Driver LC 50/60W 1200/700/1400mA fixC SR SNC

ESSENCE series

Product description

- Independent fixed output LED Driver
- Constant current LED Driver
- Output current 1,200, 700 or 1,400 mA
- Max. output power 50 or 60 W
- Nominal life-time up to 50,000 h
- For luminaires of protection class I and protection class II
- Temperature protection as per EN 61347-2-13 C5e
- 5-year guarantee

Properties

- Casing: polycarbonat, white
- Type of protection IP20

Functions

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

Standards, page 3

Wiring diagrams and installation examples, page 4

IP20 SELV

RoHS

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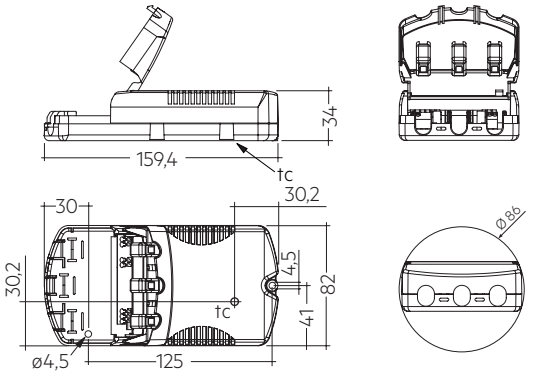
Technical data

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)	± 30 %
Turn on time (at 230 V, 50 Hz, full load)	≤ 0.5 s
Turn off time (at 230 V, 50 Hz, full load)	≤ 0.2 s
Hold on time at power failure (output)	0 s
Ambient temperature ta	-20 … +50 °C
Ambient temperature ta (at life-time 50,000 h)	40 °C
Storage temperature ts	-40 … +80 °C
Dimensions L x W x H	159.4 x 82 x 34 mm



Ordering data

Type[3]	Article number	Packaging, carton	Packaging, low volume	Packaging, high volume	Weight per pc.
LC 50W 1200mA fixC SR SNC	**87500553**	20 pc(s).	280 pc(s).	1,120 pc(s).	0.196 kg
LC 60W 700mA fixC SR SNC	**87500554**	20 pc(s).	280 pc(s).	1,120 pc(s).	0.193 kg
LC 60W 1400mA fixC SR SNC	**87500555**	20 pc(s).	280 pc(s).	1,120 pc(s).	0.195 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 50W 1200mA fixC SR SNC	1,200 mA	0.26 A	58 W	55.5 W	36.0 – 51.6 W	0.96	90 %	0.92C	88 %	30 V	43 V	55 V	1,700 mA	1,800 mA	90 °C
LC 60W 700mA fixC SR SNC	700 mA	0.29 A	68 W	60.0 W	42.0 – 59.5 W	0.96	91 %	0.94C	89 %	60 V	85 V	100 V	1,000 mA	1,100 mA	90 °C
LC 60W 1400mA fixC SR SNC	1,400 mA	0.30 A	68 W	66.5 W	42.0 – 60.2 W	0.96	90 %	0.94C	88 %	30 V	43 V	55 V	2,000 mA	2,100 mA	90 °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.

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

Overload protection
If the output voltage range is exceeded the LED Driver will protect itself and LED may flicker. After elimination of the overload, the nominal operation is restored automatically.

Overtemperature protection
The LED Driver is protected against temporary thermal overheating. If the temperature limit is exceeded, the output current is reduced to limit tc at a certain level.
The temperature protection is activated typically at 10 °C above tc max.

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

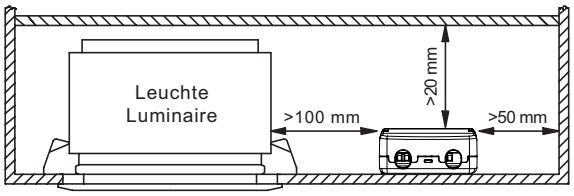
Hot plug-in or secondary switching of LEDs is not permitted and may cause a very high current to the LEDs.

Expected life-time

Type	ta	40 °C	50 °C	60 °C
LC 50W 1200mA fixC SR SNC	tc	80 °C	90 °C	x
	Life-time	50,000 h	30,000 h	x
LC 60W 700mA fixC SR SNC	tc	80 °C	90 °C	x
	Life-time	50,000 h	30,000 h	x
LC 60W 1400mA fixC SR SNC	tc	80 °C	90 °C	x
	Life-time	50,000 h	30,000 h	x

The LED Drivers are designed for a life-time stated above under reference conditions and with a failure probability of less than 10 %.

