

INSTALLATION AND MAINTENANCE MANUAL FOR  
EXPLOSIONPROOF LIGHT FITTING

# EXF250LED



Carefully read the manual before installation  
of the light fitting.

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## TECHNICAL INFORMATION

### Ex marking:

- For EXF250LED - \*\*\* - \*\* -\*\*\*\_\*\* - \*\*\*\*\* - GRP - \*\* -\*\* version



II 2G Ex eb mb IIC T5 Gb  
II 2D Ex tb IIIC T55°C-70°C Db

- Marking of ambient temperature:

Ambient temperature	Type of safety measure	Temperature class / Maximum surface temperature
$-40^{\circ}\text{C}^* \leq T_{\text{amb}} \leq +60^{\circ}\text{C}^{**}$	“eb” ; “tb”	T5 ; T55°C or T70°C

<b>Protection degree:</b>	IP66/IP67
<b>Impact resistance:</b>	IK08
<b>Cross section admission cable:</b>	1-2.5mm <sup>2</sup>
<b>Admission cable diameter::</b>	Ø 7-13mm (Ø20 cable glands), Ø 10-17mm (25Ø cable glands)
<b>Voltage:</b>	<b>35E:</b> 220-240V / 50-60Hz; 220-240V / 0 Hz <b>25E:</b> 110-254V / 50-60Hz; 220-250V / 0Hz
<b>Appliance class:</b>	I
<b>Ambient temperature (Ta) range:</b>	-40°C* ... +60°C**
<b>Surge protection:</b>	<b>35E:</b> 4kV (L-N), 4kV (L-PE) <b>25E:</b> 1kV (L-N), 2kV (L-PE)

\* - switching power supply is forbidden in temperature below -35°C (applies only to ZB version)

\*\* - check table in “Technial Information” for maximum temperature of each type of the luminaire

### Note:

This light fixture cannot operate in places exposed to the external weather conditions

## 2. TECHNICAL INFORMATION

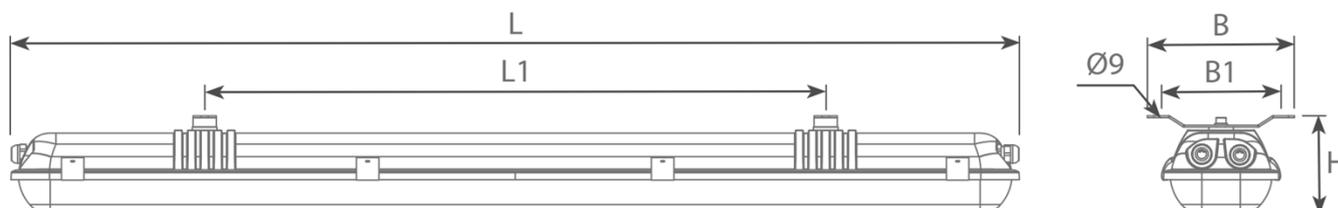
### Power supply 35E:

Type	Power	Electrical unit	IP	Appliance class	Power factor	Ambient temp.
EXF250LED-0600-FX1	19,8 W	220-240V 50-60Hz	66 67	I	≥0,97	-40 ... +45°C
EXF250LED-0600-FX2	36,6 W					-40 ... +45°C
EXF250LED-1200-FX2	36,6 W					-40 ... +45°C
EXF250LED-1200-FX4	70,3 W					-40 ... +45°C
EXF250LED-0600-GX2	24,4 W	220-240V 0Hz				-40 ... +60°C
EXF250LED-1200-GX2	24,4 W					-40 ... +60°C
EXF250LED-1200-GX4	45,8 W					-40 ... +55°C

### Power supply 25E:

Type	Power	Electrical unit	IP	Appliance class	Power factor	Ambient temp.
EXF250LED-0600-FX1	20,5 W	110-254V 50-60Hz	66 67	I	≥0,97	-40 ... +45°C
EXF250LED-0600-FX2	37,2 W					-40 ... +45°C
EXF250LED-1200-FX2	37,3 W					-40 ... +45°C
EXF250LED-1200-FX4	74,5 W					-40 ... +45°C
EXF250LED-0600-GX2	25,3 W	220-250V 0Hz				-40 ... +60°C
EXF250LED-1200-GX2	25,3 W					-40 ... +60°C
EXF250LED-1200-GX4	46,7 W					-40 ... +55°C

