

**Driver LC 10W 350mA fixC Ip SNC2**

essence series

**Product description**

- \_ Fixed output built-in LED driver
- \_ Constant current LED driver
- \_ For luminaires of protection class I and protection class II
- \_ Temperature protection as per EN 61347-2-13 C5e
- \_ Output current 350 mA
- \_ Max. output power 10.2 W
- \_ Up to 80 % efficiency
- \_ Nominal lifetime up to 50,000 h
- \_ 5 years guarantee (conditions at <https://www.tridonic.com/manufacture-guarantee-conditions>)

**Housing properties**

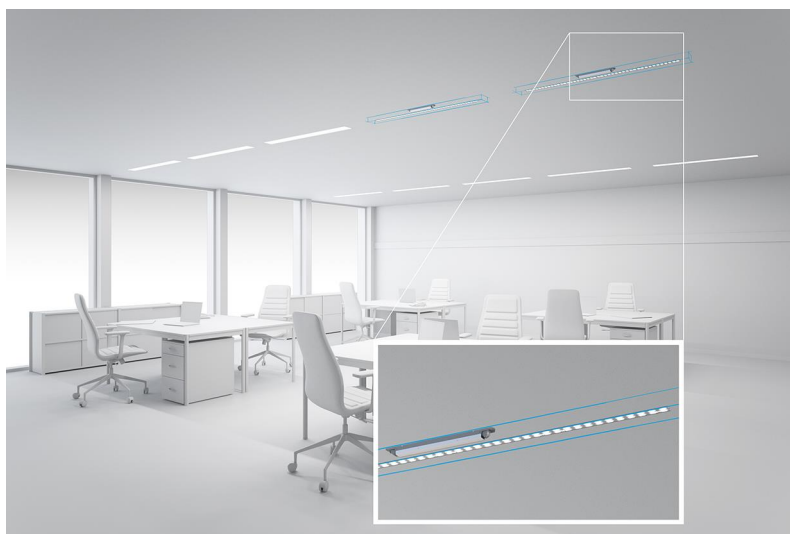
- \_ Casing: polycarbonate, white
- \_ Type of protection IP20

**Functions**

- \_ Overload protection
- \_ Short-circuit protection
- \_ No-load protection

**Website**

<http://www.tridonic.com/87500778>



Spotlights



Downlights



Linear



Area



Floor | Wall



Free-standing



Street



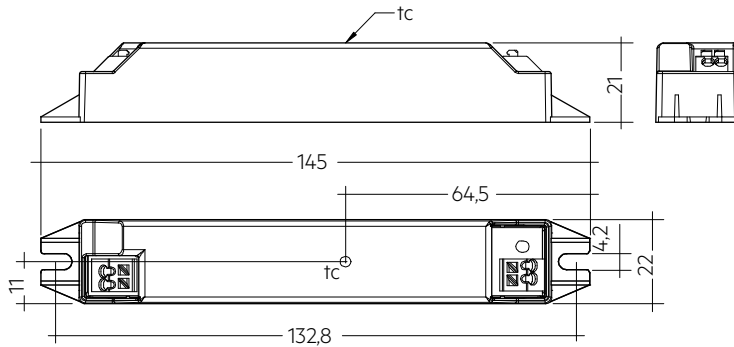
Decorative



High bay

## Driver LC 10W 350mA fixC Ip SNC2

essence series



## Ordering data

Type	Article number	Packaging, carton	Packaging, low volume	Packaging, high volume	Weight per pc.
LC 10/350/29 fixC Ip SNC2	87500778	56 pc(s).	1,736 pc(s).	8,680 pc(s).	0.043 kg

## Technical data

Rated supply voltage	220 – 240 V
AC voltage range	198 – 264 V
Input current (at 230 V, 50 Hz, full load)	0.06 A
Mains frequency	50 / 60 Hz
Output power range	4.9 – 10.2 W
THD (at 230 V, 50 Hz, full load)	< 15 %
Output current tolerance ①	± 7.5 %
Output LF current ripple (< 120 Hz)	± 10 %
Starting time (at 230 V, 50 Hz, full load)	≤ 0.5 s
Turn off time (at 230 V, 50 Hz, full load)	≤ 0.5 s
Hold on time at power failure (output)	0 s
Ambient temperature $t_a$	-20 ... +50 °C
Ambient temperature $t_a$ (at lifetime 50,000 h)	50 °C
Storage temperature $t_s$	-40 ... +80 °C
Mains burst capability	1 kV
Mains surge capability (between L - N)	1 kV
Mains surge capability (between L/N - PE)	2 kV
Surge voltage at output side (against PE)	3 kV
Type of protection	IP20
Lifetime	up to 50,000 h
Guarantee (conditions at <a href="http://www.tridonic.com">www.tridonic.com</a> )	5 Year(s)
Dimensions L x W x H	145 x 22 x 21 mm
Hole spacing D	132.8 mm

## Approval marks



## Standards

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

## Specific technical data

Type	Output current ③	Max. input power	Typ. power consumption (at 230 V, 50 Hz, full load)	$\lambda$ at full load ②	Efficiency at full load	$\lambda$ over full operating range (min.) ③	Efficiency at min. load	Min. forward voltage ②	Max. forward voltage	Max. output voltage (U-OUT)	Max. peak output current at full load ③	Max. casing temperature $t_c$
LC 10/350/29 fixC Ip SNC2	350 mA	13 W	12.6 W	0.9C	80 %	0.8C	71 %	14 V	29 V	42 V	411 mA	90 °C

① Output current is mean value.

