

HARDO.



USE AND MAINTENANCE INSTRUCTION OF LIGHTING FIXTURE

PrimeLine **-***1/3** SERIES



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1. GENERAL INFORMATION

1.1 Manufacturer

HARDO CZAPSKI I WSPÓLNICY SP. J.

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32-83 Balice, Poland

1.2 Information on this manual



NOTE: BEFORE USING THE DEVICE, READ THESE INSTRUCTIONS.

This manual describes the rules for safe and correct handling of devices. The safety recommendations contained in the manual, accident prevention measures as well as general safety measures must be followed. The instructions should be accessible to operating and maintenance personnel and kept throughout the useful life of the product.

1.3 Compliance with standards and regulations

PrimeLine series lighting fixtures have been designed and manufactured in accordance with the requirements of:

- a) Directive on the harmonization of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres **ATEX 2014/34/EU**.
- b) Directive on electrical equipment designed for use within certain voltage limits **LVD 2014/35/EU**
- c) Directive on the harmonisation of the laws of the Member States relating to electromagnetic compatibility **EMC 2014/30/EU**.

A detailed summary of standards is included in the EU declaration of conformity.

2. DEVICE DESCRIPTION

PrimeLine lighting fixtures are equipped with high-efficiency LED light sources. Depending on the version, they can serve as primary and/or emergency lighting. The product meets the essential safety requirements outlined in the ATEX Directive for Group II devices in categories 2G, 3G, 2D, and 3D, as well as the requirements of the IECEx system. Detailed guidelines regarding hazardous areas are provided later in this manual.

The lighting fixtures are approved for use in both indoor and outdoor installations. The external housing of PrimeLine lighting fixtures consists of a lower body made of glass fiber-reinforced polyester (GRP) and a polycarbonate (PC) upper body, which also serves as the fixture's diffuser. The diffuser is available in three versions: transparent, frosted, and opal. The connection between these two components is sealed with a silicone foam gasket.

External electrical cables are introduced into the housing using certified cable glands. Depending on the components used, the fixtures have an ingress protection rating of IP66/67 against solid objects and liquids. The housing is resistant to moisture and UV radiation, making it suitable for outdoor operation. The materials used ensure high resistance to mechanical impact. The fixture is designed as a single-chamber device. The housing is secured with stainless steel locking clips that prevent opening without the use of tools. Inside the housing, there is a lower frame made of powder-coated steel. Depending on the lighting fixture configuration, the lower frame serves as a mounting base for the LED driver, cable connectors, through-wiring, Ni-Cd battery pack, and CBX-M1, CBY-M1 switching modules. The fixtures can be equipped with LED drivers featuring a DALI system. The lower frame is attached to the GRP lower body using plastic mounting screws. The HEX 2356-1/2/3 LED light modules are mounted onto the upper frame, which is made of powder-coated steel. Both frames are connected using a set of rivet nuts and captive screws.

Fixtures in the shorter length version can be equipped with a safety sign (pictogram).

2.1 Possible configuration

PrimeLine **-*****1/3 are available in two lengths and in basic operation mode are powered by 220-240VAC, 50Hz. In emergency mode, they are powered from a built-in Ni-Cd battery pack ensuring backup in emergency mode of not less than 1.5 hours or 3 hours depending on type of battery pack.

A detailed description of the possible configurations and their coding is in accordance with the diagram shown in Figure 1.

PrimeLine	AA	-	B	X	Y	Z	C	R	K
	60		1	3	1	0	S	O	T
	12		2	5	2	5	B	R	M
			3	7	3		1		O
					4		3		
					5		X		
							Y		
Approximate fixture length:									
60 – 670 mm									
12 – 1270 mm									
LED module type:									
1 – HEX 2356-* LED module – two LED modules for fixture 670, four for fixture 1270, power of a single LED module is about 10 W ^[1]									
2 – HEX 2356-* LED module – two LED modules for fixture 670, four for fixture 1270, power of a single LED module is about 12 W									
3 – HEX 2356-* LED module – two LED modules for fixture 670, four for fixture 1270, power of a single LED module is about 14 W ^[2]									
Wiring:									
3 – terminal 3-pole									
5 – terminal 5-pole									
7 – terminal 7-pole									
Cable glands (quantity):									
1 – one cable gland on one side of the fixture									
2 – one cable gland on each side of the fixture									
3 – two cable glands on one side and one on the other side of the fixture									
4 – two cable glands on each side of the fixture									
5 – two cable glands on one side of the fixture									
Cable glands (size):									
0 – M20									
5 – M25									
Emergency version:									
S – baseline version of the fixture									
B – baseline version of the fixture used to cooperation with central battery without monitoring									
1 – emergency version of the fixture with 1,5 h NiCd maintenance battery ^[3]									
3 – emergency version of the fixture with 3 h NiCd maintenance battery									
X – version of the fixture used to cooperation with central battery with monitoring - with addressing module V-CG-S									
Y – version of the fixture used to cooperation with central battery with monitoring - with addressing module V-CG-SE									
Isolation switch:									
O – without isolation switch									
R – with isolation switch ^[4]									
Diffuser type:									
T – transparent diffuser									
M – frosted diffuser									
O – opal diffuser									
Annotation:									
[1] unavailable version 12-1 *****1/3 (with 1,5 h and 3 h NiCd maintenance battery)									
[2] unavailable version 60-3 *****1/3 (with 1,5 h and 3 h NiCd maintenance battery)									
[3] unavailable version 60-1 *****3 (with 3 h NiCd maintenance battery)									
[4] isolation switch is not available with version *-* *****1/3 (with 1,5 h and 3 h NiCd maintenance battery)									

