

FLFE

- Zone 1, 2, 21, 22
- Excellent "CX" coefficient
- Easy re-lamping
- Designed to last over time

"Ex e" terminal board housing

*4 Joule shock resistant
borosilicate glass*

*White painted
reflector/frame*

Silicone sealing

Simplified maintenance



FLFE series Lighting fixtures for fluorescent tubes

Ex de

FLFE series lighting fixtures have two low copper content aluminium heads fitted with G13 lamp holder, a tempered borosilicate glass tube that is resistant to changes in heat and a white painted aluminium reflector. This lighting fixture features an "Ex e" terminal board housing that allows entry to the lamp with a cable gland with an "Ex" seal (normal) as specified in installation standard (EN/IEC 60079.14). The lighting fixture can be supplied in both the normal and emergency version. The round cross section of the lamp provides a better "Cx" coefficient with less resistance to the wind and less accumulation of dust. For this reason, these units are recommended for use in hazardous places where climatic and environmental conditions are severe and as they require less maintenance thanks to a very high ageing index. FLFE series has been designed to facilitate and speed up maintenance operations. As the electrical components are housed on a frame with guides, re-lamping is quick and efficient. The fact that the fixture is fitted with a glass tube as opposed to a plastic material, makes it more effective and with a longer lifespan.

Application sectors:



Oil refineries



Chemical and petrochemical plants



Oil and combustible liquid depots



Offshore plants



Onshore plants



Stair handrails



Chemical Farm produce applications



100% Cortem product

CERTIFICATION DATA

Classification:

Group II

Category 2GD

Installation: EN 60079.14

zona 1 - zona 2 (Gas)

zona 21 - zona 22 (Dust)

Marking:

CE 0722 Ex II 2GD Ex de IIC T6 Gb - Ex tb IIIC T67°C÷T80°C Db IP66

Certification:

ATEX CESI 09 ATEX 008

IEC Ex CES 11.0021

TR CU AVAILABLE

INMETRO DNV 12.0159

All IEC Ex, TR CU and INMETRO certification data can be downloaded at www.cortemgroup.com

Standards:

CENELEC EN 60079-0: 2012, EN 60079-1: 2007, EN 60079-7: 2007, EN 60079-31: 2009 and EUROPEAN DIRECTIVE 2014/34/UE
IEC 60079-0: 2011, IEC 60079-1: 2007, IEC 60079-7: 2007, IEC 60079-31: 2008
European Directive 2006/95 Low voltage
European Directive 2004/108 Electromagnetic compatibility
European Directive 2003/108 WEEE Waste electrical and electronic equipment
European Directive 2011/64 RoHS

Class temperature:



85°C (T6)

Ambient temperature::



Standard -20°C +55°C



With emergency -20°C +50°C

Special with emergency -20°C +55°C

Degree of protection

IP66

FLFE series Lighting fixtures for fluorescent tubes



ORIGINAL PRODUCT

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy heads
External tube:	Shock and high temperature resistant borosilicate glass
Gaskets:	Acid/hydrocarbon resistant NBR on covers
Inner frame:	White painted aluminium that acts as reflector
Bolts and screws:	Stainless steel
Cap chain:	Stainless steel
Mounting:	2 x M8 holes
Entries:	2 x ISO M25 entries. Fixture kit with PLG2IB plug and NAV25IB cable gland
Coating:	Epoxy coating Ral 7035 (Light grey)
Corrosion Resistance :	The STANDARD of the aluminium alloy used by Cortem has passed the tests required by standards EN60068-2-30 (hot/humid cycles) and EN60068-2-11 (salt mist tests)

ELECTRICAL FEATURES

Lamp holders:	Bi-pin G13
Ballast:	Single channel electronic
Rated voltage:	230 V AC
Rated frequency:	50/60 Hz
Connection:	Direct to the terminal board L, N, Pe section 4 mm ² with jumpers suitable for input/output
Power factor:	0.98
Emergency unit:	Electronic inverter 110/230V, 50/60Hz, 18...58W. Ni/Cd batteries, 4Ah or 7Ah, 6V, battery charging monitored by high luminosity red LED (estimated LED lifespan 50,000 hours)
Wiring:	Silicone rubber cables with glass braid insulation for high temperatures
Safety:	Emergency safety switch fitted inside lighting fixture

