

EVML

- Zone 1, 2, 21, 22
- Excellent heat dissipation
- Saves in energy and high efficiency
- Suitable for low temperature
- Easy to install
- Small size

'Ex op is'
safe optical radiation

*Painted aluminium
body*

Supporting bracket

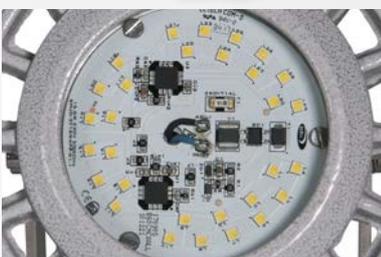
Cooling fins

Tempered glass

*LED resin-bonded electronic
board*

Orientable bracket detail

*Lighting fixture with round
windows detail*



EVML Low Bay LED lighting fixture

EVML lighting fixtures have been designed to offer a Low Bay lighting fixture that could replace incandescent equivalents with lower costs. They are suitable for the illumination of areas in which it's necessary to limit the obstruction such as tunnels, passages, corridors, stairways and command and control cabins (code EVML-50). They can also be used to illuminate and monitor hazardous materials contained inside tanks and cisterns thanks to a bracket for the coupling with the porthole flange (code EVML-50/O..). The model with the side entry meets, at last, some specific installation needs, reducing the overall dimensions (code EVML-50L). The Low Bay LED lighting fixtures has been specifically designed to meet the technical requirements of LEDs. In effect, the body fins act as a heat dissipater for the LED plate meaning that more powerful lighting can be installed without causing any deterioration of the LEDs. The universal steel mounting bracket complies with all application requirements and it allows the directionality of the light and an easy installation at low heights in all those areas defined as dangerous for the presence of explosive gas and dust as Zone 1, 2, 21, 22. The protective flat glass is resistant to impact and high temperatures and ensures non polluting illumination to the surrounding environment.

Application sectors:



CERTIFICATION DATA

Classification:	Group II	Category 2GD		
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
Marking:	CE 0722 Ex II 2GD Ex eb mb op is IIC T.. Gb - Ex tb op is IIIC T.. °C Db IP66			
Certification:	ATEX	CML 19 ATEX 3019X		
	IEC Ex	IECEx CML 19.0003X	All IEC Ex certification data can be downloaded at www.cortemgroup.com	
Standards:	CENELEC EN 60079-0: 2018, EN 60079-7: 2015, EN 60079-18: 2015, EN 60079-28: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2017, IEC 60079-18: 2014, IEC 60079-28: 2015, IEC 60079-31: 2013, IEC 60079-7: 2015 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:	See selection table EVML-50			
Ambient temperature:	-40°C +40°C	-40°C +50°C	-40°C +60°C	
Degree of protection:	IP66			

