

IP20 SELV 

Driver LCI 20 W 350/500/700 mA TEC C

TEC series

Product description

- Fixed output built-in LED Driver
- Constant current LED Driver
- Output current 350, 500 or 700 mA
- Max. output power 20 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

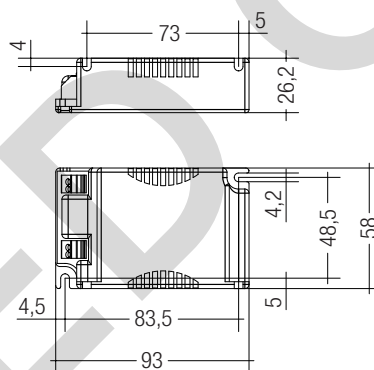
- Casing: polycarbonat, white
- Type of protection IP20

Functions

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

Technical data

Rated supply voltage	220 – 240 V
AC voltage range	198 – 264 V
Current at 50 Hz 230 V	0.1 A
Mains frequency	50 / 60 Hz
Overvoltage protection	300 V AC, 1 h
Max. input power	24 W
Output power	20 W
THD (at 230 V, 50 Hz, full load)	< 20 %
Output current tolerance®	± 7.5 %
Typ. current ripple (at 230 V, 50 Hz, full load)	± 40 %
Turn on time (at 230 V, 50 Hz, full load)	≤ 0.7 s
Turn off time (at 230 V, 50 Hz, full load)	≤ 0.7 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
Max. casing temperature tc	80 °C
Storage temperature ts	-40 ... +80 °C
Dimensions L x W x H	93 x 58 x 26.2 mm



Ordering data

Type	Article number	Packaging, carton	Packaging, low volume	Packaging, high volume	Weight per pc.
LCI 20W 350mA TEC C	87500079	20 pc(s).	280 pc(s).	3,360 pc(s).	0.081 kg
LCI 20W 500mA TEC C	87500188	20 pc(s).	280 pc(s).	3,360 pc(s).	0.080 kg
LCI 20W 700mA TEC C	87500190	20 pc(s).	280 pc(s).	3,360 pc(s).	0.081 kg



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Wiring diagrams and installation examples, page 4

Specific technical data

Type	Output current ^①	Typ. power consumption (at 230 V, 50 Hz, full load)	Power factor at full load ^①	Efficiency at full load ^①	Power factor at min. 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 ^{①②}	Max. peak output current at min. load ^{①②}
LCI 20W 350mA TEC C	350 mA	23.0 W	0.95	86 %	0.89	83 %	26 V	57 V	66 V	660 mA	810 mA
LCI 20W 500mA TEC C	500 mA	23.0 W	0.95	86 %	0.87	82 %	18 V	40 V	48 V	940 mA	1,120 mA
LCI 20W 700mA TEC C	700 mA	23.5 W	0.95	85 %	0.86	80 %	13 V	29 V	35 V	1,330 mA	1,580 mA

^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
EN 62384

Overload protection

If the output voltage range is exceeded the LED Driver reduces the LED output current. 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 LED Driver is switched off. It restarts automatically. The temperature protection is activated between 6 °C and 12 °C above $t_{c \max}$.

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.

No-load operation

The LED Driver works in constant voltage mode. In no-load operation the output voltage will not exceed the specified max. output voltage (see page 1).

Installation instructions

The LED module and all contact points within the wiring must be sufficiently insulated against 3.5 kV surge voltage.
Air and creepage distance must be maintained.

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.

Expected life-time

Type	t_a	40 °C	50 °C	60 °C
LCI 20W xxxmA TEC C	t_c	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 %.

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 ²	1.5 mm ²	1.5 mm ²	2.5 mm ²	1.5 mm ²	1.5 mm ²	1.5 mm ²	2.5 mm ²	I_{max}	Time
LCI 20W 350mA TEC C	60	90	120	140	30	45	60	70	10 A	100 µs
LCI 20W 500mA TEC C	60	90	120	140	30	45	60	70	10 A	100 µs
LCI 20W 700mA TEC C	60	90	120	140	30	45	60	70	10 A	100 µs

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

	THD	3.	5.	7.	9.	11.
LCI 20W 350mA TEC C	20	6	2	3	2	2
LCI 20W 500mA TEC C	20	6	2	3	2	2
LCI 20W 700mA TEC C	20	5	2	3	3	2

Glow wire test

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

Mounting of device

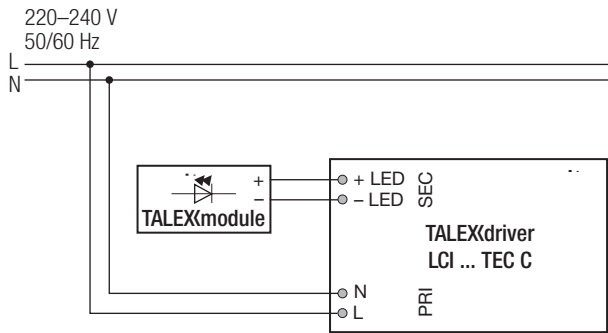
Max. torque for fixing: 0.5 Nm/M4

Storage conditions

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 (t_a) before they can be operated.