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

2 pin Ø26 fluorescent tubes model T8
 Installation mounting brackets
 Stainless steel or galvanized steel guard with external aluminium protection
 External aluminium protection recommended for outdoor installations
 Re-lamping bracket for use on in-line lighting fixtures
 Rated voltage: 277 V with double channel electronic ballast (code FLFE-236EF4/**277**)
 110/240 V with double channel electronic ballast (code FLFE-236EF4**S**)
 Can also be supplied in single tube normal operation version: FLFE-118 / FLFE-136 / FLFE-158
 Lighting fixture with emergency system and ambient temperature -20°C +55°C with batteries housed in junction box SA141410
 Rated voltage: 24 Vdc only for normal operation (codice FLFE-118/**24**)
 Execution with LED tubes from 22 W. Rated voltage: 220/240 Vac (Code FLFE-**122L** and FLFE-**222L**). LED tubes included.
 Cable entry: 2 x ISO M20 holes. Lighting fixture with 1 model PLG1IB plugs and 1 model NAV20SIB cable glands for non-armoured cable (code FLFE-118EF4/**20**)

FLFE series selection chart

Double lamp

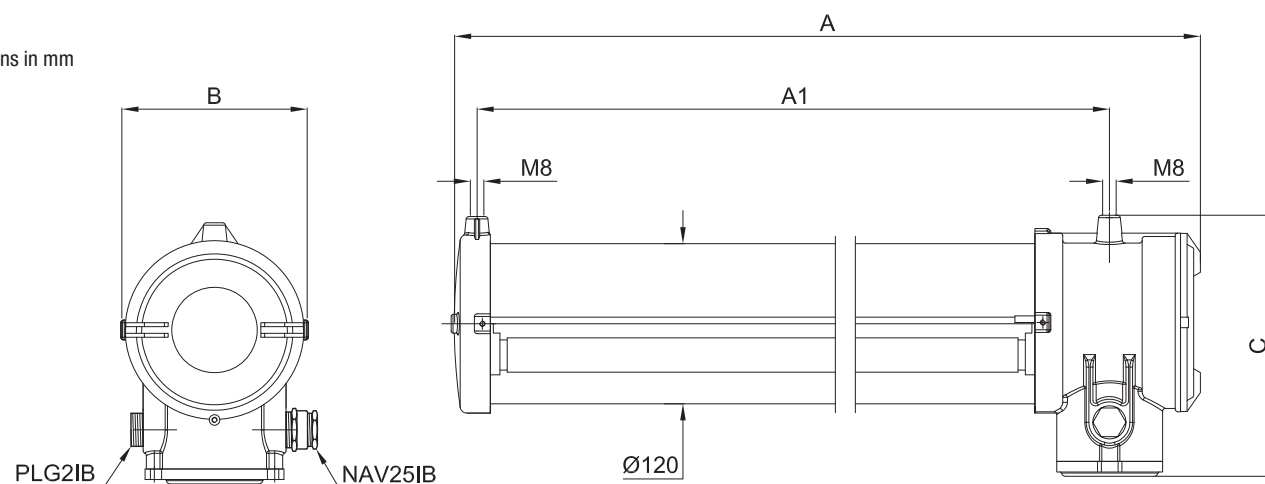
Codice	Dimensions mm				Operating type	N° of lamps	Power supply	Watt	Discharge time	Weight kg	mm
	A	A1	B	C							
FLFE-218	725	640	142	197	-	2	230 V 50/60 Hz.	18	-	5,4	240x230x800
FLFE-236	1325	1240	142	197	-	2	230 V 50/60 Hz.	36	-	7,5	240x230x1410
FLFE-258	1625	1540	142	197	-	2	230 V 50/60 Hz.	58	-	10	240x230x1700
FLFE-218EF4	725	640	142	197	normal + emergency	2	230 V 50/60 Hz.	18	120'	6,1	240x230x800
FLFE-236EF4	1325	1240	142	197	normal + emergency	2	230 V 50/60 Hz.	36	90'	9,0	240x230x1410
FLFE-258EF4	1625	1540	142	197	normal + emergency	2	230 V 50/60 Hz.	58	70'	10,6	240x230x1700
FLFE-218EF7	725	640	142	197	normal + emergency	2	230 V 50/60 Hz.	18	200'	7,3	240x230x800
FLFE-236EF7	1325	1240	142	197	normal + emergency	2	230 V 50/60 Hz.	36	180'	9,4	240x230x1410
FLFE-258EF7	1625	1540	142	197	normal + emergency	2	230 V 50/60 Hz.	58	150'	12,9	240x230x1700

