# **TRIDONIC**

## Compact fixed output







#### **Driver LC 30W 350/500/700mA fixC SR SNC2**

essence series

#### **Product description**

- Independent LED Driver with cable clamps
- Max. output power 30 W
- Output current 350, 500 or 700 mA
- For luminaires with M and MM as per EN 60598, VDE 0710 and VDE 0711
- Temperature protection as per EN 61347-2-13 C5e
- Nominal life-time up to 50,000 h
- 5-year guarantee

#### **Properties**

- Casing: polycarbonat, white
- Type of protection IP20
- Push-in terminals
- 2 separate strain relief parts for input and output cables with highly robust clamps

#### **Functions**

- Overload protection
- Short-circuit protection
- No-load protection
- No output current overshoot at mains on/off
- Burst protection voltage 1 kV
- Surge protection voltage 1 kV (L to N)
- Surge protection voltage 2 kV (L/N to earth)

#### **Typical applications**

- $\bullet\,$  For spot light and downlight in retail and hospitality application
- For panel light and area light in office and education application



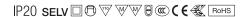
#### Standards, page 3

Wiring diagrams and installation examples, page  $\ensuremath{\mathtt{3}}$ 







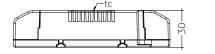


## **Driver LC 30W 350/500/700mA fixC SR SNC2**

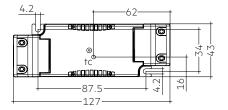
essence series

#### Technical data

Rated supply voltage	220 – 240 V
AC voltage range	198 – 264 V
Leakage current (at 230 V, 50 Hz, full load)	< 450 μΑ
Mains frequency	50/60 Hz
Overvoltage protection	320 V AC, 1 h
THD (at 230 V, 50 Hz, full load)	≤ 20 %
THD (at 230 V, 50 Hz, min. load)	≤ 20 %
Output current tolerance®	± 7.5 %
Typ. output LF current ripple at full load <sup>®</sup>	± 25 %
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	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	127 x 43 x 30 mm







## Ordering data

Туре	Article	Packaging,	Packaging,	Packaging,	Weight per
туре	number	carton	low volume	high volume	pc.
LC 30/350/86 fixC SR SNC2	87500754	14 pc(s).	364 pc(s).	2,548 pc(s).	0.111 kg
LC 30/500/54 fixC SR SNC2	87500755	14 pc(s).	364 pc(s).	2,548 pc(s).	0.111 kg
LC 30/700/43 fixC SR SNC2	87500757	14 pc(s).	364 pc(s).	2,548 pc(s).	0.111 kg

#### Specific technical data

-p															
Туре	Output	Typ. rated	Max.	Typ. power	Output power	λat	Efficiency	λ at min.	Efficiency	Min.	Max.	Max.	Max.	Max.	Max. casing
	current®	current	input	consumption		full load <sup>®</sup>	at full	load <sup>®</sup>	at min.	forward	forward	output	output	output	temperature to
		(at 230 V,	power	(at 230 V,			load <sup>®</sup>		load <sup>®</sup>	voltage <sup>®</sup>	voltage <sup>®</sup>	voltage	peak	peak	
		50 Hz, full		50 Hz, full									current at	current at	
		load)		load)									full load <sup>®</sup>	$\text{min. load}^{\tiny{\textcircled{\tiny \$}}}$	
LC 30/350/86 fixC SR SNC2	350 mA	0.150 A	34 W	33 W	15.1 – 30.1 W	0.95	89 %	0.90C	87 %	43 V	86 V	100 V	490 mA	570 mA	75 °C
LC 30/500/54 fixC SR SNC2	500 mA	0.140 A	31 W	30 W	13.5 – 27.0 W	0.95	89 %	0.90C	87 %	27 V	54 V	60 V	700 mA	810 mA	75 °C
LC 30/700/43 fixC SR SNC2	700 mA	0.150 A	34 W	33 W	18.9 – 30.1 W	0.95	89 %	0.90C	87 %	27 V	43 V	60 V	980 mA	1,130 mA	80 °C

<sup>&</sup>lt;sup>①</sup> Test result at 230 V, 50 Hz

<sup>&</sup>lt;sup>®</sup> Output current is mean value.

 $<sup>^{\</sup>scriptsize\textcircled{\scriptsize0}}$  Typical value at full load, depends on load's voltage-current character.

 $<sup>^{\</sup>scriptsize \textcircled{\$}}$  The trend between min. and full load is linear and depends on load's voltage-current character.

