



### Driver LCI 20 W 350/500/700 mA TEC SR

TEC series

#### Product description

- Independent fixed output 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
- KC certificate for LCI 20W 350mA TEC SR and LCI 20W 500mA TEC SR
- For luminaires of protection class I and protection class II
- For luminaires with M and MM as per EN 60598, VDE 0710 and VDE 0711
- Temperature protection as per EN 61347-2-13 C5e
- 5-year guarantee

#### Properties

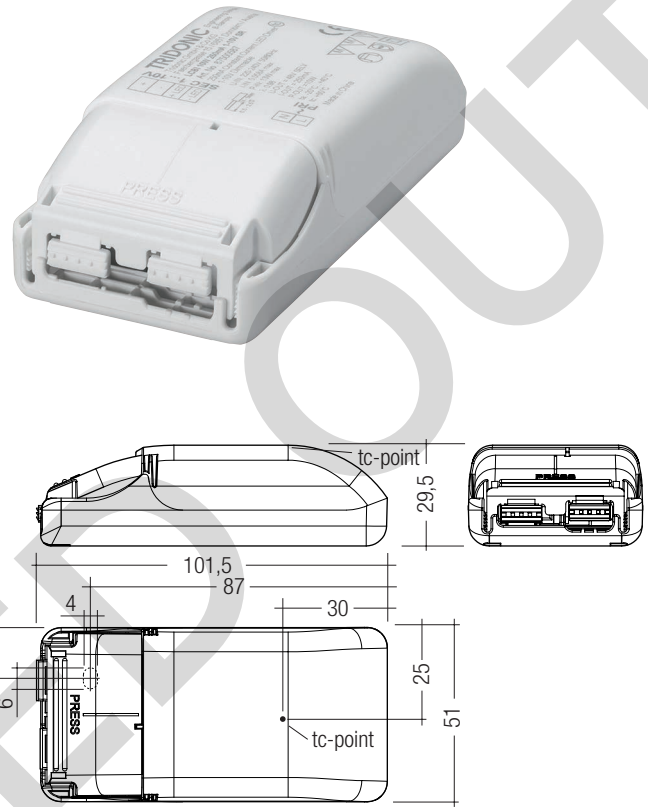
- Casing: polycarbonat, white
- Type of protection IP20

#### 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	01 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	0 s
Ambient temperature $t_a$	-20 ... +50 °C
Ambient temperature $t_a$ (at life-time 50,000 h)	40 °C
Max. casing temperature $t_c$	75 °C
Storage temperature $t_s$	-40 ... +80 °C
Dimensions L x W x H	101.5 x 51 x 29.5 mm



#### Ordering data

Type	Article number	Packaging, carton	Packaging, low volume	Packaging, high volume	Weight per pc.
LCI 20W 350mA TEC SR	87500187	20 pc(s).	280 pc(s).	3,360 pc(s).	0.084 kg
LCI 20W 500mA TEC SR	87500189	20 pc(s).	280 pc(s).	3,360 pc(s).	0.085 kg
LCI 20W 700mA TEC SR	87500191	20 pc(s).	280 pc(s).	3,360 pc(s).	0.085 kg



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**Specific technical data**

Type	Output current <sup>①</sup>	Typ. power consumption (at 230 V, 50 Hz, full load)	Power factor at full load <sup>①</sup>	Efficiency at full load <sup>①</sup>	Power factor at min. load <sup>①</sup>	Efficiency at min. load <sup>①</sup>	Min. forward voltage <sup>①</sup>	Max. forward voltage <sup>①</sup>	Max. output voltage	Max. peak output current at full load <sup>①②</sup>	Max. peak output current at min. load <sup>①②</sup>
<b>LCI 20W 350mA TEC SR</b>	350 mA	23.0 W	0.95	86 %	0.89C	83 %	26 V	57 V	66 V	660 mA	810 mA
<b>LCI 20W 500mA TEC SR</b>	500 mA	23.0 W	0.95	86 %	0.87C	82 %	18 V	40 V	46 V	940 mA	1,120 mA
<b>LCI 20W 700mA TEC SR</b>	700 mA	23.5 W	0.95	85 %	0.86C	80 %	13 V	29 V	33 V	1,330 mA	1,580 mA

<sup>①</sup> Test result at 230 V, 50 Hz.

<sup>②</sup> The trend between min. and full load is linear.

<sup>③</sup> Output current is mean value.

PHASED OUT

**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

**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 elimination of the short circuit the nominal operation is restored 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 2).

