LL1x38-CC-350

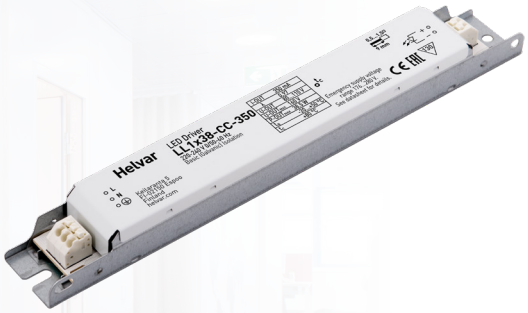
Helvar Components

1x38 W **Constant Current** LED driver

Product code: 5715

38 W 220 – 240 V 0 / 50 – 60 Hz

- Maximum 38.5W load
- Low current ripple, complying with IEEE 1789 recommendation
- Open & short circuit protection
- Suitable for Class I luminaires
- Load output is basic isolated from the mains
- Protected up to 2 kV power network fast transients



Mains Characteristics

Voltage range	198 VAC – 264 VAC withstands min 176 VAC (max. 1 hour) max 300 VAC (max. 1 hour)
DC range	176 VDC - 280 VDC
starting voltage	> 190 VDC
Mains current at full load	0.17 A – 0.22 A
Frequency	0 / 50 Hz – 60 Hz
THD at full power	< 15 %
Leakage current to earth	< 0.3 mA
Tested surge protection	1 kV L-N, 2 kV L-GND (IEC 61000-4-5)
Tested fast transient protection	2 kV (IEC 61000-4-4)

Insulation between circuits & driver case

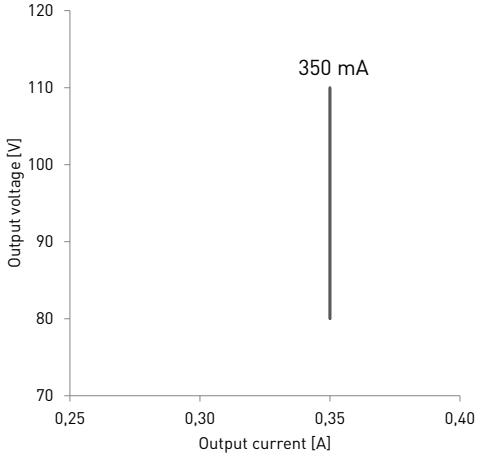
Mains circuit - Output	Basic isolated
Mains & output - Driver case	Basic insulation

Load Output (basic isolated)

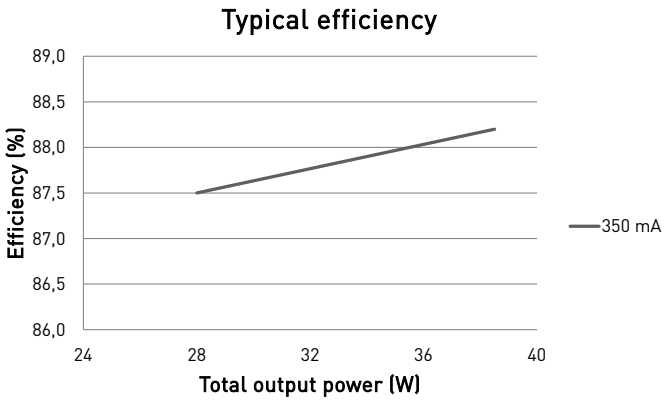
Output current (I_{out})	350 mA
Accuracy	± 5 %
Ripple	< 2 %*, at ≤ 120 Hz (Low frequency)
	*) LED load: Cree XM-L LEDs
PstLM	< 0.05*
SVM	< 0.03*
	*) At full power, measured with Cree XP-G LED modules.
U_{out} (max) (abnormal)	160 V

