

1x54 W **Constant Current** LED driver

54 W 220 – 240 V 0 / 50 – 60 Hz

- Open & short circuit protection
- Maximum 54 W load
- Low current ripple, complying with IEEE 1789 recommendation
- Driver protection Class I
- Suitable for Class I luminaires
- Load output is basic isolated from the mains
- Protected up to 4 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	0.22 A – 0.31 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 and output - Driver case	Basic insulation

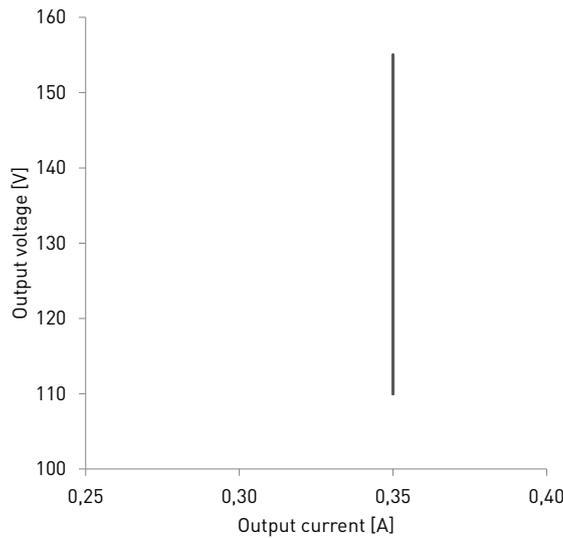
Load Output

Output current (I_{out})	350 mA
Accuracy	± 5 %
Ripple	< 2 %*, at ≤ 120 Hz
PstLM	< 0.05*
SVM	< 0.04*
U_{out} (max) (abnormal)	220 V
Start time	< 1.0 s

*] Low frequency, LED load: Cree MX-3 LEDs
*] At full power, measured with Cree XP-G LED modules.

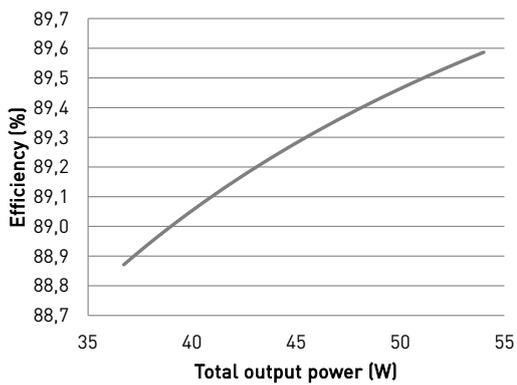
I_{out}	350 mA
P_{out} (max)	54.0 W
U_{out}	105 - 155 V
PF (λ) at full load	0.96
Efficiency (η) at full load	89 %

Operating window

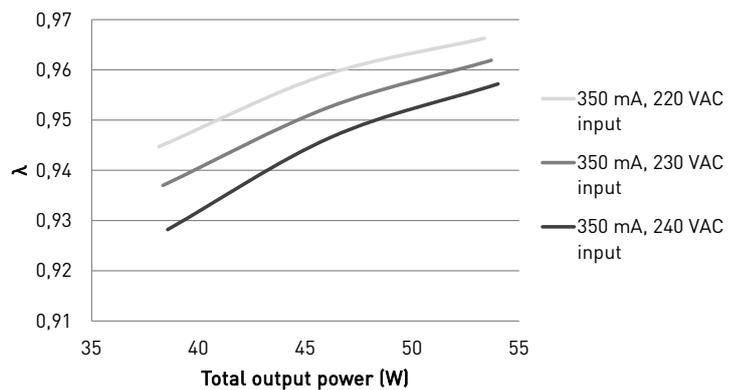


Driver performance

Typical efficiency



Typical power factor



Operating Conditions and Characteristics

Highest allowed t_c point temperature	85 °C
Ambient temperature range	-20 °C ... +45 °C
Storage temperature range	-40 °C ... +80 °C
Maximum relative humidity	No condensation
Life time (90 % survival rate)	100 000 h, at $t_c = 75$ °C 70 000 h, at $t_c = 80$ °C 50 000 h, at $t_c = 85$ °C

