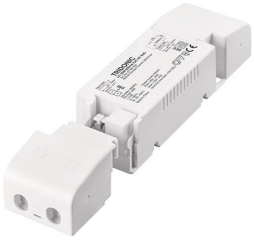
TRIDONIC

Driver LC 25/30W 600/700mA fixC SC SNC

essence series



With strain-relief

Product description
_ Fixed output LED driver
_ Can be either used built-in or independent with clip-on strain-relief (see accessory)
_ Constant current LED driver
_ Output current 600 or 700 mA
_ Max. output power 26 or 30 W
_ Nominal lifetime up to 50,000 h
_ For luminaires of protection class I and protection class II
_ Temperature protection as per EN 61347-2-13 C5e
_ Independent LED driver with cable clamps
_ 5 years guarantee (conditions at https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions)

Properties
_ Casing: polycarbonate, white
_ Type of protection IP20

Functions
_ Overtemperature protection
_ Overload protection
_ Short-circuit protection
_ No-load protection
_ Burst protection voltage 1 kV
_ Surge protection voltage 1 kV (L to N)
_ Surge protection voltage 2 kV (L/N to earth)

Website
http://www.tridonic.com/87500459

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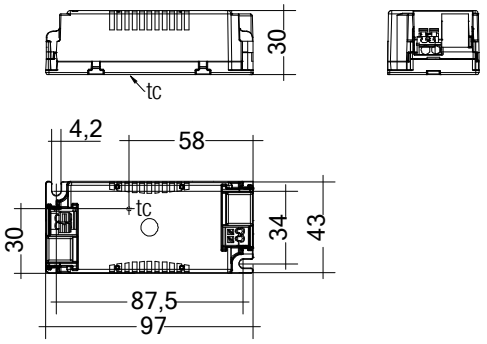


Ordering data

Type	Article number ③	Packaging, carton	Packaging, low volume	Packaging, high volume	Weight per pc.
LC 25W 600mA fixC SC SNC	**87500459**	15 pc(s).	555 pc(s).	4,440 pc(s).	0.083 kg
LC 30W 700mA fixC SC SNC	**87500460**	40 pc(s).	880 pc(s).	4,400 pc(s).	0.082 kg

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
λ over full operating range (min.)	0.91C
Max. output voltage (U-OUT)	54 V
THD (at 230 V, 50 Hz, full load)	< 20 %
Max. peak output current at full load ①	840 mA
Output current tolerance ②	± 7.5 %
Output LF current ripple (< 120 Hz)	± 30 %
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
Type of protection	IP20
Lifetime	50,000 h
Guarantee (conditions at www.tridonic.com)	5 Year(s)
Dimensions L x W x H	97 x 43 x 30 mm
Dimensions with strain-relief L x W x H	157 x 43 x 30 mm

Approval marks

IP20 SELV RoHS

Standards

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

Specific technical data

Type	Output current ②	Input current (at 230 V, 50 Hz, full load	Max. input power	Typ. power consumption (at 230 V, 50 Hz, full	Output power range	λ at full load	Efficiency at full load ④	λ over full operating range (min.)	Efficiency at min. load ④	Min. forward voltage	Max. forward voltage	Max. output voltage (U-OUT)	Max. peak output current at full load ①	Max. peak output current at min. load ①	Max. casing temperature tc
LC 25W 600mA fixC SC SNC	600 mA	140 mA	30 W	29 W	18 – 26 W	0.95	90 %	0.91C	88.5 %	30 V	43 V	54 V	840 mA	960 mA	85 °C
LC 30W 700mA fixC SC SNC	700 mA	180 mA	34 W	33 W	21 – 30 W	0.95	90 %	0.92C	89.0 %	30 V	43 V	54 V	980 mA	1,120 mA	90 °C

① The trend between min. and full load is linear.
② Output current is mean value.
③ Article LC 30W 700mA fixC SC SNC (87500460) has the KC approval mark.
④ Test result at 230 V, 50 Hz.