EVML Low Bay LED lighting fixture

EVML-50



EVML-50L



EVML-50/O

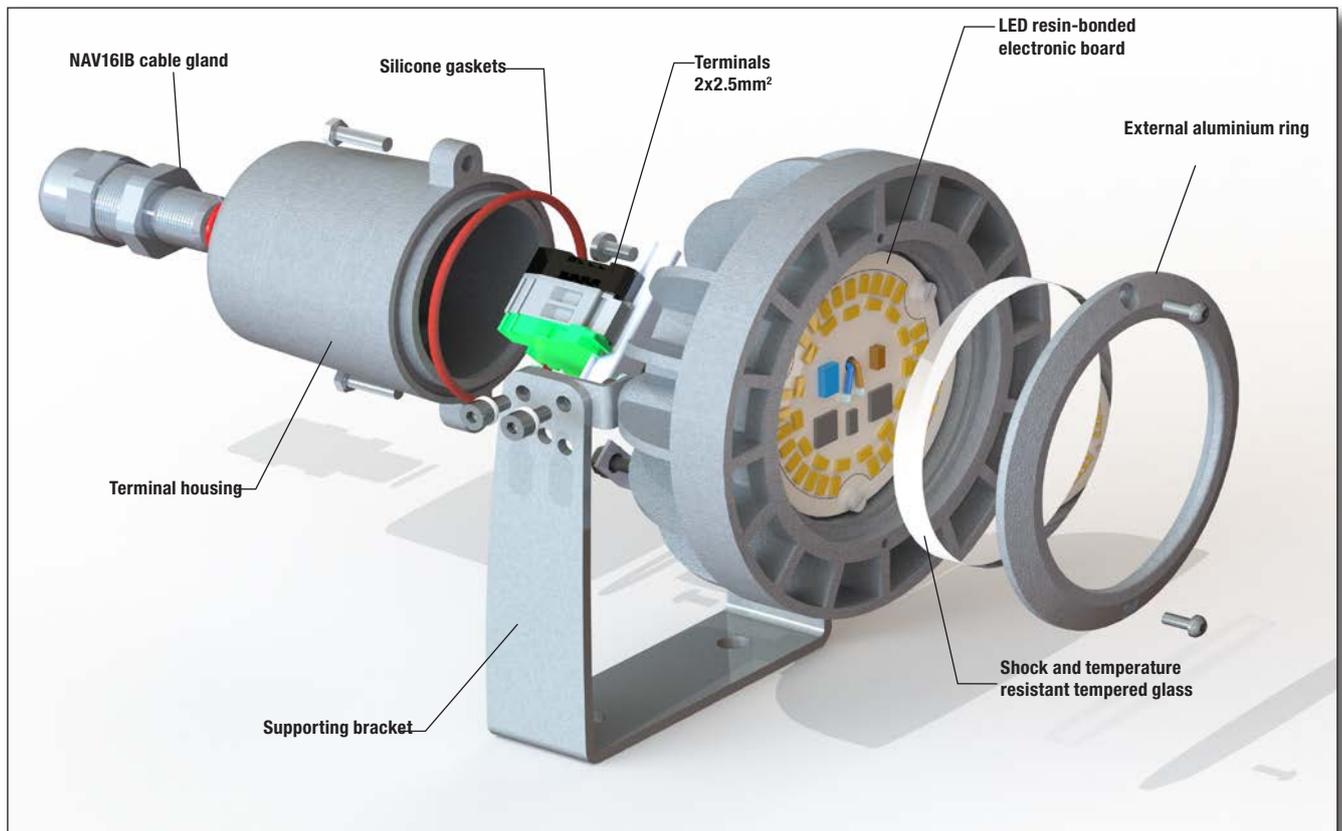


ORIGINAL PRODUCT

MECHANICAL FEATURES

Body:	Low copper content aluminium alloy fitted with cooling fins for better heat dissipation
Glass face:	Shock and temperature resistant tempered glass
Gaskets:	Acid, hydrocarbon and high temperature resistant silicone
Supporting brackets:	Stainless steel AISI 316L
Bolts and screws:	Stainless steel
Entries:	1 x ISO M16 entries. Fixture supplied with NAV161B cable gland
Coating:	Polyester 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)

EXPLODED DIAGRAM OF EVML-50 LIGHTING FIXTURE



EVML Low Bay LED lighting fixture

EVML-50 and EVML-50L series selection chart

Code	Watt	Supply voltage	Class temperature*			Weight kg	 mm
			Ta <+40°C	Ta <+50°C	Ta <+60°C		
EVML-50(L)	17 W	220-240 Vac	T5/95°C	T4/105°C	T4/115°C	1,1	162x140x157
EVML-50(L)/110	12 W	110 Vac/dc	T6/64°C	T6/74°C	T5/84°C	1,1	162x140x157
EVML-50(L)/12	15 W	12 Vac/dc	T6/66°C	T6/76°C	T5/86°C	1,1	162x140x157
EVML-50(L)/24D	15 W	24 Vdc	T6/66°C	T6/76°C	T5/86°C	1,1	162x140x157
EVML-50(L)/24A	12 W	24 Vac	T6/64°C	T6/74°C	T5/84°C	1,1	162x140x157
EVML-50(L)/48D	14 W	48 Vdc	T5/81°C	T5/91°C	T4/101°C	1,1	162x140x157
EVML-50(L)/48A	14 W	48 Vac	T6/77°C	T5/87°C	T4/97°C	1,1	162x140x157

* Temperature classes valid for the installation of the lighting fixture in a vertical position.

For improved temperature classes, check the different possible installation inclinations of the lighting fixture in the safety, use and maintenance instructions

Electrical features*	EVML-50	EVML-50/110
Power supply:	220-240 Vac	110 Vac
Rated frequency:	50-60 Hz	50-60 /0 Hz
Power consumption:	17 W	12 W
Connection:	Direct connection to terminal board L, N, Pe. Section 2,5mm ²	
Power factor:	>0,95	>0,96
Rated current:	75 mA	100 mA
EMC (electromagnetic compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-...	
THD (total harmonic distortion):	<25%	
Over-voltage protection:	4 kV	5 kV
Photometric features		
LED Multichip:	Seoul	Seoul
Viewing angle:	120°	120°
Colour temperature:	5000 K	4200 K
CRI:	80	80
Instant Restrike:	YES	YES
Lumen:	1282 lm	720 lm
Maximum light intensity:	543 cd	287 cd
Overall efficiency:	75 lm/W	60 lm/W

* In the case of installations in harsh environments with strong peaks or impurities on the power supply line, it is advisable to use a surge protector for greater protection of the lighting fixture. Cortem offers the G-1064 surge protector which can be installed in a safe area or inside an explosion-proof enclosure.

