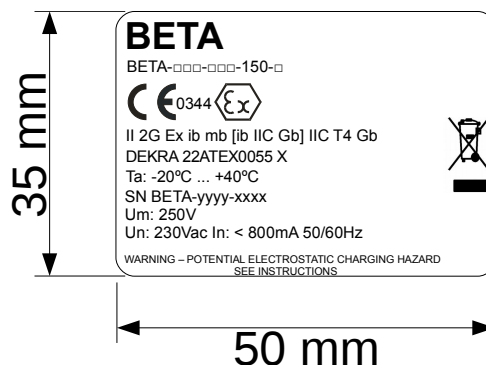
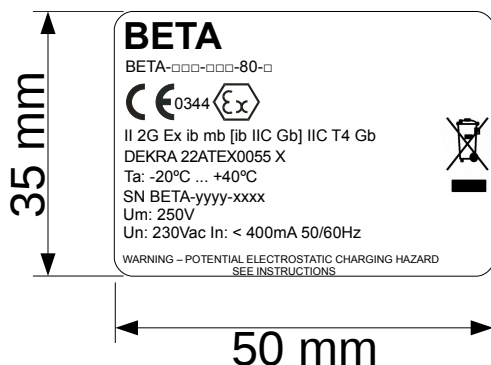


1 Contents to be incorporated into the installation manual

1.1 Summary of marking



Serial number yyyy-xxxx, yyyy is the year of production, xxxx is the serial number.

Designation according to Directive 2014/34/EC:

CE 0344 Ex II 2G

- Notified body performing the QA surveillance
- Equipment Group II (Surface Industries)
- Equipment Category 2 (Equipment with a high level of protection suitable for in Zone 1 areas)
- For explosive mixtures of gases, mists, or vapors in air

Ex marking:

Ex ib mb IIC T4 Gb

- Electrical apparatus with explosion protection acc. EN-IEC standards
- Type of protection (Intrinsic Safety and encapsulation)
- Gas group
- Temperature class
- IEC equipment protection level

Ex marking:

[ib IIC Gb]

- Type of protection (provides Intrinsic Safety outputs)
- Gas group
- IEC equipment protection level

Um

- Maximum voltage that can be applied to the non-intrinsically safe connection facilities of associated apparatus without invalidating the type of protection.

X marking

- Electrostatic charges on the luminaire enclosure and its type plate shall be avoided. Use a damp cloth for cleaning the equipment.
- The equipment shall be installed in such a way that the risk for mechanical damage is low.
- The mains supply circuit shall be limited to Overvoltage Category III in order to maintain the internal separation distances.

EC-Type Examination Certificate Number:

DEKRA 22ATEX0055

European Standards applied for explosion protection:

EN60079-0:2018

EN60079-11:2012

NEN-EN-IEC-60079-18:2015

Ambient temperature:

-20°C < Ta < +40°C

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2 Installation

2.1 General

The BETA is a high-bay LED luminaire that is available in several types depending on the type code, with or without optics, single or dual LED driver (80W / 150W) with DALI interface or wireless IoT module (I.S.).

BETA	☐ ☐	☐ ☐	☐ ☐	☐	
	DALI	with Intrinsically Safe Dali interface			
	IoT	with Intrinsically Safe wireless IoT Nedap Luxon			
	TOP	Without interface			
		857	LED color 5700K		
		840	LED color 4000K		
		80	with single 80W driver		
		150	with dual 75W drivers		
		O	with optics		

The BETA contains one or two intrinsically Safe LED drivers with encapsulated electronic circuits and flying leads. The driver has type of protection Ex mb and provides Intrinsically Safe current limitation to a LED PCB (a LED engine). On the LED PCB the LED's perform Intrinsically Safe voltage limiting.

In addition the LED driver has Intrinsically Safe outputs to an optional DALI or wireless IoT module for controlling the luminaire.