*Available PrimeLine **-*****1/3 lighting fixture models, along with their parameters, are presented in Chapter 12 of this manual.

Figure 1. Diagram of all possible configurations of PrimeLine luminaires

PrimeLine 60-***** lighting fixtures are also available in a version with safety signs (pictograms). The use of pictograms requires the installation of diffusing lenses in accordance with the manufacturer's guidelines.

Table 1 and Table 2 present the basic parameters of safety signs available in two mounting variants, while Figure 2 and Figure 3 illustrate the possible methods of their installation.

a)

Table 1. Basic information on adhesive pictograms for the PrimeLine
Parameters of adhesive pictograms for the PrimeLine 60-*****

Width [mm]	224
Height [mm]	115
Viewing distance [m]	23
Average luminance of the pictogram [cd/m ²]	≥ 200



Figure 2. PrimeLine series lighting fixture in a version with an adhesive pictogram

b)

Table 2. Basic information on suspended pictograms for the PrimeLine
Parameters of suspended pictograms for the PrimeLine 60-*****

Width [mm]	307
Height [mm]	154
Viewing distance [m]	30
Average luminance of the pictogram [cd/m ²]	≥ 200

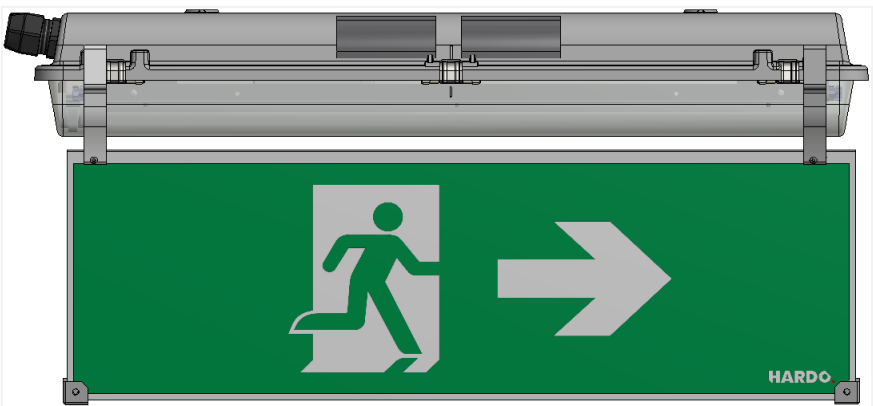


Figure 3. PrimeLine series lighting fixture in a version with a suspended pictogram

The standard set of available pictograms can be found in the data sheet of the PrimeLine lighting fixtures.

2.2 Ex marking

Depending on the version PrimeLine series luminaires are marked with Ex features as follow:

For gas, vapour and flammable liquid mist explosion hazard zones:



II 2G Ex eb mb IIC T4 Gb;

For flammable dust explosion hazard zones:



II 2D Ex tb IIIC T70°C Db.

The meaning of the individual symbols is presented in Table 3.

Table 3. The meaning of the individual symbols

Name	Symbol	Description
Explosion protection marking		Compliant with European Directive 2014/34/EU (ATEX) for installation in hazardous areas.
Device group	II	Device intended for use in explosive atmospheres other than underground mining plants.
Category of devices	2G	The device can be safely operated in explosion hazard Zone 1 or 2 of gases, vapours and mists of flammable liquids with air.
	2D	The device can be safely operated in dust explosion Zone 21 or 22.
Type of protection	Ex eb	Protection of equipment with increased safety construction "e".
	Ex mb	Encapsulation protection.
	Ex db	Protection of equipment by flameproof enclosures "d".
	Ex tb	Protection of devices against ignition of dust by means of a "t" housing.
Explosives group	IIC	The device can be used in the presence of explosion hazard of gases, vapours and mists of flammable liquids with air classified as explosion group IIA, IIB or IIC.
	IIIC	The device can be used in the presence of explosion hazard of flammable dust and fibres belonging to the explosion groups IIIA, IIIB and IIIC (all types of dust).
Temperature class	T4	The device is designed for use in hazardous areas of gases with a self-ignition temperature of > 135°C.
Temperature	70°C	The device can be used in the presence of dust whose cloud auto-ignition temperature is higher than 105°C and the smouldering temperature of the layer (5 mm) is higher than 145°C.
Explosion protection level	Gb	Equipment intended for installation in gas explosion hazard zones 1, 2 which provides a 'high level of safety' and which will not become a source of ignition under normal conditions of use and during expected damage.
	Db	Equipment intended for installation in dust explosion hazard zones 21, 22 which provides a 'high level of safety' and which will not become a source of ignition under normal conditions of use and during expected damage.

