TRIDONIC

LED driver

Compact fixed output

Driver LC 10W 350/500/700mA fixC C SNC

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, 500 or 700 mA
- Max. output power 10 W
- Nominal lifetime up to 50,000 h
- 5 years guarantee (conditions at www.tridonic.com)

Housing properties

- Casing: polycarbonat, white
- Type of protection IP20

Functions

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

Standards, page 3

Wiring diagrams and installation examples, page 4

IP20 SELV RoHS

Driver LC 10W 350/500/700mA fixC C SNC

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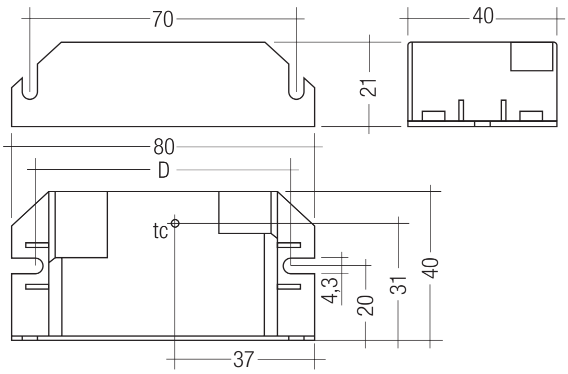
Technical data

Rated supply voltage	220 – 240 V
AC voltage range	198 – 264 V
Mains frequency	50 / 60 Hz
Overvoltage protection	320 V AC, 1 h
THD (at 230 V, 50 Hz, full load)	< 20 %
Output current tolerance[3]	± 7.5 %
Typ. current ripple (at 230 V, 50 Hz, full load)	± 40 %
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 ta	-20 ... +50 °C
Ambient temperature ta (at lifetime 50,000 h)	40 °C
Storage temperature ts	-40 ... +80 °C
Lifetime	up to 50,000 h
Guarantee (conditions at www.tridonic.com)	5 years
Dimensions L x W x H	80 x 40 x 21 mm



Ordering data

Type[4]	Article number	Packaging, carton	Packaging, low volume	Packaging, high volume	Weight per pc.
LC 10W 350mA fixC C SNC	**87500577**	25 pc(s).	1,100 pc(s).	7,700 pc(s).	0.043 kg
LC 10W 500mA fixC C SNC	**87500578**	25 pc(s).	1,100 pc(s).	7,700 pc(s).	0.043 kg
~~**LC 10W 700mA fixC C SNC**~~	**87500579**	25 pc(s).	1,100 pc(s).	7,700 pc(s).	0.043 kg

Specific technical data

Type	Output current[3]	Input current (at 230 V, 50 Hz, full load)	Max. input power	Typ. power consumption (at 230 V, 50 Hz, full load)	Output power range	λ at full load[1]	Efficiency at full load[1]	λ at min. load[1]	Efficiency at min. load[1]	Min. forward voltage	Max. forward voltage	Max. output voltage	Max. output peak current at full load[2]	Max. output peak current at min. load[2]	Max. casing temperature tc
LC 10W 350mA fixC C SNC	350 mA	60 mA	12.5 W	12 W	7 – 10 W	0.9C	83 %	0.85C	81 %	20 V	28.6 V	42 V	550 mA	600 mA	80 °C
LC 10W 500mA fixC C SNC	500 mA	60 mA	12.5 W	12 W	7 – 10 W	0.9C	83 %	0.85C	80 %	14 V	20.0 V	35 V	780 mA	820 mA	80 °C
LC 10W 700mA fixC C SNC	700 mA	65 mA	12.5 W	12 W	7 – 10 W	0.9C	81 %	0.85C	78 %	10 V	14.2 V	25 V	1,100 mA	1,150 mA	80 °C

[1] Test result at 230 V, 50 Hz.

[2] The trend between min. and full load is linear.

[3] Output current is mean value.

[4] The crossed out article is phased out.

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

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.

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

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.

Installation instructions
The LED module and all contact points within the wiring must be sufficiently insulated against 3 kV surge voltage.
Air and creepage distance must be maintained.