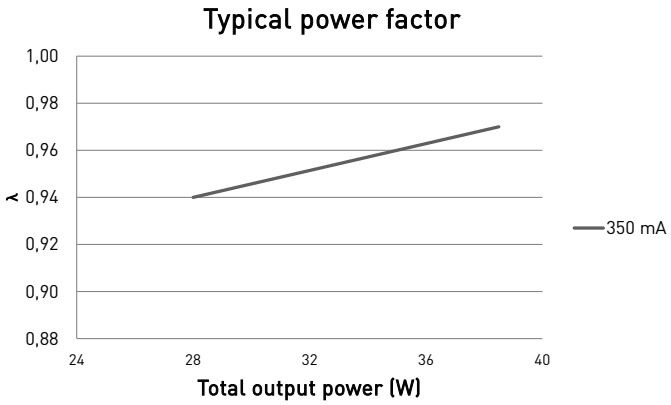
I_{out}	350 mA
P_{out} (max)	38.5 W
U_{out}	80 - 110 V
PF (λ) at full load	0.97
Efficiency (η) at full load	0.88

Operating window



Driver performance





Operating Conditions and Characteristics

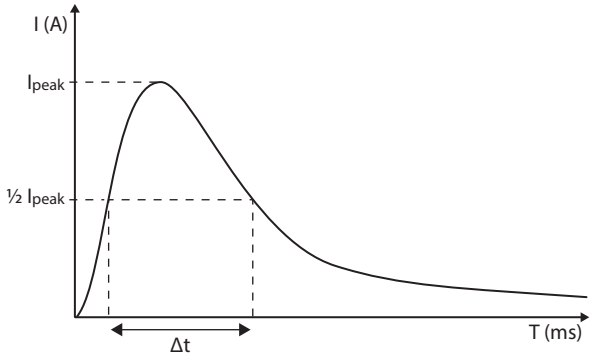
Highest allowed t_c point temperature	80 °C
Ambient temperature range	–20 °C ... +50 °C
Storage temperature range	–40 °C ... +80 °C
Maximum relative humidity	No condensation
Mains switching cycles	> 100 000 cycles
Life time (90 % survival rate)	100 000 h, at t_c = 70 °C 70 000 h, at t_c = 75 °C 50 000 h, at t_c = 80 °C

Quantity of drivers per miniature circuit breaker 16 A Type C

Based on I_{cont}	Based on inrush current I_{peak}	Typ. peak inrush current I_{peak}	1/2 value time, Δt	Calculated energy, $I_{peak}^2 \Delta t$
56 pcs.	95 pcs.	8 A	26 µs	0.0013 A^2s

CONVERSION TABLE FOR OTHER TYPES OF MINIATURE CIRCUIT BREAKER

MCB type	Relative quantity of LED drivers
B 10 A	37 %
B 16 A	60 %
B 20 A	75 %
C 10 A	62 %
C 16 A	100 % (see table above)
C 20 A	125 %

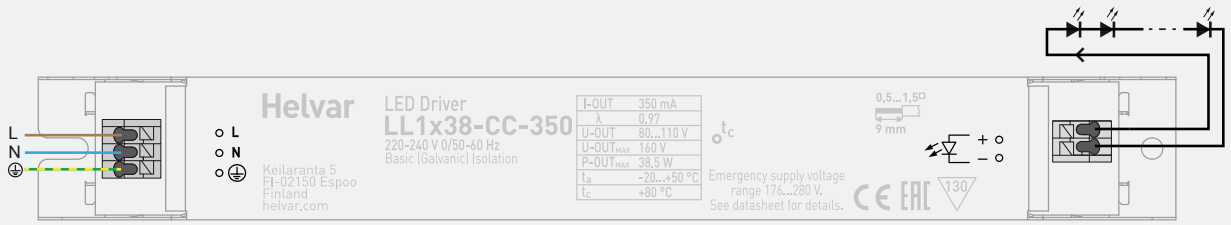


Type C MCB's are strongly recommended to use with LED lighting. Please see more details in "MCB information" document in each driver product page in "downloads & links" section.