3. SAFETY

3.1 General precautions



DANGER: THE EXPLOSION HAZARD CAUSED BY IMPROPER USE AND/OR ALTERATIONS TO THE DEVICE CAN CAUSE SERIOUS OR FATAL INJURIES.



WARNING: FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS MANUAL MAY VOID THE MANUFACTURER'S WARRANTY.



WARNING: FAILURE TO COMPLY WITH THE INSTALLATION AND USE RULES MAY RESULT IN PERSONAL INJURY OR PROPERTY LOSS. THE MANUFACTURER IS NOT RESPONSIBLE IN SUCH CASES.



WARNING: MAKING ANY MODIFICATIONS TO THE DEVICE IS PROHIBITED.



WARNING: BEFORE PERFORMING ANY ASSEMBLY OPERATIONS, INCLUDING OPENING THE CASE, IT IS IMPERATIVE THAT THE DEVICE BE DISCONNECTED FROM THE POWER SOURCE.

Luminaires must be installed and maintained in accordance with the requirements of this manual and in accordance with EN/IEC 60079-14 (current edition).

The Buyer and/or the End User must be aware of the hazards of the electrical, chemical and physical properties of gas, vapours and dust present in the installation. Proper installation and maintenance in accordance with local and national regulations, product specifications are the responsibility of the Buyer and/or the End User. It is not allowed to use a partially damaged device.

If damage or malfunction is detected, the device should be taken out of service and handed over for repair to the manufacturer's facility or another entity authorized by the manufacturer.

3.2 Application



WARNING: USE THE DEVICE ONLY FOR ITS INTENDED PURPOSE. INCORRECT USE MAY ADVERSELY AFFECT ITS SAFETY AND FUNCTIONING.



WARNING: THE DEVICE MAY BE USED IN POTENTIALLY EXPLOSIVE ATMOSPHERES ONLY AS DEFINED IN THIS MANUAL AND RESULTING FROM THE EX FEATURE ON THE DATA PLATE.

PrimeLine series luminaires are designed for use:

- In accordance with the environmental and technical conditions specified in this manual and on the nameplate.
- In external and/or internal installations;
- In Zones 1, 2 of explosion hazard of gases, vapours and mists of flammable liquids classified as explosion group IIA, IIB or IIC and temperature class T1-T4;
- In Zones 21, 22 explosion hazard of flammable fibres of explosive groups IIIA, IIIB, IIIC, whose assumed flash point is higher than 105°C and the smouldering temperature of the dust layer (5mm) higher than 145°C.

3.3 Other conditions for safe use

- The luminaires are suitable for fixed installations only;
- Operation of the luminaire outside the designated ambient temperature range is unacceptable and will lead to faster wear and/or damage. At the same time, it causes the loss of the manufacturer's warranty. Note: The use of a luminaire outside the designated range of ambient temperatures may result in loss of explosion safety measures, e.g., exceeding the temperature class and explosion;
- Each luminaire has a warning plate: **"DO NOT OPEN WHEN ENERGIZED"**;
- The housing body is made of glass fibre reinforced polyester (GRP), while the diffuser is made of polycarbonate (PC), so they should not be exposed to chemicals that may damage them, in particular: oil, acetone, chlorine, ethyl, ether, solvents;
- The luminaire has a degree of photobiological hazard RG1 – do not stare at the working light source;
- Risk of electric shock, take the required precautions, in particular do not open the live luminaire;
- The luminaire must not be installed on vibrating surfaces.
- The equipment shall only be employed with a power supply which has a prospective short circuit current not exceeding 1500A.

4. TRANSPORT AND STORAGE

Transport of luminaires should be carried out in original unit packaging. Unit and/or bulk packaging should be protected against precipitation during transport.

Luminaires can only be stored in covered rooms at a temperature of +5°C to +35°C and humidity of less than 75%. The premises should be free of corrosive vapours and gases.

5. INSTALLATION

5.1 Before installation

- Make sure that the packaging has not been damaged during transport;
- Unpack the device;
- Remove any packaging elements that could be dangerous to humans, such as belts, plastic bags, etc.

Make sure that:

- The luminaire is suitable for the hazardous area existing at the installation site;
- The group of apparatus is suitable for gases, vapours and/or dust present at the installation site;
- The temperature class and surface temperature of the device is suitable for gases, vapours and / or dust present at the installation site;
- The luminaire is not damaged.

