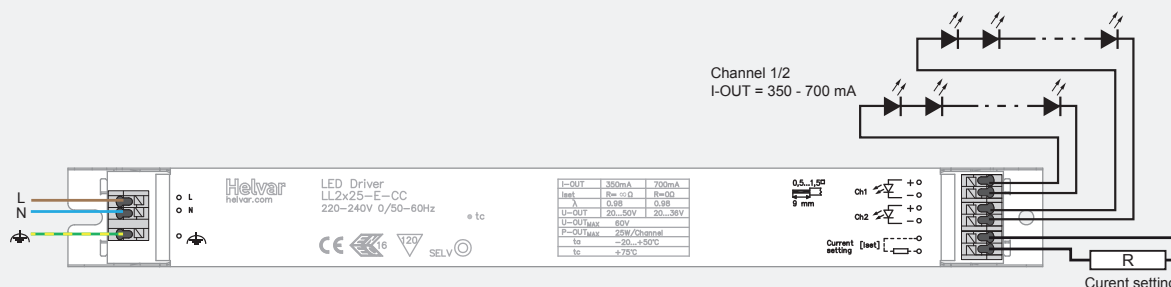


- Adjustable constant current output: 350 (default) to 700 mA
- Two SELV rated output channels
- SELV < 60 V output protection
- Overload, open & short circuit protection
- Suitable for operation with DC input
- Suitable for Class I and Class II luminaires
- Current setting resistor input
- Long lifetime, up to 100 000 h

2x25 W 220-240 VAC 50-60 Hz



Connections



Note:

- 1) Not suitable for load side switching operation.
- 2) Both output channels must be connected

Current setting (p.2)	
Resistor R	output I _v
open	350 mA
0 Ω	700 mA

Mains characteristics

Voltage range	198-264 VAC,
DC range	176-280 VDC,
starting voltage	> 190 VDC
Mains current at full load	0.23-0.30 A
Frequency	0 / 50 - 60 Hz

Load output (SELV 60 V)

Output current (I-OUT)	350 mA (default) - 700 mA
Accuracy	± 5 %
Ripple	< 2 % at ≤ 120 Hz *
	< 25 % at > 20 kHz *
*) LED load: Cree XM-L LEDs	
U-OUT _{max} (abnormal)	60 V

	I-OUT 350 mA	700 mA
P-out (max) / channel	17.5 W / ch	25 W / ch
U-OUT	20 - 50 V	20 - 36 V
λ @ max	0.93	0.96
η @ max	0.87	0.87

Insulation between circuits

Mains - SELV circuit	Double/reinforced insulation
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Operating conditions and characteristics

Highest allowed t _c point temperature	75 °C
Life time (90 % survival rate)	60 000 h, at t _c = 75 °C
	90 000 h, at t _c = 70 °C
	100 000 h, at t _c = 65 °C

Ambient temperature range	-20...+50 °C
Storage temperature range	-40...+80 °C
Maximum relative humidity	no condensation

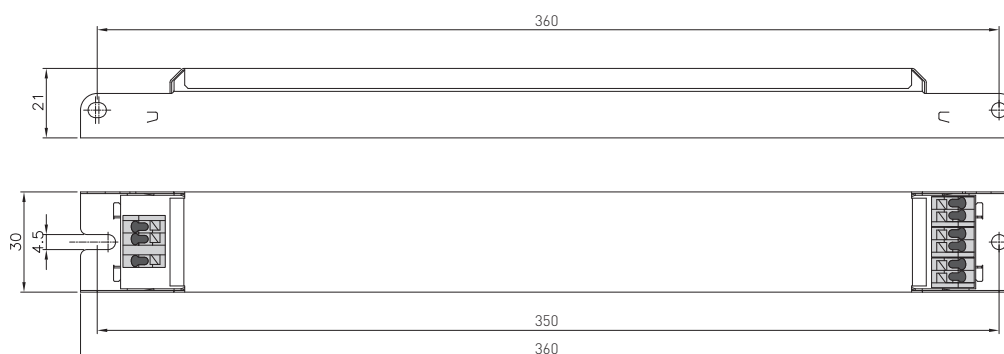
Connections and mechanical data

Wire size	0.5 - 1.5 mm ²
Wire type	solid core and fine-stranded
Maximum driver to LED wire length	5 m
Weight	270 g
IP rating	IP20

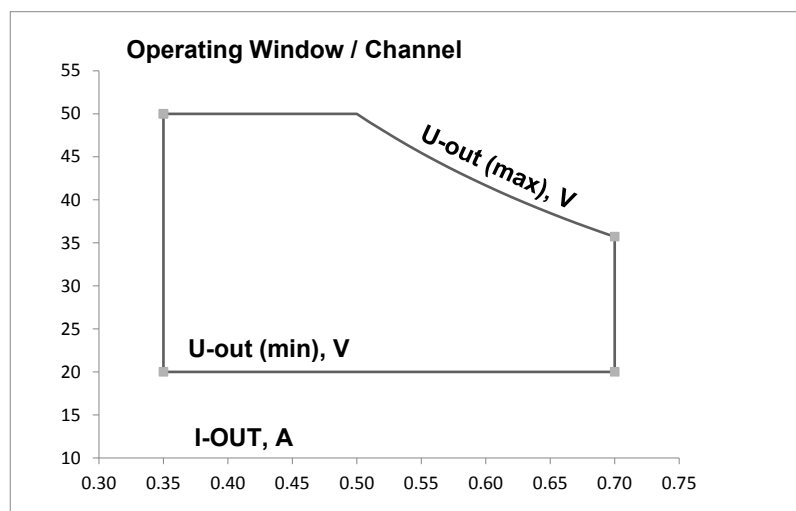
Functional description

- Current setting input sets equal output current to both channels
- Forward voltage over LED load can be different between the channels
- Load has to be connected to both channels meaning that neither of the channels can be left open. See operating window on page 2 for suitable Voltages.