Connections and Mechanical Data

Wire size	0.5 mm^2 – 1.5 mm^2
Wire type	Solid core and fine-stranded
Wire insulation	According to EN 60598
Maximum driver to LED wire length	1 m
Weight	155 g
IP rating	IP20

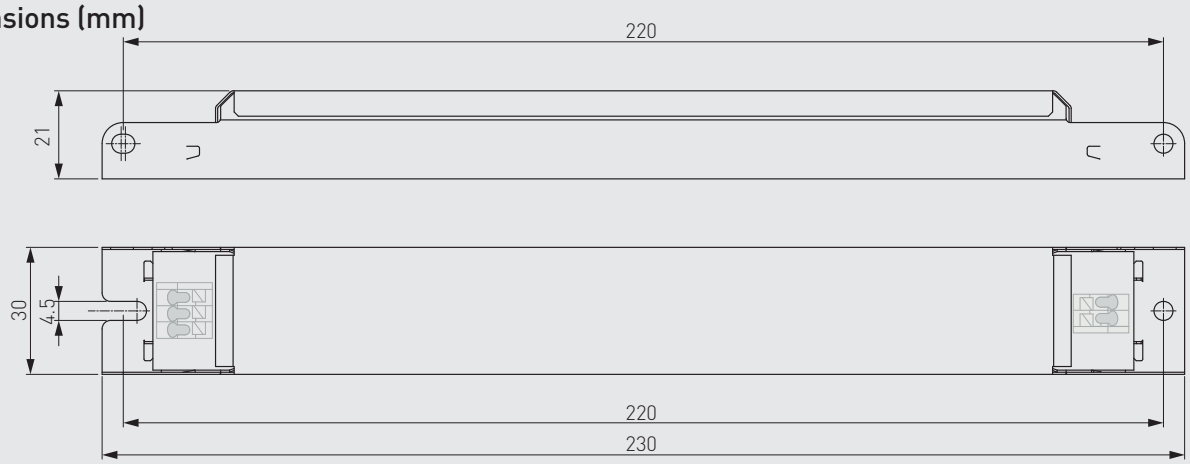
Connections



Note:

- *Not suitable for load side switching operation*

Dimensions (mm)



LL1x38-CC-350 LED driver is suited for built-in usage in luminaires. With LL1x2130-SR strain reliefs, independent use is possible too (see the LL1x2130-SR datasheet for details). 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. Operating conditions of the LED driver may never exceed the specifications as per the product datasheet.

Installation & operation

Maximum t_c temperature:

- Reliable operation and lifetime is only guaranteed if the maximum t_c point temperature is not exceeded under the conditions of use
- Ensure that the tc point temperature does not rise higher than specified on the product datasheets

Lamp failure functionality

No load

When open load is detected, driver limits output voltage according to Uout (max) (abnormal).

Short circuit

Driver can withstand output short circuit.

LED driver earthing

- LL1x38-CC-350/300 LED driver is a protective Class I device and designed for Class I luminaires.
- Devices with protective earth terminal marked with symbol ⏚ while used in Class I luminaires must always have the earth cable connected for safety reasons.

Conformity & standards

General and safety requirements	EN 61347-1
Particular safety requirements for DC or AC supplied electronic control gear for LED modules	EN 61347-2-13
Thermal protection class	EN 61347, C5e
Mains current harmonics	EN 61000-3-2
Limits for voltage fluctuations and flicker	EN 61000-3-3
Radio frequency interference	EN 55015
Immunity standard	EN 61547
Performance requirements	EN 62384
Compliant with relevant EU directives	
RoHS / REACH compliant	
CE / UKCA Marked	

Label symbols

Thermally controlled control gear, incorporating means of protection against overheating to prevent the case temperature under any conditions of use from exceeding 130 °C.