**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 SR	$t_c$	65 °C	75 °C	x
	Life-time	50,000h	30,000h	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**

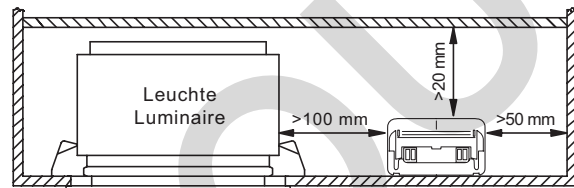
Automatic circuit breaker type	C10				C13				C16				C20				B10				B13				B16				B20				Inrush current	
	Installation Ø		1.5 mm <sup>2</sup>		1.5 mm <sup>2</sup>		1.5 mm <sup>2</sup>		2.5 mm <sup>2</sup>		1.5 mm <sup>2</sup>		1.5 mm <sup>2</sup>		1.5 mm <sup>2</sup>		2.5 mm <sup>2</sup>		1.5 mm <sup>2</sup>		1.5 mm <sup>2</sup>		1.5 mm <sup>2</sup>		2.5 mm <sup>2</sup>		$I_{max}$	Time						
LCI 20W 350mA TEC SR	60		90		120		140		30		45		60		70		10 A		100 µs															
LCI 20W 500mA TEC SR	60		90		120		140		30		45		60		70		10 A		100 µs															
LCI 20W 700mA TEC SR	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 SR	LCI 20W 500mA TEC SR	LCI 20W 700mA TEC SR	LCI 20W 350mA TEC SR	LCI 20W 500mA TEC SR	LCI 20W 700mA TEC SR	LCI 20W 350mA TEC SR	LCI 20W 500mA TEC SR	LCI 20W 700mA TEC SR	
LCI 20W 350mA TEC SR	20	6	2	3	2	2	2	2	2	2	2
LCI 20W 500mA TEC SR	20	6	2	3	2	2	2	2	2	2	2
LCI 20W 700mA TEC SR	20	5	2	3	3	2	2	2	2	2	2

**Fixing conditions**

Dry, acidfree, oilfree, fatfree. It is not allowed to exceed the maximum ambient temperature ( $t_a$ ) stated on the device. Minimum distances stated below are recommendations and depend on the actual luminaire. Is not suitable for fixing in corner.



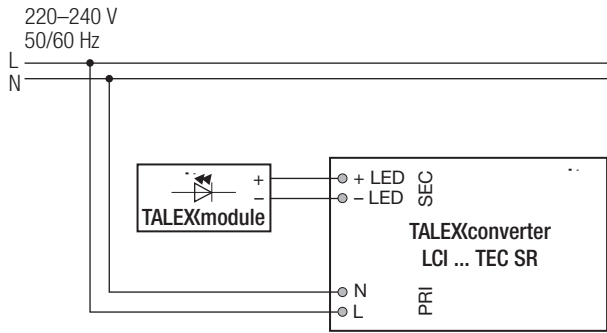
**Storage conditions**

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**



**Glow wire test**

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

**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<sub>DC</sub> 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<sub>AC</sub> (Or 1.414 x 1500 V<sub>DC</sub>). To avoid damage to the electronic devices this test must not be conducted.

**Additional information**

Additional technical information at [www.tridonic.com](http://www.tridonic.com) → Technical Data

Guarantee conditions at [www.tridonic.com](http://www.tridonic.com) → Services

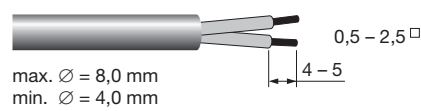
Life-time declarations are informative and represent no warranty claim. No warranty if device was opened.

**Wiring type and cross section**

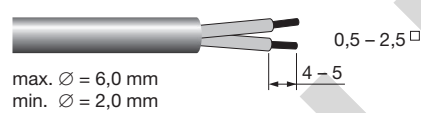
The wiring can be in stranded wires with ferrules or solid. For perfect function of the cage clamp terminals the strip length should be 4 – 5 mm for the input terminal.

The max. torque at the clamping screw (M3) is 0.2 Nm.

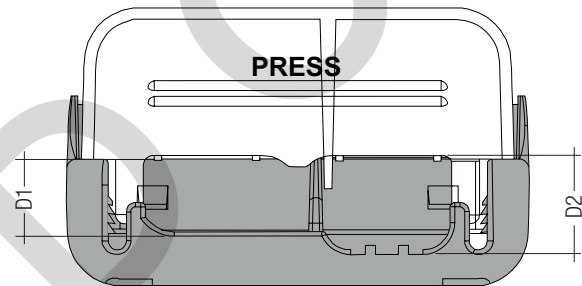
**Input terminal (D2)**



**Output terminal (D1)**



To get a proper working strain relief it is recommended that the cable jacket diameter of the side D2 is 2 mm bigger than the diameter of the side D1. (This can vary if the used cable jacket material varies from side D2 to D1 in pinching property).



