# TRIDONIC

Emergency lighting units EM powerLED

# EM powerLED CLE CPS

LED Driver for AC and DC power supplies

# Product description

- LED Driver for mains operation with integrated Simple CORRIDOR FUNCTION (CF)
- For use in central battery systems
- For luminaire installation
- For the use with STARK CLE 1500 EM
- 5 years guarantee

## Properties

- Constant current LED Driver with 350 or 470 mA output current
- Simple CORRIDOR FUNCTION (CF) with 10 % light level
- Constant current mode
- 10 or 100 % output when connected to DC
- SELV
- For emergency lighting systems as per EN 50172
- LED module and sensor available

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#### Technical data

Rated supply voltage	220 – 240 V
Voltage range AC	198 – 264 V
Voltage range DC	176 – 280 V
Mains frequency	0 / 50 / 60 Hz
Leakage current (PE)	0 mA
Overvoltage protection	320 V (for 1 h)
Max. permitted forward voltage LED	33 V
Turn on time (at 230 V, 50 Hz, full load)	100 ms
Changeover time between mains and emergency	< 380 ms
Changeover time between emergency and mains	< 100 ms
Ambient temperature ta	-25 55 °C
Max. casing temperature tc	75 °C
Dimensions LxBxH	123 x 79 x 31 mm
Type of protection	IP20

Ordering data				
Туре	Article number	Packaging, carton	Packaging, pallet	Weight per pc.
EM powerLED 12W CLE CPS	89800527	10 pc(s).	560 pc(s).	0.1 kg
EM powerLED 15W CLE CPS	89800177	10 pc(s).	560 pc(s).	0.1 kg

#### Specific technical data

Туре	Output	Output	Min.	Max.	Тур.	Input power	Input current	Efficiency	λ	Ambient	tc/ta for ≥
	current	current	output	output	output	(at 230 V, 50 Hz,	(at 230 V, 50 Hz,	(at 230 V,	(at 230 V, 50 Hz,	temperature ta®	50.000 h <sup>®</sup>
		tolerance	voltage®	voltage®	power	full load)	full load)	50 Hz)	full load)		
Normal operation											
EM powerLED 12W CLE CPS	350 mA	5 %	22 V	33 V	10.61 W	13.6 W	75 mA	78 %	0.8	-5 55 °C	85 / 55 °C
EM powerLED 15W CLE CPS	470 mA	5 %	22 V	33 V	14.25 W	17.0 W	100 mA	83 %	0.8	-5 55 °C	85 / 55 °C
CF operation											
EM powerLED 12W CLE CPS	29 mA	15 %	22 V	33 V	0.75 W	1.7 W	15 mA	44 %	0.5	-	-
EM powerLED 15W CLE CPS	43 mA	15 %	22 V	33 V	1.12 W	2.0 W	18 mA	49 %	0.5	_	-
Emergency operation 100 %											
EM powerLED 12W CLE CPS	350 mA	5 %	22 V	33 V	10.61 W	13.6 W	75 mA	78 %	-	-	-
EM powerLED 15W CLE CPS	470 mA	5 %	22 V	33 V	14.25 W	17.0 W	100 mA	83 %	-	_	-
Emergency operation 10 %											
EM powerLED 12W CLE CPS	29 mA	15 %	22 V	33 V	0.75 W	1.7 W	15 mA	44 %	_	_	-
EM powerLED 15W CLE CPS	43 mA	15 %	22 V	33 V	1.12 W	2.0 W	18 mA	49 %	_	_	-

 $^{\scriptscriptstyle (\!\!\!\!D\!)}$  Ambient temperature range ta defined in normal operation

 $^{\scriptscriptstyle \odot}$  Output voltage range defined in normal operation. LED forward voltage will decrease in CF operation.

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# SWITCH Sensor HF 5BP

Automatic switching based on motion and light level

### Product description

- Motion detector for luminaire installation
- Motion detection through glass and thin materials (except metal)
- For automatic on/off switching of electronic ballasts with corridor-FUNCTION
- "Bright-Out" function: luminaire is not switched on if there is adequate brightness
- Delay time, detection range and light value for the "Bright-Out" function can be set via 3 potentiometers
- Max. installation height 5 m
- Infinitely variable range (0.5 5.0 m)



# Ordering data

Туре	Article number	Packaging, carton	Weight per pc.
SWITCH Sensor HF 5BP	28000086	4 pc(s).	0,079 kg

### Standards

EN 55015 EN 61000-3-2 EN 61000-3-3 EN 61347-1 EN 61347-2-13 EN 61547 EN 62384 according to EN 60598-2-22 according to EN 50172 EN 61347-2-7

#### Mechanichal details

Case manufactured from polycarbonate.

