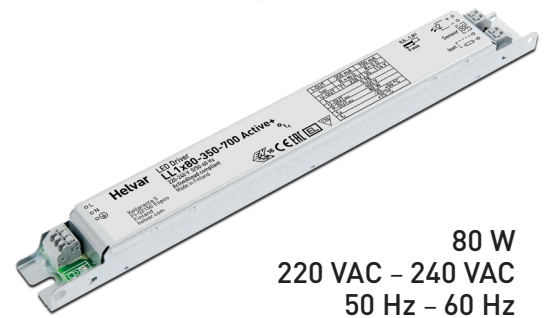


1x80 W **Dimmable** LED driver with Active+/ActiveAhead functionality

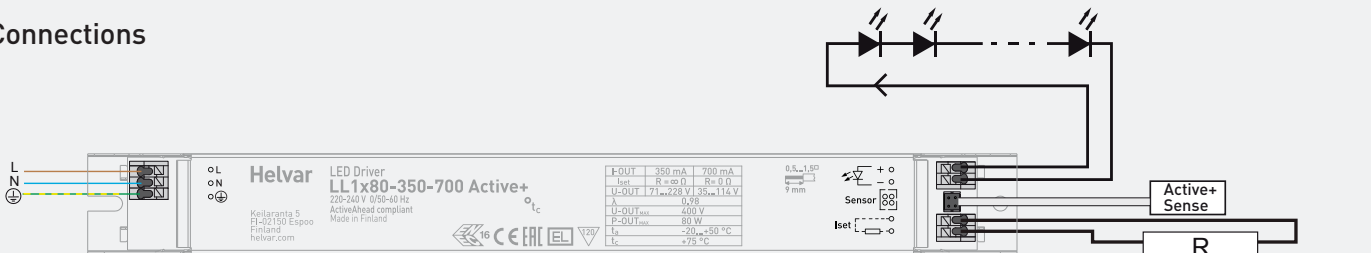
- Fully automatic standalone setup with smart learning functionality
- Optimised presence detection, daylight harvesting and Constant Lumen Output (CLO) operation
- No programming, configuration, or external control wiring needed
- Inbuilt power supply for sensor use
- Enhanced Hybrid dimming, with varying PWM frequency
- Current setting by software
- Very high efficiency up to 0.94
- Long lifetime 100 000 h



80 W
220 VAC – 240 VAC
50 Hz – 60 Hz



Connections



Current setting (p. 2)

| Resistor R | output I _{lv} |
|------------|------------------------|
| open | 350 mA |
| 0 Ω | 700 mA |

Note:

- Not suitable for load side switching operation.

Mains Characteristics

| | |
|--------------------------------|--|
| Voltage range | 198 VAC – 264 VAC |
| DC range | 176 VDC – 280 VDC, starting voltage > 190 VDC |
| Max mains current at full load | 0.34 A – 0.44 A |
| Frequency | 0 / 50 Hz – 60 Hz |
| Stand-by power | 0.30 W |

Load Output (non-isolated)

| | |
|---|---------------------------|
| Output current (I _{out}) | 350 mA (default) – 700 mA |
| - Accuracy | ± 5 % |
| - Ripple | < 2 %* at ≤ 120 Hz |
| *Low frequency, LED load: Cree MX3 LEDs | |
| U _{out} (max) (abnormal) | 400 V |
| EOFx (EL use) | > 0.98 |

| | I _{out} 350 mA | 700 mA |
|--------------------------|-------------------------|--------------|
| P _{out} (max) | 80 W | 80 W |
| U _{out} | 71 V – 228 V | 35 V – 114 V |
| λ | 0.98 | 0.98 |
| Efficiency (η), max load | 0.94 | 0.92 |

Operating Conditions and Characteristics

| | |
|--|--|
| Max. temperature at t _c point | 75 °C |
| Ambient temperature range | -20 °C ... +50 °C |
| Storage temperature range | -40 °C ... +80 °C |
| Maximum relative humidity | no condensation |
| Life time (90% survival) | 100 000h, at t _c =65 °C 75 000h, at t _c =70 °C 50 000h, at t _c =75 °C |