EVML Low Bay LED lighting fixture



EVML LOW VOLTAGE



Electrical features	EVML-50/12	EVML-50/24D	EVML-50/24A	EVML-50/48D	EVML-50/48A
Power supply:	12 Vac/dc	24 Vdc	24 Vac	48 Vdc	48 Vac
Rated frequency:	50-60 /0 Hz	0 Hz	50-60 Hz	0 Hz	50-60 Hz
Power consumption:	15 W	15 W	12 W	14 W	14 W
Connection:	Direct connection to terminal board L, N, Pe. Section 2,5 mm ²				
Power factor:	>0,95	-	>0,95	-	>0,95
Rated current:	1,47 A	630 mA	540 mA	307 mA	318 mA
EMC (electromagnetic compatibility):	EN 55015, EN 61547, IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-...				
THD (total harmonic distortion):	<25%				
Over-voltage protection:	5 kV	5 kV	5 kV	5 kV	5 kV
Photometric features					
LED Multichip:	Samsung	Samsung	Samsung	Samsung	Samsung
Viewing angle:	120°	120°	120°	120°	120°
Colour temperature:	5700 K	5700 K	5700 K	5700 K	5700 K
CRI:	80	80	80	80	80
Instant Restrike:	YES	YES	YES	YES	YES
Lumen:	1365 lm (dc)	1458 lm	1092 lm	1361 lm	1256 lm
Maximum light intensity:	565 cd	371 cd	368 cd	569 cd	373 cd
Overall efficiency:	88 lm/W	97 lm/W	91 lm/W	96 lm/W	90 lm/W

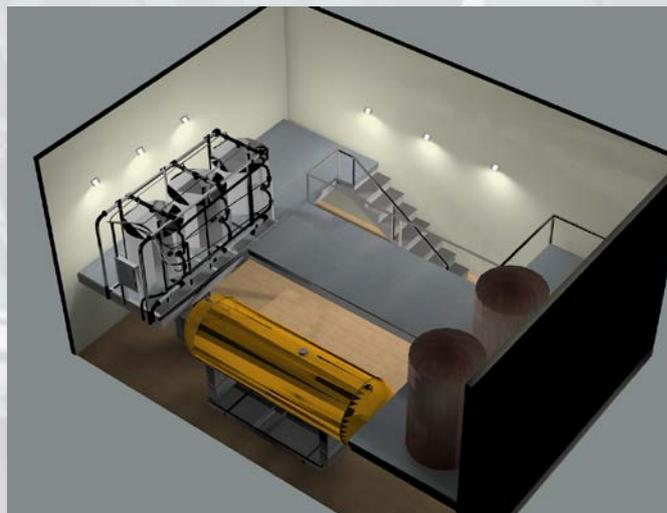
ACCESSORIES AVAILABLE / SPECIAL REQUESTS

U bolt for pole mounting
Different colour temperature (code EVML-50/**3000K**)

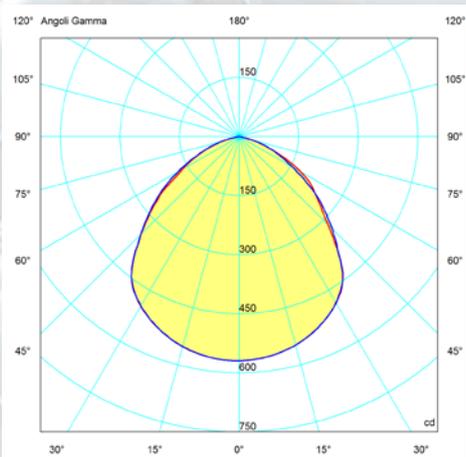
EVML Low Bay LED lighting fixture

EVML..., equivalenze

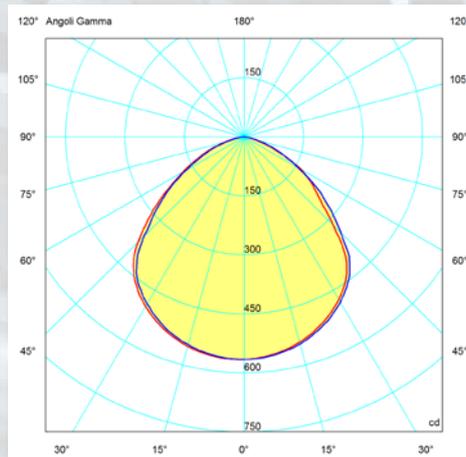
			
EVML-50 (17W) LED	(100W) Incandescent	(70W) Halogen	(23W) Electronic
Typical energy savings			



