

# 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*

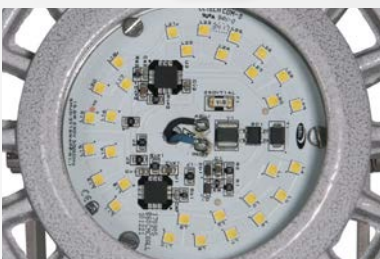
*Cooling fins*

*Tempered glass*

*LED resin-bonded electronic  
board*

*Orienteable 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

<b>Classification:</b>	Group II	Category 2GD		
<b>Installation:</b> EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)		
<b>Marking:</b>	CE 0722 Ex II 2GD Ex eb mb op is IIC T.. Gb - Ex tb op is IIC T.. °C Db IP66			
<b>Certification:</b>	ATEX	CML 19 ATEX 3019X		
	IEC Ex	IECEx CML 19.0003X	All IEC Ex and TR CU certification data can be downloaded at <a href="http://www.cortemgroup.com">www.cortemgroup.com</a>	
	TR CU	DISPONIBLE		
<b>Standards:</b>	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 2004/108 Electromagnetic compatibility European Directive 2012/19/UE, 2002/96/CE, 2003/108/CE WEEE European Directive 2011/65/UE RoHS			
<b>Class temperature:</b>	See selection table EVML-50			
<b>Ambient temperature:</b>	-40°C +40°C	-40°C +50°C	-40°C +60°C	
<b>Degree of protection:</b>	IP66			

