# **TRIDONIC**

# Compact fixed output







#### Driver LC 40W 900/1050mA fixC SR SNC2

**ESSENCE** series

#### **Product description**

- Independent LED Driver with cable clamps
- Max. output power 40 W
- Output current 900 or 1,050 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**

- 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  $\ensuremath{\mathtt{3}}$ 





Compact fixed output

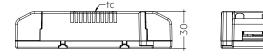
# | P20 **SELV** □ ( **F** ( **R** ( **R** ) **R** ( **F** ( **R** ) **R** ( **R** )

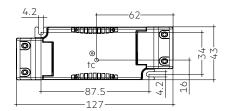
# Driver LC 40W 900/1050mA fixC SR SNC2

**ESSENCE** series

#### Technical data

220 – 240 V	Rated supply voltage
198 – 264 V	AC voltage range
Hz, full load) < 450 μA	eakage current (at 230 V, 50 Hz, full load)
50/60 Hz	Mains frequency
320 V AC, 1 h	Overvoltage protection
1) ≤ 20 %	THD (at 230 V, 50 Hz, full load)
d) ≤ 20 %	THD (at 230 V, 50 Hz, min. load)
± 7.5 %	Output current tolerance®
t full load <sup>®</sup> ± 25 %	Typ. output LF current ripple at full load®
full load) ≤ 0.5 s	Turn on time (at 230 V, 50 Hz, full load)
full load) ≤ 0.5 s	Furn off time (at 230 V, 50 Hz, full load)
0 s	Hold on time at power failure
-20 +50 °C	Ambient temperature ta
e-time 50,000 h) 40 °C	Ambient temperature ta (at life-time 50,000 h)
-40 +80 °C	Storage temperature ts
127 x 43 x 30 mm	Dimensions L x W x H
$\begin{array}{lll} \text{(i)} & \leq 20 \text{ \%} \\ \text{(d)} & \leq 20 \text{ \%} \\ & \pm 7.5 \text{ \%} \\ \text{(at full load)} & \pm 25 \text{ \%} \\ \text{(full load)} & \leq 0.5 \text{ S} \\ \text{(full load)} & \leq 0.5 \text{ S} \\ \text{(o)} & \text$	THD (at 230 V, 50 Hz, full load) THD (at 230 V, 50 Hz, min. load) Dutput current tolerance® Typ, output LF current ripple at full load® Turn on time (at 230 V, 50 Hz, full load) Turn off time (at 230 V, 50 Hz, full load) Hold on time at power failure Ambient temperature ta Ambient temperature ta (at life-time 50,000 h) Storage temperature ts





# Ordering data

Туре	Article	Packaging,	Packaging,	Packaging,	Weight per
туре	number	carton	low volume	high volume	pc.
LC 40/900/45 fixC SR SNC2	87500762	14 pc(s).	364 pc(s).	2,548 pc(s).	0.113 kg
LC 40/1050/39 fixC SR SNC2	87500763	14 pc(s).	364 pc(s).	2,548 pc(s).	0.113 kg

#### Specific technical data

Specific recilinear data															
Туре	Output current®	Typ. rated current		Typ. power consumption		λ at	,	λ at min.	,						Max. casing temperature to
	current	(at 230 V, 50 Hz, full	power			Tull load	load <sup>®</sup>	IUdu					current at	current at min. load®	'
		load)		load)											
LC 40/900/45 fixC SR SNC2	900 mA	0.220 A	46 W	45.0 W	24.3 – 40.5 W	0.95	90 %	0.90C	88 %	27 V	45 V	60 V	1,260 mA	1,450 mA	80 °C
LC 40/1050/39 fixC SR SNC2	1050 mA	0.220 A	47 W	45.5 W	24.2 - 41.0 W	0.95	90 %	0.90C	88 %	23 V	39 V	60 V	1.470 mA	1.700 mA	85 °C

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

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

 $<sup>\</sup>ensuremath{^{\mathfrak{D}}}$  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 40/900/45 fixC SR SNC2	tc	70 °C <sup>⊕</sup>	80 °C <sup>⊕</sup>							
	Life-time	50,000 h	30,000 h							
LC 40/1050/39 fixC SR SNC2	tc	75°C <sup>®</sup>	85 °C <sup>™</sup>							
Le 40, 1030/37 11XC 3R 314C2	Life-time	50,000 h	30,000 h							

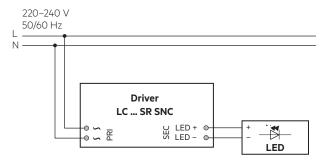
<sup>&</sup>lt;sup>®</sup> Test result at max. output voltage.