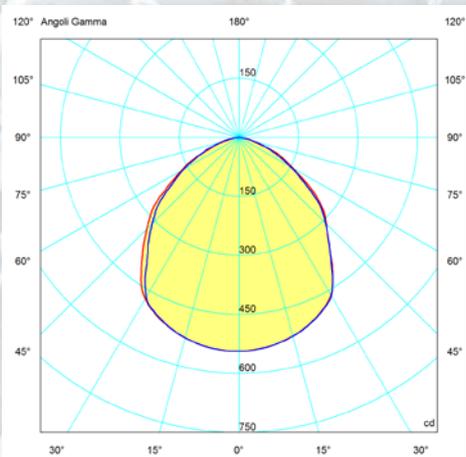
Example of lighting design made with EVML-50 LED Low Bay lighting fixtures



EVML-50/48D Luminous flux: 1361 lm

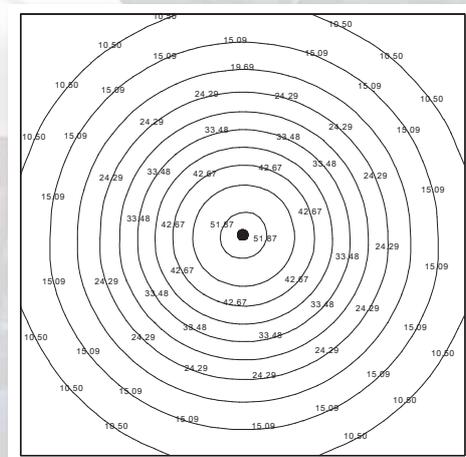


EVML-50/48D Luminous flux: 1361 lm



EVML-50 Luminous flux: 1282 lm

EVML-50 illumination on the floor expressed in lux in a room 5m x 5m with the lighting fixtures centrally placed at 2,5m in height



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 0180

EVML LED tank/vessel inspection lighting fixture

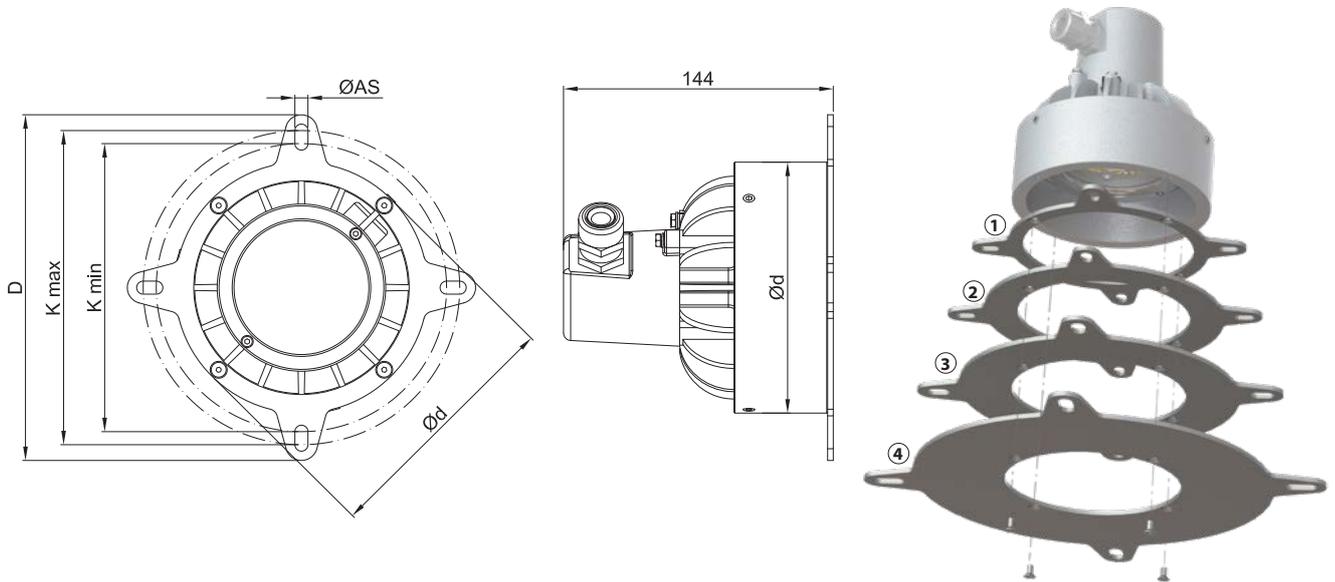
EVML-50/O.. TANK/VESSEL INSPECTION LIGHTING FIXTURES

Code		Kmax	Kmin	ØAS	D	Ød	Round window acc. DIN28120
EVML-50/.../O10	①	169	155	7	186	135	100
EVML-50/.../O12	②	194	180	7	211	160	125
EVML-50/.../O15	③	222	208	9	243	185	150
EVML-50/.../O20	④	282	258	9	303	235	200