Glow-wire test according to EN 61347-1 with increased temperature of 850  $^{\circ}\mathrm{C}$  passed.

#### Short-circuit behaviour

In case of a short circuit on the secondary side (LED) the LED ouput is switched off. After elimination of the short circuit the nominal operation is restored automatically.

#### No-load operation

The LED Driver is not damaged in the no-load operation. The max. output voltage can be obtained during no-load operation.

#### Storage conditions

Humidity:

5 % up to max. 85 %, not condensed (max. 56 days/year at 85 %)

Storage temperature: -40 °C up to max. +80 °C

The devices have to be within the specified temperature range (ta) before they are operated.

#### Maximum loading of automatic circuit breakers

Automatic circuit breaker type	B10	B13	B16	B20	Inrush	current
Installation Ø	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	$2.5\text{mm}^2$	max	time
EM powerLED 12W CLE CPS	90	130	130	130	10 A	120 µs
EM powerLED 15W CLE CPS	90	130	130	130	10 A	120 µs

#### Harmonic distortion in the mains supply (at 230 V / 50 Hz and full load) in %

Туре	THD	3	5	7
EM powerLED 12W CLE CPS	50	30	20	14
EM powerLED 15W CLE CPS	38	33	20	8

#### Ballast lumen factor (BLF) in %

	Corridor mode	DC operation
EM powerLED 12W CLE CPS	10	10 / 100
EM powerLED 15W CLE CPS	10	10 / 100

Expected life-time

Туре		ta = 45 °C	ta = 55 °C
EM powert ED 12W CLE CDS	tc	65 °C	75 °C
LIN POWERLED 12W GLE GF3	Life-time	100,000 h	50,000 h
EM powert ED 15W CLE CDS	tc	65 °C	75 °C
EW POWERLED 13W GLE GFS	Life-time	100,000 h	50,000 h

## Wiring diagram EM powerLED with sensor



#### Switching behaviour:

L	CF	Output LED
off	off	off
off	on	off
on	off	10 %
on	on	100 %

#### DC operation behaviour:

Emergency level at 10 %

The sensor is not activ in DC operation.

PIR input ≙ 230 V

## Wiring diagram EM powerLED



PIR input ≙ 230 V

The mains power must be removed before changing the LED load.

Secondary switching of LEDs is not allowed and may cause damage to the LEDs. The hot plug-in of LEDs during normal operation may result in current peaks of up to 50% above the typical output current.

## DC operation behaviour:

The emergency level (10 % or 100 %) depends on the polarity of the DC voltage.

L	+	-
Ν	-	+
CF	+	-
Emergency level	100 %	10 %

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## Wiring instructions

- The LED terminals are classified as SELV. Keep the wiring of the input terminals separated from the wiring of the SELV equivalent terminals or consider special wiring (double insulation, 6 mm creepage and clearance) when these connections should be kept SELV.
- LED leads should be separated from the mains connections and wiring for good EMC performance.
- Maximum lead length on the LED terminals is 3 m. For a good EMC performance keep the LED wiring as short as possible.

#### **IDC** interface

 solid wire with a cross section of 0.5 mm<sup>2</sup> according to the specification from WAGO

#### Horizontal interface

- solid wire with a cross section of 0.5–1.5 mm<sup>2</sup> according to the specification from WAGO
- strip 7.5–8.5 mm of insulation from the cables to ensure perfect operation of the terminals



#### Installation instruction

Max. torque for the mounting screws: 0.5 Nm / M4.

You must make sure that the LED is connected with the correct polarity. LEDs that are connected to EM powerLED should have polarity reversal protection such as a Schottky diode. There may be irreversible damage if the LED is connected with the wrong polarity. The protection device must be capable of handling a load of more than 700 mA.

#### Additional information

Additional technical information at <u>www.tridonic.com</u> → Technical Data

Guarantee conditions at <u>www.tridonic.com</u>  $\rightarrow$  Services

Life-time declarations are informative and represent no warranty claim. No warranty if device was opened.