Driver LC 35W 700mA 0-10V UNV sl ADV

Linear advanced series (Universal voltage)

Product description

- Built-in constant current LED Driver
- For dry and damp location
- Dimming range 10 to 100 %
- 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 35 W
- Up to 85 % efficiency
- Nominal life-time up to 50,000 h
- 5-year guarantee

Housing properties

- Casing: metal, white
- Potted version
- Type of protection IP44

Interfaces

- Dimmable via 0 … 10 V
- 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 4 kV (L to N)

Typical applications

- For linear/area lighting in office applications

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

IP44 SELV RoHS

Driver LC 35W 700mA 0-10V UNV sl ADV

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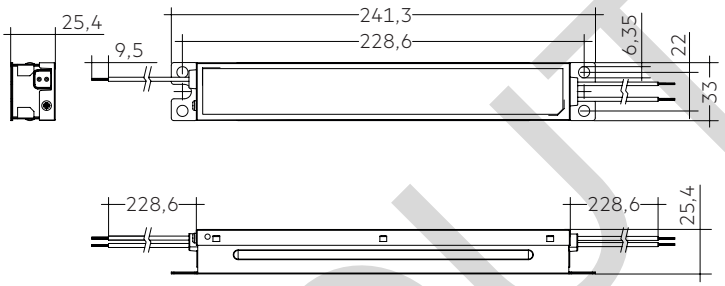
Technical data

Rated supply voltage	120 – 277 V
AC voltage range	108 – 305 V
Max. input current (at 277 V, 60 Hz, full load)	0.2 A
Max. input current (at 120 V, 60 Hz, full load)	0.44 A
Leakage current (at 230 V, 50 Hz, full load)	< 500 µA
Mains frequency	50 / 60 Hz
Overvoltage protection	320 V AC, 2 h
Max. input power	52.8 W
Typ. power consumption (at 230 V, 50 Hz, full load)	42.9 W
Min. output power	22.4 W
Max. output power	35.7 W
Typ. efficiency (at 230 V / 50 Hz / full load)[1]	84 %
λ (at 230 V, 50 Hz, full load)[1]	0.95
Output current[2]	700 mA
Output current tolerance[2]	± 5 %
Max. output current peak (non-repetitive)	770 mA
Typ. current ripple (at 230 V, 50 Hz, full load)	± 30 %
Min. forward voltage	32 V
Max. forward voltage	51 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)	≤ 0.1 s
Hold on time at power failure (output)	0 s
Max. casing temperature tc	80 °C
Ambient temperature ta	-25 … +55 °C
Ambient temperature ta (at life-time 50,000 h)	50 °C
Storage temperature ts	-40 … +80 °C
Life-time	up to 50,000 h
Dimensions L x W x H	241.3 x 33 x 25.4 mm

[1] Test result at 700 mA.

[2] Output current is mean value.



Ordering data

Type	Article number	Packaging, carton	Packaging, palett	Weight per pc.
LC 35W 700mA 0-10V UNV sl ADV	**28001766**	20 pc(s).	1,500 pc(s).	0.37 kg

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
EN 62384
UL8750 with Class 2 output based on UL1310
FCC Part 15 Class B

2. Thermal details and life-time

2.1 Expected life-time

Expected life-time

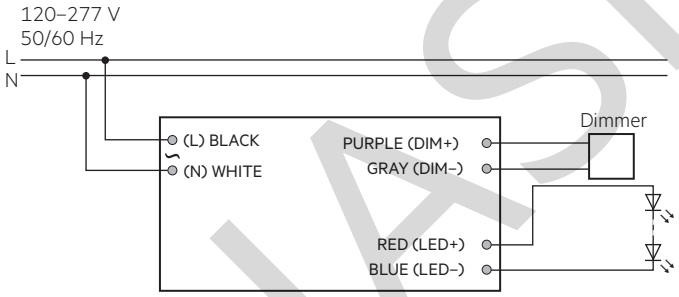
Type	ta	40 °C	45 °C	50 °C	55 °C
LC 35W 700mA 0-10V UNV sl ADV	tc	65 °C	70 °C	75 °C	80 °C
	Life-time	100,000 h	75,000 h	50,000 h	35,000 h

