



### Driver LCO 200W 500/700/1050/1400mA fixC L SNC2

SNC Outdoor series

#### Product description

- Fixed output built-in LED Driver
- Constant current LED Driver
- Output current 500, 700, 1,050 or 1,400 mA
- Up to 94 % efficiency
- For luminaires of protection class I
- Expanded ambient temperature range of -30 ... +60 °C
- Nominal life of 50,000 h
- 5-year guarantee



#### Properties

- Metal casing
- Type of protection IP67

#### Functions

- Overtemperature protection
- Overload protection
- Short-circuit protection
- No-load protection



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**Wiring diagrams and installation examples**, page 3



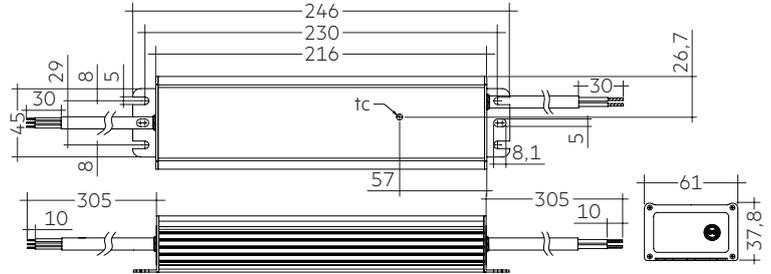
IP67   

### Driver LCO 200W 500/700/1050/1400mA fixC L SNC2

SNC Outdoor series

#### Technical data

Rated supply voltage	120 – 240 V
AC voltage range	100 – 240 V
Mains frequency	50 / 60 Hz
Leakage current (at 230 V, 50 Hz, full load)	< 500 µA
THD (at 230 V, 50 Hz, full load)	< 10 %
Output current tolerance <sup>®</sup>	± 5 %
Typ. output LF current ripple at full load <sup>®</sup>	< 5 %
Starting time (at 230 V, 50 Hz, full load)	≤ 1 s
Turn off time (at 230 V, 50 Hz, full load)	≤ 0.5 s
Ambient temperature ta	-30 ... +60 °C
Storage temperature ts	-40 ... +85 °C
Mains burst capability	4 kV
Mains surge capability (between L – N)	4 kV
Mains surge capability (between L/N – PE)	6 kV
Surge voltage at output side (against PE)	1 kV
Dimensions L x W x H	246 x 61 x 37.8 mm



#### Ordering data

Type	Article number <sup>®</sup>	Packaging, carton	Packaging, pallet	Weight per pc.
LCO 200/500/400 fixC L SNC2	28002309	10 pc(s).	480 pc(s).	0.92 kg
LCO 200/700/285 fixC L SNC2	28002310	10 pc(s).	480 pc(s).	0.92 kg
LCO 200/1050/190 fixC L SNC2	28002311	10 pc(s).	480 pc(s).	0.92 kg
LCO 200/1400/142 fixC L SNC2	28002312	10 pc(s).	480 pc(s).	0.92 kg

#### Specific technical data

Type	Output current <sup>®</sup>	Input current (at 230 V, 50 Hz, full load)	Input power (at 230 V, 50 Hz, full load)	Max. input power	Output power range	λ at full load <sup>®</sup>	Efficiency at full load <sup>®</sup>	λ at min. load <sup>®</sup>	Efficiency at min. load <sup>®</sup>	Min. forward voltage	Max. forward voltage	Max. output voltage (U-OUT)	Max. peak output current at full load <sup>®</sup>	Max. casing temperature tc
LCO 200/500/400 fixC L SNC2	500 mA	0.94 A	216.3 W	216.3 W	60 – 200 W	0.98	93.5 %	0.91C	87.0 %	133 V	400 V	410 V	615 mA	90 °C
LCO 200/700/285 fixC L SNC2	700 mA	0.93 A	212.8 W	212.8 W	60 – 200 W	0.98	94.0 %	0.90C	85.0 %	95 V	285 V	295 V	819 mA	90 °C
LCO 200/1050/190 fixC L SNC2	1,050 mA	0.95 A	216.3 W	216.3 W	60 – 200 W	0.98	93.0 %	0.89C	82.0 %	63 V	190 V	200 V	1,376 mA	90 °C
LCO 200/1400/142 fixC L SNC2	1,400 mA	0.97 A	215.1 W	215.1 W	60 – 200 W	0.98	93.0 %	0.92C	83.5 %	47 V	142 V	152 V	1,960 mA	90 °C

<sup>®</sup> Test result at 230 V, 50 Hz

<sup>®</sup> Output current is mean value.

<sup>®</sup> The trend between min. and full load is linear and depends on load's voltage-current character.

<sup>®</sup> Typical value at full load, depends on load's voltage-current character.

<sup>®</sup> The delivery time is 13 weeks, except 28002310.