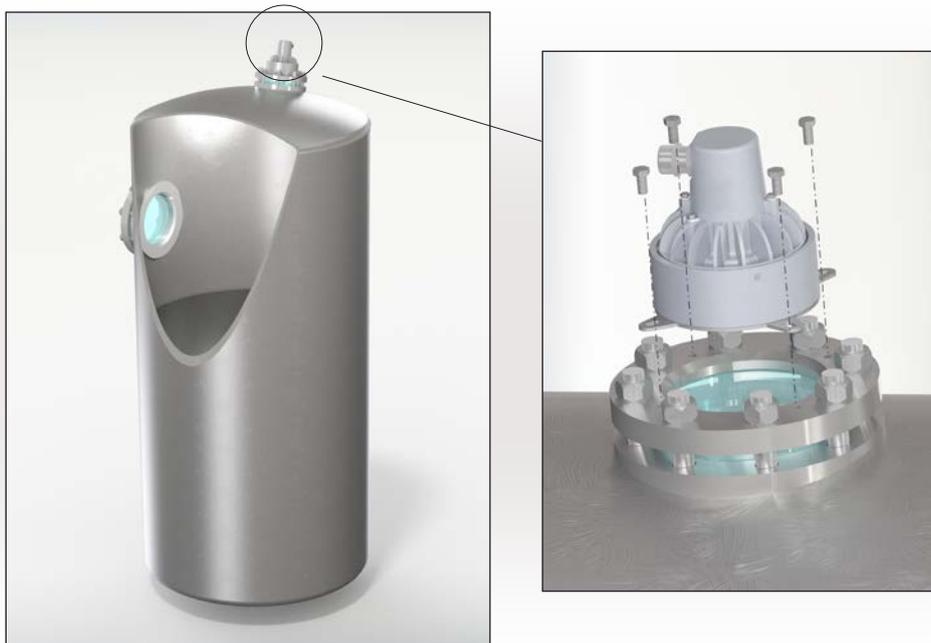
/...: No number For 220 Vac
 110 For 110 Vac/dc
 12 For 12 Vac/dc
 24D For 24 Vdc
 24A For 24 Vac
 48D For 48 Vdc
 48A For 48 Vac



DIMENSIONAL DRAWING



Application example made with EVML-50/O12 LED lighting fixtures with round windows



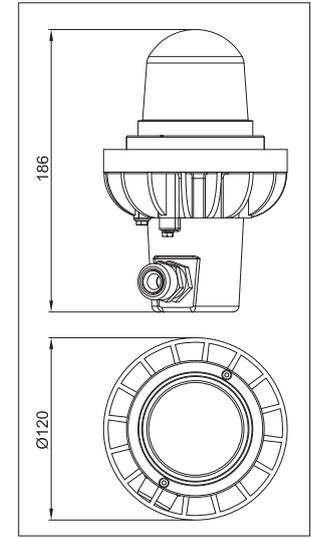
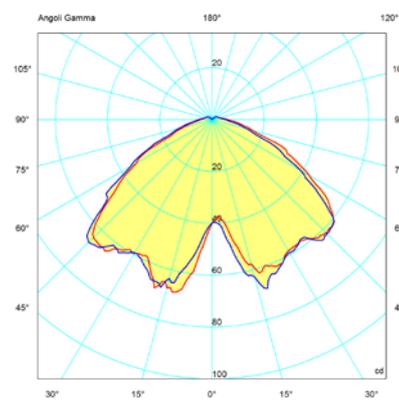
EVML LED Obstruction lighting fixture

Obstruction lighting EVML-50/G...

EVML-50/G are the new lighting fixtures which feature a LED plate and a globe of different colours: blue, red, green, amber or clear. They can be installed in locations where obstacles, dangers are needed to be signalled and for any visual communication. They replace acoustic signals in places where they are not applicable.



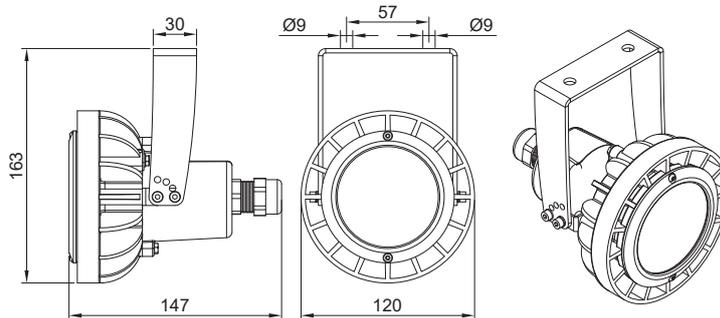
Code	Colour
EVML-50/.../GG	Amber
EVML-50/.../GR	Red
EVML-50/.../GV	Green
EVML-50/.../GB	Blue
EVML-50/.../GI	Clear



