Driver LC 20W 350mA fixC SR SNC

ESSENCE series

Product description

- Independent driver with strain-relief housing
- Extra flat housing for constrained installation conditions (small ceiling cut outs and low ceiling voids)
- Max. output power 18.9 W
- Output current 350 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)

Standards, page 3
Wiring diagrams and installation examples, page 4

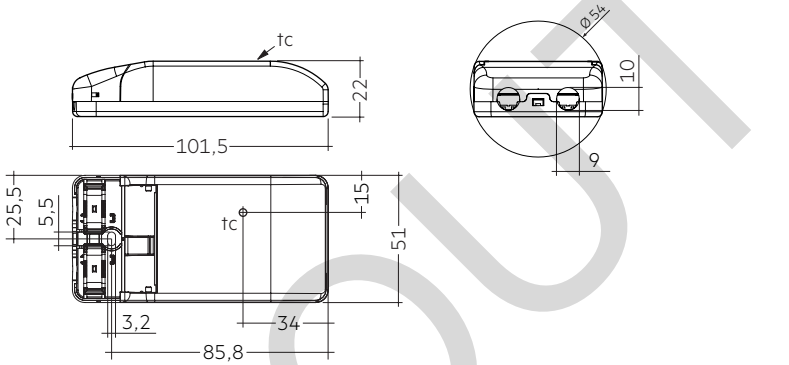
IP20 SELV RoHS

Driver LC 20W 350mA fixC SR SNC

ESSENCE series

Technical data

Rated supply voltage	220 – 240 V
Input voltage, AC	198 – 264 V
λ at full load[①]	0.9C
λ at min. load[①]	0.87C
Mains frequency	50/60 Hz
Overvoltage protection	320 V AC, 1 h
Leakage current (at 230 V, 50 Hz, full load)	< 200 µA
THD (at 230 V, 50 Hz, full load)	≤ 20 %
THD (at 230 V, 50 Hz, min. 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	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	101.5 x 51 x 22 mm



Ordering data

Type	Article number	Packaging, carton	Packaging, low volume	Packaging, high volume	Weight per pc.
LC 20W 350mA fixC SR SNC	**87500632**	20 pc(s).	380 pc(s).	3,420 pc(s).	0.076 kg

Specific technical data

Type	Output current[③]	Typ. rated current (at 230 V, 50 Hz, full load)	Max. input power	Typ. power consumption (at 230 V, 50 Hz, full load)	Output power	Efficiency at full load[①]	Efficiency at min. load[①]	Min. forward voltage[①]	Max. forward voltage[①]	Max. output voltage	Max. peak output current at full load[②]	Max. peak output current at min. load[②]	Max. casing temperature tc
LC 20W 350mA fixC SR SNC	350 mA	0.11 A	21.5 W	21.3 W	14 – 18.9 W	87.5 %	86.5 %	40 V	54 V	60 V	450 mA	500 mA	80 °C

[①] Test result at 230 V, 50 Hz, 25 °C.

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

[③] Output current is mean value.

1. Standards

EN 55015
EN 60598-1
EN 61000-3-2
EN 61000-3-3
EN 61347-1
EN 61347-2-13
EN 61547
EN 62384

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

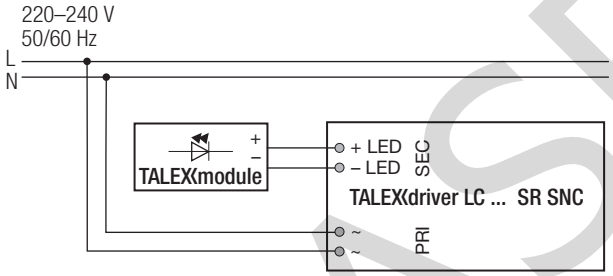
Expected life-time

Type	ta	40 °C	50 °C	
LC 20W 350mA fixC SR SNC	tc	70 °C	80 °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 %.

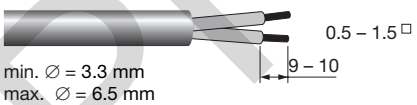
3. Installation / wiring

3.1 Circuit diagram



3.2 Wiring type and cross section

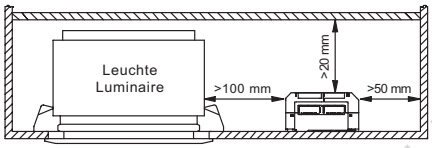
The wiring can be in stranded wires with ferrules or solid. For perfect function of the cage clamp terminals the strip length should be 9 – 10 mm for the input terminal.
The max. torque at the clamping screw (M3) is 0.2 Nm.



The following cable types are approved and recommended by Tridonic:
- RVVB 2x0.5 mm²
- H03VVH2-F2G0.75
- RVVB 2x1.0 mm²
- RVV 2x1.5 mm²

3.3 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.



3.4 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.).

3.5 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.