Depending on the used flaps of the terminal following cable jacket diameter difference between the side D2 and D1 terminals is recommended:

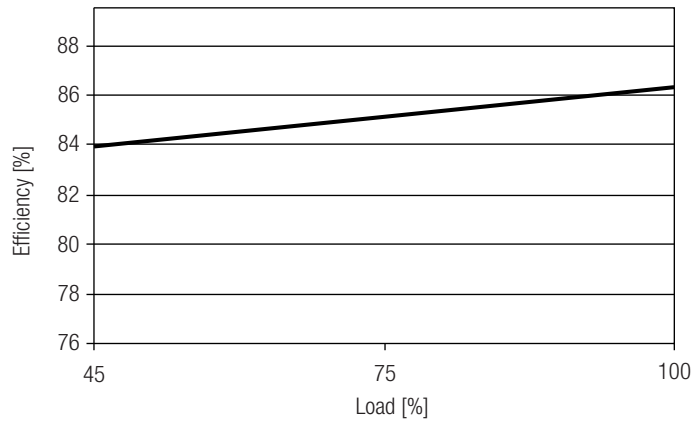
Side D1		Side D2		Difference D2 - D1
Housing bottom	Cover terminal	With flap	Without flap	
With flap	Without flap	With flap	Without flap	
x	-	x	-	3.5 mm
x	-	x	-	5.5 mm
x	-	-	x	3.5 mm
-	x	x	-	3.5 mm
-	x	-	x	1.5 mm
x	-	-	x	1.5 mm
-	x	x	-	1.5 mm
-	x	-	x	-0.5 mm

**Wiring instructions**

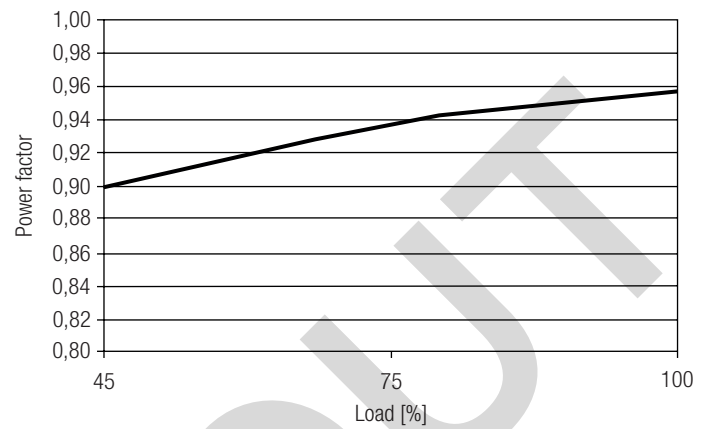
- All connections must be kept as short as possible to ensure good EMI behaviour
- Mains leads should be kept apart from LED Driver and other leads (ideally 5 – 10 cm distance)
- The maximum length of output wires is 2 m.
- Secondary switching is not permitted.
- Incorrect wiring can damage LED modules.
- The wiring must be protected against short circuits to earth (sharp edged metals parts, metal cable clips, louver, etc.)