# EVML Low Bay LED lighting fixture

EVML-50



EVML-50L



EVML-50/O

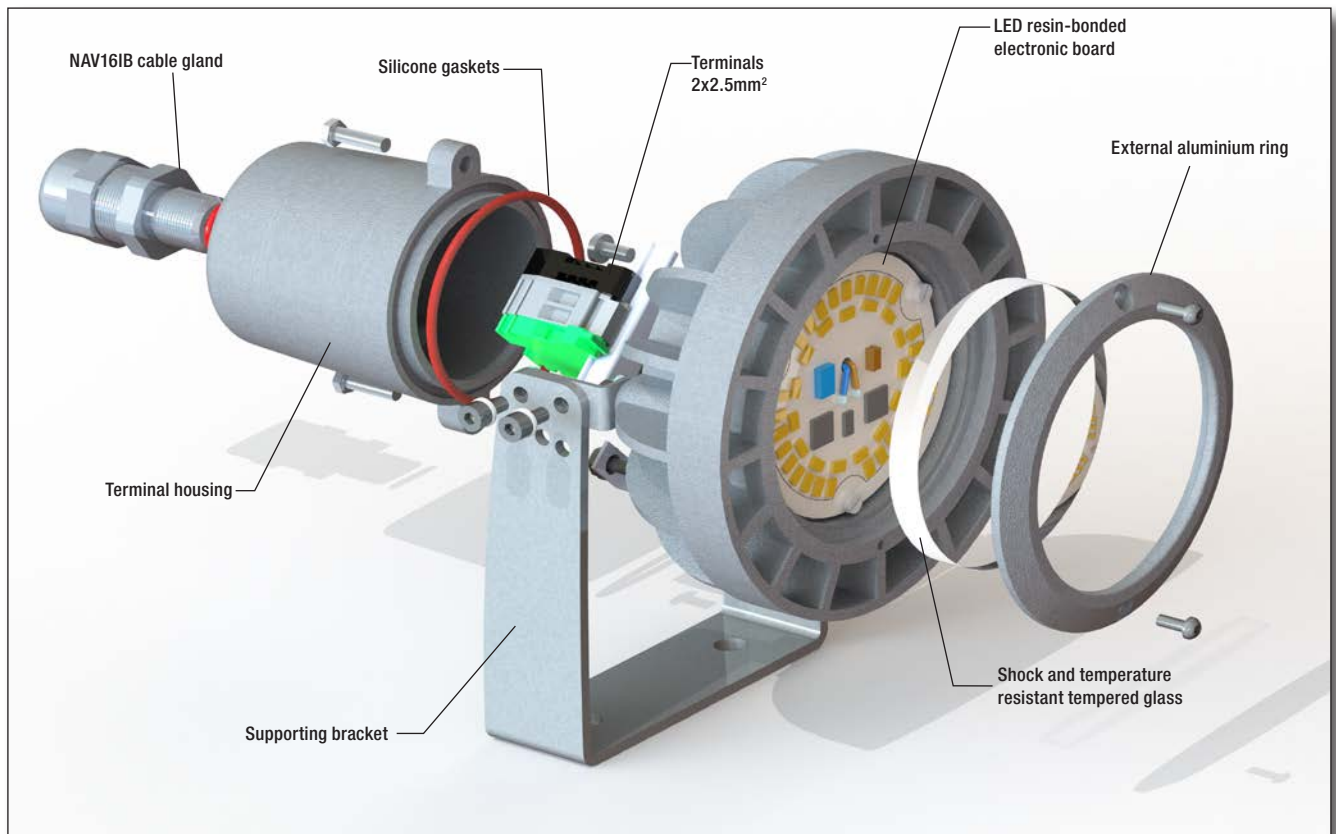


ORIGINAL PRODUCT

## MECHANICAL FEATURES


<b>Body:</b>	Low copper content aluminium alloy fitted with cooling fins for better heat dissipation
<b>Glass face:</b>	Shock and temperature resistant tempered glass
<b>Gaskets:</b>	Acid, hydrocarbon and high temperature resistant silicone
<b>Supporting brackets:</b>	Stainless steel AISI 316L
<b>Bolts and screws:</b>	Stainless steel
<b>Entries:</b>	1 x ISO M16 entries. Fixture supplied with NAV16IB cable gland
<b>Coating:</b>	Polyester coating Ral 7035 (Light grey)
<b>Corrosion Resistance:</b>	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/dc
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 <sup>2</sup>	
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
<b>Lumen:</b>	<b>1282 lm</b>	<b>720 lm</b>
<b>Maximum light intensity:</b>	<b>543 cd</b>	<b>287 cd</b>
<b>Overall efficiency:</b>	<b>75 lm/W</b>	<b>60 lm/W</b>

\* 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 <sup>2</sup>				
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
<b>Lumen:</b>	<b>1365 lm (dc)</b>	<b>1458 lm</b>	<b>1092 lm</b>	<b>1361 lm</b>	<b>1256 lm</b>
<b>Maximum light intensity:</b>	<b>565 cd</b>	<b>371 cd</b>	<b>368 cd</b>	<b>569 cd</b>	<b>373 cd</b>
<b>Overall efficiency:</b>	<b>88 lm/W</b>	<b>97 lm/W</b>	<b>91 lm/W</b>	<b>96 lm/W</b>	<b>90 lm/W</b>

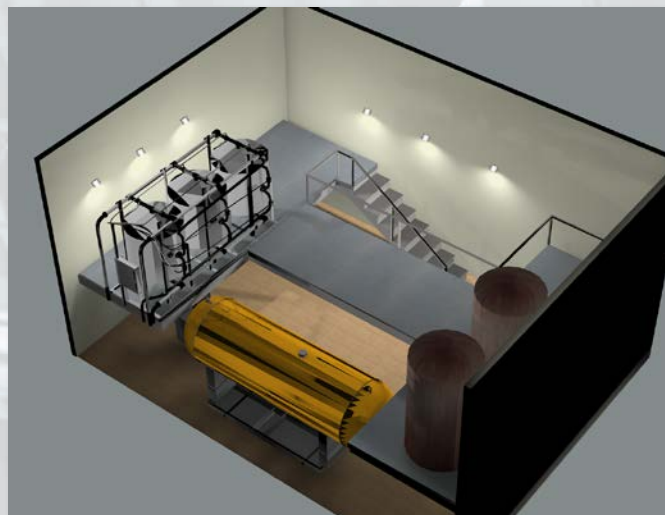
### ACCESSORIES AVAILABLE / SPECIAL REQUESTS