Lighting fixture in emergency for loop-in loop-out execution (see methods of installation)

Code	Dimensions mm				Operating type	N° of lamps	Power supply	Watt	Discharge time	Weight kg	mm
	A	A1	B	C							
FLFE-218EF4EE	725	640	142	197	normal + emergency	2	230 V 50/60 Hz.	18	120'	8,8	240x230x800
FLFE-236EF4EE	1325	1240	142	197	normal + emergency	2	230 V 50/60 Hz.	36	90'	11,2	240x230x1410
FLFE-258EF4EE	1625	1540	142	197	normal + emergency	2	230 V 50/60 Hz.	58	70'	13,5	240x230x1700
FLFE-218EF7EE	725	640	142	197	normal + emergency	2	230 V 50/60 Hz.	18	200'	8,3	240x230x800
FLFE-236EF7EE	1325	1240	142	197	normal + emergency	2	230 V 50/60 Hz.	36	180'	11,7	240x230x1410
FLFE-258EF7EE	1625	1540	142	197	normal + emergency	2	230 V 50/60 Hz.	58	150'	14	240x230x1700

DIMENSIONAL DRAWING

Dimensions in mm



FLFE series selection chart

Ex de

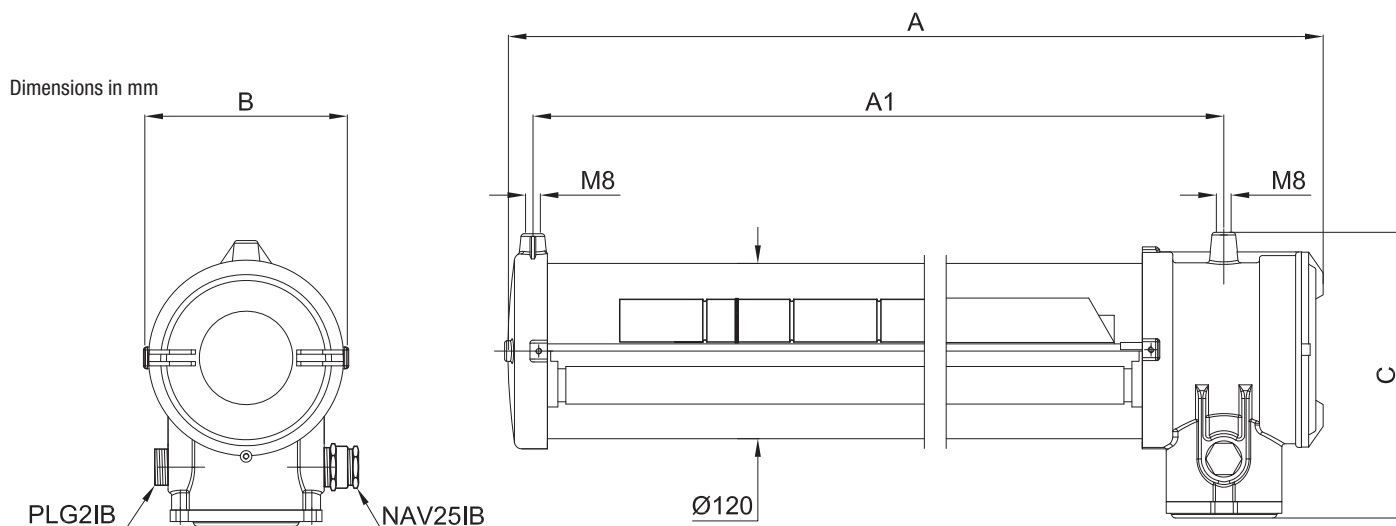
Single lamp

Code	Dimensions mm				Operating type	N° of lamps	Power supply	Watt	Discharge time	Weight kg	mm
	A	A1	B	C							
FLFE-118EF4	725	640	142	197	normal + emergency	1	230 V 50/60 Hz.	18	120'	6,8	240x230x800
FLFE-136EF4	1325	1240	142	197	normal + emergency	1	230 V 50/60 Hz.	36	90'	10,2	240x230x1410
FLFE-158EF4	1625	1540	142	197	normal + emergency	1	230 V 50/60 Hz.	58	70'	12,5	240x230x1700
FLFE-118EF7	725	640	142	197	normal + emergency	1	230 V 50/60 Hz.	18	200'	7,3	240x230x800
FLFE-136EF7	1325	1240	142	197	normal + emergency	1	230 V 50/60 Hz.	36	180'	10,7	240x230x1410
FLFE-158EF7	1625	1540	142	197	normal + emergency	1	230 V 50/60 Hz.	58	150'	13	240x230x1700