5.2 Installation

PrimeLine luminaires have M8 mounting nuts embedded in the GRP lower body. At the place where the nuts are mounted, the mounting brackets must be fixed with M8/15 mm bolts and M8 spring washers. M8 screws should be tightened with a torque of 5-6 Nm. Installation of PrimeLine luminaires on target mounting surfaces should be carried out in accordance with the approved mounting positions shown in Figure 4.



WARNING: IN ANY CASE, THE MINIMUM DISTANCE OF THE LUMINAIRE FROM THE ILLUMINATED SURFACES SHOULD NOT BE LESS THAN 0,5 M.

Mounting of the brackets to mounting surfaces should be carried out using screws or mounting pins appropriate to the weight of the device.



WARNING: FOLLOW THE GENERAL SAFETY RULES.



WARNING: THE LUMINAIRE MUST NOT BE INSTALLED ON VIBRATING SURFACES.

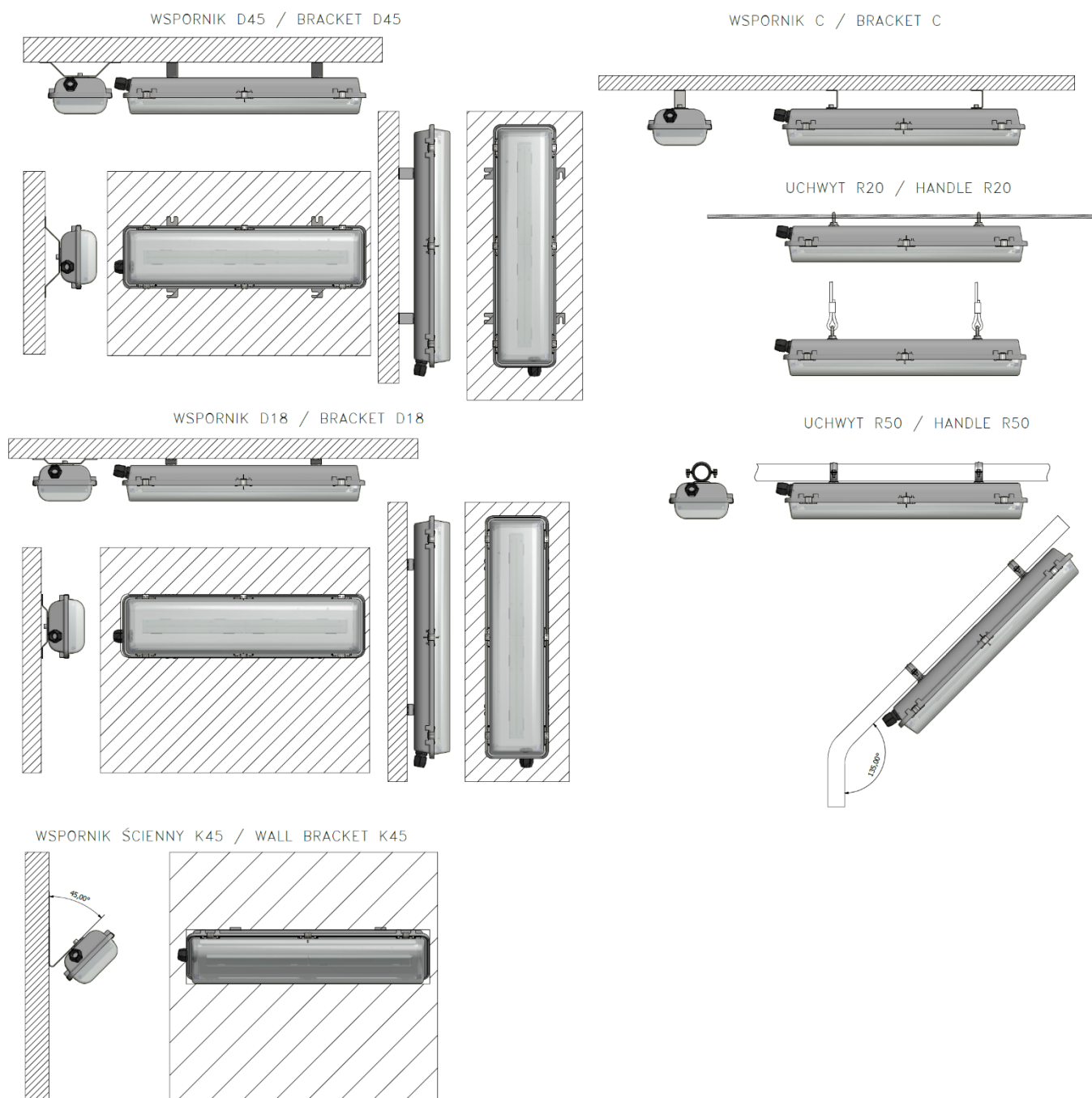


Figure 4. Acceptable mounting position

5.3 Electrical connection

5.3.1 General requirements



WARNING: INSTALLATION AND CONNECTION TO THE ELECTRICAL INSTALLATION SHOULD COMPLY WITH THE REQUIREMENTS OF THE PN-EN/IEC 60079-14 STANDARD.