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

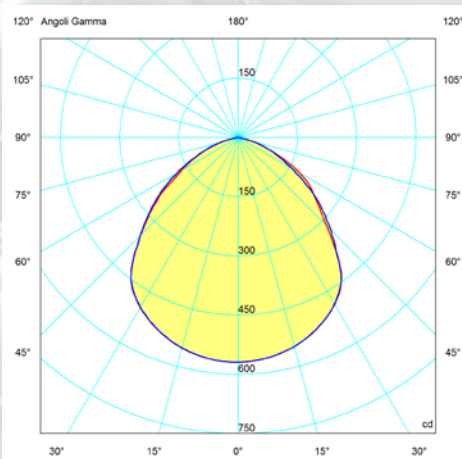
# EVML Low Bay LED lighting fixture

## EVML..., equivalenze

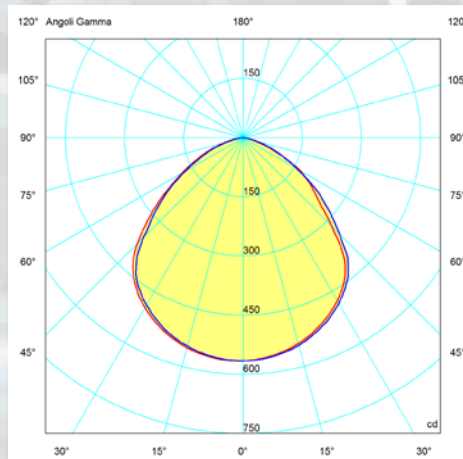
			
EVML-50 (17W) LED	(100W) Incandescent	(70W) Halogen	(23W) Electronic
Typical energy savings			



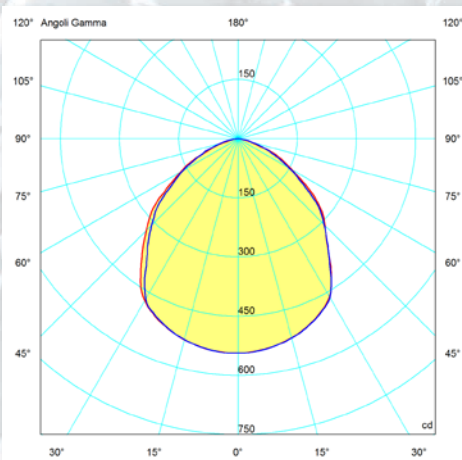
Example of lighting design made with EVML-50 LED Low Bay lighting fixtures



EVML-50/48D Luminous flux: 1361 lm

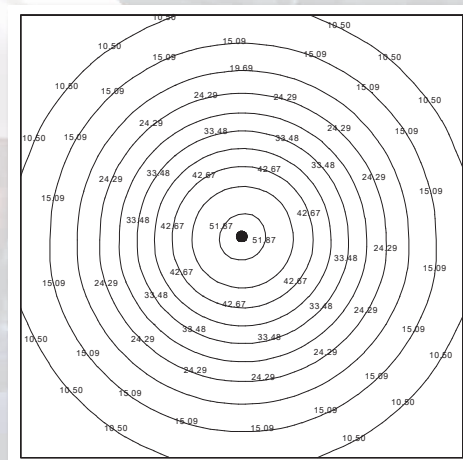


EVML-50/48D Luminous flux: 1361 lm



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

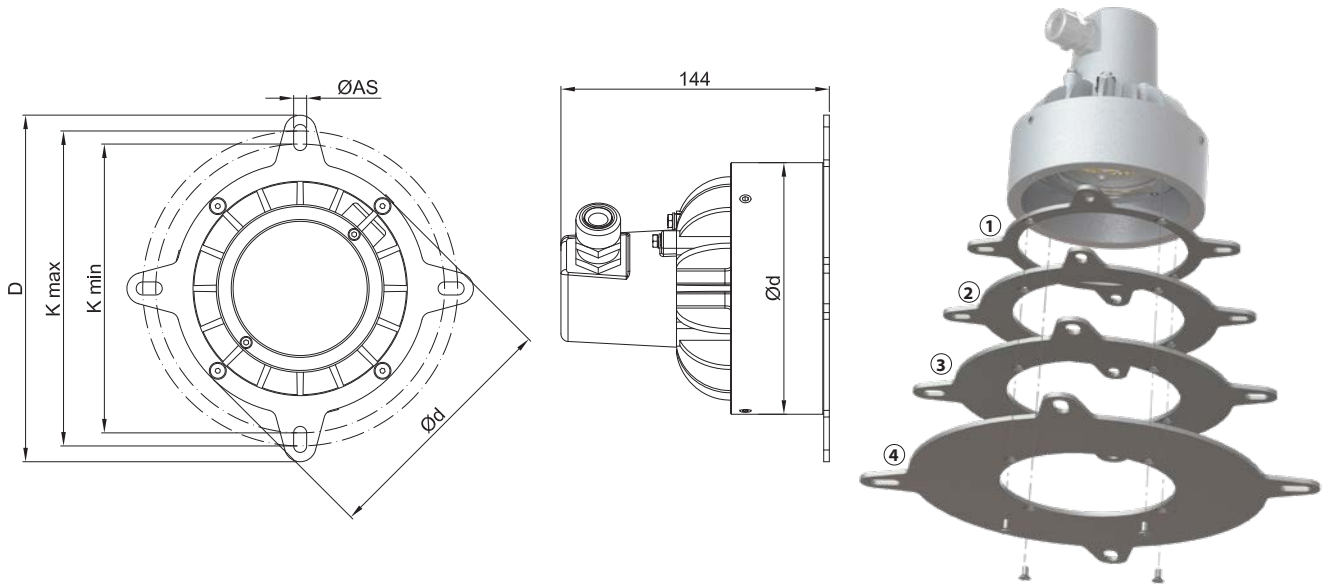
## EVML-50/O.. TANK/VESSEL INSPECTION LIGHTING FIXTURES