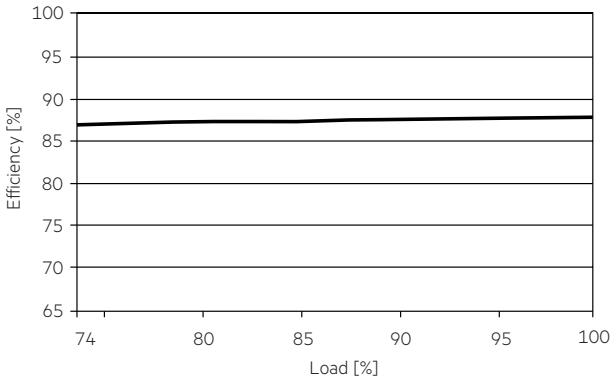
3.6 Replace LED module

1. Mains off
2. Remove LED module
3. Wait for 30 seconds
4. Connect LED module again

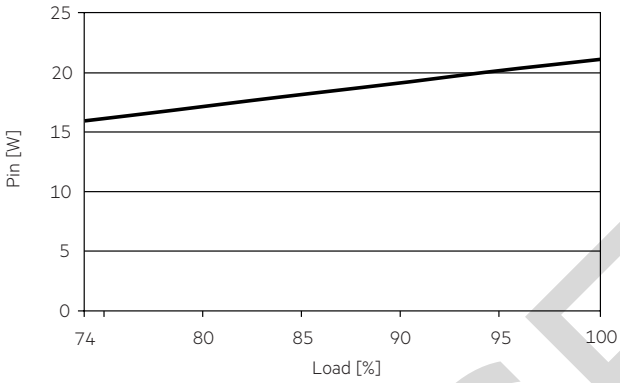
Hot plug-in or secondary switching of LEDs is not permitted and may cause a very high current to the LEDs.

4. Electrical values

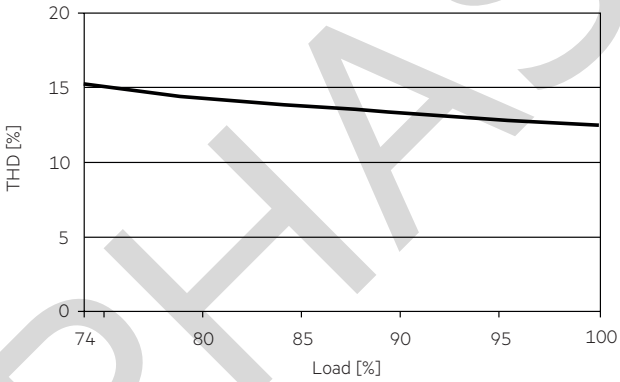
4.1 Efficiency vs load



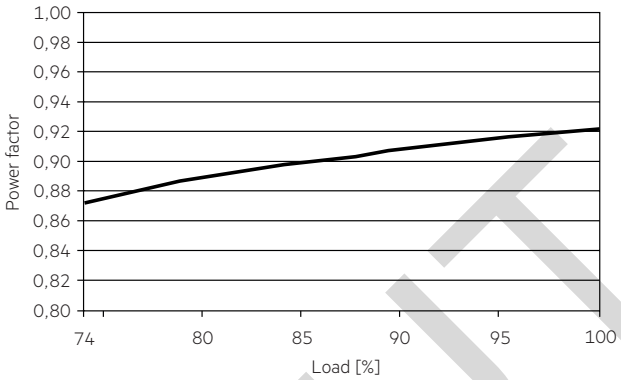
4.2 Input power vs load



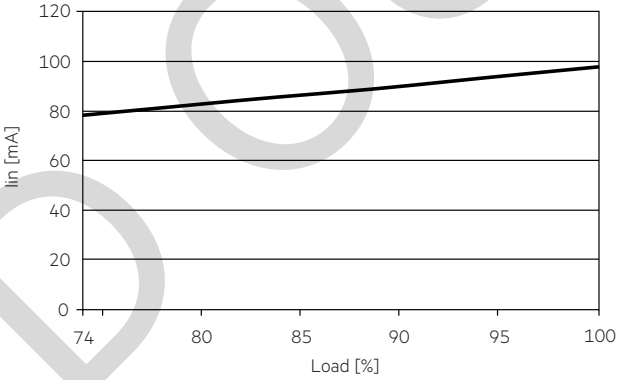
4.3 THD vs load



4.4 Power factor vs load



4.5 Input current vs load



4.6 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 20W 350mA fixC SR SNC	60	80	100	120	50	65	80	100	2.88 A	61 µs

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

	THD	3.	5.	7.	9.	11.
LC 20W 350mA fixC SR SNC	< 20	< 10	< 5	< 5	< 4	< 3

5. Functions

5.1 Overload protection

If the output voltage range is exceeded the LED Driver will protect itself. After elimination of the overload the nominal operation is restored automatically.

5.2 Short-circuit behaviour

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

5.3 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 open due to a failure.
In no-load operation the output voltage will not exceed the specified max. output voltage (see page 2).

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 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.

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.