Replace LED module
1. Mains off
2. Remove LED module
3. Wait for 10 seconds
4. Connect LED module again

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

Expected lifetime

Type	ta	40 °C	50 °C	60 °C
LC 10W 350mA fixC C SNC	tc	70 °C	80 °C	x
	Lifetime	50,000 h	30,000 h	x
LC 10W 500mA fixC C SNC	tc	70 °C	80 °C	x
	Lifetime	50,000 h	30,000 h	x
LC 10W 700mA fixC C SNC	tc	70 °C	80 °C	x
	Lifetime	50,000 h	30,000 h	x

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

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

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

Mounting of device
Max. torque for fixing: 0.5 Nm/M4

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.

Maximum loading of automatic circuit breakers in relation to inrush current

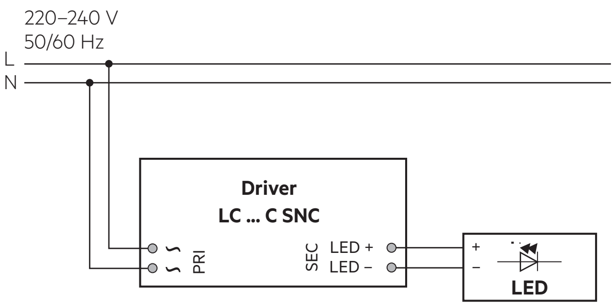
Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current	
Installation Ø	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	1.5 mm²	1.5 mm²	1.5 mm²	2.5 mm²	I_{max}	Time
LC 10W 350mA fixC C SNC	120	160	200	240	120	160	200	240	8 A	80 µs
LC 10W 500mA fixC C SNC	120	160	200	240	120	160	200	240	8 A	80 µs
LC 10W 700mA fixC C SNC	120	160	200	240	120	160	200	240	8 A	80 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.

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

	THD	3.	5.	7.	9.	11.
LC 10W 350mA fixC C SNC	< 20	< 15	< 8	< 8	< 8	< 5
LC 10W 500mA fixC C SNC	< 20	< 10	< 8	< 6	< 6	< 6
LC 10W 700mA fixC C SNC	< 20	< 15	< 10	< 8	< 5	< 5

Wiring diagram



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 DC for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal.
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 AC (or 1.414 x 1500 V DC). To avoid damage to the electronic devices this test must not be conducted.

Conditions of use

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).

Maximum number of switching cycles

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

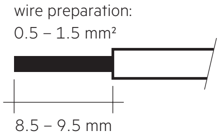
Additional information

Additional technical information at www.tridonic.com → Technical Data

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

Wiring type and cross section

For wiring use stranded wire with ferrules or solid wire from 0.5 – 1.5 mm². Strip 8.5 – 9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals.

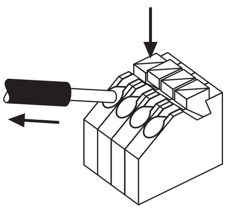


Wiring guidelines

- 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.
- Secondary switching is not permitted.
- Incorrect wiring can demage 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.).