② Test result at 230 V, 50 Hz.

③ The trend between min. and full load is linear.

## 1. Standards

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

### 1.1 Glow-wire test

according to EN 61347-1 with increased temperature of 850 °C passed.

## 2. Thermal details and lifetime

### 2.1 Expected lifetime

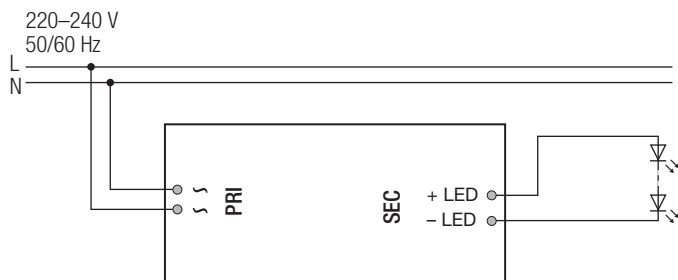
Expected lifetime				
Type	$t_a$	40 °C	50 °C	60 °C
LC 10/350/29 fixC Ip SNC2	$t_c$	80 °C	90 °C	x
	Lifetime	100,000h	50,000h	x

The LED Driver is designed for a lifetime stated above under reference conditions and with a failure probability of less than 10 %.

The relation of  $t_c$  to  $t_a$  temperature depends also on the luminaire design. If the measured  $t_c$  temperature is approx. 5 K below  $t_c$  max.,  $t_a$  temperature should be checked and eventually critical components (e.g. ELCAP) measured. Detailed information on request.

## 3. Installation / wiring

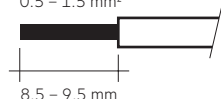
### 3.1 Circuit diagram



### 3.2 Wiring type and cross section

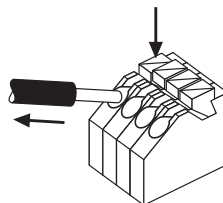
The wiring can be stranded wires with ferrules or rigid wires with a cross section of 0.5 – 1.5 mm<sup>2</sup>. Strip 8.5 – 9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals (WAGO 250).

wire preparation:  
0.5 – 1.5 mm<sup>2</sup>



### 3.3 Release of the wiring

Press down the “push button” and remove the cable from front.



### 3.4 Wiring guidelines

- 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)
- Max. length of output wires is 2 m.
- 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.).

### 3.5 Replace LED module

1. Mains off
2. Remove LED module
3. Wait for 30 seconds
4. Connect LED module again

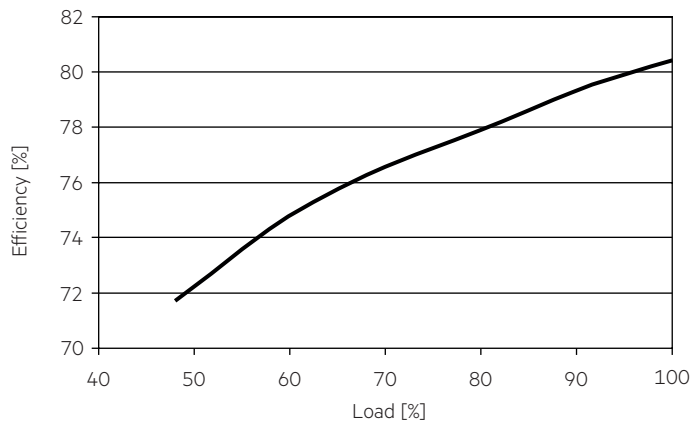
Hot plug-in or output switching of LEDs is not permitted and may cause a very high current to the LEDs.