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

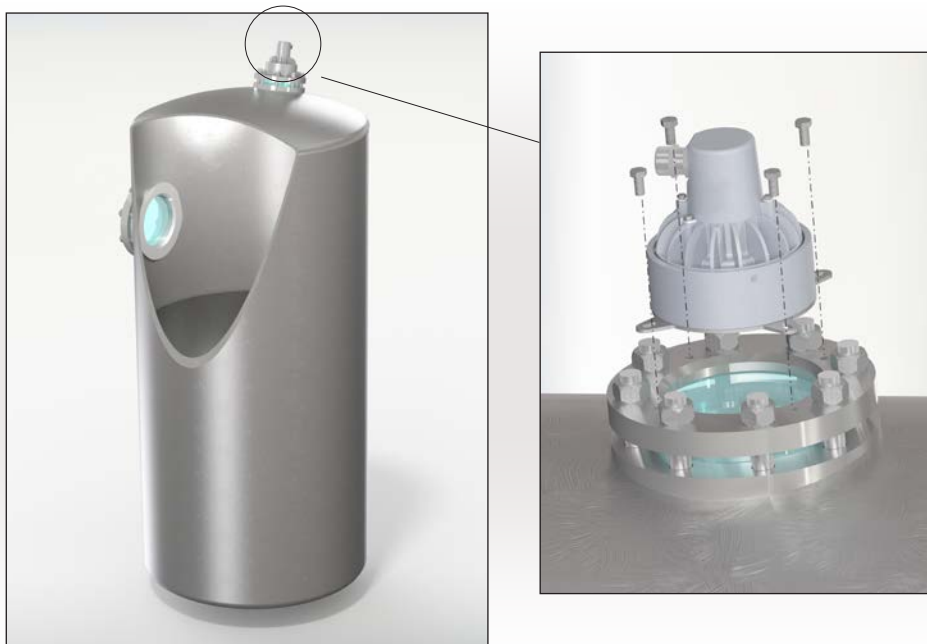
/...: No number For 220 Vac  
 110 For 110 Vac/dc  
 12 For 12 Vac/dc  
 24D For 24 Vdc  
 24A For 24 Vac  
 48D For 48 Vdc  
 48A For 48 Vac



### DIMENSIONAL DRAWING



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



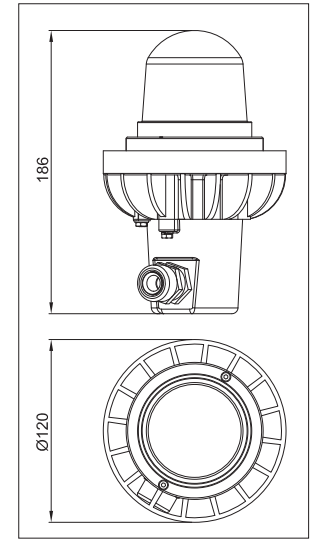
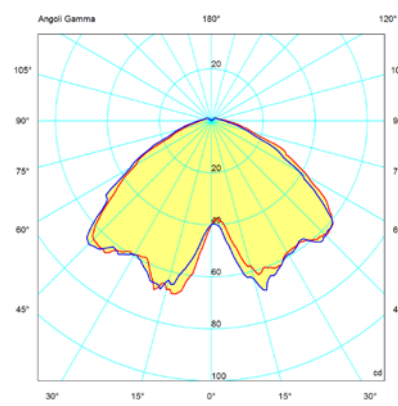
# EVML LED Obstruction lighting fixture

