

PLD E 400 W ...

**LED enclosure light, 24 V DC,
color temperature 5000 K, pivoting**

Data sheet
106445_en_03

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1 Description

The LED light is designed to illuminate the interior of control cabinets. The integrated prismatic design ensures optimum illumination of the control cabinet.

Accessories for clip fixing are supplied with the light. You can therefore mount the light without using tools.

For connected control cabinets, for example, multiple lights can be connected one after the other and therefore supplied using just one power supply unit.

The light mode can be controlled via a button. The light can be permanently switched on or off or automatic mode can be enabled. In automatic mode the light is switched on and off via a door position switch: the lighting is switched on when the control cabinet door is opened and off again when the control cabinet door is closed.

Features

- Color temperature 5000 K
- Lights can be connected in series
- IP20 degree of protection
- Pivoting



Make sure you always use the latest documentation.
It can be downloaded from the product at phoenixcontact.net/products.

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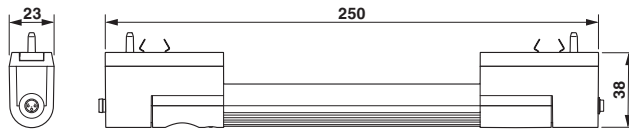
3 Ordering data

| Description | Type | Order No. | Pcs./Pkt. |
|---|-------------------------------|-----------|-----------|
| LED enclosure light, 24 V DC, Degree of protection IP20, Color temperature 5000 K, Length 250 mm, pivoting, can be switched in series, including mounting accessories | PLD E 400 W 250 | 2702221 | 1 |
| LED enclosure light, 24 V DC, Degree of protection IP20, Color temperature 5000 K, Length 375 mm, pivoting, can be switched in series, including mounting accessories | PLD E 400 W 375 | 2702222 | 1 |
| LED enclosure light, 24 V DC, Degree of protection IP20, Color temperature 5000 K, Length 500 mm, pivoting, can be switched in series, including mounting accessories | PLD E 400 W 500 | 2702223 | 1 |
| Accessories | Type | Order No. | Pcs./Pkt. |
| Primary-switched STEP POWER power supply for DIN rail mounting, input: 1-phase, output: 24 V DC/0.5 A | STEP-PS/ 1AC/24DC/0.5 | 2868596 | 1 |
| Primary-switched STEP POWER power supply for DIN rail mounting, input: 1-phase, output: 24 V DC/0.75 A | STEP-PS/ 1AC/24DC/0.75/FL | 2868622 | 1 |
| Plug-in power supply unit for class 400 LED enclosure lights, including country-specific plug adapters for Europe, Great Britain, USA and Australia; max. output voltage 12 W | PLD E 400-PS/1AC/24DC/12W | 2702435 | 1 |
| Plug-in power supply unit for class 400 LED enclosure lights, including country-specific plug adapters for Europe, Great Britain, USA and Australia; max. output voltage 30 W | PLD E 400-PS/1AC/24DC/30W | 2702436 | 1 |
| Sensor/Actuator cable, 3-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket straight M8 Snap-in, Cable length: 3 m, with ferrules | SAC-3P- 3,0-PUR/M 8SIFS AE | 1417698 | 1 |
| Sensor/Actuator cable, 3-position, PUR halogen-free, black-gray RAL 7021, Plug straight M8, on Socket straight M8 Snap-in, Cable length: 0.6 m | SAC-3P-M 8MS/ 0,6-PUR/M 8SIFS | 1417699 | 1 |
| Sensor/Actuator cable, 3-position, PUR halogen-free, black-gray RAL 7021, Plug straight M8, on Socket straight M8 Snap-in, Cable length: 1 m | SAC-3P-M 8MS/ 1,0-PUR/M 8SIFS | 1417700 | 1 |
| Sensor/Actuator cable, 3-position, PUR halogen-free, black-gray RAL 7021, Plug straight M8, on Socket straight M8 Snap-in, Cable length: 3 m | SAC-3P-M 8MS/ 3,0-PUR/M 8SIFS | 1417701 | 1 |
| Door position switch with 3 m cable with open cable end and 0.6 m cable with M8 socket (Snap-in), including mounting accessories | PLD E 400-DS-3,0/FS/0,6 | 2702336 | 1 |
| Door position switch with 1 m cable with M8 plug and 0.6 m cable with M8 socket (Snap-in), including mounting accessories | PLD E 400-DS-MS/1,0-FS/0,6 | 2702337 | 1 |