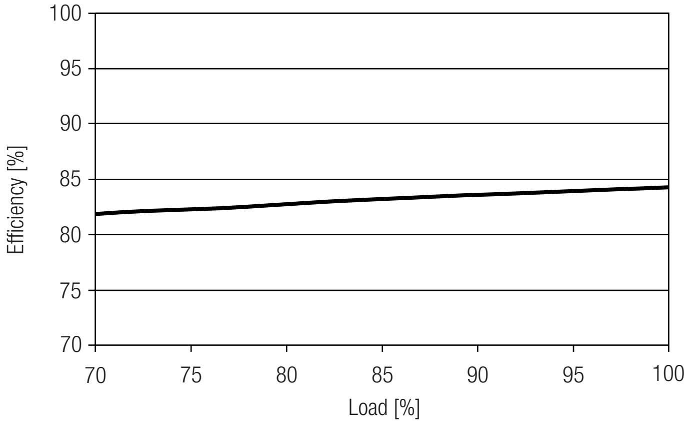
Release of the wiring

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

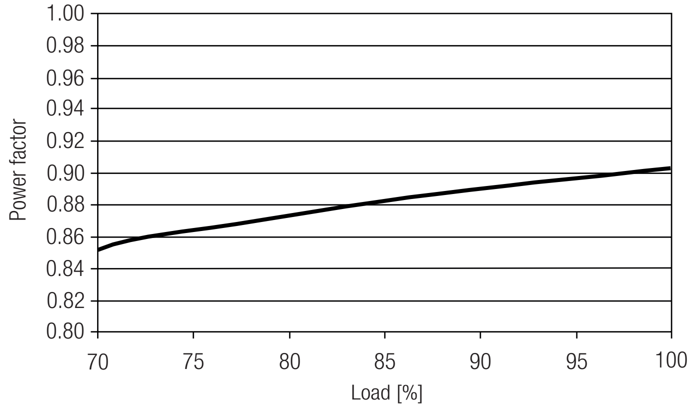


Diagrams LC 10W 350mA fixC C SNC

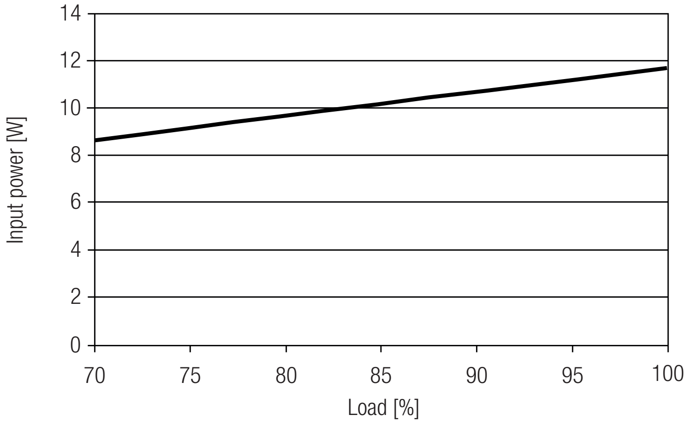
Efficiency vs load



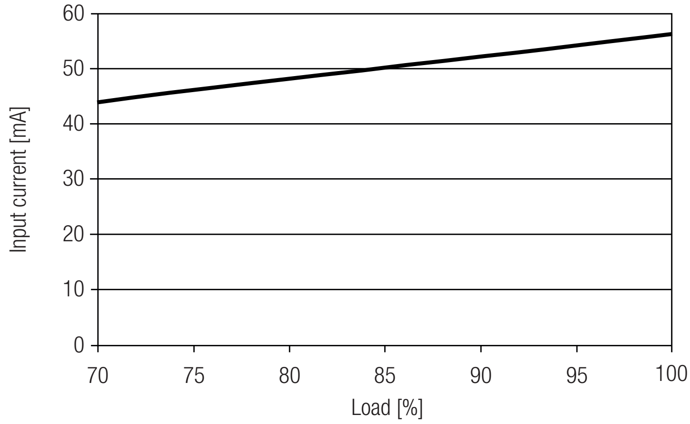
Power factor vs load



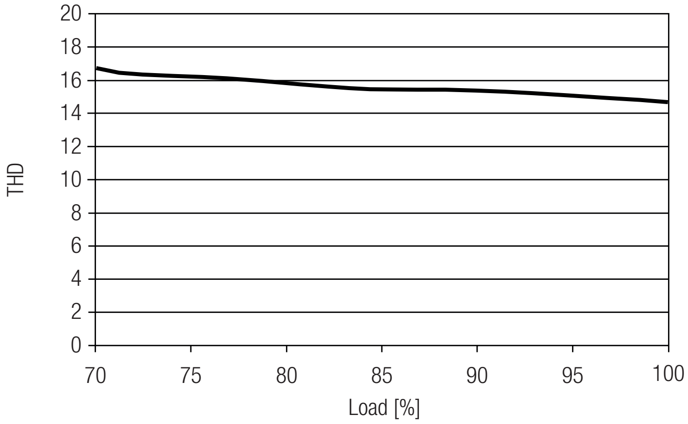