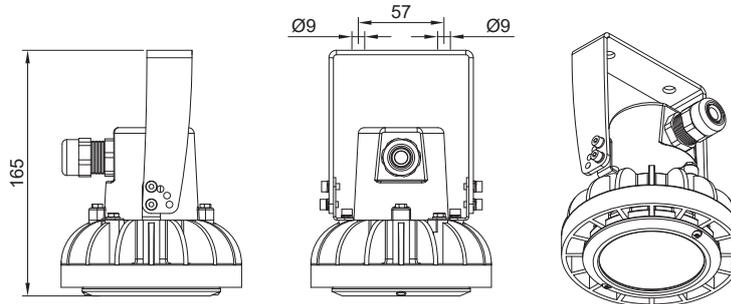
...: No number	For 220 Vac	24A	For 24 Vac/dc
110	For 110 Vac/dc	48D	For 48 Vdc
12	For 12 Vac/dc	48A	For 48 Vac
24D	For 24 Vdc		

DIMENSIONAL DRAWINGS

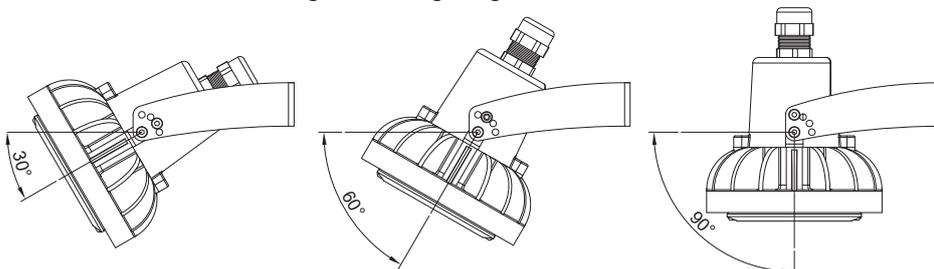
EVML-50 (rear cable entry)



EVML-50L (side cable entry)



Tilt degrees for lighting fixture installation EVML-50



EVML-50P hand-held lighting fixture

The LED EVML-50P hand-held lighting fixture, powered with cable, has been designed to be used mainly in inspection and maintenance activities on industrial plants, in tanks and in all those places where there is a potentially dangerous atmosphere formed by gas and dust. The EVML-50P series hand-held lighting fixture is characterized by a non-slip handle and a high degree of body strength combined with excellent light performance. A further peculiarity of this hand-held lighting fixture is the possibility of being powered with different voltages at 12, 24, 48, 110 and 220 V ac/dc for a wider use.



Classification: 2014/34/UE	Group II	Category 2GD
Installation: EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
Execution:	CE 0722 (Ex) II 2GD Ex e mb IIC T. Gb Ex tb IIIC T..°C Db IP66	
Certificate:	ATEX	CML 19 ATEX 3019X
	IEC Ex	IECEX CML 19.0003X
	TR CU	AVAILABLE
Standard:	CENELEC EN 60079-0: 2018, EN 60079-7: 2015, EN 60079-18: 2015, EN 60079-28: 2015, EN 60079-31: 2014 and EUROPEAN DIRECTIVE 2014/34/UE IEC 60079-0: 2017, IEC 60079-18: 2014, IEC 60079-28: 2015, IEC 60079-31: 2013, IEC 60079-7: 2015 European Directive 2006/95 Low voltage European Directive 2004/108 Electromagnetic compatibility European Directive 2003/108 WEEE European Directive 2011/64 RoHS	
Temp. class:	See "selection table"	
Ambient temp.:	-40°C +40°C (+50°C +60°C)	
Protection rating:	IP66	

FEATURES

- Low copper content aluminium alloy fitted with cooling fins for better heat dissipation.
- Polyester coating Ral 7035.
- Shock and temperature resistant tempered glass.
- Non-slip black handle.
- High corrosion resistance.
- Suitable for offshore / onshore environments.
- Easy connection.
- Cable gland for non-armored cable NAV20IB, cable range 6.5 ÷ 14.

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

5 meters long cable and SPY series plug (example code EVML-50/24DPT)
Hook for hand-held lighting fixture (code G-1061)