## 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.



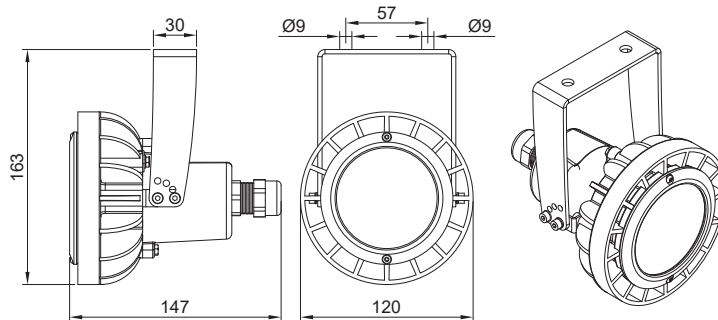
Code	Colour
EVML-50/.../GG	Amber
EVML-50/.../GR	Red
EVML-50/.../GV	Green
EVML-50/.../GB	Blue
EVML-50/.../GI	Clear



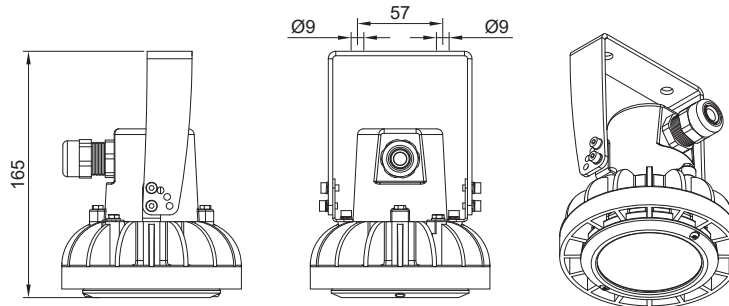
...: No number	For 220 Vac	<b>24A</b>	For 24 Vac/dc
<b>110</b>	For 110 Vac/dc	<b>48D</b>	For 48 Vdc
<b>12</b>	For 12 Vac/dc	<b>48A</b>	For 48 Vac
<b>24D</b>	For 24 Vdc		

## DIMENSIONAL DRAWINGS

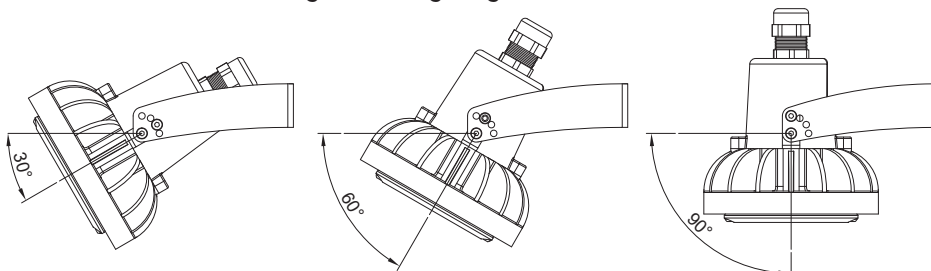
EVML-50 (rear cable entry)



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.



<b>Classification:</b> 2014/34/UE	Group II	Category 2GD
<b>Installazione:</b> EN 60079.14	zone 1 - zone 2 (Gas)	zone 21 - zone 22 (Dust)
<b>Execution:</b>	CE 0722 (Ex) II 2GD Ex e mb IIC T. Gb Ex tb IIIC T..°C Db IP66	
<b>Certificate:</b>	ATEX	CML 19 ATEX 3019X
	IEC Ex	IECEX CML 19.0003X
	TR CU	AVAILABLE
<b>Standard:</b>	For all IEC Ex and TR CU certification data, download the certificate from <a href="http://www.cortemgroup.com">www.cortemgroup.com</a>	
	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 2004/108 Electromagnetic compatibility European Directive 2003/108 WEEE European Directive 2011/64 RoHS	
<b>Temp. class:</b>	See "selection table"	
<b>Ambient temp.:</b>	-40°C +40°C (+50°C +60°C)	
<b>Protection rating:</b>	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)