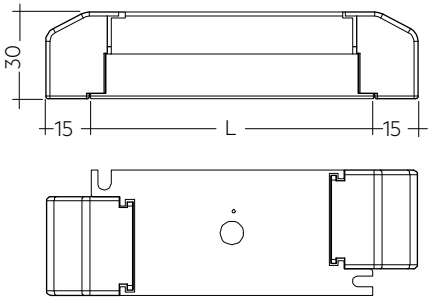
Strain-relief set 43x30mm

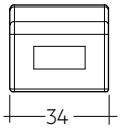
Accessory

Product description

- Optional strain-relief set for independent applications
- Transforms the LED driver into a fully class II compatible LED driver (e.g. ceiling installation)
- Easy and tool-free mounting to the LED driver, screwless cable-clamp channels for long strain-relief (30 x 43 x 30 mm)
- With screws for short strain-relief (15 x 34 x 30 mm)
- Overall length = length L (LED driver) + 2 x 30 mm (long strain-relief set), 2 x 15 mm (short strain-relief) or long and short strain-relief any combination
- Standard SC (L = 30 mm) available as non-pre-assembled and pre-assembled
- Short SC (L = 15 mm) only pre-assembled available

Website
http://www.tridonic.com/28001168





Permissible cable jacket diameter: 3 – 9 mm

Ordering data

Type	Article number	Packaging, carton ①	Packaging, outer box	Weight per pc.
ACU SC 43x30mm CLIP-ON SR SET	**28001168**	10 pc(s).	500 pc(s).	0.018 kg
ACU SC 43x30mm CLIP-ON SR SET 300	**28001351**	300 pc(s).	300 pc(s).	0.033 kg
ACU SC 30x43x30mm CLIP-ON SR PA	**28001699**	10 pc(s).	500 pc(s).	0.015 kg
ACU SC 15x43x30mm CLIP-ON SR PA	**28001574**	10 pc(s).	1,200 pc(s).	0.012 kg

Approval marks

① 28001168: A carton of 10 pcs. is equal to 10 sets, each with 2 strain-reliefs parts. 28001351: A carton of 300 pcs. is equal to 300 sets, each with 2 strain-reliefs parts. 28001699 + 28001574: A carton contains exactly 10 pcs. strain-reliefs (no sets).

1. Standards

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

1.1 Glow-wire test

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

2. Thermal details and life-time

2.1 Expected life-time

Expected life-time

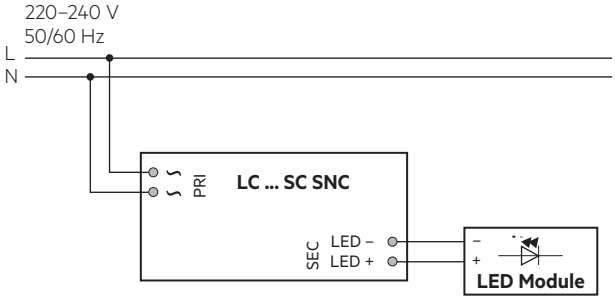
Type	ta	40 °C	50 °C
LC 25W 600mA fixC SC SNC	tc	75 °C[1]	85 °C[1]
	Life-time	50,000 h	30,000 h
LC 30W 700mA fixC SC SNC	tc	80 °C[1]	90 °C[1]
	Life-time	50,000 h	30,000 h

[1] Test result at max. output voltage.

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

3. Installation / wiring

3.1 Circuit diagram

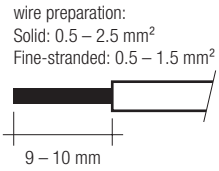


3.2 Wiring type and cross section

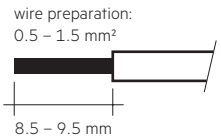
The input wiring can be stranded wires with ferrules with a cross section of 0.5 – 1.5 mm² or with solid wires with a cross section of 0.5 – 2.5 mm².
Strip 9 – 10 mm of insulation from the cables to ensure perfect operation of the push-wire terminals.

The output wiring can be done with a cross section of 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.