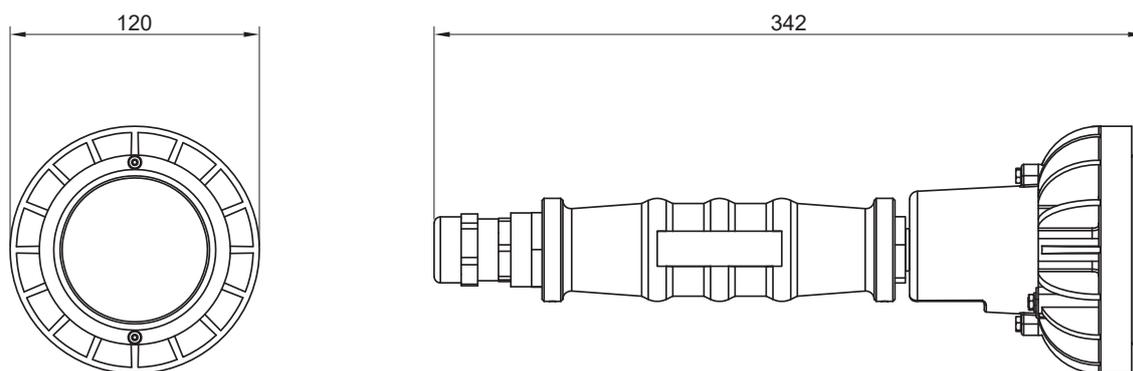


EVML-50P hand-held lighting fixture

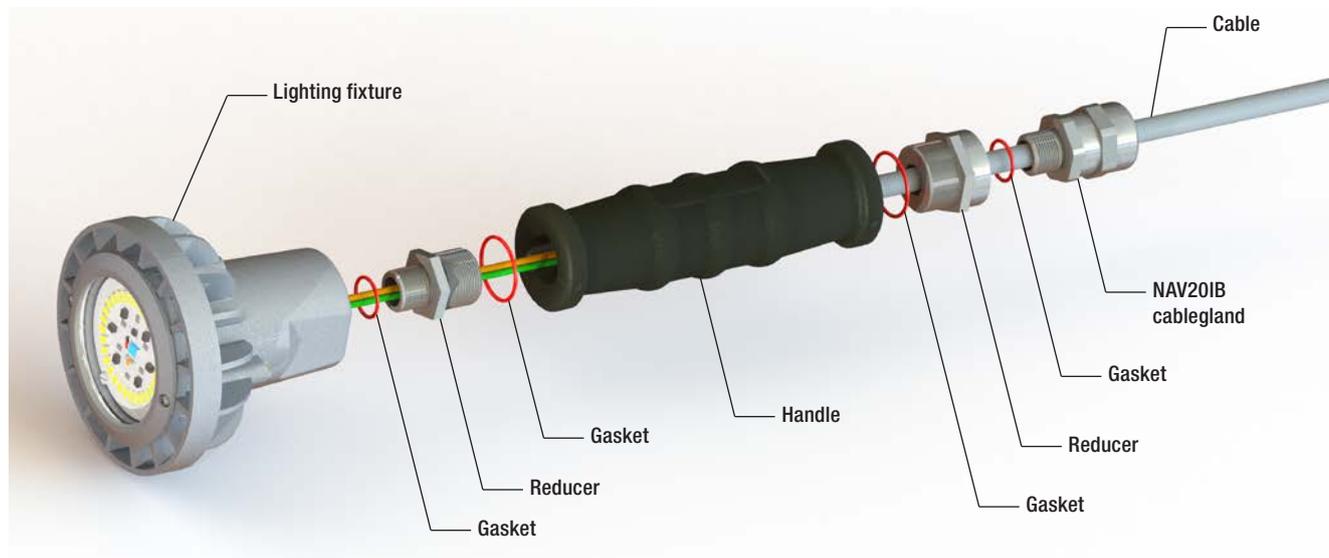
EVML-50P lighting fixture selection chart

Code	Watt	Supply voltage	Temperature class			Weight kg	 mm
			Ta <+40°C	Ta <+50°C	Ta <+60°C		
EVML-50P	19 W	220-240 Vac	T5/95°C	T4/105°C	T4/115°C	1.4	
EVML-50/110P	12 W	110 Vac/dc	T6/64°C	T6/74°C	T5/84°C	1.4	
EVML-50/12P	18 W	12 Vac/dc	T6/66°C	T6/76°C	T5/86°C	1.4	
EVML-50/24DP	16 W	24 Vdc	T6/66°C	T6/76°C	T5/86°C	1.4	
EVML-50/24AP	13 W	24 Vac	T6/64°C	T6/74°C	T5/84°C	1.4	
EVML-50/48DP	15 W	48 Vdc	T5/81°C	T5/91°C	T4/101°C	1.4	
EVML-50/48AP	15 W	48 Vac	T6/77°C	T5/87°C	T4/97°C	1.4	

DIMENSIONAL DRAWING



EXPLODED DIAGRAM OF EVML-50P



MSU Signalling lightings

The MSU series signalling lighting equipment is designed to be used in hazardous areas as indicator of dangers and for any communication need, replacing also acoustic signals. It is a multi-unit device formed by a metal sheet base, fixable on walls, poles, etc., by EVML-50/G signalling lighting equipment and by an 'Ex e' aluminum junction box SA series. The EVML- 50/G signalling lighting equipment are available with a LED and globe of different colours: blue, red, green, amber and clear.