WARNING: IT IS FORBIDDEN TO MAKE ANY CHANGES TO THE FACTORY CONNECTIONS IN THE LUMINAIRE.

The power cables have to be introduced into the right lighting system by using of certified cable glands. After making the cable connections, you need to clamp the cable gland by tightening the cable gland nut with a wrench. During tightening, protect the cable gland from turning with a second wrench. Clamping the cable gland is designed to protect the power cable against tearing out and against water and dust ingress inside the luminaire.



WARNING: FAILURE TO COMPLY WITH THE ABOVE NOTICE MAY DAMAGE THE SEALS, THEREBY REDUCING THE DEGREE OF PROTECTION AGAINST INGRESS OF DUST AND WATER (IP) AND THUS EXPLOSION SAFETY.

Use power cables with the following parameters:

- Single core cross-section 1.5-4 mm² – for luminaires powered on one side;
- Single core cross-section 2.5-4 mm² – for pass-through or crossed powered luminaires;
- Outer diameter of the cable: 8-17 mm – the value depends on the size and type of cable gland.

The maximum through-currents are:

- $I_{\max} = 12$ A for L, N, PE pass-through or crossed connections;
- $I_{\max} = 8$ A for L1, L2, L3, N, PE pass-through or crossed connections.



WARNING: THE ABOVE VALUES MUST NOT BE EXCEEDED. AS THIS MAY LEAD TO A DECREASE IN THE SAFETY OF THE LUMINAIRE. THE MANUFACTURER DOES NOT BEAR ANY RESPONSIBILITY IN SUCH CASES.

5.3.2 Execution of luminaire electrical connections

In order to make electrical connections, use a flat tip screwdriver to open the mounting clips and tilt or remove the polycarbonate diffuser. Then, using a screwdriver, unscrew the two non-loose screws located on both shorter sides of the upper frame (reflector), tilt the reflector, cable terminals are mounted below on the lower base.

Remove 8-10 mm of insulation from the wires then connect to the cable terminals in accordance with the markings placed on the cable terminals. A permanent phase supply shall be connected to terminal L', while a switched phase supply shall be connected to terminal L. Both terminals shall be supplied from the same phase.

For PrimeLine **_*****1/3 possible connection diagrams are available in Figure 3. For DALI power supply, see markings on enclosure.

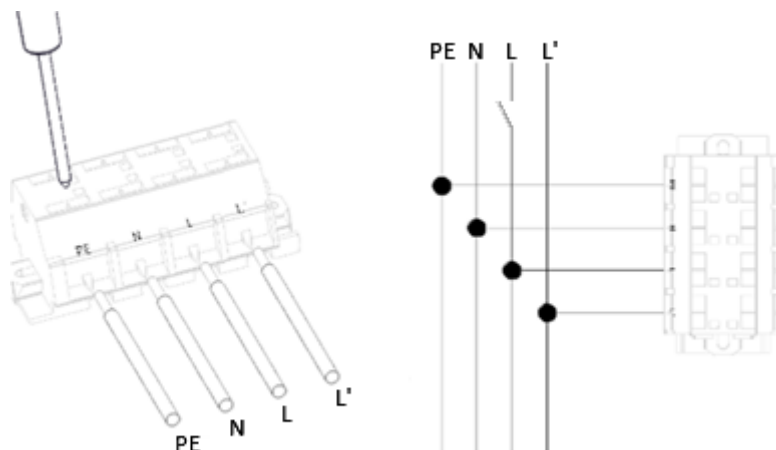


Figure 5. Possible connection diagrams of PrimeLine **-*1/3

For safety and to eliminate the risk of damaging the lighting fixture components, electrical connections must be made in the order specified by the manufacturer. The power supply must not operate without a load. The sequence of connections is as follows:

- Connect the power supply from the battery pack;
- Connect the main power supply.

After making connections, the earthing efficiency should be checked in accordance with local regulations and the luminaire should be closed again, i.e.:

- Set the top base (reflector) in the starting position;
- Tighten two non-loose screws with a screwdriver;
- Close the protective diffuser made of polycarbonate with clips.

If it becomes necessary to switch off the lighting fixture, first disconnect the mains power supply and then disconnect it from the battery pack.



WARNING: THE ORDER OF PERFORMING ACTIVITIES RELATED TO ELECTRICAL CONNECTIONS MUST BE STRICTLY FOLLOWED. FAILURE TO FOLLOW THE SEQUENCE WILL RESULT IN DAMAGE TO THE LIGHTING FIXTURE COMPONENTS.

