



#### Driver LC 18W 350mA UNV C ADV

Compact advanced series (Universal voltage)

#### Product description

- Built-in constant current LED Driver
- For dry and damp location
- For luminaires of protection class I and protection class II
- Temperature protection as per EN 61347-2-13 C5e
- UL and ENEC certified
- Max. output power 18 W
- Up to 84 % efficiency
- Nominal life-time up to 50,000 h
- 5-year guarantee

#### Housing properties

- Casing: plastic, white
- Potted version
- Type of protection IP54

#### Interfaces

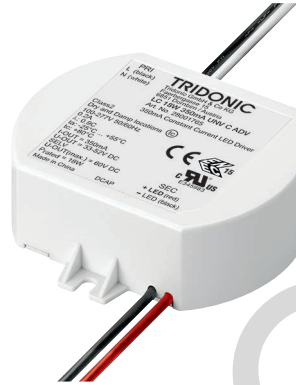
- Single wires with tinned wire ends

#### Functions

- Overtemperature protection
- Overload protection
- Short-circuit protection
- No-load protection
- Burst protection voltage 1 kV
- Surge protection voltage 1 kV (L to N)

#### Typical applications

- For linear/area lighting in office applications



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**Wiring diagrams and installation examples**, page 3

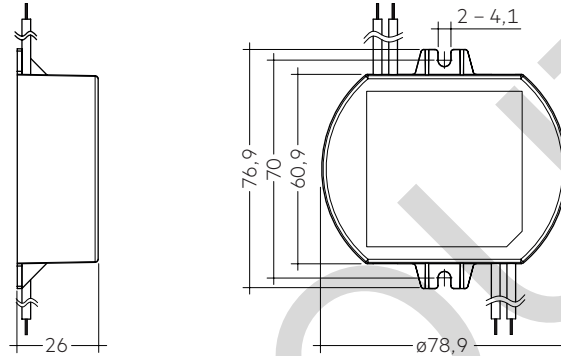
IP54 SELV      RoHS

### Driver LC 18W 350mA UNV C ADV

Compact advanced series (Universal voltage)

#### Technical data

Rated supply voltage	100 – 277 V
AC voltage range	90 – 305 V
Max. input current (at 277 V, 60 Hz, full load)	0.13 A
Max. input current (at 120 V, 60 Hz, full load)	0.3 A
Mains frequency	50 / 60 Hz
Overvoltage protection	320 V AC, 2 h
Max. input power	22.8 W
Typ. power consumption (at 230 V, 50 Hz, full load)	22.2 W
Min. output power	12 W
Max. output power	18 W
Typ. efficiency (at 230 V / 50 Hz / full load) <sup>①</sup>	84 %
$\lambda$ (at 230 V, 50 Hz, full load) <sup>②</sup>	0.9C
Output current <sup>②</sup>	350 mA
Output current tolerance <sup>②</sup>	± 5 %
Max. output current peak (non-repetitive)	720 mA
Typ. current ripple (at 230 V, 50 Hz, full load)	± 40 %
Min. forward voltage	33 V
Max. forward voltage	52 V
Max. output voltage	60 V
THD (at 230 V, 50 Hz, full load)	< 20 %
Starting time (at 230 V, 50 Hz, full load)	≤ 1 s
Turn off time (at 230 V, 50 Hz, full load)	≤ 0.4 s
Hold on time at power failure (output)	0 s
Max. casing temperature $t_c$	85 °C
Ambient temperature $t_a$	-20 ... +60 °C
Ambient temperature $t_a$ (at life-time 50,000 h)	55 °C
Storage temperature $t_s$	-20 ... +80 °C
Life-time	up to 50,000 h
Dimensions L x W x H	76.9 x 78.9 x 26.0 mm



#### Ordering data

Type	Article number	Packaging, carton	Packaging, pallet	Weight per pc.
LC 18W 350mA UNV C ADV	28001765	40 pc(s).	2,400 pc(s).	0.2 kg

<sup>①</sup> Test result at 350 mA.

<sup>②</sup> Output current is mean value.