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

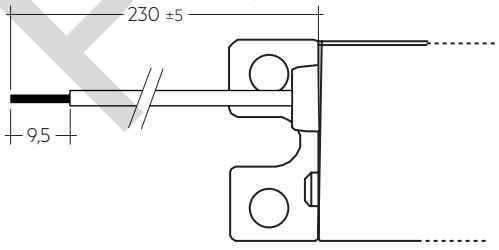
The relation of tc to ta temperature depends also on the luminaire design.
If the measured tc temperature is approx. 5 K below tc max., ta temperature should be checked and eventually critical components (e.g. ELCAP) measured.
Detailed information on request.

3. Installation / Wiring

3.1 Wiring diagram



Primary wire		Secondary wire			
L	N	DIM+	DIM–	LED+	LED–
black	white	purple	gray	red	blue



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 or secondary switching of LEDs is not permitted and may cause a very high LED output current.

3.4 Replace LED module

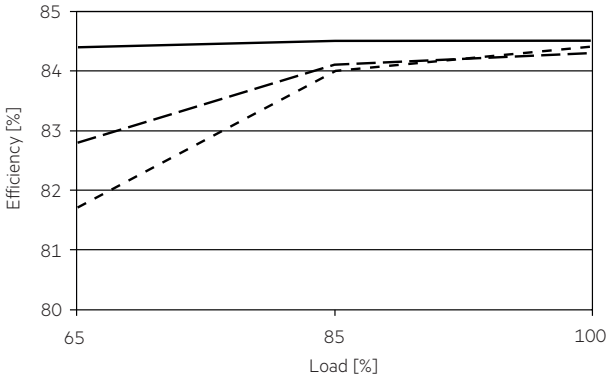
1. Mains off
2. Remove LED module
3. Wait for 20 seconds
4. Connect LED module again

3.5 Installation instructions

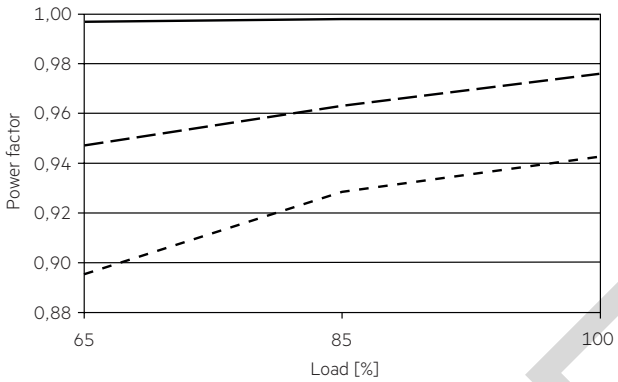
The LED module and all contact points within the wiring must be sufficiently insulated against 2 kV surge voltage.
Air and creepage distance must be maintained.