### 3.6 Mounting of device

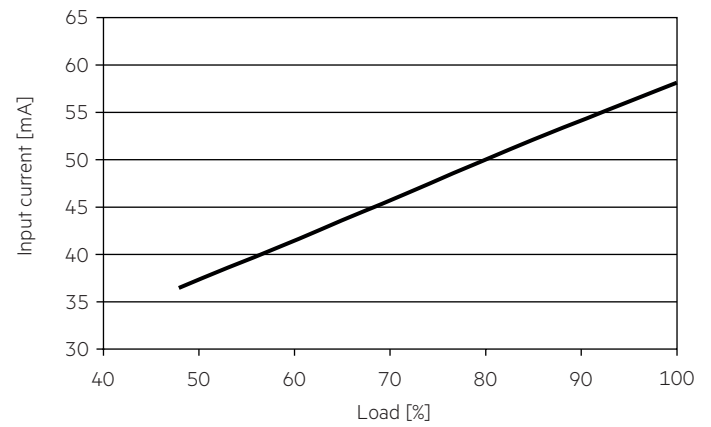
Max. torque for fixing: 0.5 Nm/M4

## 4. Electrical values

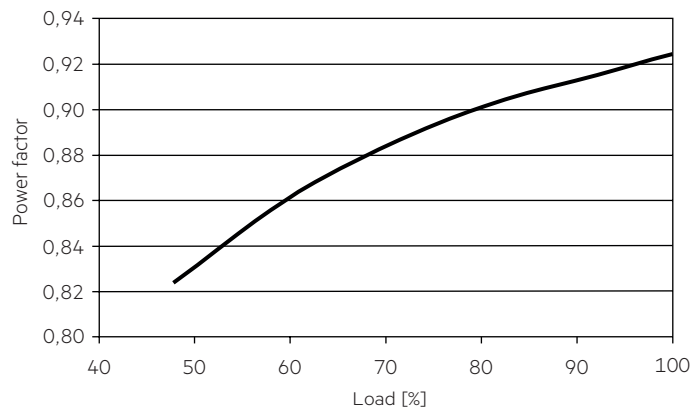
### 4.1 Efficiency vs load



### 4.4 Input current vs load

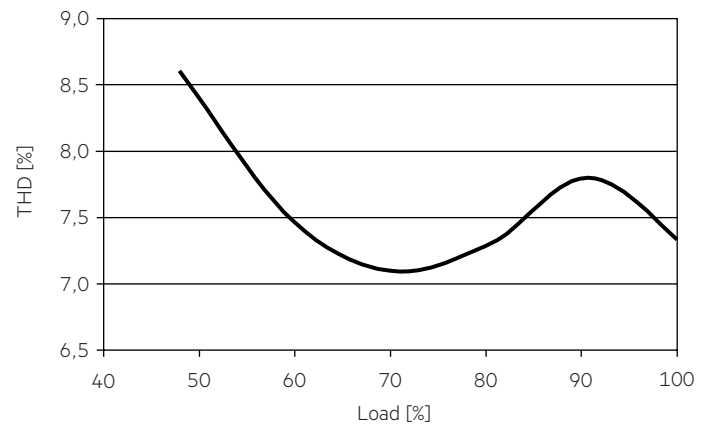


### 4.2 Power factor vs load

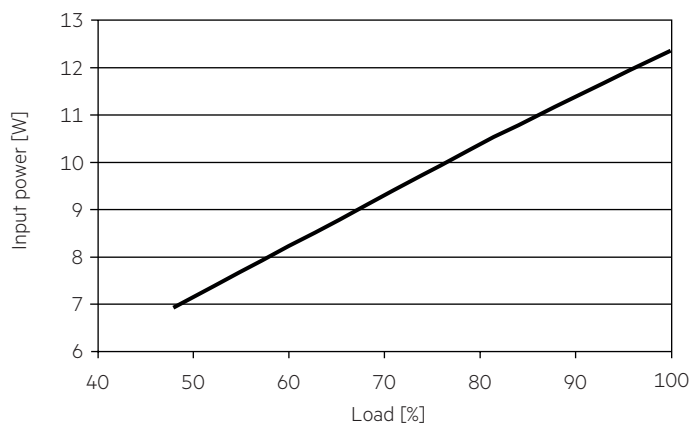


### 4.5 THD vs load (without harmonic < 5 mA or 0.6 % of the input current)

THD without harmonic < 5 mA (0.6 %) of the input current:



### 4.3 Input power vs load



#### 4.6 Maximum loading of automatic circuit breakers in relation to inrush current

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>LC 10/350/29 fixC Ip SNC2</b>	120	160	200	240	120	160	200	240	8 A	60 µs

These are max. values calculated out of continuous current running the device on full load.

There is no limitation due to inrush current.

If load is smaller than full load for calculation only continuous current has to be considered.

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

	THD	3.	5.	7.	9.	11.
<b>LC 10/350/29 fixC Ip SNC2</b>	< 15	< 12	< 10	< 7	< 5	< 5

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 switched off. After elimination of the short-circuit fault the LED Driver will recover automatically.

### 5.2 No-load operation

The LED Driver works in burst working mode to provide a constant output voltage regulation which allows the application to be able to work safely when LED string opens due to a failure.

### 5.3 Overload protection

If the maximum load is exceeded by a defined internal limit, the LED Driver will protect itself and LED may flicker. After elimination of the overload, the nominal operation is restored automatically.

## 6. Miscellaneous

### 6.1 Insulation 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 insulation test with 500 V<sub>DC</sub> for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals.

The insulation 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. 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 can be operated.

The LED Driver is declared as inbuilt LED controlgear, meaning it is intended to be used within a luminaire enclosure.

If the product is used outside a luminaire, the installation must provide suitable protection for people and environment (e.g. in illuminated ceilings).

### 6.3 Maximum number of switching cycles

All LED Driver are tested with 50,000 switching cycles.

### 6.4 Additional information

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

Lifetime declarations are informative and represent no warranty claim. No warranty if device was opened.