FEATURES

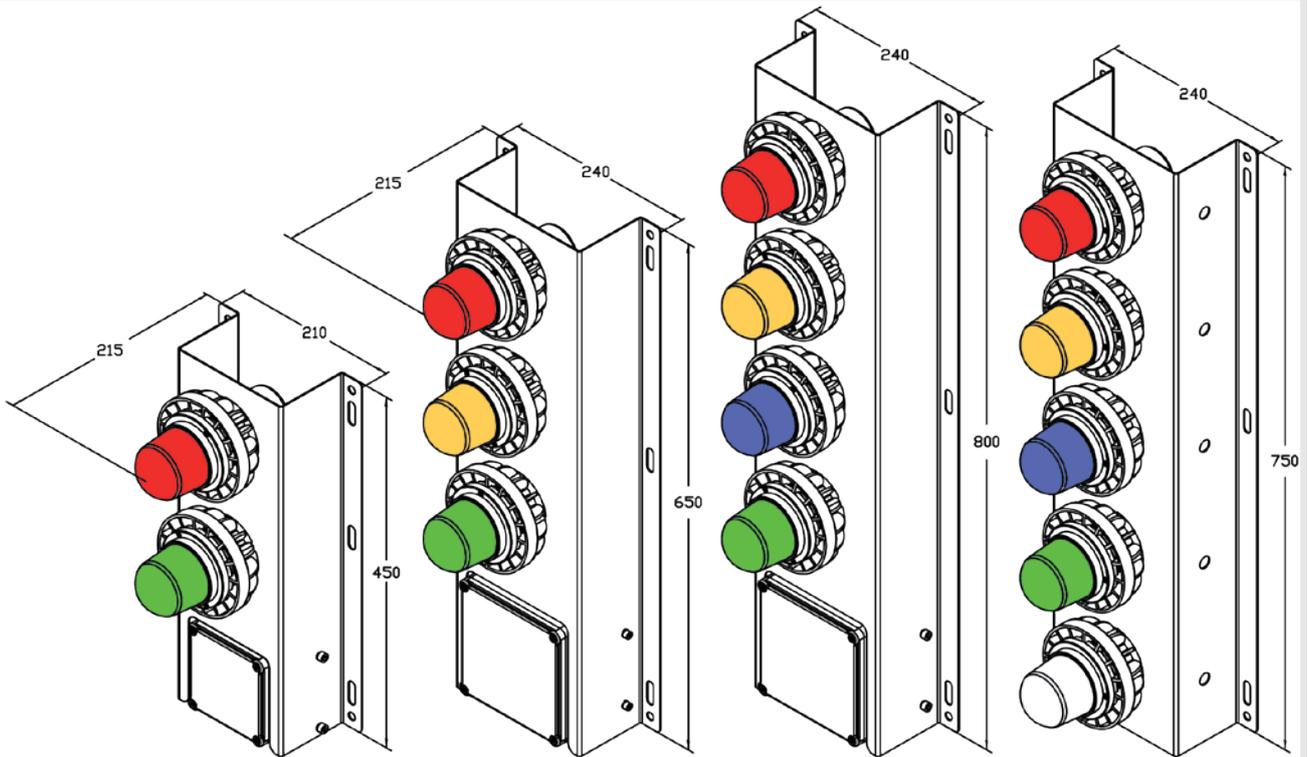
- Pre-wired ready to use multi-signalling unit
- Corrosion resistant
- Coating RAL7035
- Suitable for offshore / onshore & harsh environments
- 'Ex e' termination area
- Quick and easy to terminate
- Cablegland NAV25IB, range cable 11 ÷ 20
- High ingress protection IP66
- Extreme temperature range -40°C...+60°C
- Light enhancing lens, 5 colour options
- Up to 5 beacon positions
- Power supply: 230 Vac
- Rated frequency: 50-60 Hz
- Lumen (single signal lamps): 1032 lm
- Max. light intensity (single signal lamps): 385 cd

ACCESSORIES AVAILABLE / SPECIAL REQUESTS

Different rated voltage 110 Vac/dc
 Different combination upon requests

Code	Type Lamp	Device	Watt	Class (Ta = +40°C)	Max surface temperature °C (Ta= +40°C)
MSU-2RV	LED	2-way	19 W	T6	60
MSU-3RGV	LED	3-way	19 W	T6	60
MSU-4RGBV	LED	4 -way	19 W	T6	60
MSU-5RGBVI	LED	5-way	19 W	T6	60

DIMENSIONAL DRAWINGS



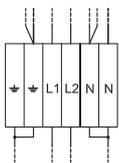
MSU-2RV
Red
Green

MSU-3RGV
Red
Ambrer
Green

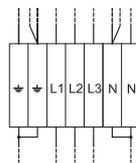
MSU-4RGBV
Red
Amber
Blue
Green

MSU-5RGBV1
Red
Amber
Blue
Green
Colorless

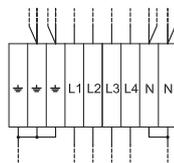
ELECTRICAL CONNECTION



MSU-2RV



MSU-3RGV



MSU-4RGBV

Wiring inside the junction box