Luminaire's size for both length versions:



Type	L	L1	B	B1	H
EXF250LED-0600	700	450	190	160	129
EXF250LED-1200	1300	800	190	160	129

Maximum number of line connected luminaires depending on type of the utilized circuit breakers:

Power supply	B16	C16	Max. starting current	Starting time
35E	27	45	4A	< 1300 $\mu$ S
25E	24	40	24A	< 250 $\mu$ S

### 3. PHOTOMETRICAL DATA

#### Power supply 35E:

Type	Luminous flux	Emergency luminous flux*	Efficiency**	Colour temperature	CRI	Lifetime
EXF250LED-0600-FX1	2715 lm	1358 lm	137 lm/W	4500K  6500K (optional)	>85	>100 000 h
EXF250LED-0600-FX2	5439 lm	2720 lm	149 lm/W			
EXF250LED-1200-FX2	5511 lm	2756 lm	151 lm/W			
EXF250LED-1200-FX4	10701 lm	5351 lm	152 lm/W			
EXF250LED-0600-GX2	3484 lm	1742 lm	143 lm/W			
EXF250LED-1200-GX2	3535 lm	1768 lm	145 lm/W			
EXF250LED-1200-GX4	6922 lm	3461 lm	151 lm/W			

Lifetime of a LED modules: L<sub>80</sub>B<sub>50</sub>

#### Power supply 25E:

Type	Luminous flux	Emergency luminous flux*	Efficiency	Colour temperature	CRI	Lifetime
EXF250LED-0600-FX1	2715 lm	2715 lm	132 lm/W	4500K  6500K (optional)	>85	>100 000 h
EXF250LED-0600-FX2	5439 lm	5439 lm	146 lm/W			
EXF250LED-1200-FX2	5511 lm	5511 lm	148 lm/W			
EXF250LED-1200-FX4	10701 lm	10701 lm	144 lm/W			
EXF250LED-0600-GX2	3484 lm	3484 lm	138 lm/W			
EXF250LED-1200-GX2	3535 lm	3535 lm	140 lm/W			
EXF250LED-1200-GX4	6922 lm	6922 lm	148 lm/W			

Lifetime of a LED modules: L<sub>80</sub>B<sub>50</sub>

\* - relevant only for ZB version (luminaire compatible with central battery). For 35E power supply, emergency luminous flux equals to 50% of nominal luminous flux (with mains power supply). For 25E power supply, emergency luminous flux equals to 100% of nominal luminous flux (with mains power supply)

\*\* - these values refer to mains powered operation of the luminaire



Optionally, the ZB version of the luminaire can be equipped with a pictogram.



Pictogram brightness >200 cd/m<sup>2</sup>

The pictogram version can only be selected for the FX2 luminaire type.

## 4. CONSTRUCTION DESCRIPTION

Light fittings are built according to common electrical engineering rules. The product meets the essential requirements of the Directives and the harmonized standards listed in the EU Declaration of Conformity. Used solutions, materials, electrical equipment and proper insulating spaces guarantee that during normal exploitation there is no possibility any sparks, electrostatic charge, dangerous heating or light fitting destruction caused by environment factors occurrence.

Light fittings are built as a one chamber equipment. Mounting tray and brackets are made of powder painted galvanized steel. Closing clamps are made of stainless steel.

Used terminals ensures safe and non-sparking connection of inner wires and admission cables. The diffuser is made of UV stabilized polycarbonate or PMMA. Housing is made of glass fiber reinforced polyester.