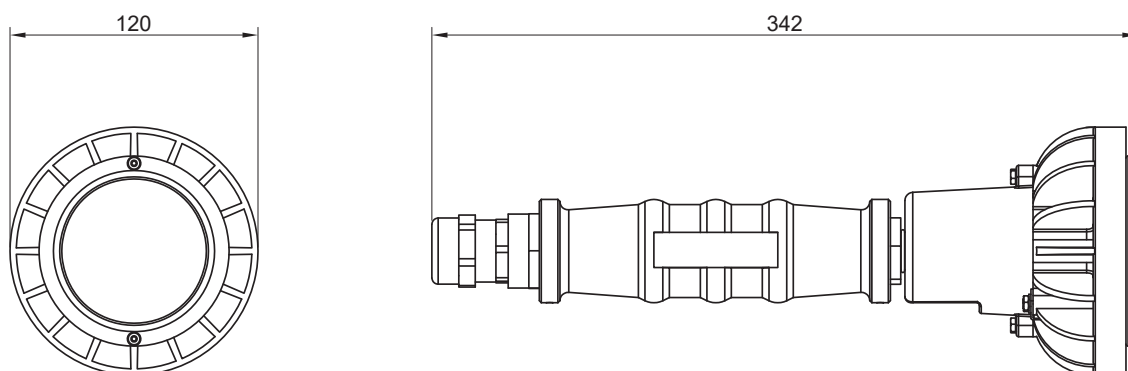


# EVML-50P hand-held lighting fixture

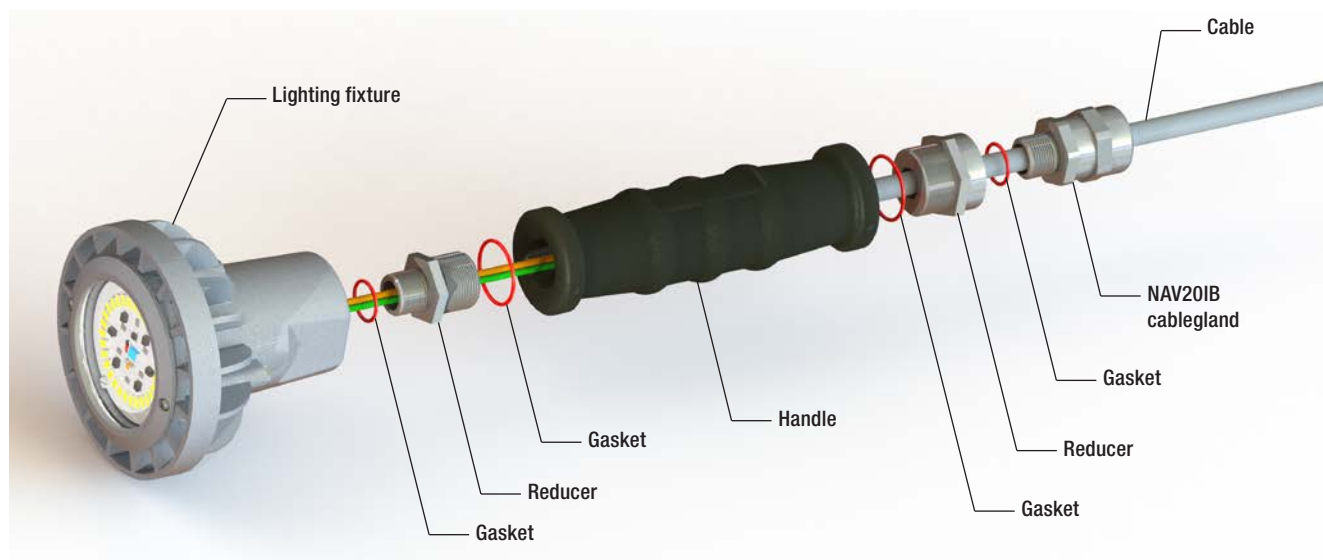
## EVML-50P lighting fixture selection chart