| Accessories | Type | Order No. | Pcs./Pkt. |
|--|-----------------|-----------|-----------|
| Set for magnetic mounting of class 400 PLD enclosure lights | PLD E 400-ME MM | 2702312 | 1 |
| Set for screw mounting of class 400 PLD enclosure lights, including screws and washers | PLD E 400-ME SM | 2702313 | 1 |
| Set consisting of two clip retainers for class 400 PLD enclosure lights (replacement part) | PLD E 400-ME CM | 2702314 | 1 |

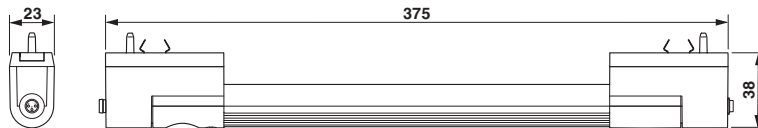
4 Technical data

Dimensions (nominal sizes in mm)



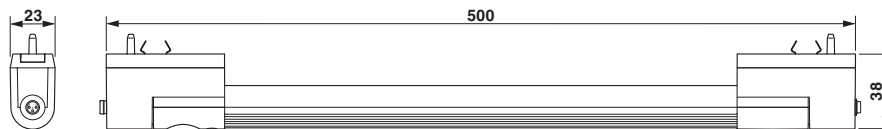
| | |
|--------|--------|
| Length | 250 mm |
| Width | 23 mm |
| Height | 38 mm |

Dimensions (nominal sizes in mm)



| | |
|--------|--------|
| Length | 375 mm |
| Width | 23 mm |
| Height | 38 mm |

Dimensions (nominal sizes in mm)



| | |
|--------|--------|
| Length | 500 mm |
| Width | 23 mm |
| Height | 38 mm |

General data

| | |
|---|-------------------------|
| Weight (PLD E 400 W 250) | 120 g |
| Weight (PLD E 400 W 375) | 170 g |
| Weight (PLD E 400 W 500) | 220 g |
| Color | traffic grey A RAL 7042 |
| Ambient temperature (operation) | -25 °C ... 60 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |

General data

| | |
|--|---|
| Permissible humidity (operation) | 5 % ... 95 % |
| Permissible humidity (storage/transport) | 5 % ... 95 % |
| Air pressure (operation) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Air pressure (storage/transport) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Degree of protection | IP20 |
| Protection class | III |
| Mounting position | any |
| Mounting type | Clip mounting |

Special properties

pivoting (Schwenkbereich $\pm 90^\circ$)
 can be switched in series
 including mounting accessories

Connection data

| | |
|---------------------|------------------------|
| Connection method | M8 connector (snap-in) |
| Number of positions | 3 |

Power supply for module electronics

| | |
|-------------------------------------|-----------------------|
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Power consumption (PLD E 400 W 250) | 1.5 W |
| Power consumption (PLD E 400 W 375) | 3 W |
| Power consumption (PLD E 400 W 500) | 5 W |



When using LED enclosure lights for the North American market, use class 2 power supply units.

Light properties

| | |
|----------------------------------|----------------------------|
| Source of light type | LED |
| Number of LEDs (PLD E 400 W 250) | 5 |
| Number of LEDs (PLD E 400 W 375) | 12 |
| Number of LEDs (PLD E 400 W 500) | 20 |
| Service life, lighting appliance | 50,000 h (L70) |
| Light color | Neutral white |
| Color temperature | 5000 K |
| Color rendering index | 75 |
| Luminous flux (PLD E 400 W 250) | 140 lm (Net luminous flux) |
| Luminous flux (PLD E 400 W 375) | 340 lm (Net luminous flux) |
| Luminous flux (PLD E 400 W 500) | 560 lm (Net luminous flux) |

Light properties

| | |
|--------------------------------|--|
| Illumination (PLD E 400 W 250) | max. 335 lx (50 cm distance) max. 85 lx (Distance of 1 m) |
| Illumination (PLD E 400 W 375) | max. 845 lx (50 cm distance) max. 210 lx (Distance of 1 m) |
| Illumination (PLD E 400 W 500) | max. 1350 lx (50 cm distance) max. 335 lx (Distance of 1 m) |