Connections and Mechanical Data

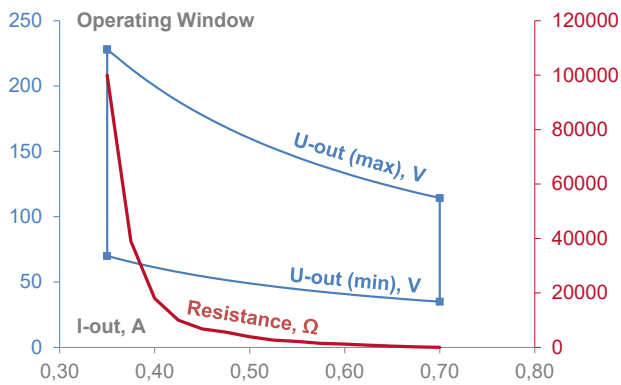
| | |
|-----------------------------------|---|
| Wire size | 0.5 mm ² – 1.5 mm ² |
| Wire type | solid core and fine-stranded |
| Maximum driver to LED wire length | 5 m |
| Weight | 220 g |
| IP rating | IP20 |

Functional Description

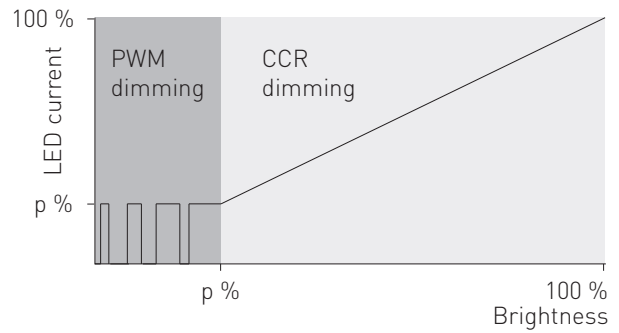
- Active+/ActiveAhead functionality as default (see User Guide)
- Light setting in ActiveAhead according to prediction of people flow
- Overriding setting of sensor parameters by Helvar Active+/ActiveAhead mobile app (see User Guide)
- Linear dimming curve. Dynamic range can be set within 1 - 100 %.
- Adaptive overload protection up to 85 W
- Limited outrush current (1200 mA) during load change
- Full load recognition, automatic recovery
- High Efficiency

Note: See page 2 - 3 for dimensions and additional information

Load output



Hybrid dimming technique



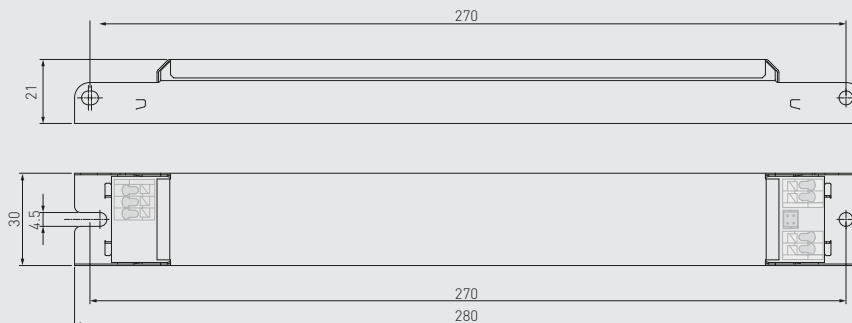
| Dimming range | Dimming technique |
|---------------|----------------------------------|
| 1 % – 20 % | Pulse Width Modulation (PWM)* |
| 20 % – 100 % | Constant Current Reduction (CCR) |

* PWM dimming frequency 1 – 8 kHz

Current setting resistor values (Nominal I_{out} ($\pm 5\%$ tol.))

| R (Ω) | 0 | 220 | 470 | 820 | 1k2 | 1k5 | 2k2 | 2k7 | 3k9 | 5k6 | 6k8 | 10k | 18k | 39k | Open |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| I_{out} (mA) | 700 | 675 | 650 | 625 | 600 | 575 | 550 | 525 | 500 | 475 | 450 | 425 | 400 | 375 | 350 |

Dimensions



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, Δt | Calculated energy, $I_{peak}^2 \Delta t$ |
|---------------------|---------------------|--------------------|----------------------------|--|
| 30 pcs. | 30 pcs. | 42 A | 186 μs | 0.24 A ² s |

LL1x80-350-700 Active+ 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

Wire type and cross section

Refer to datasheets connections & mechanical data

Wiring insulation

According to recommendations in EN 60598

Maximum wire lengths

Refer to datasheets connections & mechanical data

Wire connections

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, such as Class I or Class II fittings (no earth required). 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 & operation

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 for independent use is to have the top cover facing upwards.

Current setting resistor

LL1x80-350-700 Active+ LED driver features 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 drivers will operate at their default lowest current level.

- 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, refer to the table on page 2.
- For drivers not providing isolation (non-isolated), current setting resistor must be insulated according safety regulations.

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 |
| Additional safety requirements for AC/DC supplied electronic controlgear for emergency lighting | EN 61347-2-13 Annex J |
| Thermal protection class | EN61347, 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 | |
| ENEC and CE marked | |