2.2 Environmental

Always follow local regulations and at least IEC60079-14 (Explosive atmospheres - Part 14: Electrical installations design, selection and erection) or other local codes of practice.

2.3 Ratings

Rated Input Voltage	Single driver	Dual driver
Um Un	250Vac 230Vac 50/60Hz <= 5A	
Supply Current	400mA	800mA
Power consumption	75W	150W
Lumen output	17.000lm	30.000lm
Operating Ambient Temp	-20°C to +40°C	
Colour:	Black	
Protection Glass	4 mm	

		
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2.4 Mounting

For maximum long term reliability and light output, the light must be installed in free air. The BETA luminaire design incorporates an over-temperature control circuit that reduces input power should internal temperatures reach a maximum level. As a result, light output may be temporarily reduced at higher ambient temperatures.

The equipment must be installed in such a way that the risk for mechanical damage is low, in particular to minimize the risk of impact onto the safety glass window.

Recommended mounting height: 4-12m

2.4.1 Electrostatic discharge

The BETA surface has been examined to be safe when there is a risk of electrostatic discharges during the intended use.

Case must be taken not to use the BETA in an environment with a prolific charge generating mechanism.

Examples of such a mechanism are:

- Areas where a pneumatic transfer of powders occur.
- Areas where charge spraying in a powder coating process occurs.

2.5 Electrical connection

Do not apply a main voltage above $U_m = 250V$ as this may invalidate the type of protection.

Ensure that the mains voltage supply is disconnected before connecting the luminaire.

The luminaire is suitable for connection to a mains supply with Overvoltage Category III as defined in EN-IEC60664-1 (equipment for industrial use with permanent connection to the fixed installation).

For connecting the colored fitted power cable conductors is as follows:

- Brown wire connects to Live.
- Blue wire connects to Neutral.
- Green/Yellow wire connects to Safety Ground (Earth).

Note: Electrical installation of the extension should be carried out by a qualified electrician.

2.5.1 Installation of Junction Box

The BETA is provided with flying leads that when installed in the hazardous area must be terminated inside a separately certified Ex eb enclosure.

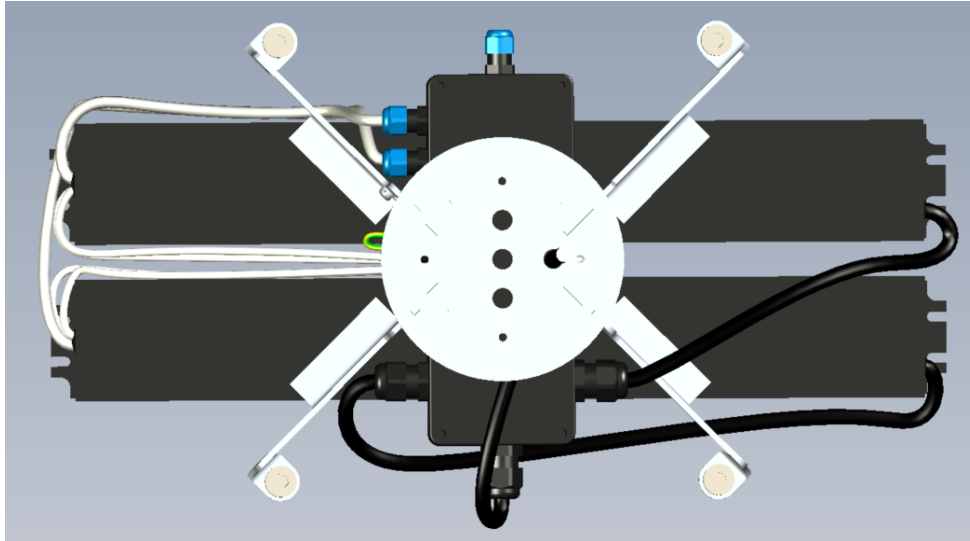
The junction box can be installed outside the BETA, however inside the BETA a limited amount of space is available for mounting a junction box.