## 1. Standards

EN 55015  
 EN 61000-3-2  
 EN 61000-3-3  
 IEC 61000-4-2  
 IEC 61000-4-3  
 IEC 61000-4-4  
 IEC 61000-4-5  
 IEC 61000-4-6  
 IEC 61000-4-8  
 IEC 61000-4-11

EN 61347-1  
 EN 61347-2-13  
 EN 61547  
 UL8750 with Class 2 output based on UL1310  
 FCC Part 15 Class B

### 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

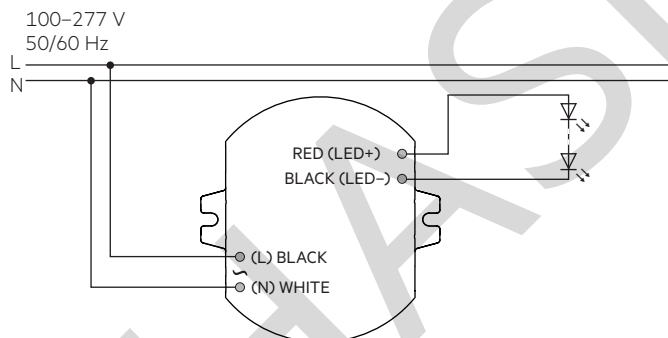
Expected life-time						
Type	ta	40 °C	45 °C	50 °C	55 °C	60 °C
LC 18W 350mA UNV C ADV	tc	65 °C	70 °C	75 °C	80 °C	85 °C
	Life-time	>100,000 h	100,000 h	75,000 h	50,000 h	35,000 h

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

The relation of tc to ta temperature depends also on the luminaire design. If the measured tc temperature is approx. 5 K below tc max., ta temperature should be checked and eventually critical components (e.g. ELCAP) measured. Detailed information on request.

## 3. Installation / Wiring

### 3.1 Wiring diagram



Connection	Primary wire		Secondary wire	
	L	N	LED+	LED-
Colour	black	white	red	black
Wire length	300 mm	300 mm	110 mm	110 mm
Strip length	5 mm	5 mm	5 mm	5 mm

### 3.2 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.
- 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.).

### 3.3 Hot plug-in

Hot plug-in is not recommended after shutdown due to output voltage of > 0 V. If a LED is connected the device has to be restarted before the output will be activated again.

**3.4 Replace LED module**

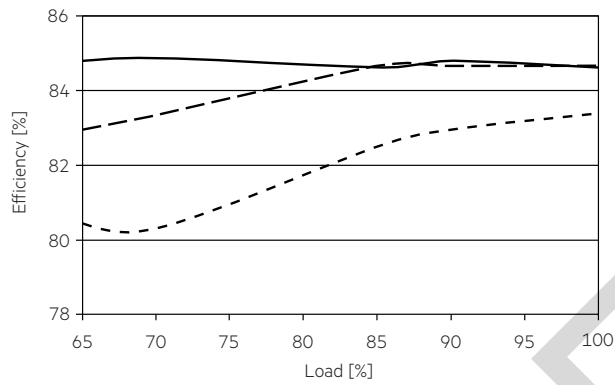
1. Mains off
  2. Remove LED module
  3. Wait for 3 seconds
  4. Connect LED module again
- Hot plug-in or secondary switching of LEDs is not permitted and may cause a very high current to the LEDs.

**3.5 Installation instructions**

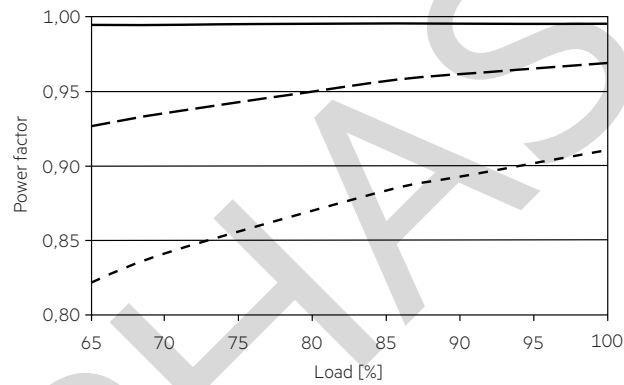
The LED module and all contact points within the wiring must be sufficiently insulated against 2 kV surge voltage.  
Air and creepage distance must be maintained.