## 1. Standards

EN 55015  
 EN 61000-3-2  
 EN 61000-3-3  
 EN 61347-1  
 EN 61347-2-13  
 EN 61547  
 EN 62384

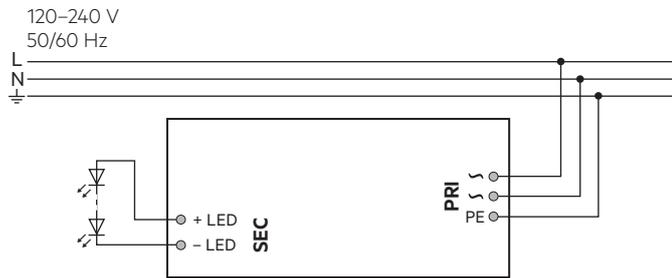
## 2. Thermal details and life-time

### 2.1 Expected life-time

Expected life-time					
Type	ta	45 °C	50 °C	55 °C	60 °C
LCO 200/500/400 fixC L SNC2	tc	60 °C	65 °C	70 °C	75 °C
	Life-time	>100,000 h	100,000 h	70,000 h	50,000 h
LCO 200/700/285 fixC L SNC2	tc	60 °C	65 °C	70 °C	75 °C
	Life-time	>10,000 h	85,000 h	60,000 h	40,000 h
LCO 200/1050/190 fixC L SNC2	tc	65 °C	70 °C	75 °C	80 °C
	Life-time	100,000 h	70,000 h	50,000 h	35,000 h
LCO 200/1400/142 fixC L SNC2	tc	65 °C	70 °C	75 °C	80 °C
	Life-time	95,000 h	65,000 h	45,000 h	30,000 h

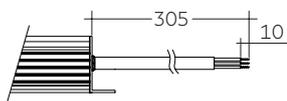
## 3. Installation / wiring

### 3.1 Circuit diagram



### 3.2 Connection

Primary cable			Secondary cable	
L	N	PE	+	-
brown	blue	green/yellow	red	black



#### PRI:

3x1.0 mm<sup>2</sup>

#### SEC:

2x1.0 mm<sup>2</sup>

### 3.3 Wiring instructions

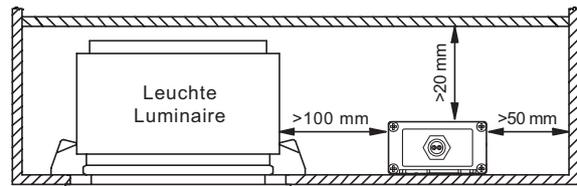
- All connections must be kept as short as possible to ensure good EMI behaviour
- Mains leads should be kept apart from LED Driver and other leads (ideally 5 – 10 cm distance)
- The maximum length of output wires is 3 m.
- Secondary switching is not permitted.
- Incorrect wiring can damage LED modules.
- To avoid the damage of the Driver, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.).

### 3.4 Installation instructions

The switching of LEDs on secondary side is not permitted.

### 3.5 Fixing conditions

Acidfree, oilfree, fatfree. It is not allowed to exceed the maximum ambient temperature (ta) stated on the device. Minimum distances stated below are recommendations and depend on the actual luminaire. Is not suitable for fixing in corner. Terminals according to EN 60998-2-1 or EN 60998-2-2 are required.



### 3.6 Earth connection

The earth connection is conducted as protection earth (PE). The LED Driver can be earthed via metal housing. If the LED Driver will be earthed, protection earth (PE) has to be used. There is no earth connection required for the functionality of the LED Driver. Earth connection is recommended to improve following behaviour.

- Electromagnetic interferences (EMI)
- Transmission of mains transients to the LED output

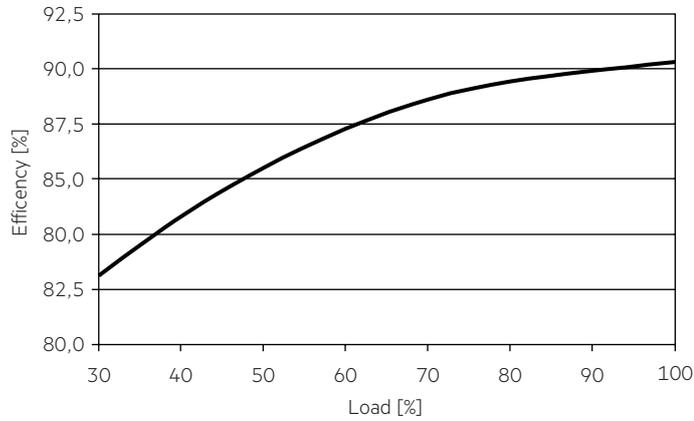
In general it is recommended to earth the LED Driver if the LED module is mounted on earthed luminaire parts respectively heat sinks and thereby representing a high capacity against earth.

For Class I application, protection earth need to connected with the metal housing (bottom part).