6. WORK IN EMERGENCY MODE

6.1 General information

During PrimeLine **-*1/3 are powered by 220-240VAC, 50Hz mains voltage, the process of charging the built-in Ni-Cd battery packs takes place. Loss of mains voltage causes the PrimeLine**-*1/3 luminaires to automatically enter emergency mode when powered from built-in battery packs. The emergency working time under rated operating conditions shall not be less than 1.5 hours or 3 hours depending on type of version of the lighting fixture. The minimum required battery charging time is min. 24 hours.

In accordance with the requirements for emergency lighting PrimeLine luminaires have implemented an automatic self-test. The scope of the tests is as follows:

1. start sequence after mains and battery reset, or if connected to battery while powered by mains supply:
 - 2 seconds lamp test in normal mode. In case faulty lamp. The unit will turn off output and indicate LAMP-FAULT. Battery charger will be active;
 - 5 seconds emergency mode test
 - return to normal mode. Indicator will be green if all ok. Fault will be indicated if no battery/low battery voltage is detected;

2. self-test timer and function:

- initial 24h test. After a full reset, the internal clock starts counting to 24h + a random period (<1h) until first short test is conducted. Short test duration is 5 second. LED module and battery presence is checked.
- + 30 days test. 30 days after initial test. Short test duration is 5 second. LED module and battery presence is checked.
- 12 x 30 days test (1 year). After 12x 30 days. Full test. Full emergency duration 90 or 180 minutes according to settings is checked. As well as lamp and battery present test.

Status of the system is indicated by the LED indicator according to Table 2 of this instruction.

6.2 Battery pack, commissioning



DANGER: OPERATIONS SHOULD BE PERFORMED IN THE ABSENCE OF A POTENTIALLY EXPLOSIVE ATMOSPHERE.

For the time of storage and transport, the battery packs are disconnected from the power supply. During the connection operations carried out in accordance with paragraph 5, the battery shall be connected to the terminals of the driver power supply according to Figure 4.

After connecting the batteries and supplying mains voltage, the luminaire will go into the charging state, which cannot be shorter than 24 hours.



WARNING: BEFORE ENERGIZING CHECK THAT ALL CONNECTIONS ARE MADE TO THE CORRECT PORT, AND THAT NO WIRES ARE LOOSE OR DAMAGED. THE LED-MODULE MUST BE INSTALLED BEFORE THE UNIT IS ENERGIZED. DO NOT ENERGIZE THE HFXE WITHOUT LED-MODULE CONNECTED.

After connecting the batteries and supplying mains voltage, the luminaire will go into the charging state, which cannot be shorter than 24 hours.

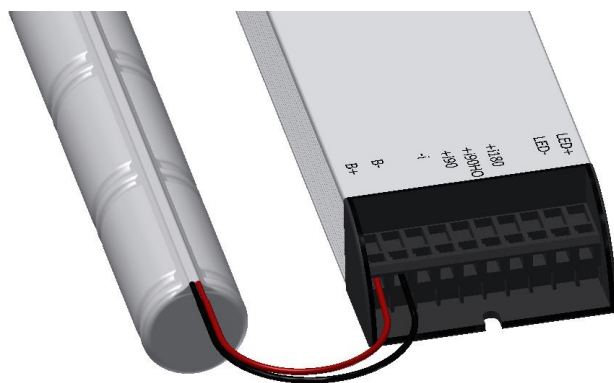


Figure 4. Connecting a battery pack

NOTE: Batteries should be replaced at least 4 years from the date of installation, or when the luminaire fails to maintain its rated operating time after an appropriate charging period, or when the luminaire fails the capacitance test performed at least once every 52 weeks.



WARNING: ALL REPAIRS, INCLUDING REPLACEMENT OF THE LIGHT SOURCE OR BATTERY PACK, CAN ONLY BE CARRIED OUT USING ORIGINAL SPARE PARTS AND ONLY BY THE MANUFACTURER OF THE LUMINAIRE OR AN AUTHORIZED SERVICE.



WARNING: WITH THE BATTERY CONNECTED, OPENING THE LIGHTING FIXTURE IS ONLY POSSIBLE AFTER THE BATTERY HAS BEEN DISCHARGED.

6.3 Status indication

PrimeLine **-*****1/3 series have a signalling diode mounted on the upper frame (reflector), determining the operating status of the luminaire. Possible states of signalling diodes are shown in Table 4.

Table 4. Possible states of the signalling diode

LED indicator status	Constant RED	Constant GREEN	Intermittently blinking RED (0,5 sec on/3 sec off)	Blinking RED (0,5 sec on/1 sec off)
Fixture status	Battery faulty or missing, faulty internal circuit	System OK	Led module fault	Battery capacity low

When LED is permanent off meant that system is either out of power or working in emergency mode.

7. CLEANING



WARNING: ELECTROSTATIC HAZARD.

