



Driver LCA 18W 450mA phase-cut 22mm SR ADV

ADVANCED series

Product description

- Dimmable constant current LED driver (SELV)
- 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 W
- Output current 450 mA
- Dimmable via trailing edge phase dimmers
- Dimming range 5 to 100 % (depending on dimmer)
- For luminaires with M and MM as per EN 60598, VDE 0710 and VDE 0711
- 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



Standards, page 3

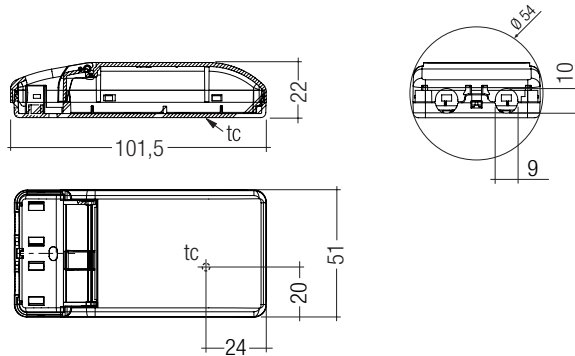
Wiring diagrams and installation examples, page 4

IP20 SELV         
RoHS

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Technical data

Rated supply voltage	220 – 240 V
AC voltage range	198 – 264 V
λ at full load ^①	0,9C
λ at min. load ^①	0,9C
Mains frequency	50 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 (at 230 V, 50 Hz, full load) ^②	± 7,5 %
Output current tolerance (at 230 V, 50 Hz, min. load) ^②	± 7,5 %
Typ. current ripple (at 230 V, 50 Hz, full load)	± 30 %
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 ta	-20 ... +50 °C
Ambient temperature ta (at life-time 50,000 h)	50 °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.
LCA 18W 450mA phase-cut 22mm SR ADV	87500407	20 pc(s).	380 pc(s).	3,420 pc(s).	0,079 kg

Specific technical data

Type	Output current ^② (at 230 V, 50 Hz, full load)	Typ. rated current (at 230 V, 50 Hz, full load)	Max. input power	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	Max. casing temperature tc
LCA 18W 450mA phase-cut 22mm SR ADV	450 mA	0,095 A	22,5 W	13,50 – 17,55 W	80 %	80 %	30 V	39 V	50 V	660 mA	85 °C

^① Test result at 230 V, 50 Hz without dimmer connected.

^② 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 will protect itself. After elimination of the overload the nominal operation is restored automatically.

Short-circuit behaviour

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

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

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.

Glow wire test

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

Expected life-time

Type	ta	50 °C	60 °C
LCA 18W 450mA phase-cut 22mm SR ADV	tc	85 °C	x
	Life-time	50,000 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	
									I _{max}	Time
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		
LCA 18W 450mA phase-cut 22mm SR ADV	50	65	80	100	50	65	80	100	1.5 A	60 µs

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

	THD	3.	5.	7.	9.	11.
LCA 18W 450mA phase-cut 22mm SR ADV	< 20	< 9	< 1	< 2	< 2	< 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

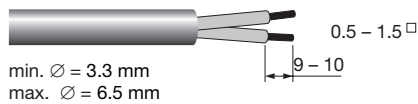
1. Mains off
2. Remove LED module
3. Wait for 17 seconds
4. Connect LED module again

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

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

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.
- Secondary switching is not permitted.
- Incorrect wiring can damage 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.).

Additional information

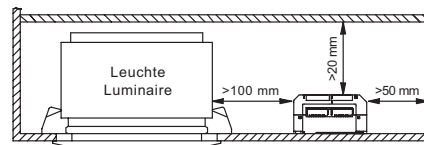
Additional technical information at www.tridonic.com → Technical Data

Guarantee conditions at www.tridonic.com → Services

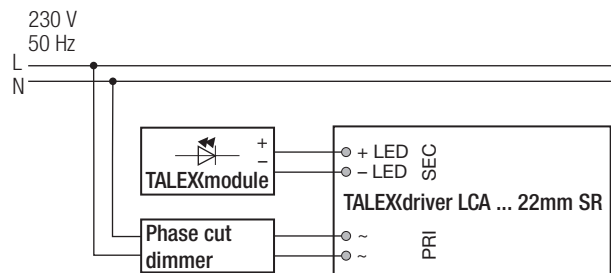
Life-time declarations are informative and represent no warranty claim.
No warranty if device was opened.

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.