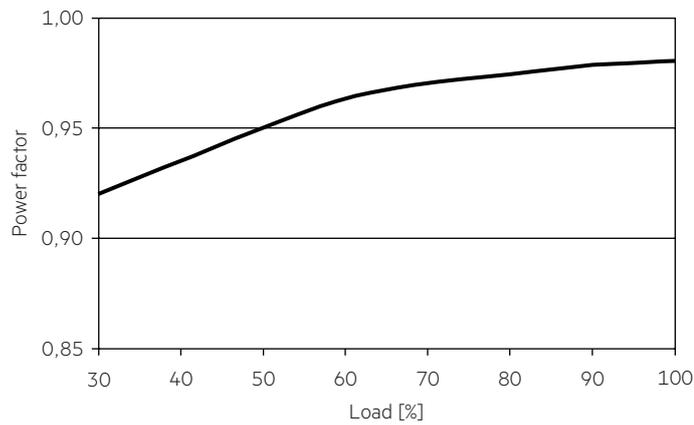
## 4. Electrical values

### 4.1 Diagrams

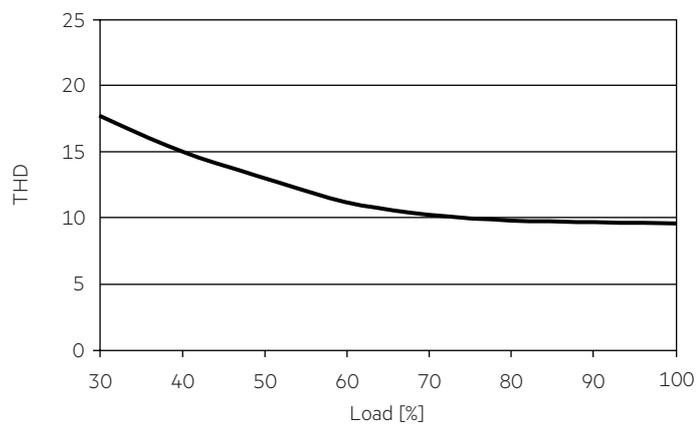
4.1.1 Efficiency vs Load



4.1.2 Power factor vs Load



4.1.3 THD vs Load



#### 4.2 Maximum loading of automatic circuit breakers

Automatic circuit breaker type	C10	C13	C16	C20	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 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	I <sub>max</sub>	Time
<b>LCO 200/500/400 fixC L SNC2</b>	3	4	6	6	1	2	3	6	172 A	228 µs
<b>LCO 200/700/285 fixC L SNC2</b>	3	4	6	6	1	2	3	6	172 A	228 µs
<b>LCO 200/1050/190 fixC L SNC2</b>	3	4	6	6	1	2	3	6	172 A	228 µs
<b>LCO 200/1400/142 fixC L SNC2</b>	3	4	6	6	1	2	3	6	172 A	228 µs

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

	THD	3.	5.	7.	9.	11.
<b>LCO 200/500/400 fixC L SNC2</b>	< 10	< 6	< 5	< 5	< 4	< 3
<b>LCO 200/700/285 fixC L SNC2</b>	< 10	< 6	< 5	< 5	< 4	< 3
<b>LCO 200/1050/190 fixC L SNC2</b>	< 10	< 6	< 5	< 5	< 4	< 3
<b>LCO 200/1400/142 fixC L SNC2</b>	< 10	< 6	< 5	< 5	< 4	< 3

Acc. to 6100-3-2. Harmonics < 5 mA or < 0.6 % (whatever is greater) of the input current are not considered for calculation of THD.

## 5. Functions

### 5.1 Short-circuit behaviour

In case of a short circuit on the secondary side (LED) the LED Driver switches into hic-cup mode. After the removal of the short-circuit fault the LED Driver will recover automatically.

### 5.2 No-load operation

The LED Driver works in constant voltage mode. In no-load operation the output voltage will not exceed the specified max. output voltage (see page 2).

### 5.3 Overload protection

If the output voltage range is exceeded the LED Driver will work in hic-cup mode. After elimination of the overload, the nominal operation is restored automatically.

### 5.4 Overtemperature protection

The LED Driver is protected against temporary thermal overheating. If the temperature limit is exceeded the LED Driver is switched off. It restarts automatically.

## 6. Miscellaneous

### 6.1 Isolation and electric strength testing of luminaires

Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) or ENEC 303-Annex A, each luminaire should be submitted to an isolation test with 500 V<sub>DC</sub> for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal. The isolation resistance must be at least 2 MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1500 V<sub>AC</sub> (or 1.414 x 1500 V<sub>DC</sub>). To avoid damage to the electronic devices this test must not be conducted.

### 6.2 Conditions of use and storage

Humidity: 5 % up to max. 95 %, not condensed (max. 56 days/year at 95 %)

Storage temperature: -40 °C up to max. +85 °C

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

### 6.3 Additional information

Additional technical information at [www.tridonic.com](http://www.tridonic.com) → Technical Data

Guarantee conditions at [www.tridonic.com](http://www.tridonic.com) → Services

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