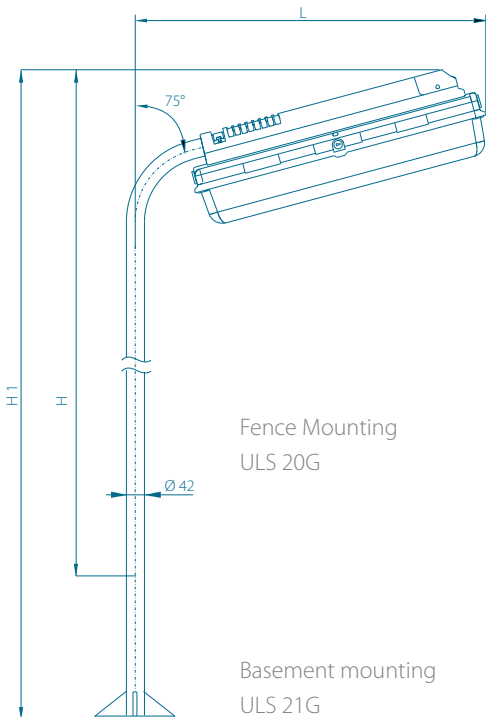
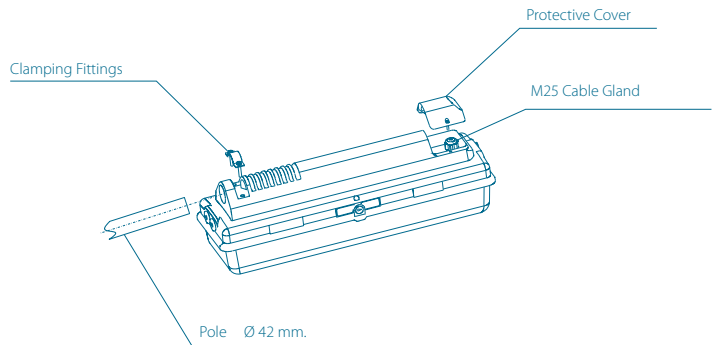
All models of GRP Light Fittings can be provided with special accessory **ULSP** installed on top of the body. The ULSP can be working on both short and long body of GRP Light Fittings and can house a pole of 42 mm. diameter.

This accessory must be required together with correspondent model of GRP Light Fitting since it's necessary to provide a special cable entry on top of the body.

Ordering Codes

Code	Mounting Type Description
ULSP	GRP Clamp Support Set - Pole Ø 42 mm.
ULS 19G	Pole Ø 42 mm. - Wall Mounting
ULS 20G	Pole Ø 42 mm. - Fence Mounting
ULS 21G	Pole Ø 42 mm. - Basement Mounting

Size	H	H1	L	L1
Short Body	2635	2645	815	850
Long Body	2740	2750	1405	1440



Wall Mounting
ULS 19G