Input power vs load



Input current vs load

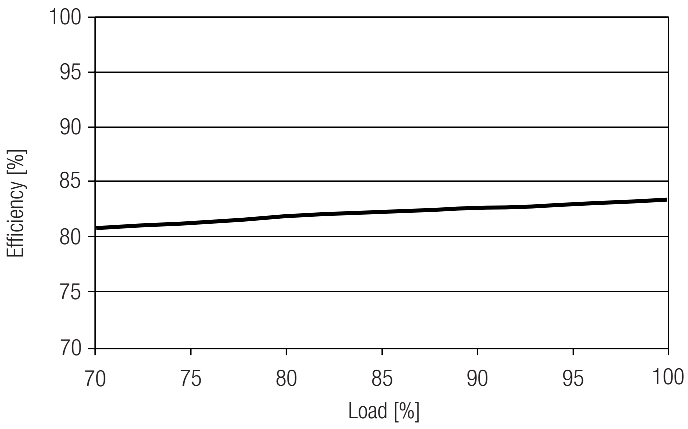


THD vs load

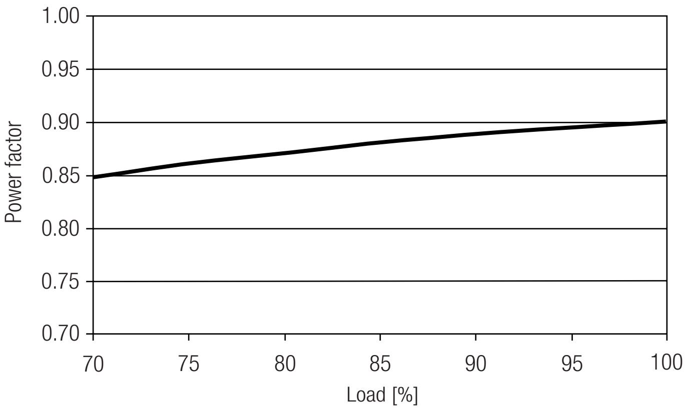


Diagrams LC 10W 500mA fixC C SNC

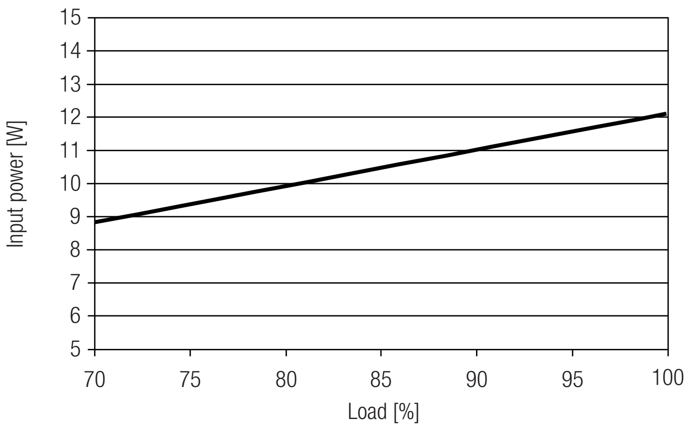
Efficiency vs load



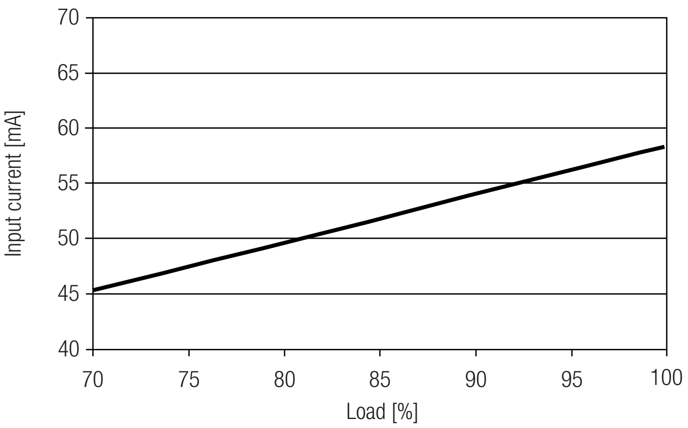
Power factor vs load



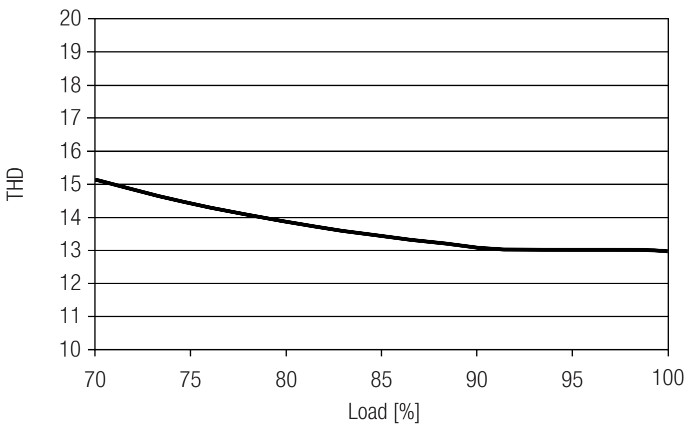