Fixing conditions
Dry, 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.



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.

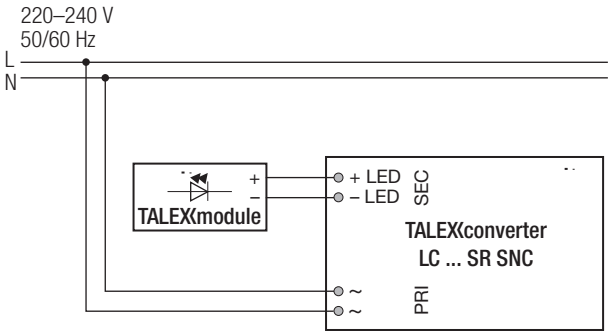
Maximum loading of automatic circuit breakers

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 50W 1200mA fixC SR SNC	32	45	60	80	30	42	52	65	10 A	50 µs
LC 60W 700mA fixC SR SNC	25	35	45	55	20	35	40	55	12 A	50 µs
LC 60W 1400mA fixC SR SNC	25	35	45	55	20	35	40	55	12 A	50 µs

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

	THD	3.	5.	7.	9.	11.
LC 50W 1200mA fixC SR SNC	< 20	< 12	< 4	< 2	< 2	< 2
LC 60W 700mA fixC SR SNC	< 20	< 12	< 4	< 2	< 2	< 2
LC 60W 1400mA fixC SR SNC	< 20	< 12	< 4	< 2	< 2	< 2

Wiring diagram



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 DC 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 AC (or 1.414 x 1500 V DC). To avoid damage to the electronic devices this test must not be conducted.

Additional information

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

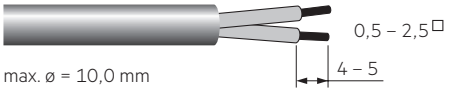
Guarantee conditions at www.tridonic.com → Services

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

Wiring type and cross section

The wiring can be in stranded wires with ferrules or solid.
For perfect function of the cage clamp terminals the strip length should be 4 – 5 mm for the input terminal.
The max. torque at the clamping screw (M3) is 0.2 Nm.
Use one wire for each terminal connector only.
Use each strain relief channel for one cable only.

Input / Output terminal



max. ø = 10,0 mm
min. ø = 2,2 mm

Wiring instructions

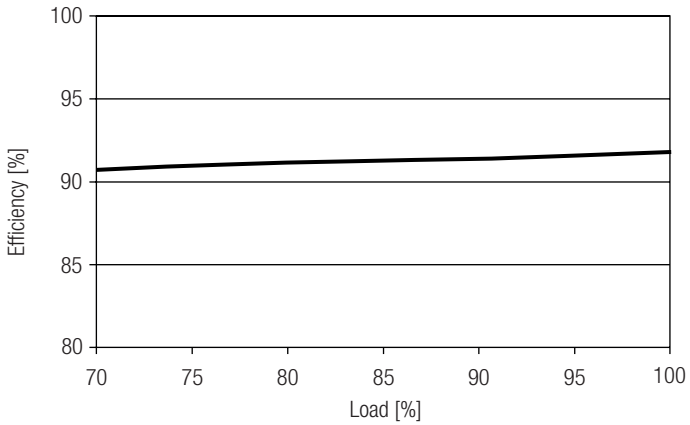
The secondary leads should be separated from the mains connections and wiring for good EMC performance.
The maximum lead length on secondary side is 2 m. For a good EMC performance keep the LED wiring as short as possible.

Wiring guidelines

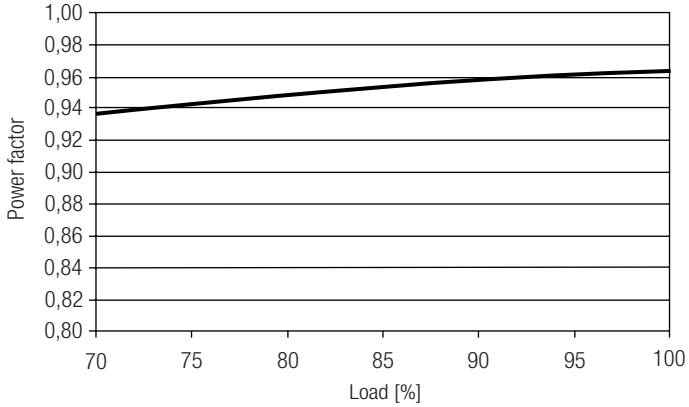
- All connections must be kept as short as possible to ensure good EMI behaviour.
- Mains leads should be kept apart from LED control gear and other leads (ideally 5 – 10 cm distance)
- Max. lenght of output wires is 2 m.
- Secondary switching is not permitted.
- Incorrect wiring can demage LED modules.
- 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.).