Input wiring



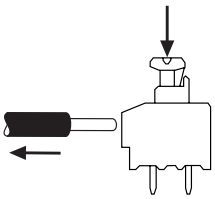
Output wiring



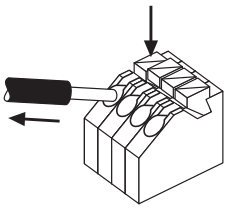
3.3 Release of the wiring

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

Input terminal

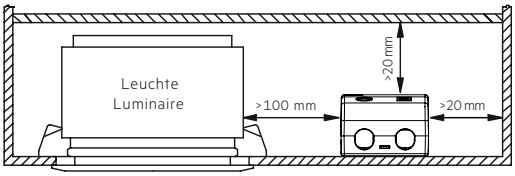


Output terminal



3.4 Fixing conditions when using as independent Driver with Clip-On

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.



3.5 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. length of output wires is 2 m.
- The secondary wires (LED module) should be routed in parallel to ensure good EMC performance.
- Secondary switching is not permitted.
- Incorrect wiring can demage LED modules.
- To avoid damage of the Driver, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.).

3.6 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.

3.7 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.

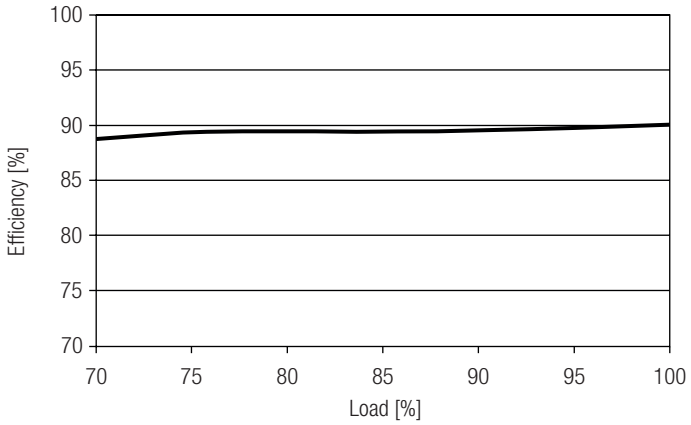
3.8 Mounting of device

Max. torque for fixing: 0.5 Nm/M4

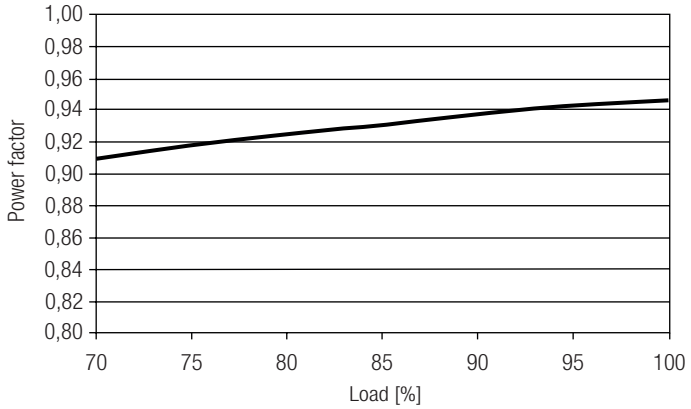
4. Electrical values

4.1 Diagrams LC 25W 600mA fixC SC SNC

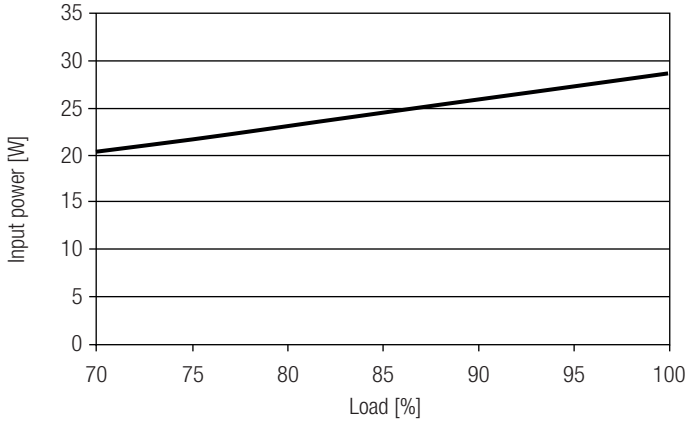
4.1.1 Efficiency vs load



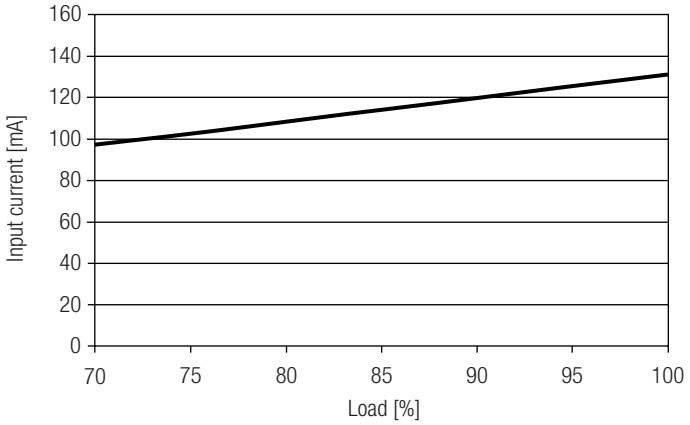
4.1.2 Power factor vs load



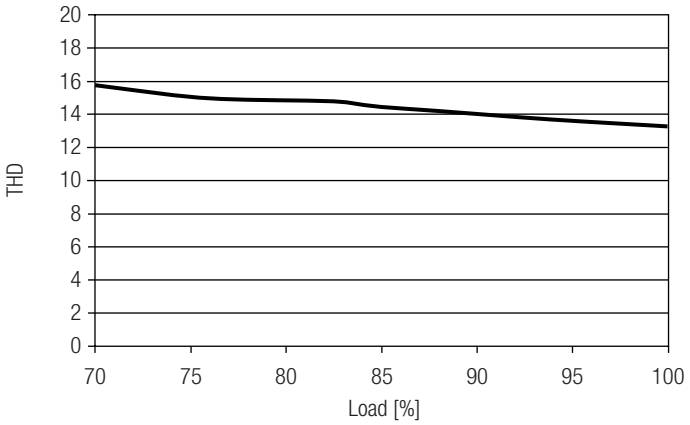
4.1.3 Input power vs load



4.1.4 Input current vs load

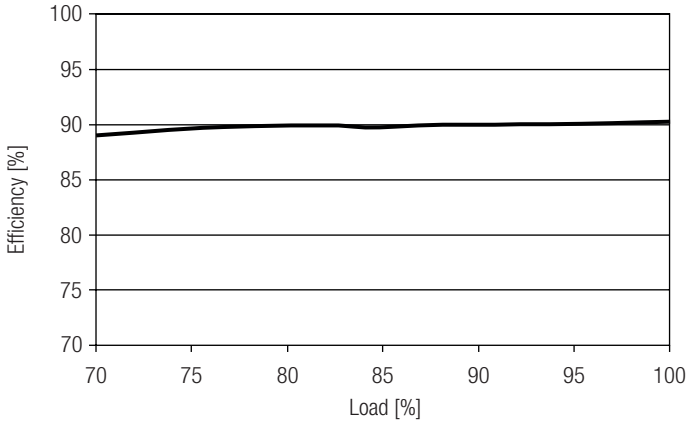


4.1.5 THD vs load

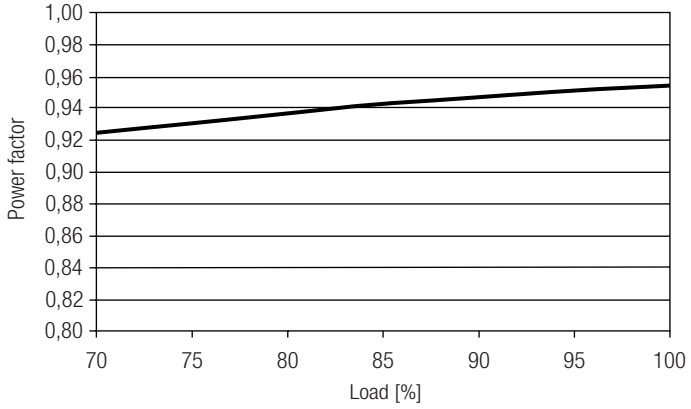


4.2 Diagrams LC 30W 700mA fixC SC SNC

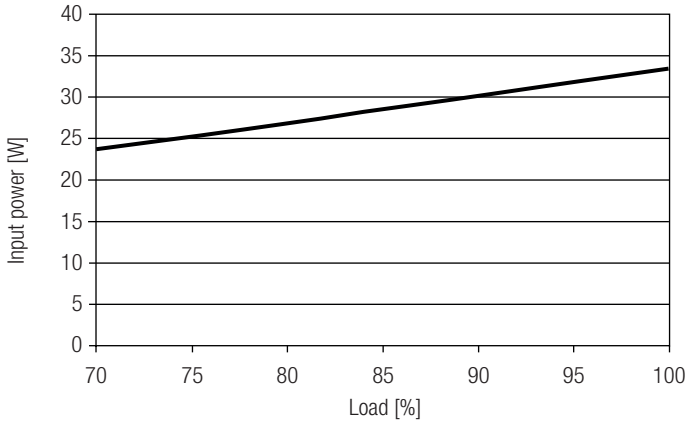
4.2.1 Efficiency vs load



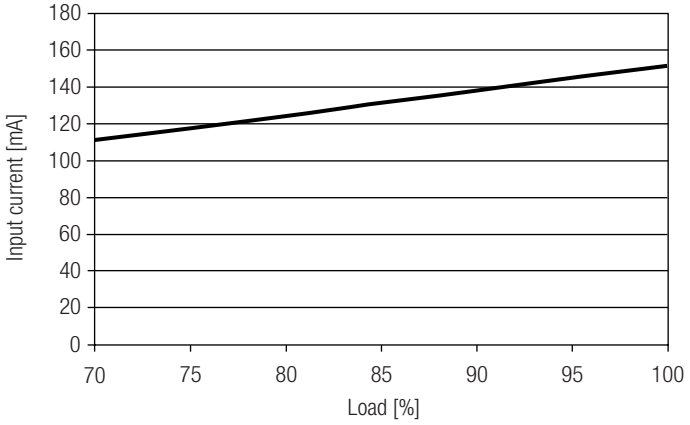
4.2.2 Power factor vs load



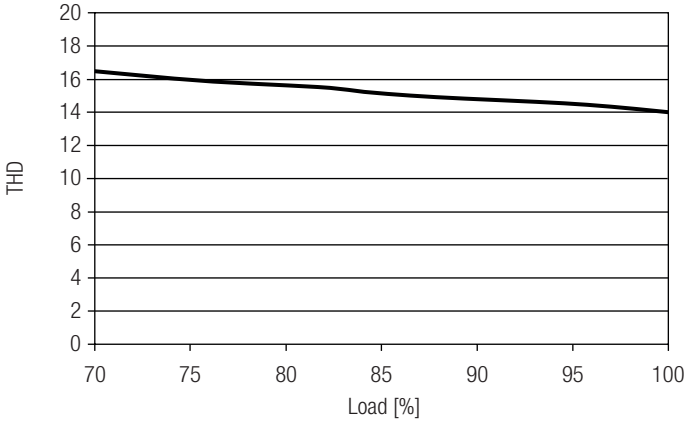
4.2.3 Input power vs load



4.2.4 Input current vs load



4.2.5 THD vs load



4.3 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 25W 600mA fixC SC SNC	65	80	100	125	55	70	90	110	8 A	100 µs
LC 30W 700mA fixC SC SNC	55	70	85	110	50	65	80	100	8 A	100 µs

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

	THD	3.	5.	7.	9.	11.
LC 25W 600mA fixC SC SNC	< 20	< 12	< 4	< 3	< 3	< 2
LC 30W 700mA fixC SC SNC	< 20	< 12	< 4	< 2	< 2	< 2

5. Functions

5.1 Short-circuit behaviour

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

5.2 No-load operation

The LED control gear 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 output voltage range is exceeded the LED control gear 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 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.

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.

6.3 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.