FLFE-118EE4	725	640	142	197	emergency	1	230 V 50/60 Hz.	18	120'	6,8	240x230x800
FLFE-136EE4	1325	1240	142	197	emergency	1	230 V 50/60 Hz.	36	90'	8,9	240x230x1410
FLFE-158EE4	1625	1540	142	197	emergency	1	230 V 50/60 Hz.	58	70'	12,5	240x230x1700
FLFE-118EE7	725	640	142	197	emergency	1	230 V 50/60 Hz.	18	200'	7,3	240x230x800
FLFE-136EE7	1325	1240	142	197	emergency	1	230 V 50/60 Hz.	36	180'	10,7	240x230x1410
FLFE-158EE7	1625	1540	142	197	emergency	1	230 V 50/60 Hz.	58	150'	13	240x230x1700

Lighting fixture in emergency for loop-in loop-out execution (see methods of installation)

Code	Dimensions mm				Operating type	N° of lamps	Power supply	Watt	Discharge time	Weight kg	mm
	A	A1	B	C							
FLFE-118EF4EE	725	640	142	197	normal + emergency	1	230 V 50/60 Hz.	18	120'	8,8	240x230x800
FLFE-136EF4EE	1325	1240	142	197	normal + emergency	1	230 V 50/60 Hz.	36	90'	11,2	240x230x1410
FLFE-158EF4EE	1625	1540	142	197	normal + emergency	1	230 V 50/60 Hz.	58	70'	13,5	240x230x1700
FLFE-118EF7EE	725	640	142	197	normal + emergency	1	230 V 50/60 Hz.	18	200'	8,3	240x230x800
FLFE-136EF7EE	1325	1240	142	197	normal + emergency	1	230 V 50/60 Hz.	36	180'	11,7	240x230x1410
FLFE-158EF7EE	1625	1540	142	197	normal + emergency	1	230 V 50/60 Hz.	58	150'	14	240x230x1700

DIMENSIONAL DRAWING



FLFE series selection chart

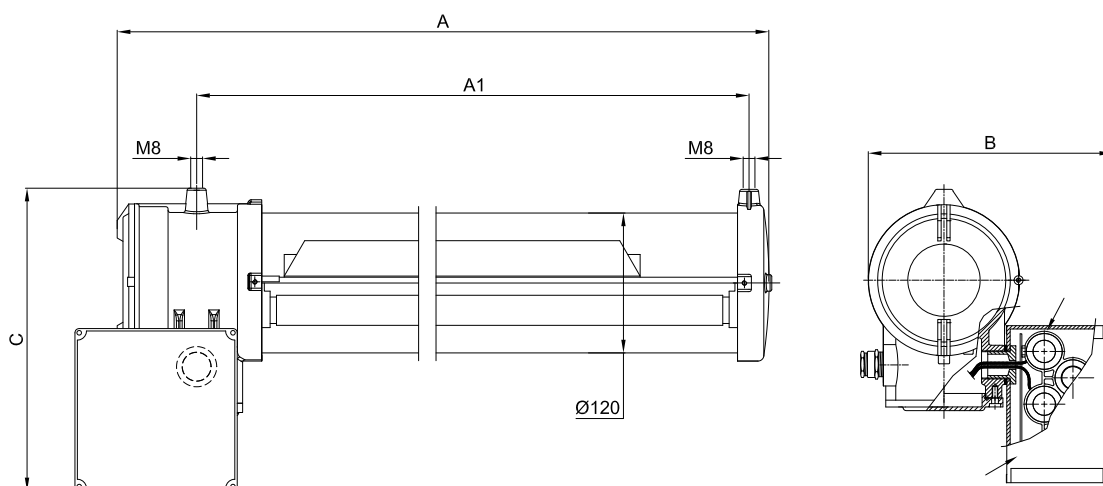
Lighting fixture in emergency for ambient temperature -20°C +55°C
manufactured with batteries housed in junction box type SA141410