Each luminaire has a warning plate reading: "**WARNING: ELECTROSTATIC HAZARD**". Dust and dust must not accumulate on the housing surfaces. Cleaning should be carried out with a soft cloth with the addition of an antistatic agent or suitable vacuum cleaners appropriate to the prevailing environmental conditions. It is forbidden to use chemicals that may damage the luminaire or impair functional properties

8. MAINTENANCE



WARNING: SERVICE AND MAINTENANCE WORK SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE DETAILED REQUIREMENTS OF PN-EN/IEC 60079-17:2014-05.



WARNING: INSPECTIONS AND MAINTENANCE CAN ONLY BE CARRIED OUT BY TRAINED AND EXPERIENCED PERSONNEL IN ACCORDANCE WITH THE REQUIREMENTS OF PN-EN/IEC 60079-17:2014-05.

8.1 Visual and close inspections

At least once every 1 months, a visual and close inspection of the lighting fixture should be carried out. During the visual inspection, luminaires do not need to be disconnected from the power source. The scope of the inspection should include in particular:

- Visual verification of the correctness of assembly and possible assembly changes;
- Visual check of operation;
- Visual inspection of the condition of power cables and their markings;
- Visual check of the condition of cable glands;

- Visual check of the condition of the PC diffuser and GRP body and gaskets for damages and possible dirt;
- Visual check of the status and legibility of information labels;
- Cleaning the luminaire housing in accordance with the requirements of paragraph 7.

All irregularities identified shall be remedied. A detailed description and scope of activities is included in the PN-EN/IEC 60079-17:2014-05 standard.

In addition, at least 1 per month, the status of the indicator diode should be checked in accordance with section 6.3.

8.2 Detailed inspections

At least once every 12 months, a visual inspection of lighting fixtures should be carried out. During the detailed inspection, the luminaire must be disconnected from the power source.

The scope of the detailed inspection should include:

- Scope of activities for visual and close inspection;
- Checking the condition of protective coatings of internal elements of the lighting fixture;
- Checking the condition of internal components, e.g.: cable connections, cable connectors, power supply, LED modules, cable glands;
- Verification of the installation site in terms of possible environmental changes, e.g.: type of hazardous area, temperature class, surface temperature, tightness class.

All irregularities identified shall be remedied. A detailed description and scope of activities is included in the PN-EN/IEC 60079-17:2014-05 standard.

8.3 Additional requirements



DANGER: EXPLOSION HAZARD. THE FOLLOWING MEASUREMENTS SHALL BE TAKEN IN THE ABSENCE OF AN EXPLOSIVE ATMOSPHERE

In accordance with the requirements of local regulations, electrical tests related to:

- Measurement of the current consumed by the luminaire;
- Measurement of the condition of the insulation;
- Measurement of the effectiveness of the protective connection

9. REPAIRS



WARNING: THE USE OF A DAMAGED DEVICE IS PROHIBITED AS IT MAY LEAD TO PERSONAL INJURY OR PROPERTY LOSS. THE MANUFACTURER DOES NOT BEAR ANY LIABILITY IN SUCH CASES.



WARNING: ALL REPAIRS, INCLUDING REPLACEMENT OF THE LIGHT SOURCE OR BATTERY PACK, CAN ONLY BE CARRIED OUT USING ORIGINAL SPARE PARTS AND ONLY BY THE MANUFACTURER OF THE LUMINAIRE, THE SERVICE AGENT OR A SIMILARLY SKILLED PERSON.



WARNING: ALL REPAIRS MAY ONLY BE CARRIED OUT IN NON-EXPLOSIVE ATMOSPHERIC CONDITIONS.

10. DISPOSAL



A symbol placed on the product or on the packaging indicates that the product should not be considered normal household waste but must be recycled for electrical and electronic equipment.

11. WARRANTY CONDITIONS

To read the warranty conditions, please refer to our General Terms and Conditions available at www.hardo.tech.

12. TECHNICAL DATA

12.1 Electrical and environmental parameters

The basic electrical parameters of PrimeLine **-*****1/3 series luminaires are presented in Table 5.

Table 5. The basic electrical parameters of PrimeLine PrimeLine **-*****1/3

Type	Power* [W]	Power factor	Rated voltage [V]	Ambient temperature [°C]	Protective class	IP
PrimeLine 60-1*****1	27,5	0,91	AC 220-240, 50Hz	0 ≤ T _a ≤ +45; 0 ≤ T _a ≤ +40 - <i>with opal diffuser</i> ; -20 ≤ T _a ≤ +40 – option**	I	66/67
PrimeLine 60-2*****1/3	31,6	0,93		0 ≤ T _a ≤ +45; 0 ≤ T _a ≤ +40 - <i>with opal diffuser</i> ; -20 ≤ T _a ≤ +40 – option**		
PrimeLine 12-2*****1/3	56,5	0,97	AC 220-240, 50Hz	0 ≤ T _a ≤ +45; 0 ≤ T _a ≤ +40 - <i>with opal diffuser</i> ; -20 ≤ T _a ≤ +40 – option**		
PrimeLine 12-3*****1	64,7	0,98		0 ≤ T _a ≤ +45; 0 ≤ T _a ≤ +40 - <i>with opal diffuser</i> ; -20 ≤ T _a ≤ +40 – option**		

* Power values given for AC power supply, power tolerance +/- 10%;

** The lighting fixture version designed to operate at T_a = -20°C is available only with a 4000 mAh battery pack and without through-wiring; any of the available diffuser types may be used.