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

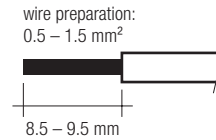
Guarantee conditions at www.tridonic.com → Services

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 stranded wires with ferrules or rigid wires with a cross section of 0.5 – 1.5 mm².

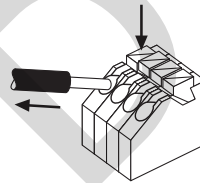
Strip 8.5 – 9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals (WAGO 250).

**Wiring instructions**

- 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)
- The maximum length of output wires is 2 m.
- Secondary switching is not permitted.
- Incorrect wiring can damage LED modules.
- The wiring must be protected against short circuits to earth (sharp edged metals parts, metal cable clips, louver, etc.)

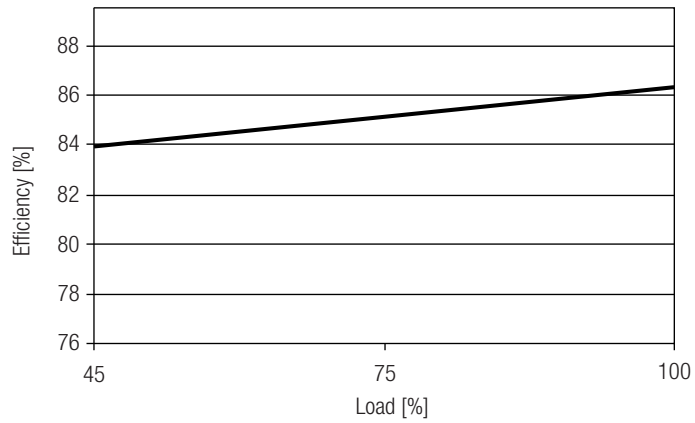
Release of the wiring

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

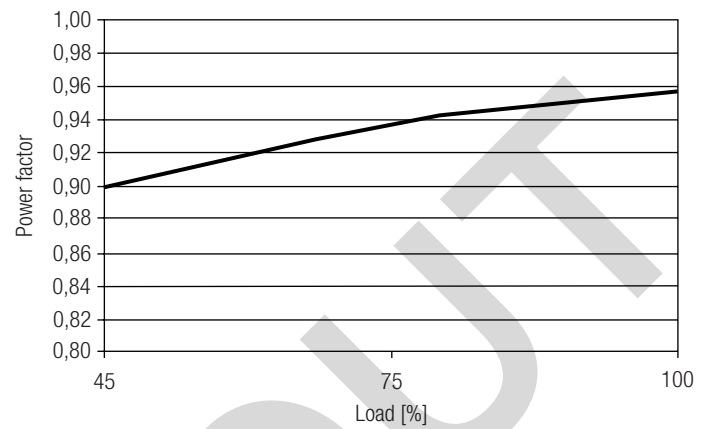


Diagrams LCI 20W 350mA TEC C

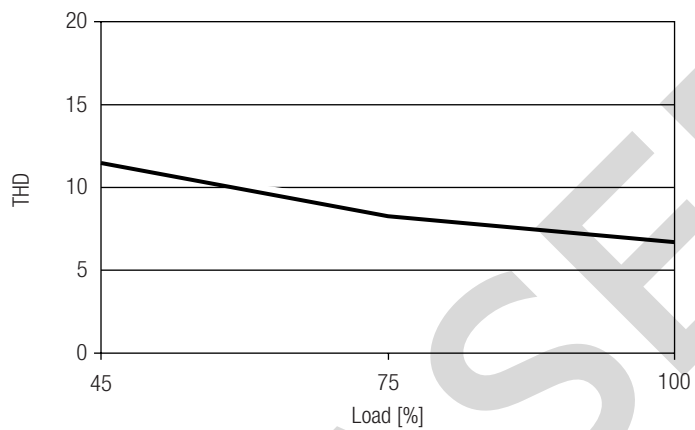
Efficiency vs load



Power factor vs load

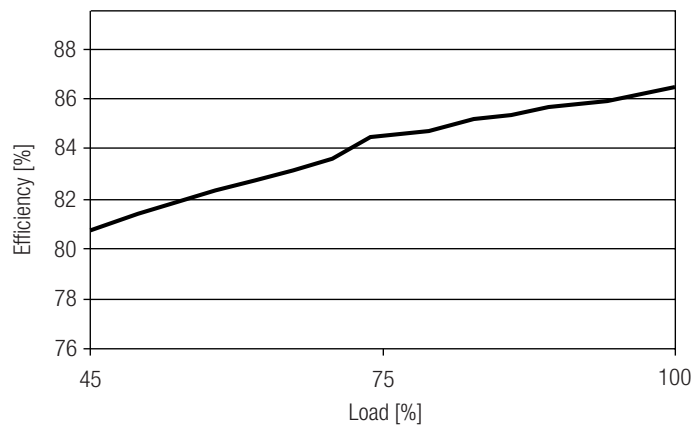


THD vs load

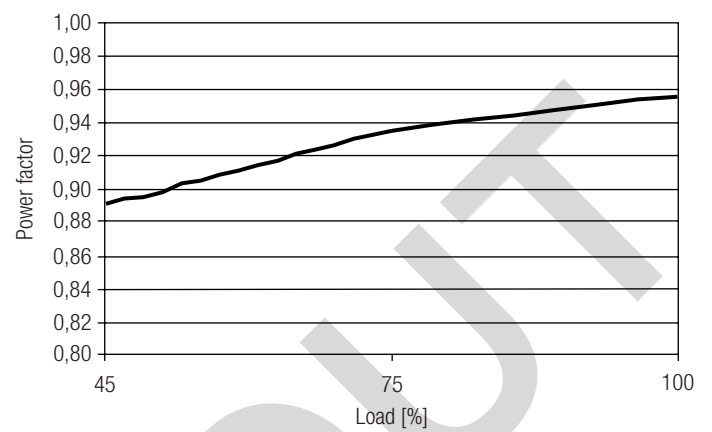


Diagrams LCI 20W 500mA TEC C

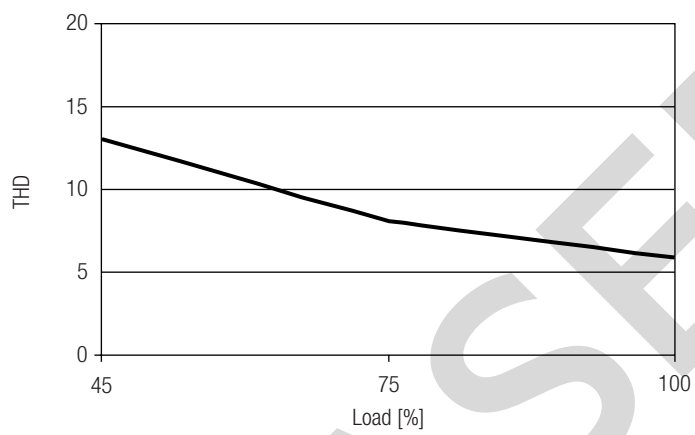
Efficiency vs load



Power factor vs load

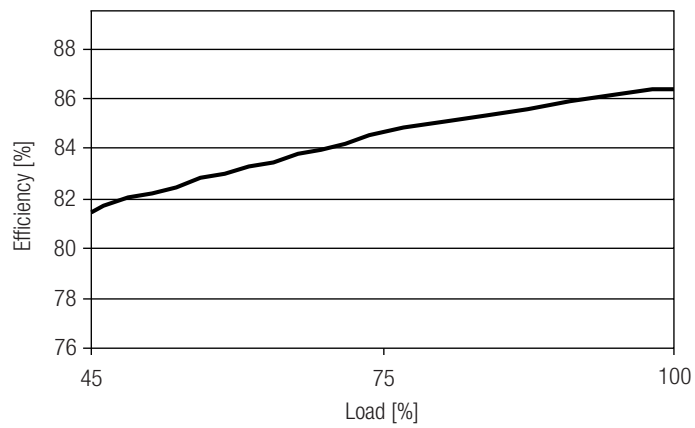


THD vs load

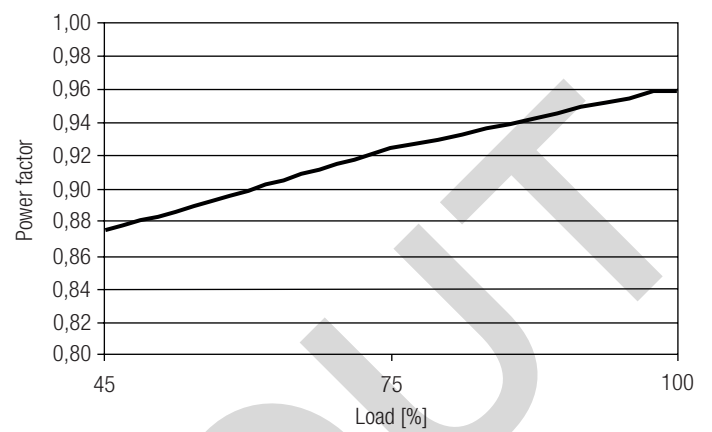


Diagrams LCI 20W 700mA TEC C

Efficiency vs load



Power factor vs load



THD vs load