Input power vs load



Input current vs load

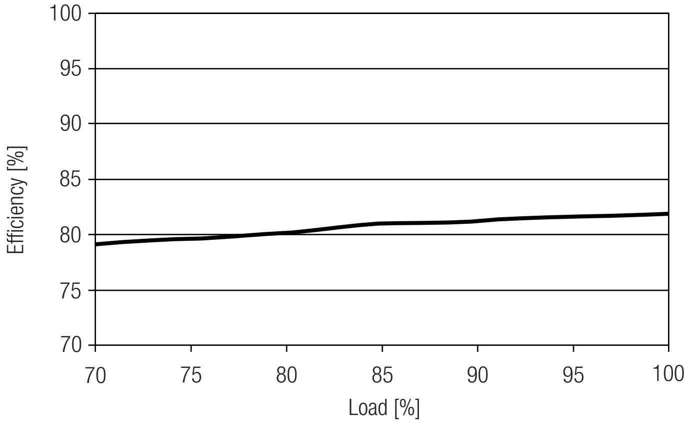


THD vs load

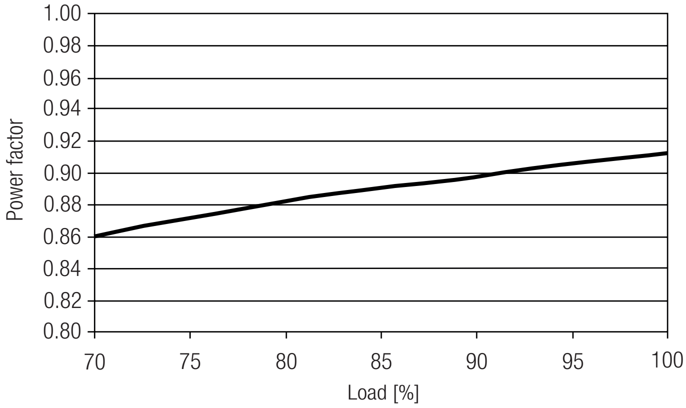


Diagrams LC 10W 700mA fixC C SNC

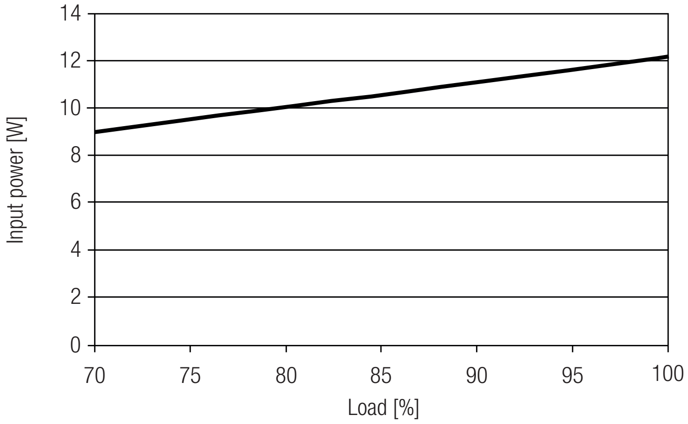
Efficiency vs load



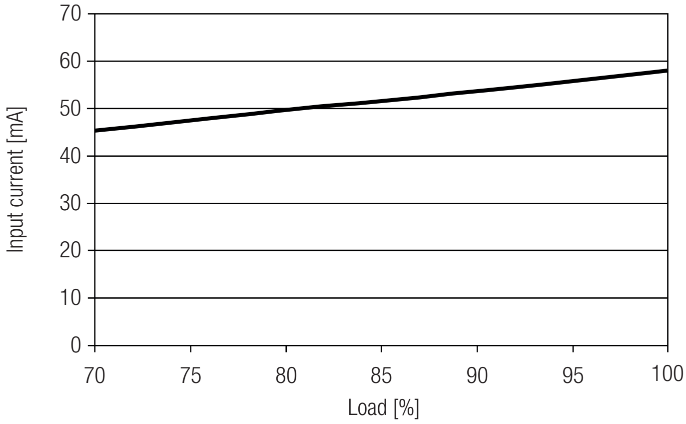
Power factor vs load



Input power vs load



Input current vs load



THD vs load