Diagrams LC 50W 1200mA fixC SR SNC

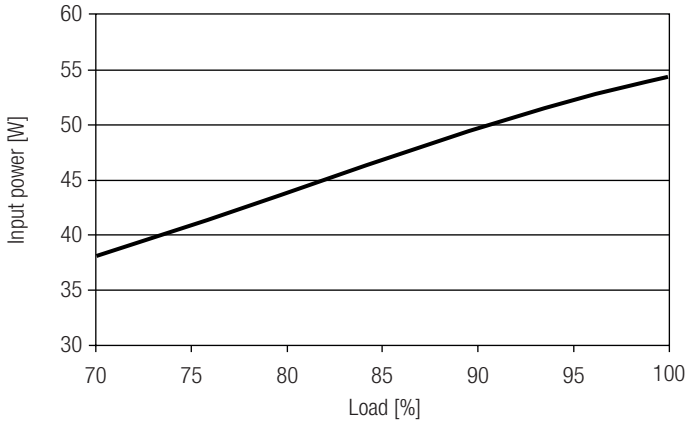
Efficiency vs load



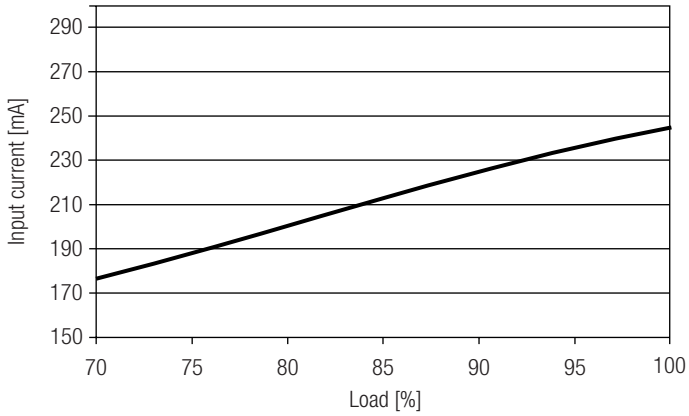
Power factor vs load



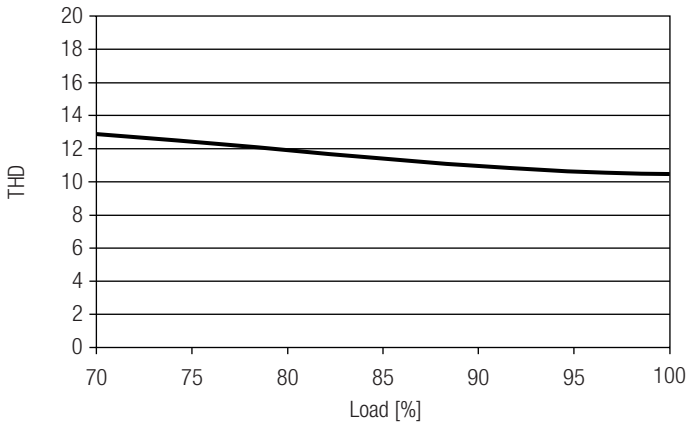
Input power vs load



Input current vs load

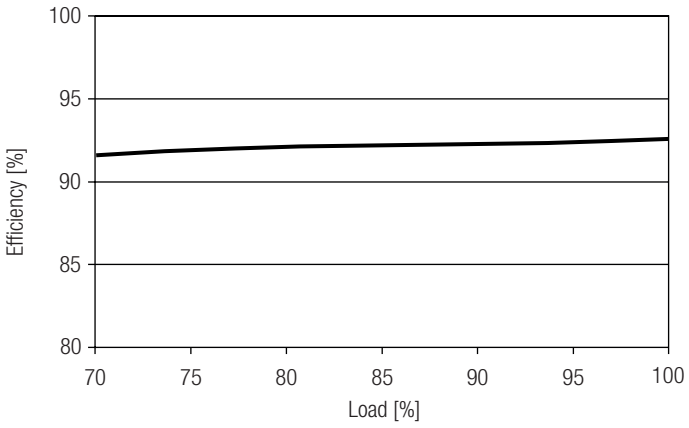


THD vs load