*** Emergency versions for T_a = -20°C and PrimeLine 60-*****1/3 versions are available only without through-wiring.

**** The operating time of the 60-1*****1 fixture in emergency mode is 1 h at -20 ≤ T_a ≤ 0°C and 1.5 h at 0 ≤ T_a ≤ +40°C.

12.2 Photometric data

Photometric data for PrimeLine **-*****1/3 for an ambient temperature of +25°C, colour temperature of 4000K or 4500K and a colour rendering index CRI>80 are shown in Table 6.

Table 6. Basic photometric data of PrimeLine **-*****1/3

Type	Ambient temperature [°C]	Luminous flux with AC voltage [lm]*			Luminous flux in emergency mode [lm]*			CRI
		Colour temperature** [K]						
		4000						
		Transparent	Frosted	Opal	Transparent	Frosted	Opal	
PrimeLine 60-1*****1	0 ≤T _a ≤+45; 0≤T _a ≤+40 - <u>with opal diffuser</u> ;	2946	2776	2375	1100	1040	880	>70 >80 >90
PrimeLine 60-1*****1	-20≤T _a ≤+40	2946	2776	2375	900	850	720	
PrimeLine 60-2*****1	0 ≤T _a ≤+45;	3613	3405	2913	550	520	440	

	$0 \leq T_a \leq +40$ - <i>with opal diffuser;</i>						
PrimeLine 60-2****1	$-20 \leq T_a \leq +40$	3613	3405	2913	450	420	360
PrimeLine 60-2****3	$0 \leq T_a \leq +45$; $0 \leq T_a \leq +40$ - <i>kloszem mlecznym;</i>	3613	3405	2913	550	520	440
PrimeLine 12-2****1	$0 \leq T_a \leq +45$; $0 \leq T_a \leq +40$ - <i>with opal diffuser;</i>	7293	6873	5880	500	470	400
PrimeLine 12-2****1	$-20 \leq T_a \leq +40$	7293	6873	5880	400	380	320
PrimeLine 12-2****3	$0 \leq T_a \leq +45$; $0 \leq T_a \leq +40$ - <i>with opal diffuser;</i>	7293	6873	5880	500	470	400
PrimeLine 12-3****1	$0 \leq T_a \leq +45$; $0 \leq T_a \leq +40$ - <i>with opal diffuser;</i>	8305	7827	6696	850	800	680
PrimeLine 12-3****1	$-20 \leq T_a \leq +40$	8305	7827	6696	750	710	600

* Possible ranges of luminous flux depending on the type of shade, colour temperature and CRI (transparent, opal or frosted), tolerance +/- 10%.

** Available colour temperatures: 4000K, 4500K, 5700K, 6500K, tolerance +/- 10%.

12.3 Dimensions

Basic dimensions of PrimeLine luminaires are shown in Figure 6 and Table 7.

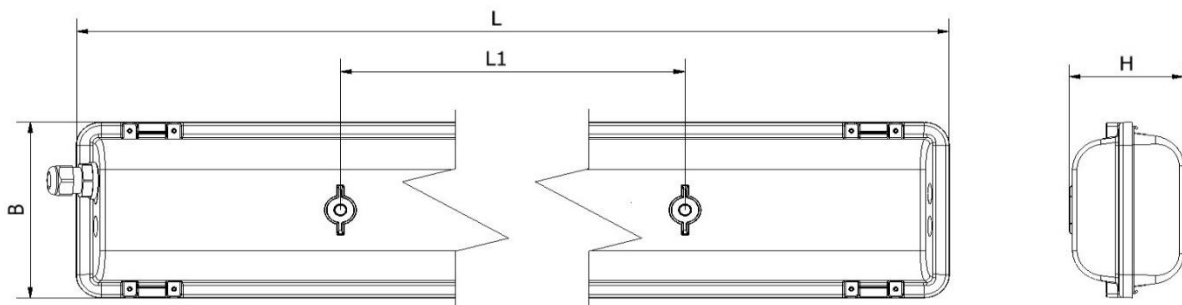


Figure 6. Basic dimensions of PrimeLine luminaires

Table 7. Basic dimensions of PrimeLine luminaires

Type	L	L1	B	H
PrimeLine 60-*****	670	400	173	107
PrimeLine 12-*****	1276	800	173	107