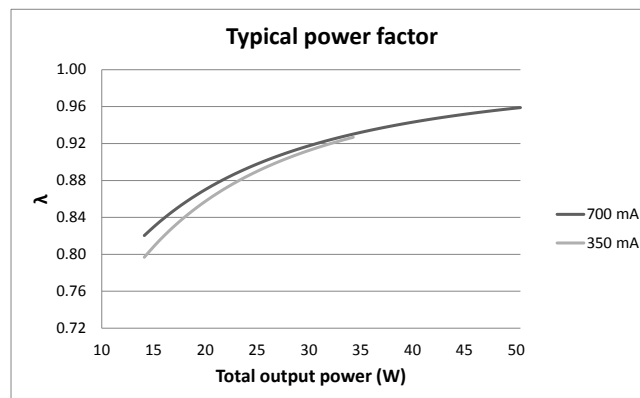
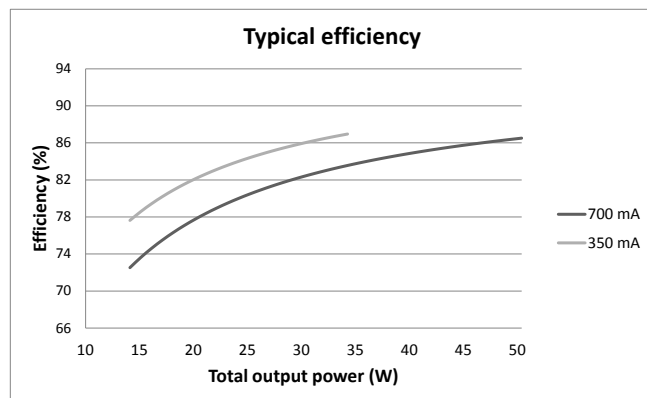
Dimensions



Load output



Driver performance



Current setting resistor values (Nominal I-OUT (±5 % tol.))

R (Ω)	0	220	470	680	1k	1k5	1k8	2k2	2k7	3k3	3k9	4k7	6k8	8k2	12k	18k	33k	47k	∞
I _{out} (mA)	700	680	665	650	635	615	605	590	575	555	540	525	495	480	450	420	395	380	350

Quantity of drivers per miniature circuit breaker 16 A Type C

Based on I _{Cont}	Based on I _{peak}	Typ.inrush current	1/2 value time	Calculated energy
(pcs.)	(pcs.)	I _{peak} (A)	Δt (μs)	I _{peak} ² Δt (A ² s)
43	53	30	16	0.104

LL2x25-E-CC LED driver is suited for in-built luminaire usage. In order to have safe and reliable LED driver operation, the LED luminaires will need to comply with the relevant standards and regulations (e.g. IEC/EN 60598-1). The LED luminaire shall be designed to adequately protect the LED driver from dust, moisture and pollution. The luminaire manufacturer is responsible for the correct choice and installation of the LED drivers according to the application and product datasheets. Specifications of the LED drivers may never exceed the operating conditions as per the product datasheets.

Wiring considerations

Wire type and cross section

- Please refer to datasheets connections & mechanical data

Wiring insulation

- According to recommendations in EN 60598

Maximum wire lengths

- Please refer to datasheets connections & mechanical data

Wire connections

- Please refer to datasheets connections diagram

Miniature Circuit Breakers (MCB)

- Type-C MCB's with trip characteristics in according to EN 60898 are recommended.

LED driver earthing

- LED drivers are designed to support different luminaire classifications, like Class I or Class II fittings (no earth required). Please check the individual LED driver type for its exact safety class rating.
- For Helvar LED drivers to have a reliable operation and EMC performance, the luminaires are expected to have an earth connection.

Installation & operational considerations

Maximum tc temperature

- Reliable operation and lifetime is only guaranteed if the maximum tc point temperature is not exceeded under the conditions of use.

Installation site

- Ensure that the LED driver does not exceed temperature higher than specified on the product datasheets.
- The general preferred installation position of LED drivers is to have the top cover facing upwards.

Current setting resistor

The Helvar LL2x25-E-CC LED driver feature an adjustable constant current output.

- An external resistor can be inserted in to the current setting terminal, allowing the user to adjust the LED driver output current.
- When no external resistor is connected, then the LED driver will operate at their default lowest current level (350 mA).
- A standard through-hole resistor can be used for the current setting. To achieve the most accurate output current it is recommended to select a quality low tolerance resistor.
- For the resistor / current value selection, please refer to the enclosed table below.

Conformity

General and safety requirements	EN 61347-1
Particular safety requirements for d.c. or a.c. supplied electronic controlgear for LED modules, acc. to	EN 61347-2-13
Thermal protection class	EN61347, C5e
Mains current harmonics, acc. to	EN 61000-3-2
Limits for Voltage Fluctuations and Flicker, acc to	EN 61000-3-3
Radio Frequency Interference, acc. to	EN 55015
Immunity standard, acc. to	EN 61547
Performance requirements, acc to	EN 62384

Compliant with relevant EU directives
ENEC, CE and SELV marked