## 5. PRELIMINARIES

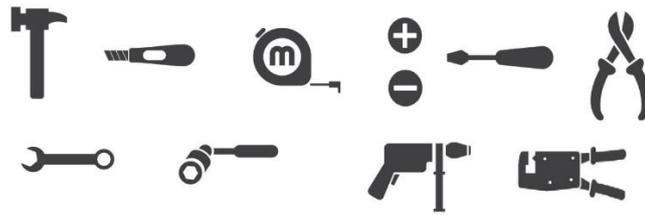
### SAFETY RULES

- Carefully read all the information included in the manual before mounting the light fitting.
- General safety rules must be followed.
- Failure to comply with rules of the installation and use can lead to personal injury or property loses. ATM Lighting sp. z o.o. company takes no responsibility in such cases.
- Failure to comply with rules included in this manual will result in void of the manufacturer warranty.
- Manufacturer takes no responsibility for any damages resulting from improper installation, maintenance or improper use.
- It is the responsibility of the user to perform the installation in accordance with this manual and the safety regulations and standards applicable to the type of installation.
- In case of malfunction, the device must be turned off and returned for repair to the manufacturer or his authorized entity.



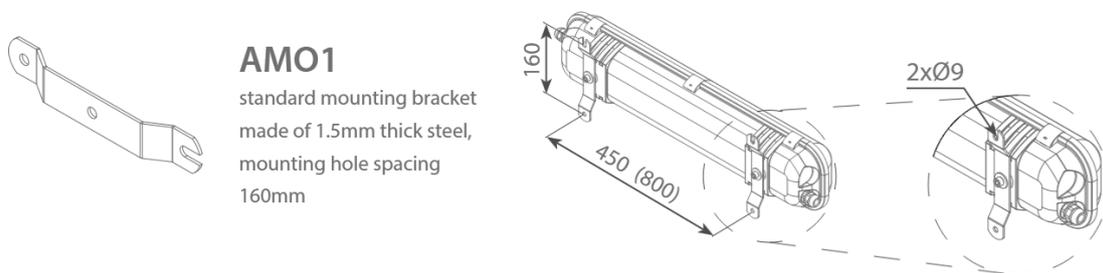
Before performing any installation work, including opening the enclosure, be absolutely sure to disconnect the unit from the power source.

**NECESSARY TOOLS**



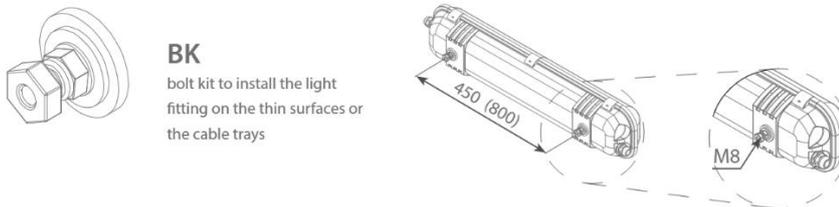
**6. LIGHT FITTING MOUNTING**

By default, the EXF250LED light fitting is equipped with two AMO1 mounting brackets, which are designed for direct installation on a ceiling or on a wall:

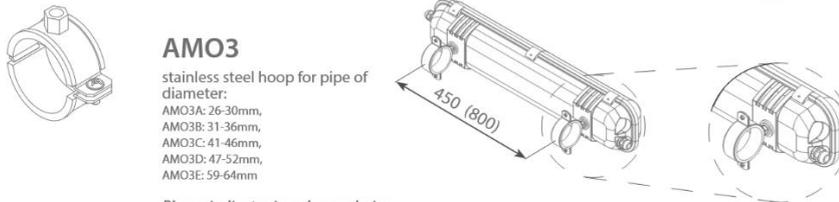


**AMO1**  
standard mounting bracket  
made of 1.5mm thick steel,  
mounting hole spacing  
160mm

It is possible to choose one of the alternative mounting types:

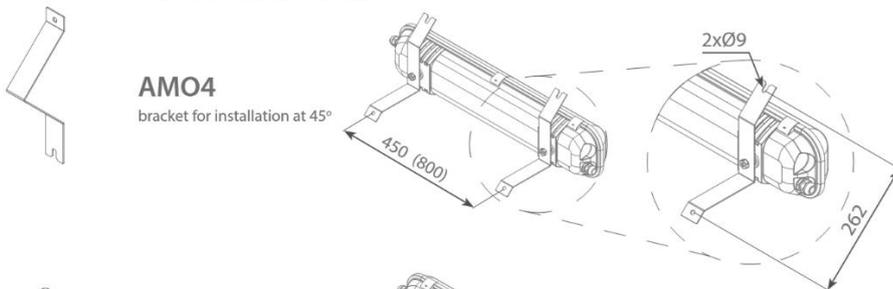


**BK**  
bolt kit to install the light  
fitting on the thin surfaces or  
the cable trays

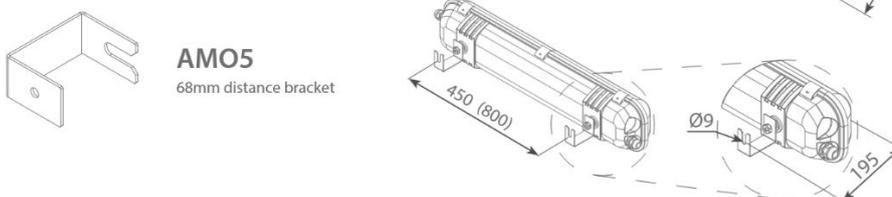


**AMO3**  
stainless steel hoop for pipe of  
diameter:  
AMO3A: 26-30mm,  
AMO3B: 31-36mm,  
AMO3C: 41-46mm,  
AMO3D: 47-52mm,  
AMO3E: 59-64mm

*Please indicate size when ordering*



**AMO4**  
bracket for installation at 45°



**AMO5**  
68mm distance bracket

## 7. ELECTRICAL CONNECTION

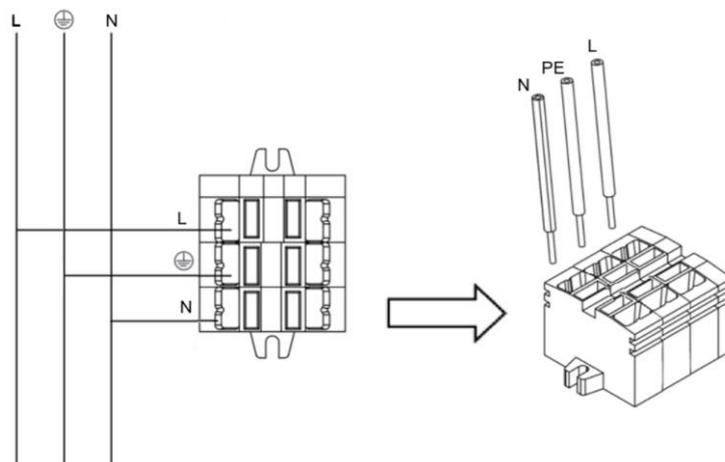


Installation and electrical connection should be in accordance with the requirements of PN-EN 60079-14.

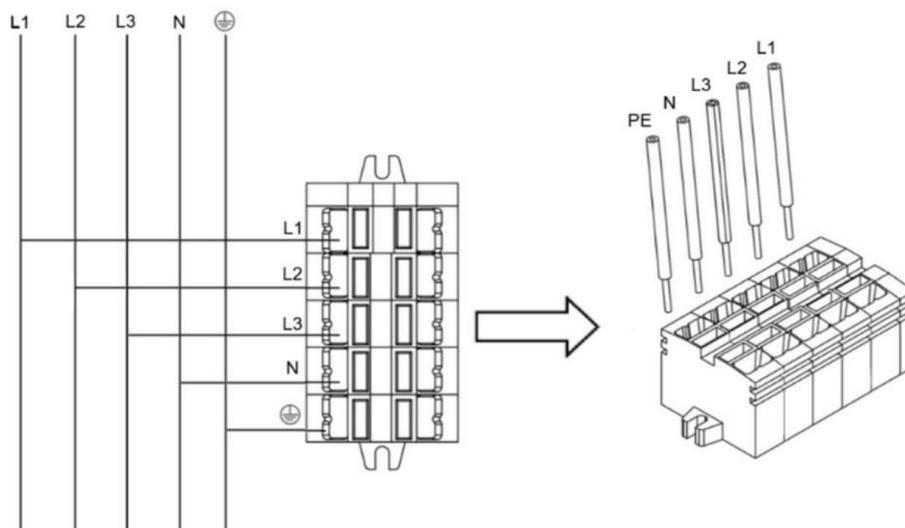
To connect power supply:

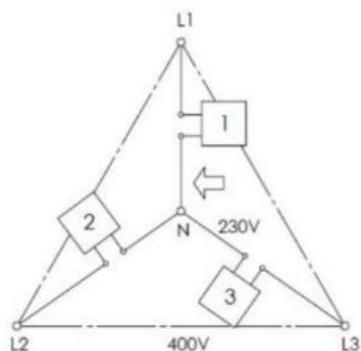
- enter the power cable to the housing through the cable entry (gland),
- carefully remove the insulation from the tips of the wires (8-10mm) and put them into the connector, according to a label inside the light fitting,
- precisely tighten power cable in the gland with two wrenches,
- check the effectiveness of grounding.

1. Power connection for standard and ZB version (3-pole connector):

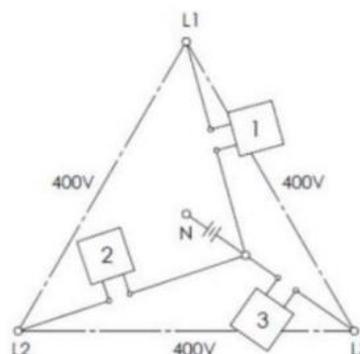


2. Power connection for a luminaire powered from a 3-phase network (5-pole connector):



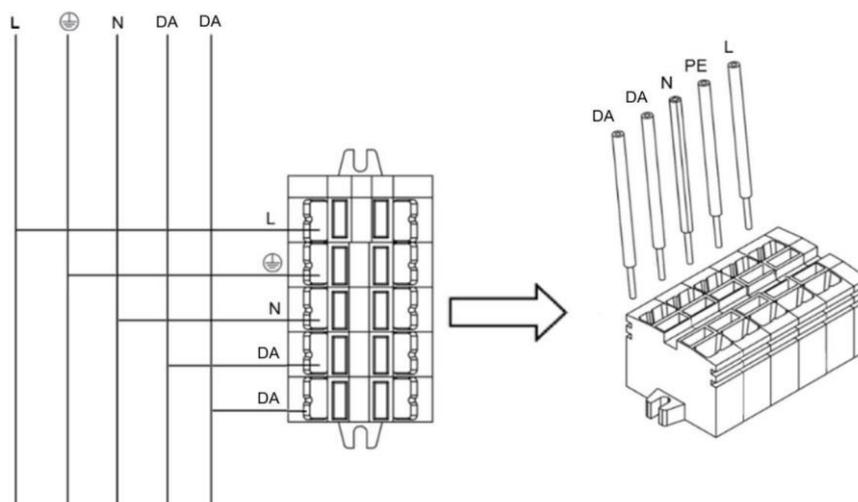


Correct connection



Incorrect connection

3. Power connection for luminaire with DALI-2 functionality\* (5-pole connector):



\* - DALI-2 option is available only for 35E power supply (220-240V, 0/50-60Hz).

For temperatures below  $-30^{\circ}\text{C}$ , DALI functionality may be limited.

Voltage at the terminal:  $>12\text{V}$



Remarks:

- Use one wrench to tighten the sealing nut, while using the second wrench to block gland body against rotation, otherwise damage of the seal can be caused and therefore sealing level will be decreased, as well as the explosion protection.
- In case of damage or voltage occurrence in the neutral wire, the luminaire or group of such luminaires may be exposed to voltage exceeding allowed range. This may result in damage of the power supply system.
- The luminaire cannot be powered with phase-to-phase voltage of 400V

## 8. CONDITIONS OF SAFETY USE

- Every light fitting must have label with rating data on it. Each light fitting is equipped with this „Installation and maintenance manual”, which must be kept by user until the end of exploitation.
- Light fittings are designed for fixed installations only.
- Using light fitting outside the designated operating temperature range is unacceptable and will decrease a lifetime of light fitting and/or damage it. It will also cause a loss of warranty.



**Remark:** Using light fitting beyond the designated operating temperature range may result in the loss of explosion protection measures, exceeded temperature class and cause explosion.