Code	Dimensions mm				Operating type	N° of lamps	Power supply	Watt	Discharge time	Weight kg	 mm
	A	A1	B	C							
FLFE-218EF4E	725	640	223	273	normale+emergenza	2	230 V 50/60 Hz.	18	120'	7,8	370x320x800
FLFE-236EF4E	1325	1240	223	273	normale+emergenza	2	230 V 50/60 Hz.	36	90'	11,2	370x320x1410
FLFE-218EF7E	725	640	223	273	normale+emergenza	2	230 V 50/60 Hz.	18	200'	8,3	370x320x800
FLFE-236EF7E	1325	1240	223	273	normale+emergenza	2	230 V 50/60 Hz.	36	180'	11,7	370x320x1410

Code	Dimensions mm				Operating type	N° of lamps	Power supply	Watt	Discharge time	Weight kg	 mm
	A	A1	B	C							
FLFE-118EF4E	725	640	223	273	normal + emergency	1	230 V 50/60 Hz.	18	120'	7,8	370x320x800
FLFE-136EF4E	1325	1240	223	273	normal + emergency	1	230 V 50/60 Hz.	36	90'	11,2	370x320x1410
FLFE-118EF7E	725	640	223	273	normal + emergency	1	230 V 50/60 Hz.	18	200'	8,3	370x320x800
FLFE-136EF7E	1325	1240	223	273	normal + emergency	1	230 V 50/60 Hz.	36	180'	11,7	370x320x1410
FLFE-118EE4E	725	640	223	273	emergency	1	110/230 V 50/60 Hz.	18	120'	7,8	370x320x800
FLFE-136EE4E	1325	1240	223	273	emergency	1	110/230 V 50/60 Hz.	36	90'	11,2	370x320x1410
FLFE-118EE7E	725	640	223	273	emergency	1	110/230 V 50/60 Hz.	18	200'	8,3	370x320x800
FLFE-136EE7E	1325	1240	223	273	emergency	1	110/230 V 50/60 Hz.	36	180'	11,7	370x320x1410

Execution only possible for 18W and 36W lighting fixtures

DIMENSIONAL DRAWING



Dimensions in mm

DON'T FORGET TO ORDER THE ACCESSORIES

Example: Type of lighting fixture +
FLFE-218

Fluorescent tubes
LAMPL18W21

+

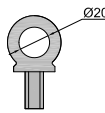
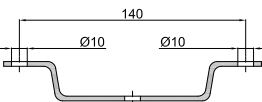
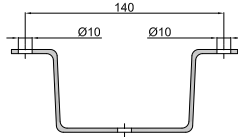
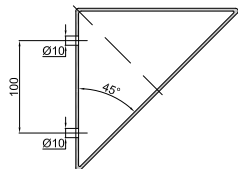
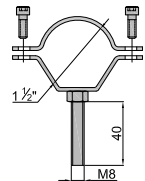
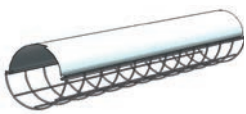
Installation bracket
G-258

+

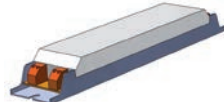
other... see key



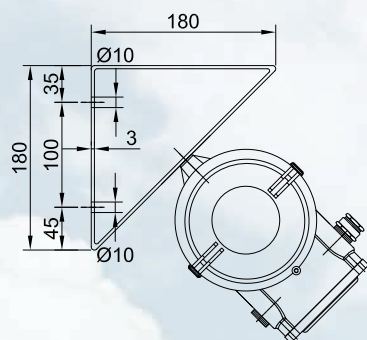
Accessori a richiesta e parti di ricambio serie FLFE...