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

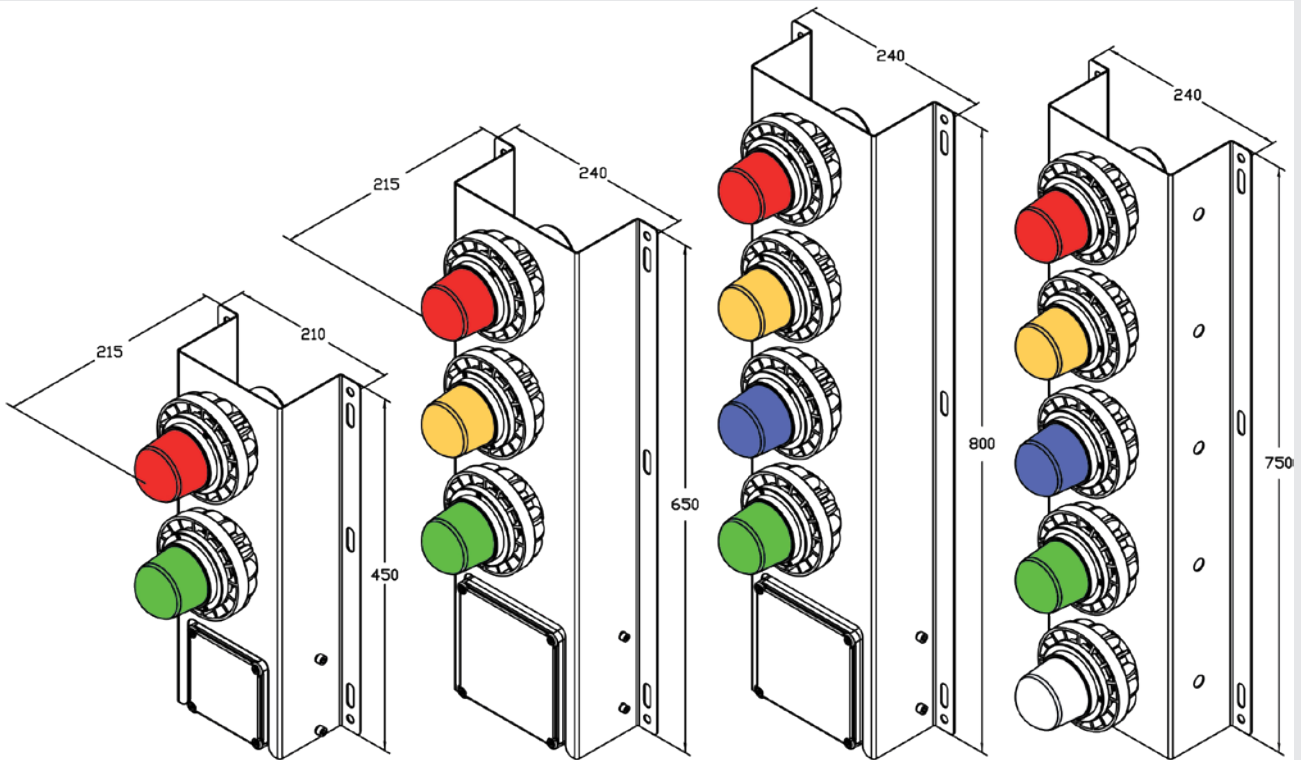
- Pre-wired ready to use multi-signalling unit
- Corrosion resistant
- Coating RAL7035
- Suitable for offshore / onshore & harsh environments
- 'Ex e' termination area
- Quick and easy to terminate
- Cablegland NAV25IB, range cable 11 ÷ 20
- High ingress protection IP66
- Extreme temperature range -40°C...+60°C
- 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 voltages
- 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	T5	85
MSU-3RGV	LED	3-way	19 W	T5	85
MSU-4RGBV	LED	4 -way	19 W	T5	85
MSU-5RGBVI	LED	5-way	19 W	T5	85

## DIMENSIONAL DRAWINGS



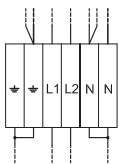
**MSU-2RV**  
Red  
Green

**MSU-3RGV**  
Red  
Ambrer  
Green

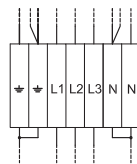
**MSU-4RGBV**  
Red  
Amber  
Blue  
Green

**MSU-5RGBV1**  
Red  
Amber  
Blue  
Green  
Colorless

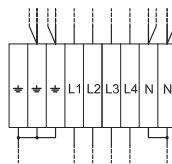
## ELECTRICAL CONNECTION



**MSU-2RV**



**MSU-3RGV**



**MSU-4RGBV**

Wiring inside the junction box