4. Electrical values

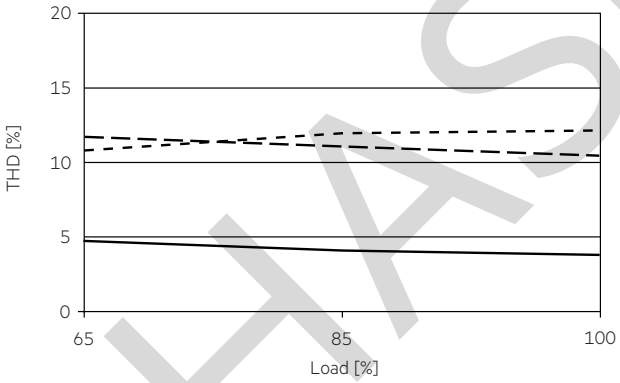
4.1 Efficiency vs. load



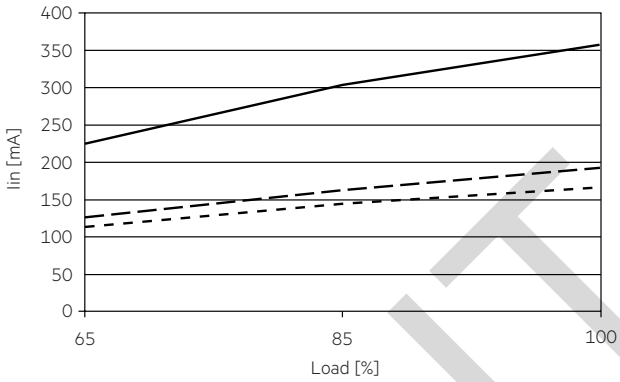
4.2 Power factor vs. load



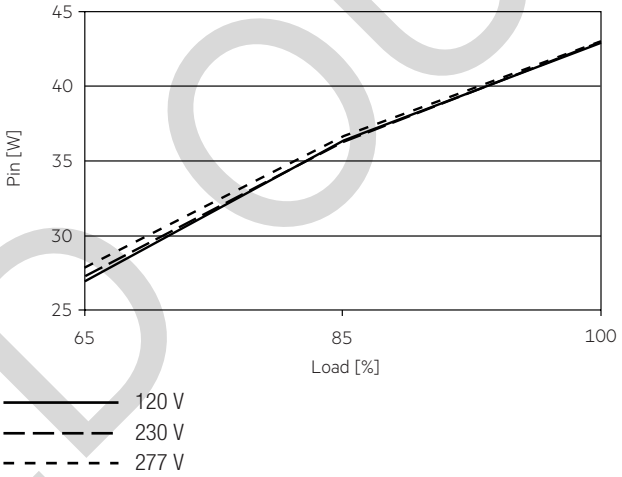
4.3 THD vs. load



4.4 Input current vs. load

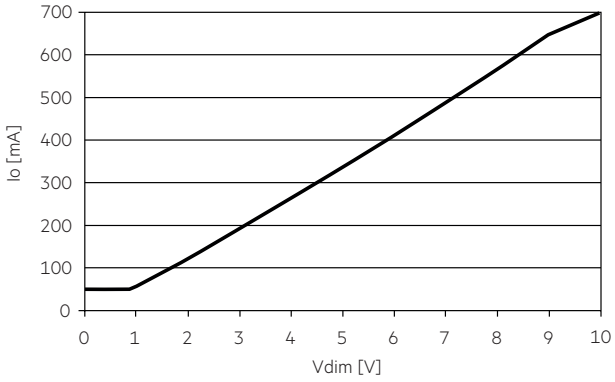


4.5 Input power vs. load



4.6 Dimming

0 – 10 V dimming curve / Output current vs dimming voltage



4.7 Maximum loading of automatic circuit breakers in relation to inrush current

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 35W 700mA 0-10V UNV sl ADV	16	21	26	33	10	13	16	20	40 A	200 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.

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

	THD	3.	5.	7.	9.	11.
LC 35W 700mA 0-10V UNV sl ADV	< 20	< 3	< 1	< 1	< 1	< 1

5. Interfaces / communication

5.1 Control input (0 ... 10 V)

Control input open	Max. dimming level
Control input short-circuit	Min. dimming level
Output current range	275 µA ±5 %
Max. permitted input voltage	±20 V
Voltage range dimming	0 – 10 V
Input voltage < 1 V	Min. dimming level
Input voltage > 10 V	Max. dimming level

Dimming range 10 % to 100 %.
Dimming curve is linearised.

6. Functions

6.1 Short-circuit behaviour

In case of a short circuit at the output of the LED driver, the output operates in hiccup mode.

6.2 No-load operation

The LED Driver will not be damaged in the no-load operation.
A voltage of 60V DC is permanent at the output.

6.3 Overload protection

In case of exceeding the maximum allowed LED voltage at the output, the LED driver will reduce the output current.

6.4 Overtemperature protection

The LED Driver is protected against temprorary thermal overheating. If the temperature limit is exceeded, the output of the LED driver operates in hiccup mode. The temperature protection is activated approx. +10 °C above Tc max.

7. Miscellaneous

7.1 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 DC 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 AC (or 1.414 x 1500 V DC). To avoid damage to the electronic devices this test must not be conducted.

7.2 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.

7.3 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.