ILLUSTRAZIONE	DESCRIZIONE	MODELLO	CARATTERISTICHE	CODICE	LEGENDA
	Triphosphor fluorescent tubes G13 fitting 3.000K	18 W	1350 lm (FD18W)	LAMPL18W21	 
		36 W	3350 lm (FD36W)	LAMPL36W21	
		58 W	5200 lm (FD58W)	LAMPL58W21	
	Compact fluorescent tubes 2G11 fittings	36 W	2700 lm	LAMP-PLL36W	 
	Tige	Lunghezza: 250 mm	Material: stainless steel	BRF8MIN/250	 
	Type O eyebolt		Material: galvanised steel	GOF-8	 
	Type U bracket complete with screws		Material: bracket: galvanised steel screws: stainless steel	G-0609	 
	Type V bracket complete with screws		Material: bracket: galvanised steel screws: stainless steel	G-0610	 
	Type D bracket complete with screws		Material: bracket: galvanised steel screws: stainless steel	G-0611	 
	Type P bracket		Material: galvanised steel	G-0480	 
	Guard with Light blue/white painted 10/10 aluminium external protection	18 W	Stainless steel guard	G18-0529	 
		36 W		G36-0529	
		58 W		G58-0529	
		18 W	Galvanized steel guard	G18-0529G	
		36 W		G36-0529G	
		58 W		G58-0529G	

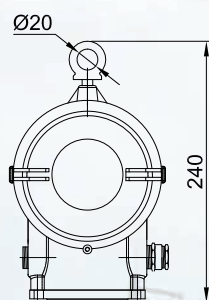
Accessori a richiesta e parti di ricambio serie FLFE...

ILLUSTRAZIONE	DESCRIZIONE	MODELLO	CARATTERISTICHE	CODICE	LEGENDA
	External protection	18W	Light blue/white painted 10/10 aluminium external protection	G18-568	 
		36W		G36-568	
		58W		G58-568	
		18W	10/10 stainless steel AISI 304 external protection	G18-568IN	
		36W		G36-568IN	
		58W		G58-568IN	
	Cable gland	ISO M25	std. range cavo 11÷20	NAV25IB	
	Reflector inner frame	2 x 18 W	Painted 20/10 aluminium	G18-567	
		2 x 36 W		G36-567	
		2 x 58 W		G58-567	
		1 x 18 W		G18-661	
		1 x 36 W		G36-661	
		1 x 58 W		G58-661	
	Battery pack		4 Ah	BATT4AH/D	
			7 Ah	BATT7AH/D	
	Battery pack for execution with batteries housed in type SA141410 junction box	18W e 36W	4 Ah	G0309B	
			7 Ah	G-0309	
	Electronic ballast	2 x 18 W 2 x 36 W	230 V 50/60 Hz	RV236	
		1 x 18 W 1 x 36 W		RV136	
		2 x 58 W		R258P	
		1 x 58 W		R158P	
	Electronic inverter		110/230 V 50/60 Hz	INVERTER	
	Lamp holder	FLFE-1..	G13 250 V, 4 A	STU3249-12/S	
		FLFE-2..			
	Re-lamping bracket with clip system for use on in-line lighting fixtures		Material: galvanised steel	G-0318 + G-0318/1	 

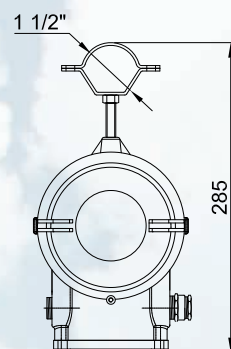
Installation and mounting methods FLFE series