Diagrams LCI 20W 350mA TEC SR

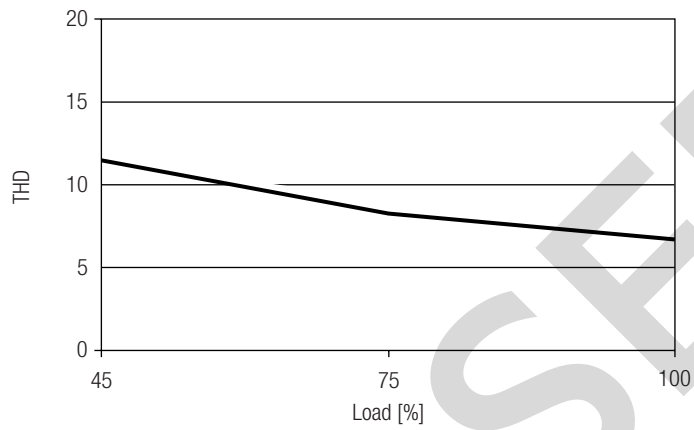
Efficiency vs load



Power factor vs load

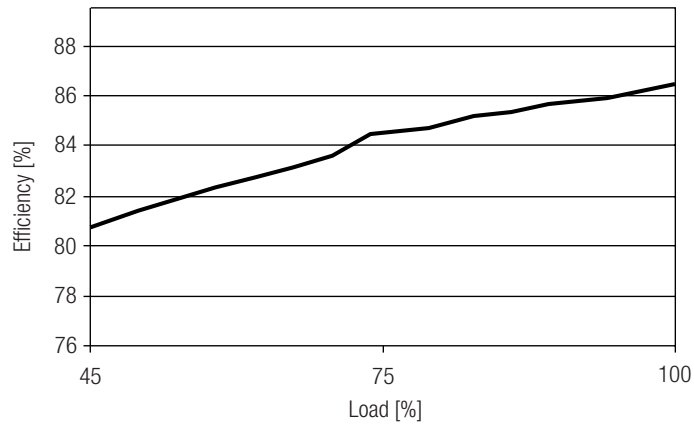


THD vs load

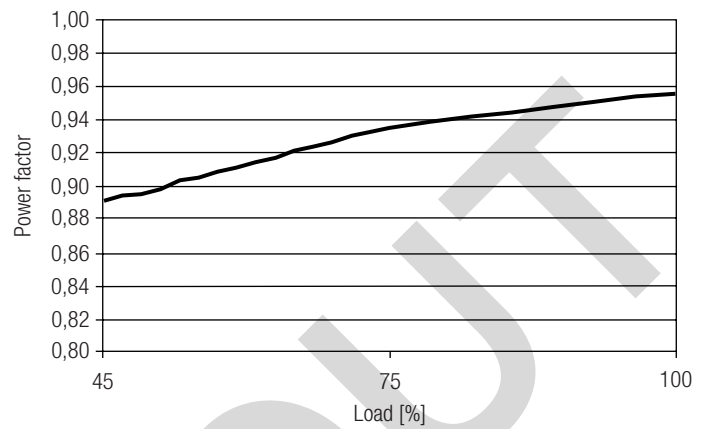


Diagrams LCI 20W 500mA TEC SR

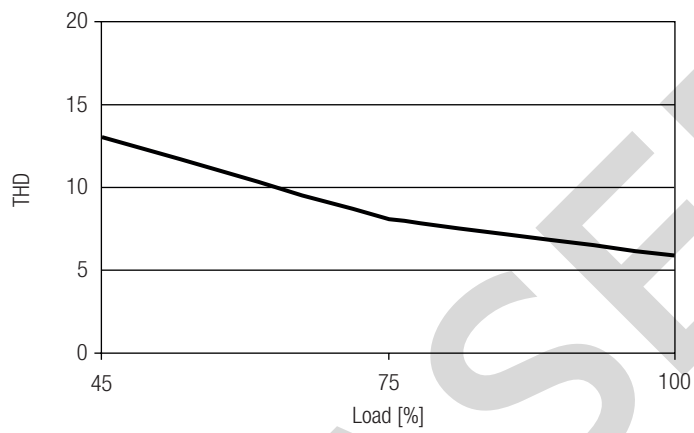
Efficiency vs load



Power factor vs load

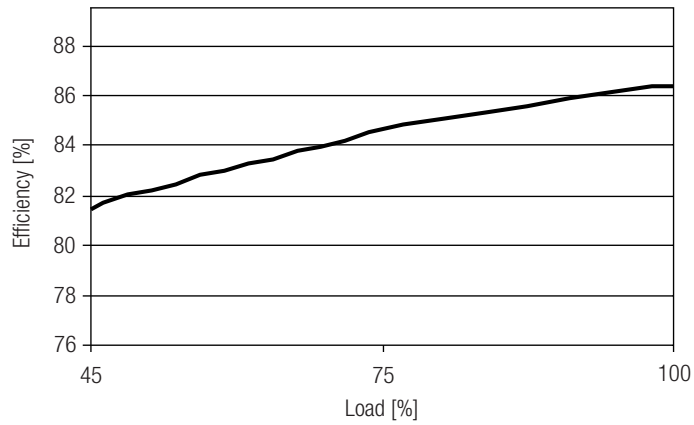


THD vs load

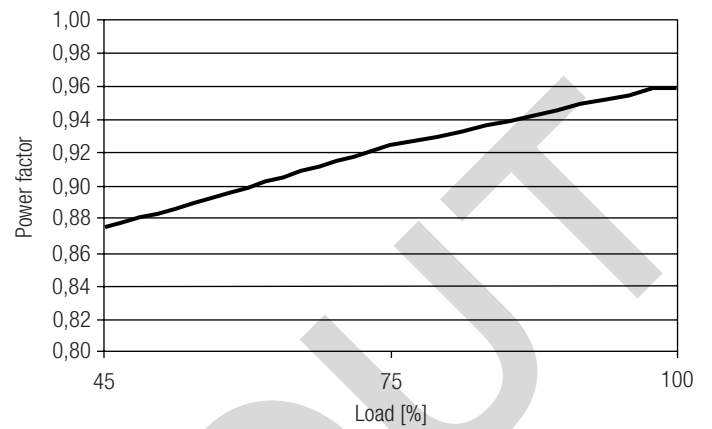


Diagrams LCI 20W 700mA TEC SR

Efficiency vs load



Power factor vs load



THD vs load