**4. Electrical values**

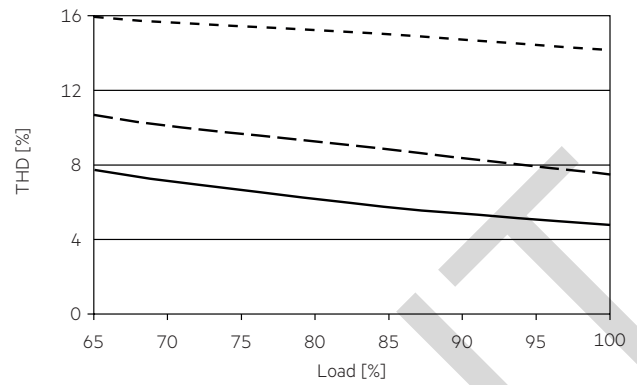
**4.1 Efficiency vs. load**



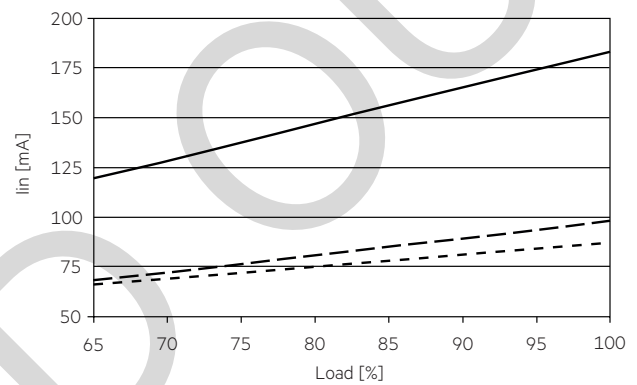
**4.2 Power factor vs. load**



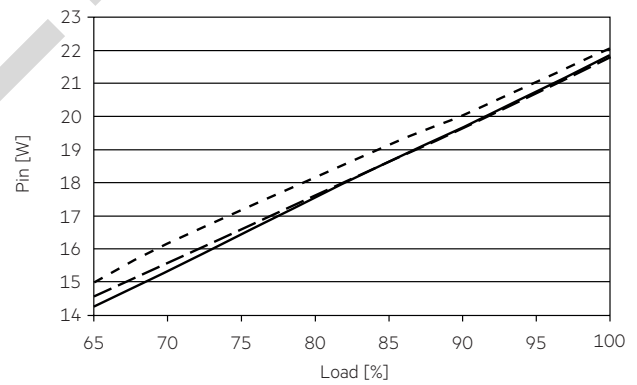
**4.3 THD vs. load**



**4.4 Input current vs. load**



**4.5 Input power vs. load**



- 120 V
- - - 230 V
- · - 277 V

#### 4.6 Maximum loading of automatic circuit breakers in relation to inrush current

120 V, 60 Hz

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>	I <sub>max</sub>	Time
<b>LC 18W 350mA UNV C ADV</b>	35	45	56	70	35	45	56	70	5 A	150 µs

230 V, 50 Hz

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>	I <sub>max</sub>	Time
<b>LC 18W 350mA UNV C ADV</b>	70	91	112	140	60	78	96	120	10 A	150 µs

277 V, 60 Hz

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>	I <sub>max</sub>	Time
<b>LC 18W 350mA UNV C ADV</b>	40	50	63	80	24	30	38	48	20 A	150 µs

This are max. values calculated out of inrush current! Please consider not to exceed the maximum rated continuous current of the circuit breaker. Calculation uses typical values from ABB series S200 as a reference. Actual values may differ due to used circuit breaker types and installation environment.

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

	THD	3.	5.	7.	9.	11.
<b>LC 18W 350mA UNV C ADV</b>	< 20	< 10	< 5	< 3	< 3	< 2

## 5. Functions

### 5.1 Short-circuit behaviour

In case of a short circuit at the LED output the LED output is switched off. When fault is removed, the driver can go back to work automatically without resetting input main power.

### 5.2 No-load operation

The LED Driver will not be damaged in the no-load operation. When the output is floating and doesn't connect the LED modules, the output voltage will keep the max. voltage (< 60 V). After connecting the LED load, the driver works normally without resetting the main power.

### 5.3 Overload protection

If the output voltage range is exceeded, the LED Driver will keep the max. voltage, and output current will reduce. When fault is removed, the driver can go back to work automatically without resetting input main power.

### 5.4 Overtemperature protection

The LED Driver is protected against temporary thermal overheating. If the temperature limit is exceeded the output voltage of the LED will shutdown, and restart automatically after the driver cold down. The temperature protection is activated approx. +20°C above T<sub>c</sub> max.

## 6. Miscellaneous

### 6.1 Insulation 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 insulation 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 insulation 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.

### 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 (t<sub>a</sub>) before they can be operated.

### 6.3 Maximum number of switching cycles

All LED Driver are tested with 50,000 switching cycles. The actually achieved number of switching cycles is significantly higher.

### 6.4 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.