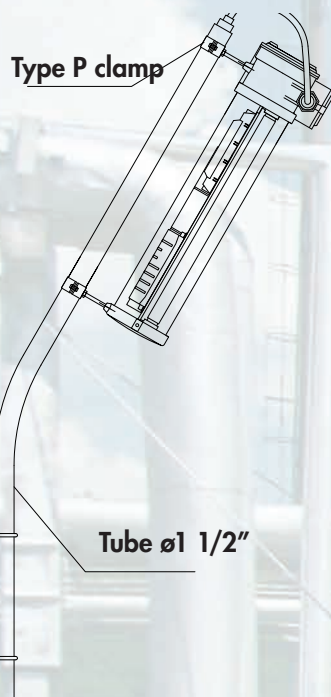
**45° angle mounting
TYPE "D"**



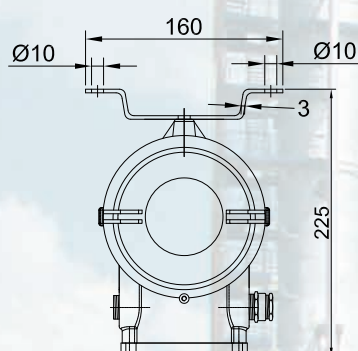
**Pendant mounting
eyebolt TYPE "O"**



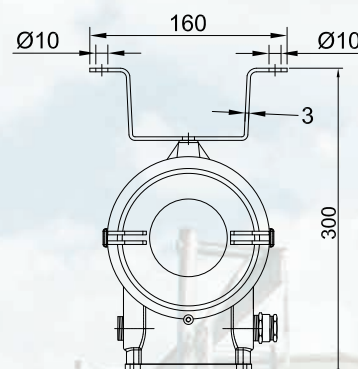
**Mounting using 1.1/2"
metal clamps TYPE "P"**