#### 1. Standards

EN 55015

EN 61000-3-2

EN 61000-3-3

EN 61347-1

EN 61347-2-13

EN 61547

EN 60598-1

EN 62384

#### 1.1 Glow wire test

according to EN 60598-1 with increased temperature of 850 °C passed.

#### 2. Thermal details and life-time

#### 2.1 Expected life-time

Expected life-time				
Туре	ta	40°C	50°C	
LC 30/350/86 fixC SR SNC2	tc	65 °C <sup>®</sup>	75 °C <sup>®</sup>	
Le 30/330/00 fixe 3K 3Ke2	Life-time	50,000 h	30,000 h	
LC 30/500/54 fixC SR SNC2	tc	65 °C <sup>®</sup>	75 °C <sup>®</sup>	
LC 30/300/34 HAC 3R 3NC2	Life-time	50,000 h	30,000 h	
LC 30/700/43 fixC SR SNC2	tc	70 °C <sup>®</sup>	80 °C <sup>⊕</sup>	
LC 30/ / 00/43 HXC 3R 3NC2				

Life-time

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

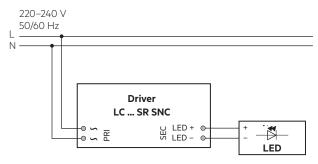
50,000 h

30,000 h

Life-time declarations are informative and represent no warranty claim.

## 3. Installation / wiring

#### 3.1 Circuit diagram



## 3.2 Wiring type and cross section

The wiring can be in stranded wires with ferrules or solid with a cross section of 0.5– $1.5 \text{ mm}^2$ . Strip 8.5–9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals.

Use one wire for each terminal connector only.

The max. torque at the clamping screw (M4) is 0.3 Nm.

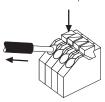


The following cable types are approved and recommended by Tridonic:

RVVB 2 x 0.5 mm<sup>2</sup> RVVB 2 x 0.75 mm<sup>2</sup> RVVB 2 x 1 mm<sup>2</sup> RVVB 2 x 1.5 mm<sup>2</sup> RVV 3 x 0.75 mm<sup>2</sup> SOLID 2.5 mm<sup>2</sup>

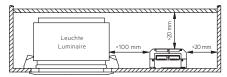
#### 3.3 Release of the wiring

Press down the "push button" and remove the cable from front.



#### 3.4 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.



#### 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 Driver 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 the damage of the Driver, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.).

#### 3.6 Replace LED module

- 1. Mains off
- 2. Remove LED module
- 3. Wait for 20 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

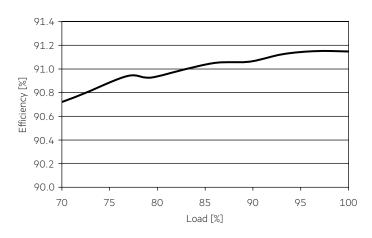
Max. torque for fixing: 0.5 Nm/M4  $\,$ 

<sup>&</sup>lt;sup>®</sup> Test result at max. output voltage.