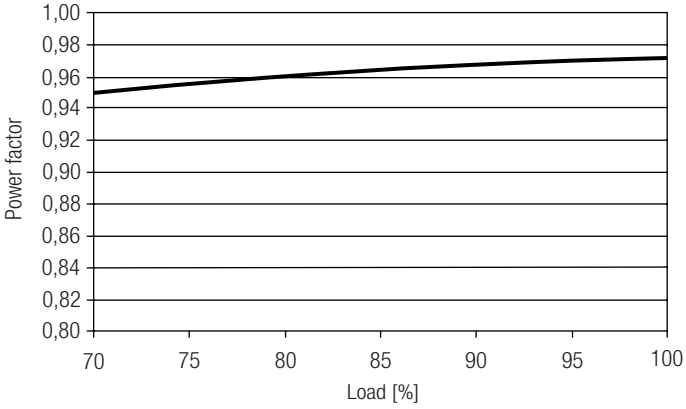


Diagrams LC 60W 700mA fixC SR SNC

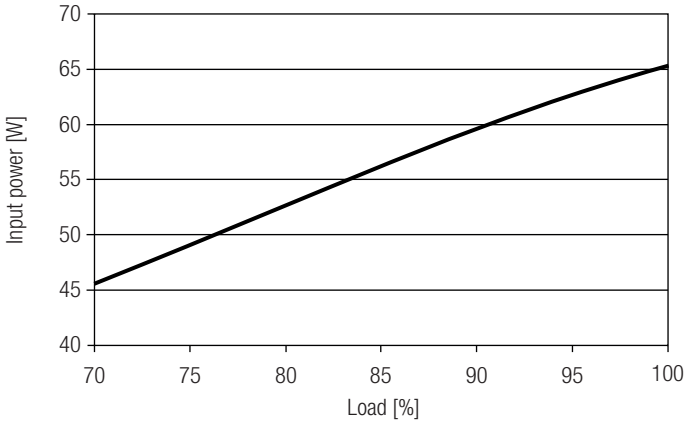
Efficiency vs load



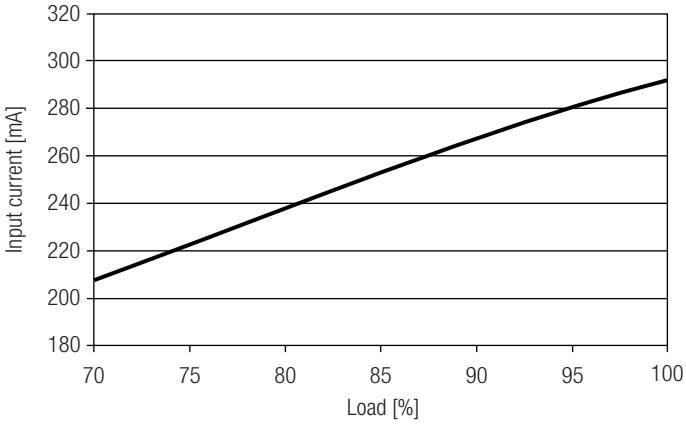
Power factor vs load



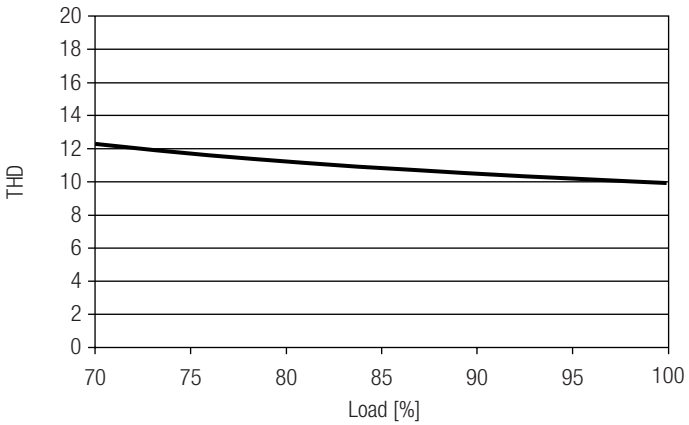
Input power vs load



Input current vs load