Wiring diagram



Isolation and electric strength testing of luminaires

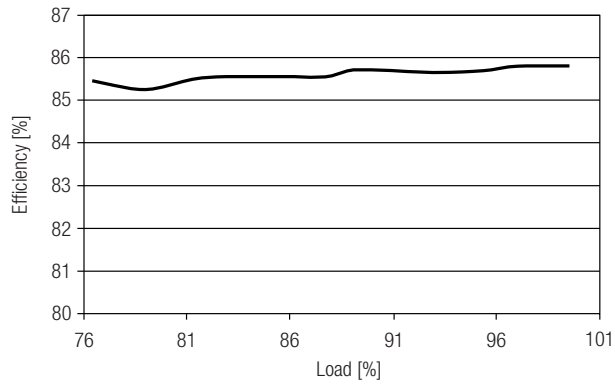
Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

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.

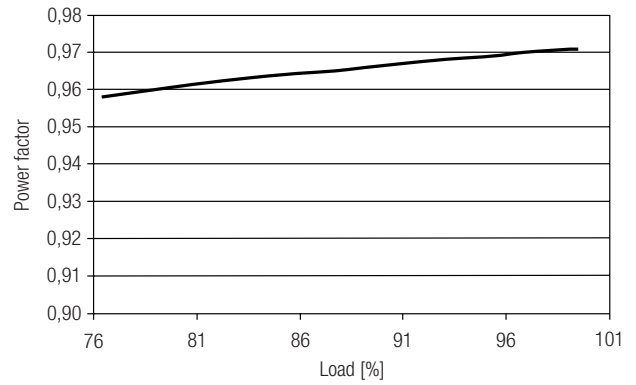
As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1500 V_{AC} (or 1.414 x 1500 V_{DC}). To avoid damage to the electronic devices this test must not be conducted.

Diagrams LCA 18W 450mA phase-cut 22mm SR ADV

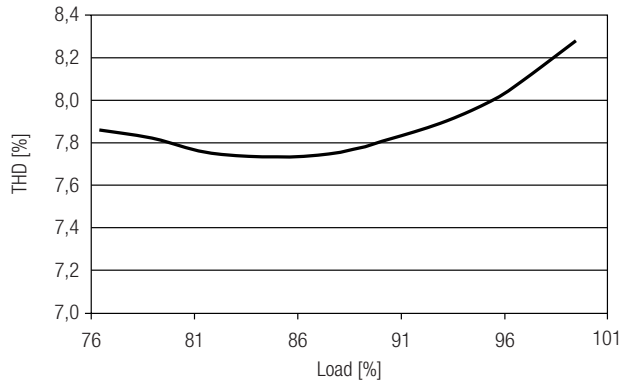
Efficiency vs load



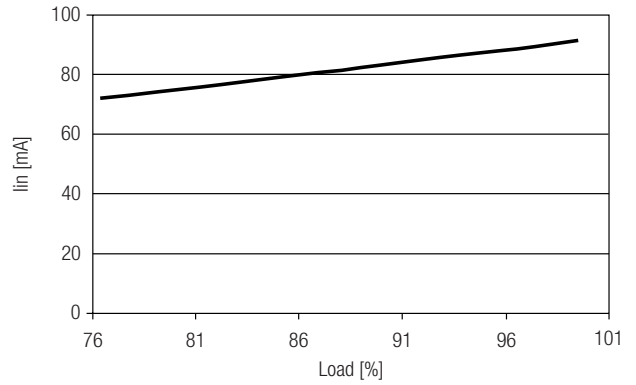
Power factor vs load



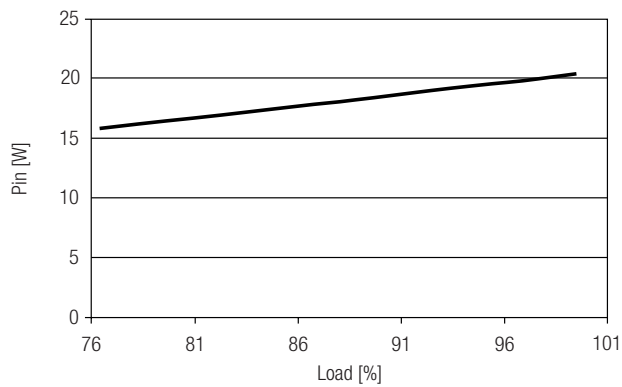
THD vs load



Input current vs load



Input power vs load



Phase cut dimming curve (depends dimmer)
Output current vs dimming