- Each light fitting must have a warning sign: „DO NOT OPEN UNDER VOLTAGE” on it.
- Admission cables must have 3-wires with PE wire or 5-wires with PE wire (depending on the version) and diameter 7-13mm (Ø20 cable glands) or 10-17mm (Ø25 cable glands).
- Use power wires with cross section 1-2,5mm<sup>2</sup>.
- Maximum cross current **I=16A** (for 3-phase power network version **I=10A**).
- The diffuser may be made of polycarbonate, so it mustn't be exposed to chemical substances which may destroy it, especially: oil, acetone, chloride, ethyl, ether. In case of doubts what substances are present in work environment of the light fitting, prior investigation must be made to determine that.



- Do not stare into working light source.



- Risk of electrical shock.

## 9. LIGHT FITTING MAINTENANCE AND SERVICING

**REMARK:** during the servicing and maintenance, touching the LEDs is prohibited, because it will decrease the lifetime of light fitting and cause the loss of manufacturer's warranty.



It is recommended to carry out inspections of electrical equipment in accordance with the requirements of PN-EN 60079-17.

**INSPECTION:** at least once a month. Inspection is made without opening the light fitting. User must check admission cables condition (insulation damage, cracks, burns etc.). Cables must not have any acute bends. Outside parts of the light fitting must be checked. No cracks or corrosion signs may occur. Bolts used to mount light fitting should be properly tightened, washers mustn't be cracked. Cleanliness of outer surfaces and light fittings surroundings must be checked. Light fittings may not be soiled by paint or grease. Do not allow for dust (dirt) deposition on the light fitting. The readability of rating and warning plates must be checked. Abnormalities found must be fixed.

**SERVICE AND MAINTENANCE:** at least once a year. Service and maintenance must be made with power supply turned off. User must take inspection steps first. After opening, check: metal parts painting, condition of inner wiring and its mounting, insulating materials, cable glands gaskets, terminals.

Abnormalities found must be fixed. Rating and warning plates must be cleaned. Surfaces of insulating materials and covers must be clean.

**VERIFICATION OF TECHNICAL CONDITION:** at least once in every 2 years. Power supply must be switched off. Verification of technical condition must be proceeded outside of Ex zone or with monitoring the hazard level. It is only allowed to proceed if:

- explosive atmosphere concentration does not exceed 10% of lower explosion limit (LEL) for explosive atmospheres in zones 1 and 2,
- cleaning activities have been carried out to ensure the cleanliness of the installation (house-keeping) and dust cloud occurrence possibility is excluded in zones 21,22 of explosion hazard.

Besides all the examination during inspection, service and maintenance paragraphs, electrical examination must be also carried out: light fitting current consumption, insulation examination, protective earthing condition. Special attention must be paid to insulating parts condition, no crack or burns may occur.

## 10. CLEANING AND SPARE PARTS



Do not allow dust to accumulate on the light fitting. Cleaning have to be carried out using vacuum cleaners or a soft cloth with antistatic agent suitable to working conditions. Do not use chemicals that can damage any part of the light fitting.

All parts considered as a spare parts must be ordered at manufacturer of light fitting.

## 11. REPAIRING



All repairs may be made only by manufacturer or authorized repair workshops according to PN-EN 60079-19.

## 12. LIGHT SOURCE REPLACEMENT

Replacement of the light source can be made only by specially trained personnel, using the original components provided by ATM Lighting sp. z o.o.

## 13. TRANSPORT AND CONDITIONS OF STORAGE

During transport operations, light fittings shouldn't be exposed to precipitation or mechanical shock.

Light fittings may be stored only in sheltered warehouses, within +5°C to +35°C temperature range and relative humidity lower than 75%. No corrosion causing vapours or gases should be present.

## 14. DISPOSAL OF WASTE EQUIPMENT



User must obey relevant rules and regulations about disposal of wasted equipment valid in their country.

## 15. WARRANTY

- It is required to disconnect power supply from the light fitting before any maintenance work.
- It is forbidden to make any changes to the light fitting construction. Any unauthorized interference may result in reduced functionality or damage to the device and may in some cases endanger life or health. At the same time it relieves the manufacturer of all warranty liability.
- All specific information can be found in document „General terms and conditions warranty ATM Lighting sp. z o.o.” available at the website [www.atmlighting.pl/en/](http://www.atmlighting.pl/en/)





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