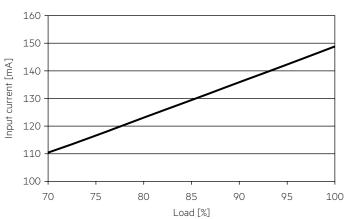
## 4. Electrical values

## 4.1 Diagrams LC 30W 350mA fixC SR SNC2

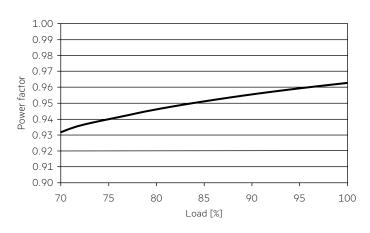
## 4.1.1 Efficiency vs load



## 4.1.4 Input current vs load

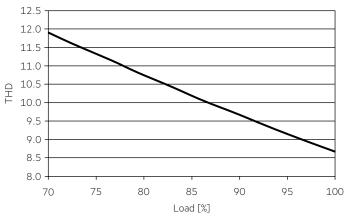


4.1.2 Power factor vs load

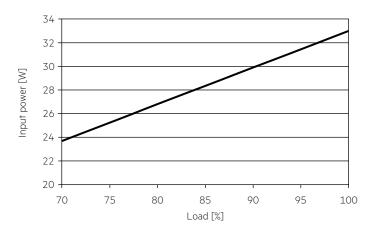


4.1.5 THD vs load

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

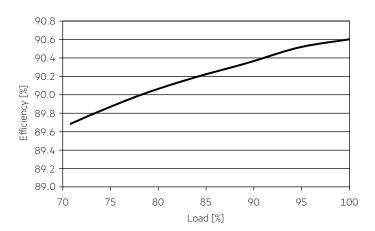


4.1.3 Input power vs load

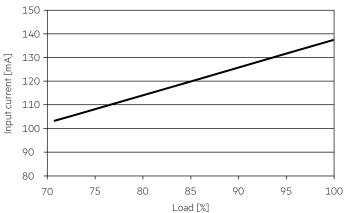


## 4.2 Diagrams LC 30W 500mA fixC SR SNC2

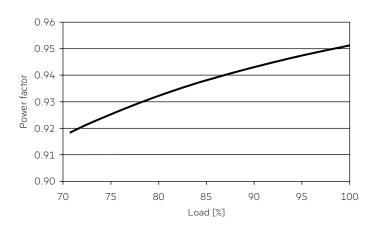
## 4.2.1 Efficiency vs load



4.2.4 Input current vs load

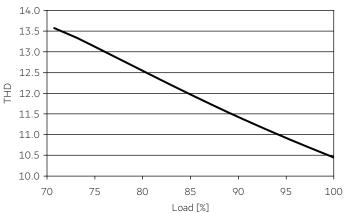


4.2.2 Power factor vs load

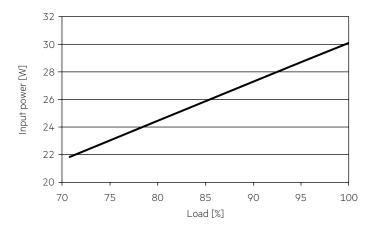


4.2.5 THD vs load

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

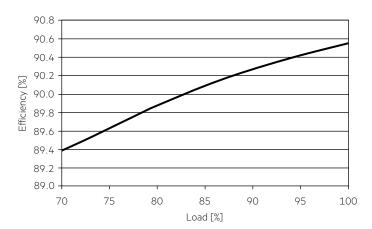


4.2.3 Input power vs load

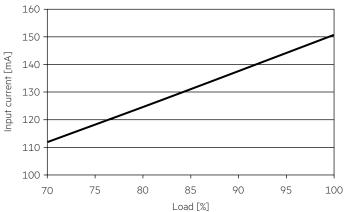


## 4.3 Diagrams LC 30W 700mA fixC SR SNC2

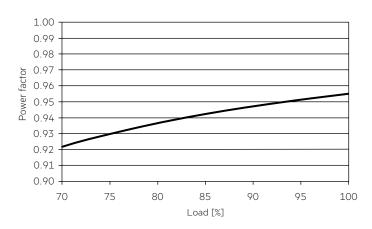
## 4.3.1 Efficiency vs load



4.3.4 Input current vs load

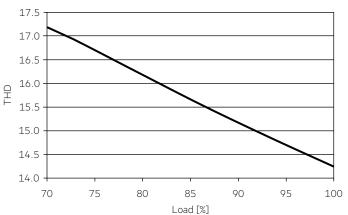


4.3.2 Power factor vs load

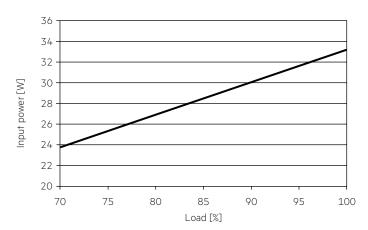


4.3.5 THD vs load

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



4.3.3 Input power vs load



#### 4.4 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>	Imax	Time
LC 30/350/86 fixC SR SNC2	55	70	85	110	50	65	80	100	8 A	40 µs
LC 30/500/54 fixC SR SNC2	55	70	85	110	50	65	80	100	8 A	40 µs
LC 30/700/43 fixC SR SNC2	55	70	85	110	50	65	80	100	8 A	40 µs

# 4.5 Harmonic distortion in the mains supply (at 230 V / 50 Hz and full load) $\cdot$

in %

	THD	3.	5.	7.	9.	11.
LC 30/350/86 fixC SR SNC2	< 15	< 15	< 5	< 4	< 3	< 3
LC 30/500/54 fixC SR SNC2	< 15	< 15	< 5	< 4	< 3	< 3
LC 30/700/43 fixC SR SNC2	< 18	< 15	< 5	< 4	< 3	< 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 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 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.

#### 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  $_{\rm DC}$  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  $2M\Omega$ .

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  $\underline{www.tridonic.com} \rightarrow \mathsf{Technical}$  Data

Guarantee conditions at  $\underline{www.tridonic.com} \rightarrow Services$ 

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