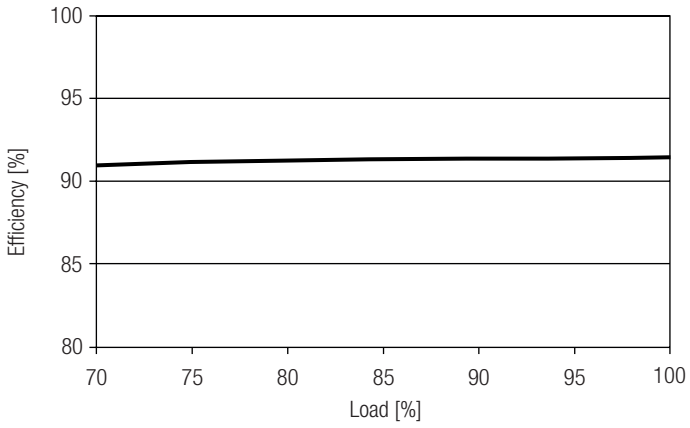


THD vs load

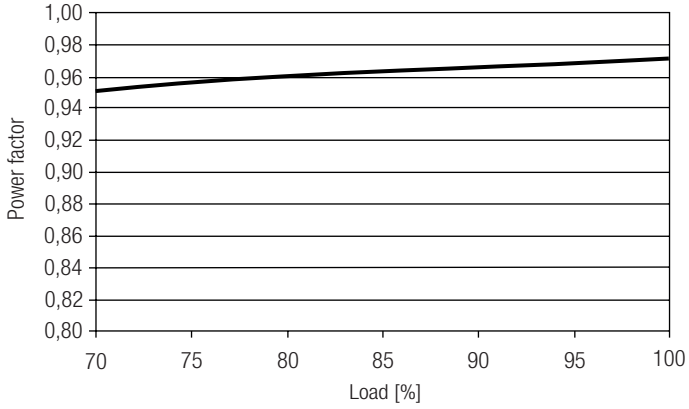


Diagrams LC 60W 1400mA fixC SR SNC

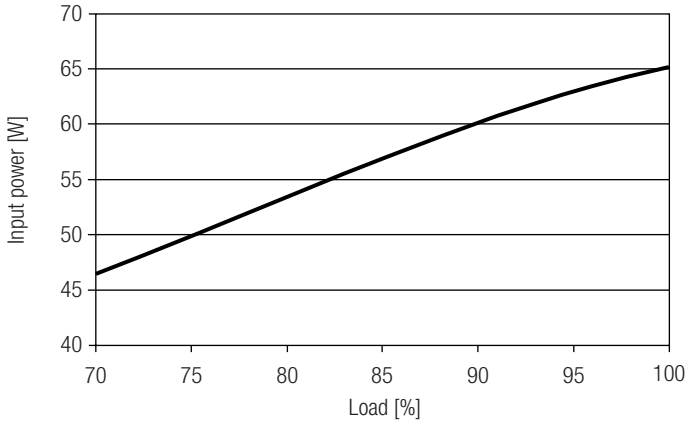
Efficiency vs load



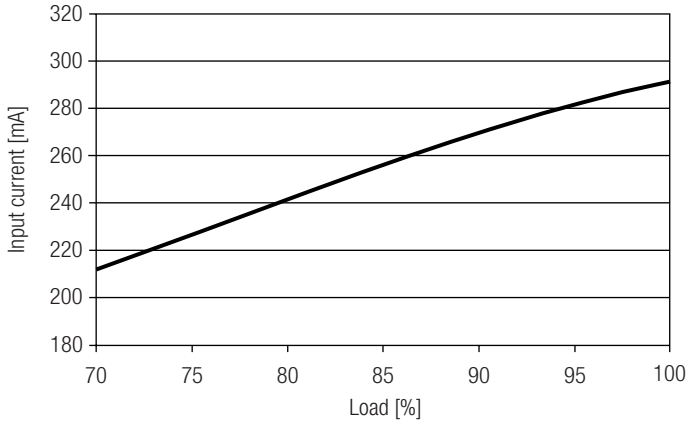
Power factor vs load



Input power vs load



Input current vs load



THD vs load