Mechanical tests

| | |
|--|-----|
| Vibration resistance in acc. with EN 60068-2-6/ IEC 60068-2-6 | 5g |
| Shock in acc. with EN 60068-2-27/IEC 60068-2-27 | 25g |
| Continuous shock according to EN 60068-2-27/ IEC 60068-2-27 | 10g |

Conformance with EMC Directive 2014/30/EU**Noise immunity test in accordance with EN 61000-6-2**

| | |
|--|--|
| Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 | Criterion B; 4 kV contact discharge, 4 kV air discharge |
| Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 | Criterion A, Field intensity: 10 V/m |
| Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 | Criterion B; ± 2 kV |
| Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 | Criterion A, ± 1 kV (symmetrical), ± 2 kV (asymmetrical) |
| Conducted interference EN 61000-4-6/IEC 61000-4-6 | Criterion A; Test voltage 10 V |

Noise emission test as per EN 61000-6-4

| | |
|--|---------|
| Radio interference properties EN 55011 | Class A |
|--|---------|

Approvals

For the latest approvals, please visit phoenixcontact.net/products.

5 Safety notes



WARNING: Explosion hazard

Do not install and operate the light in potentially explosive spaces!



CAUTION: Impaired vision

Looking at the light continually can temporarily impair vision. This can increase the danger of accidents. Therefore do not look at a light source for a long period.



NOTE: Damage to the electronics

The IP20 degree of protection (IEC 60529/EN 60529) of the device is intended for use in a clean and dry environment.

Do not subject the device to mechanical and/or thermal loads that exceed the specified limits.



NOTE

Before any work on the light, always switch off the supply voltage and ensure it cannot be switched on again!

6 Illuminance distribution

The illuminance distribution depends on the length of the light. Please refer to the figures below for the illuminance distribution.

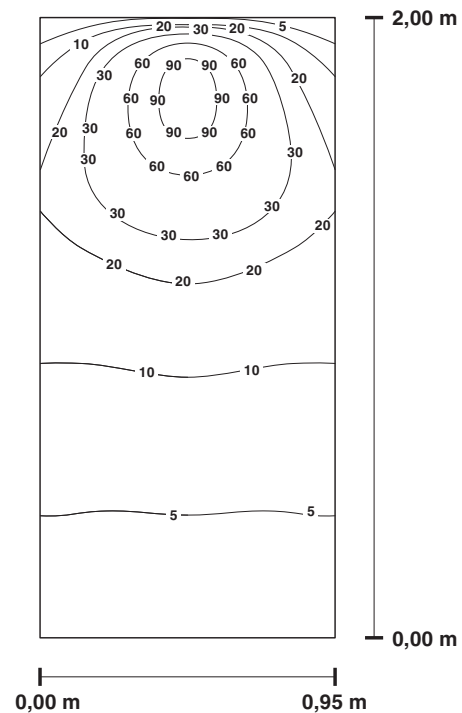


Figure 1 Lighting level distribution in Lux
 PLD E 400 W 250 (installation depth of the control cabinet plate $d = 200$ mm)

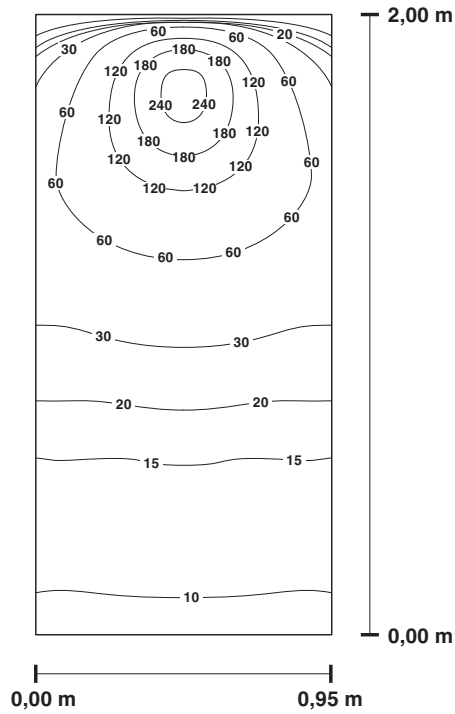


Figure 2 Lighting level distribution in Lux
 PLD E 400 W 375 (installation depth of the
 control cabinet plate $d = 200$ mm)