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

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

#### 3. Installation / wiring

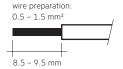
#### 3.1 Circuit diagram



# 3.2 Wiring type and cross section

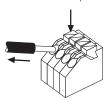
The wiring can be in stranded wires with ferrules or solid with a cross section of 0.5–1.5 mm². Strip 8.5–9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals.

Use one wire for each terminal connector only.



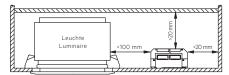
#### 3.3 Release of the wiring

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. 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.).

### 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

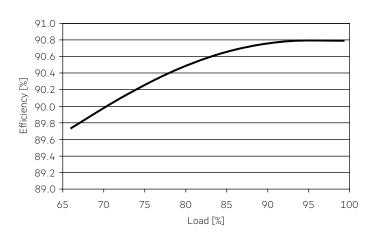
The LED module and all contact points within the wiring must be sufficiently insulated against 3 kV surge voltage.

Air and creepage distance must be maintained.

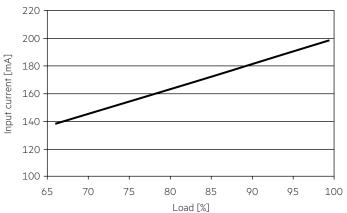
# 4. Electrical values

# 4.1 Diagrams LC 40W 900mA fixC SR SNC2

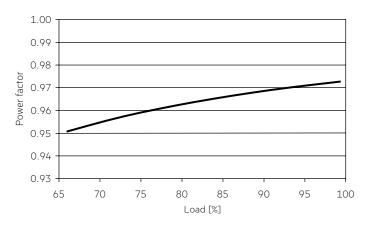
# 4.1.1 Efficiency vs load



# 4.1.4 Input current vs load

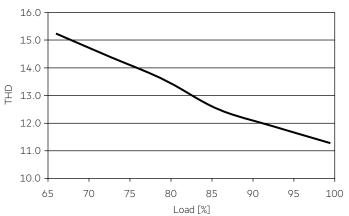


4.1.2 Power factor vs load

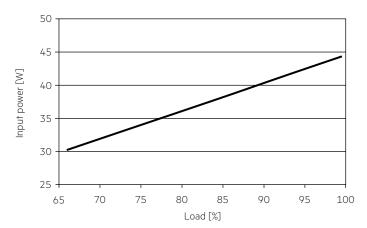


4.1.5 THD vs load



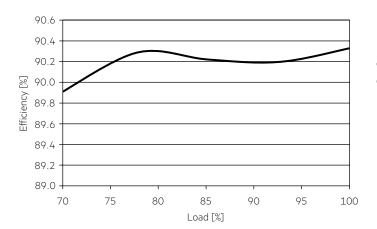


4.1.3 Input power vs load

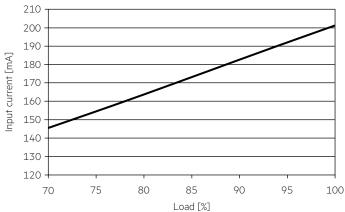


# 4.2 Diagrams LC 40W 1050mA fixC SR SNC2

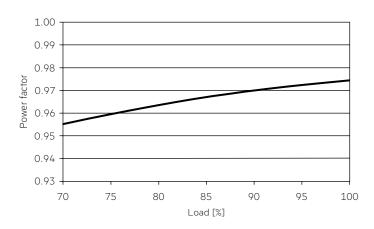
# 4.2.1 Efficiency vs load



# 4.3.4 Input current vs load

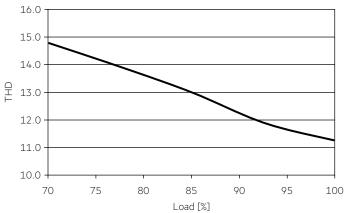


# 4.3.2 Power factor vs load

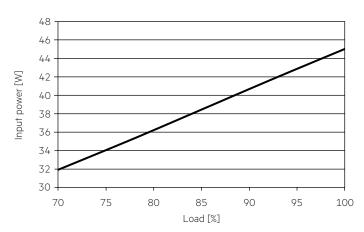


4.3.5 THD vs load

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



4.3.3 Input power vs load



#### 4.3 Maximum loading of automatic circuit breakers

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20	Inrush	n 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 40/900/45 fixC SR SNC2	35	50	65	75	28	40	52	60	10 A	100 µs
LC 40/1050/39 fixC SR SNC2	35	50	65	75	28	40	52	60	10 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 40/900/45 fixC SR SNC2	< 15	< 15	< 5	< 4	< 3	< 3
LC 40/1050/39 fixC SR SNC2	< 15	< 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  $2\,{\rm M}\Omega$ .

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 <u>www.tridonic.com</u> → Technical Data

Guarantee conditions at <u>www.tridonic.com</u> → Services

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