**Pole mounting for FLFE with
barrier cable gland**

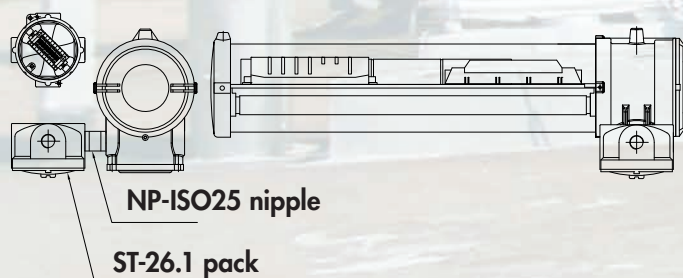


**Low ceiling mounting with
clamp TYPE "U"**

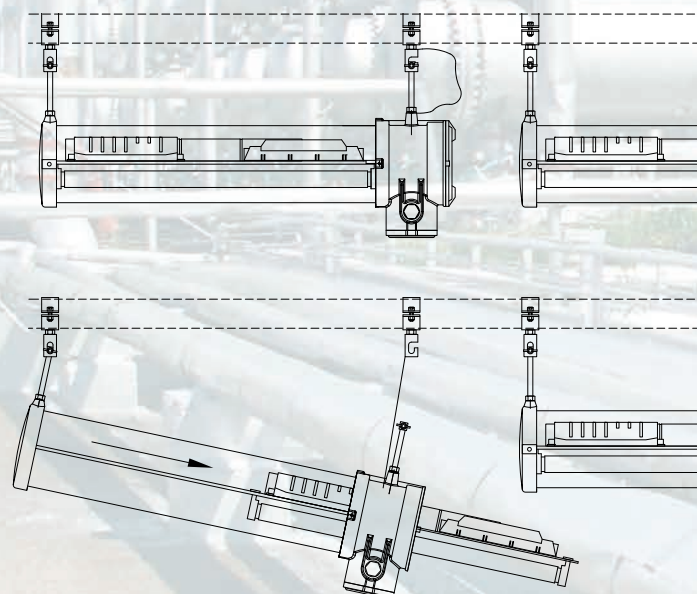


**High ceiling mounting with
clamp TYPE "V"**

Internal view

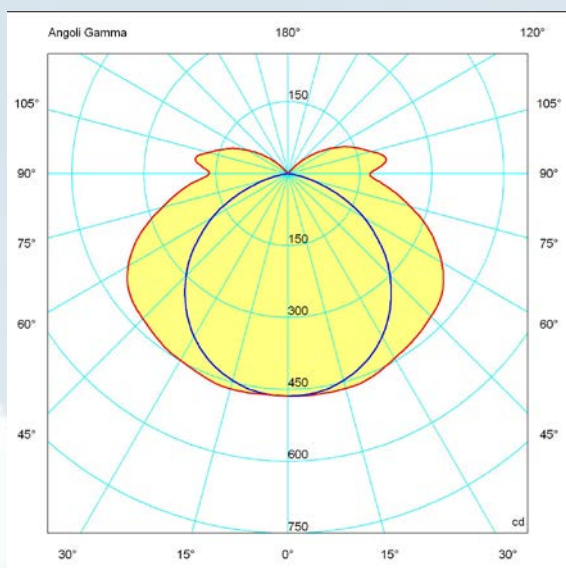


**FLFE assembly in emergency for
special execution with loop-in loop-out.**

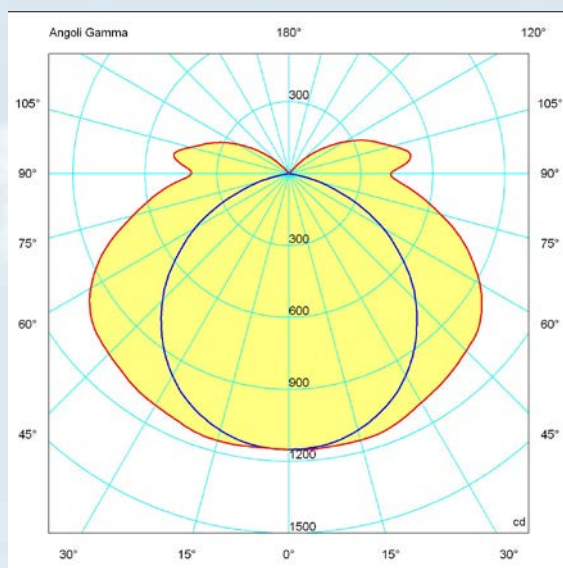


**Mounting system with release clip for easy fluorescent
tube replacement. System adopted for installing
in-line lighting fixtures.**

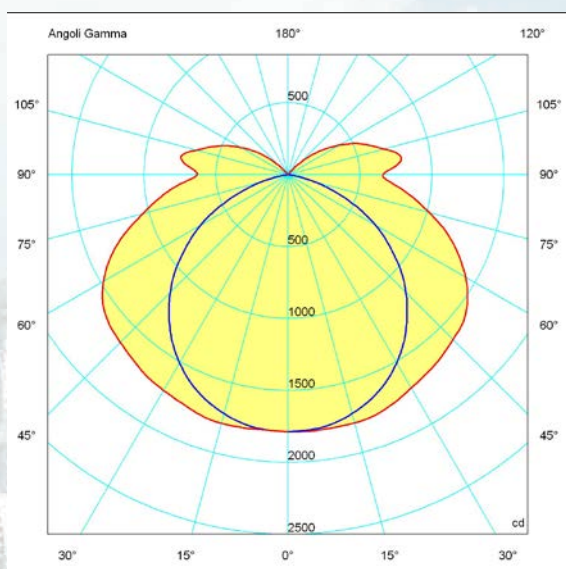
Dimensions in mm



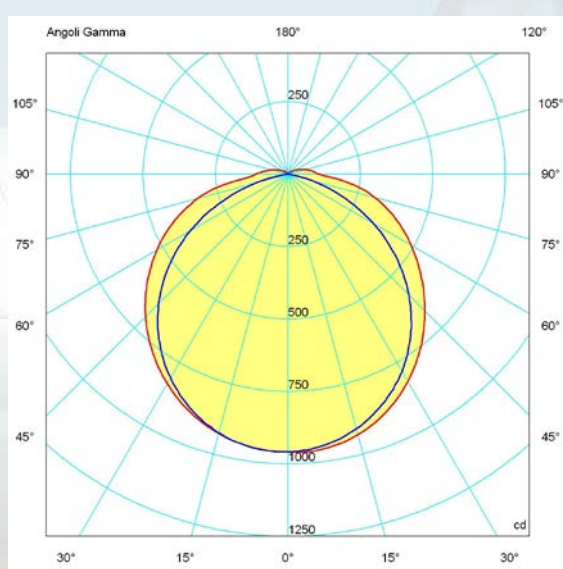
FLFE-218



FLFE-236



FLFE-258



FLFE-222L

On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing.

— = plane 90270
— = plane C 0180