When installing an Ex eb certified junction box inside the BETA, the junction box must meet or exceed:

- The ambient temperature T_a to be considered for the cable glands and sealing is the maximum temperature inside the BETA enclosure which is $+60^{\circ}C$,
- The maximum service temperature of the junction box where it is mounted on or close to the LED driver is $+73^{\circ}C$.

As an example of such an installation see below picture.

		
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2.5.2 Mains wiring

The cable has flying leads with specifications:

Specification	Value
Manufacturer	LAPP
Type	Robust 200 3G1 , part no 0021801 CAY9225660A_REV_G
Cores	3
Copper area	1 mm ²
Outer diameter	8.4mm
Minimum isolation thickness or Isolation Test voltage	4000V
Voltage rating Uo/U	450/750V
Maximum operating temperature (fixed installation)	-50°C / +80°C

2.5.3 Optional DALI or wireless IoT module for controlling the luminaire.

DALI circuits are provided as flying leads as well and must be terminated inside a Ex eb junction box.

The wiring between ATEX85W driver and the optional DALI or Wireless IoT module consists of a single 4 wire (LVD_A, LVD_B, V+, GND), multi-stranded 0.5 mm wires with 0.25 mm solid isolation. This is surrounded by 0.8mm + an additional 0.5mm solid isolation sleeve that provides infallible isolation to the frame of the apparatus

Cable with the following specification is used:

Specification	Value
Manufacturer	Pylon
Type	4P cable with RJ9 connector 4P4C 1200mm long 1.3mm insulation
Copper area	0.2mm ²
Minimum isolation thickness	1.3mm

		
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Specification	Value
Maximum operating temperature	85°C

As the DALI circuits are Intrinsically Safe (see below) when combined into a single Ex eb enclosure the terminals must keep > 50mm separation from the non-Intrinsically Safe power line circuits.

In the BETA TOP version, DALI/wireless IoT circuits may not be connected to any other circuits. BETA DALI and BETA IoT may only be connected to certified DALI and wireless IoT module supplied by the manufacturer

2.5.4 Intrinsically Safe circuits

LED circuit and DALI/wireless IoT circuit have Intrinsically Safe wiring within the respective circuits. However, with respect to the frame of the apparatus Infallible Separations must be maintained.

Only certified DALI/wireless IoT modules from the manufacturer may be connected.

Warning: with respect to the frame of the apparatus these circuits may have up to 750Vdc. Do not perform work on the BETA when circuits are live.

		
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3 Inspection, Maintenance and Repair

3.1 Inspection and Maintenance

The requirements as stated in EN-IEC 60079-17 or other codes of practice valid on the place of installation apply.

If the BETA enclosure or window appears cracked, dented, broken or otherwise no longer in good condition or are very dirty or damaged they must be immediately repaired or cleaned. If any of the LED's is not functioning or shining brighter than the others, turn off the device and return to the manufacturer for repair.

Cycle of maintenance depends on the specific conditions of use. As a general guide line for light use a 12 month interval is recommended.

3.2 Repair

Repair to the BETA may only be done by using original parts. It shall be carried out by qualified skilled workers who have been trained in accordance with EN-IEC 60079-19 or other codes of practice valid on the place of installation.

The LED compartment is IP54 and contains no user servicable parts. It shall not be opened by the user and in case of repair should be replaced in it's entirety.

Applying of non-original parts may lead to injury to persons and damage to equipment.

If non-original parts are used or repair has been carried out in an incompetent manner the warranties concerning explosion safety no longer apply. Therefore it is advised to return the equipment to the manufacturer in case repair is needed.

3.3 Specific conditions for Safe Use

- Electrostatic charges on the luminaire enclosure and its type plate shall be avoided. Use a damp cloth for cleaning the equipment.
- The equipment shall be installed in such a way that the risk for mechanical damage is low.
- The mains supply circuit shall be limited to Overvoltage Category III in order to maintain the internal separation distances.

		
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