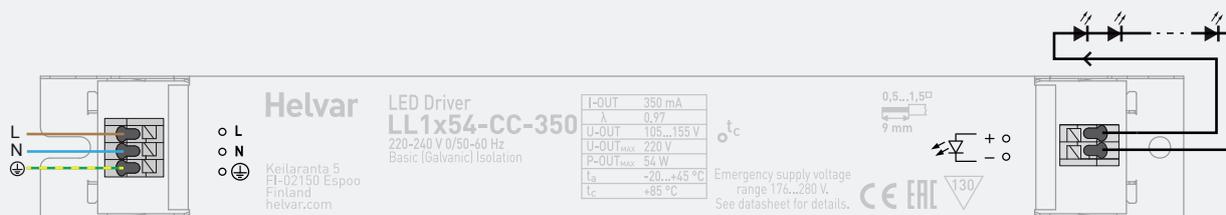
Quantity of drivers per miniature circuit breaker 16 A Type C

Based on I_{cont}	Based on inrush current I_{peak}	Typ. peak inrush current I_{peak}	1/2 value time, Δt	Calculated energy, $I_{peak}^2 \Delta t$
43 pcs.	80 pcs.	10.0 A	25 μs	0.0021 A ² s

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	160 g
IP rating	IP20

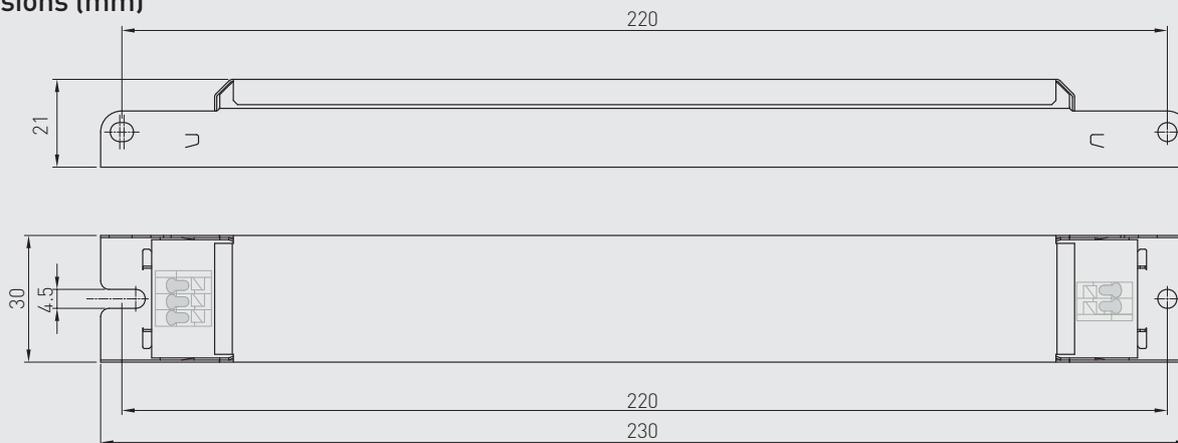
Connections



Note:

- Not suitable for load side switching operation

Dimensions (mm)



LL1x54-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 ambient and t_c temperature:

- For built-in components inside luminaires, the t_a ambient temperature range is a guideline given for the optimum operating environment. However, integrator must always ensure proper thermal management (i.e. mounting base of the driver, air flow etc.) so that the t_c point temperature does not exceed the t_c maximum limit in any circumstance.
- Reliable operation and lifetime is only guaranteed if the maximum t_c point temperature is not exceeded under the conditions of use.

Lamp failure functionality

No load

When open load is detected, driver limits output voltage according to $U_{out} (max)$ (abnormal).

Short circuit

Driver can withstand output short circuit.

Conformity & standards

General and safety requirements	EN 61347-1: 2008+ A1:2011+A2:2013
Particular safety requirements for DC or AC supplied electronic control gear for LED modules	EN 61347-2-13: 2014
Thermal protection class	EN 61347, C5e
Mains current harmonics	EN 61000-3-2: 2014
Limits for voltage fluctuations and flicker	EN 61000-3-3: 2013
Radio frequency interference	EN 55015: 2013
Immunity standard	EN 61547: 2009
Performance requirements	EN 62384: 2006+ A1:2009
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.