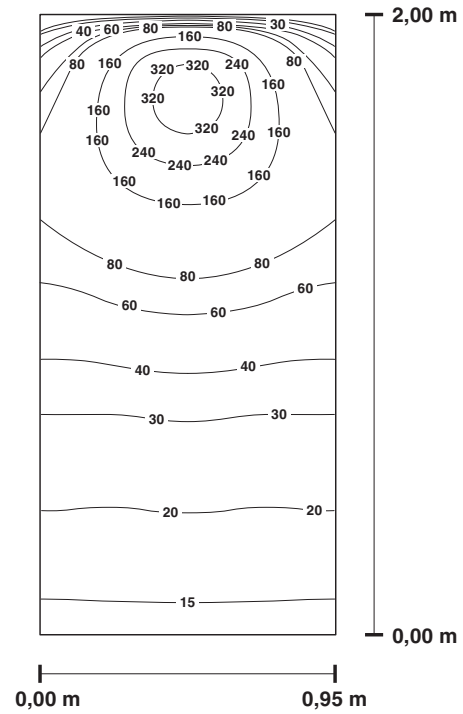


Figure 3 Lighting level distribution in Lux
 PLD E 400 W 500 (installation depth of the
 control cabinet plate $d = 200$ mm)

7 Pin assignment

To supply power to the light, connect the cable to the X01 IN connector.

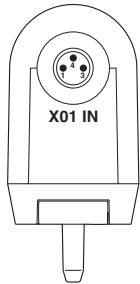


Figure 4 Connection of the supply voltage of a light

To connect multiple lights in series, connect the X02 OUT output of one light to the X01 IN input of the following light.

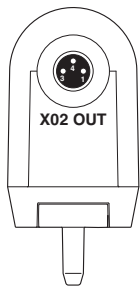


Figure 5 Forwarding of the supply voltage with the series connection of lights

Pin assignment of the M8 connectors

| Pin | Assignment | Conductor color | Note |
|-----|---------------------|-----------------|--|
| 1 | +24 V DC | Brown | Power supply to the light |
| 3 | GND | Blue | |
| 4 | +24 V DC (switched) | Black | Signal from door position switch for controlling the light in mode A |



Only use Phoenix Contact accessories!



NOTE: device damage

Make sure that the total current consumed by all the lights used in a series connection does not exceed 2 A.

8 Connection examples

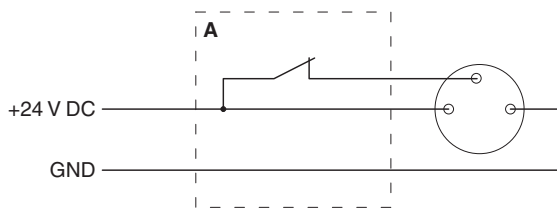


Figure 6 Connection of the light using a door position switch (A)



Figure 7 Connection of a light



Figure 8 Series connection of two lights

9 Function description

Once you have provided voltage to the light, it is ready for operation and in mode 0 (delivery condition) or in the most recently selected mode.

Button S1 on the light is used to control the light mode. The current mode is indicated via the status LED.

Press the button to change mode. Each time button S1 is pressed, the light changes to the next mode: 0 - A - I.

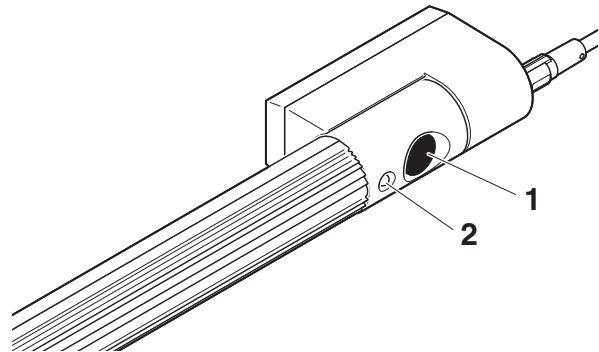


Figure 9 Button S1 and status LED

| Mode | Status LED | Description |
|------|-----------------|--|
| 0 | OFF | No supply voltage connected, or supply voltage connected but lamp switched off |
| A | Yellow ON | Light in standby mode, door position switch is active Lighting switches on when cabinet door is opened, switches back off when cabinet door is closed |
| I | Yellow flashing | Light is on continuously |