

LL1x20-DA-E-nDim

1x20 W **Energy Efficient** LED driver for nightDim operation

freedom in lighting

20 W 220 - 240 V, 50 - 60 Hz

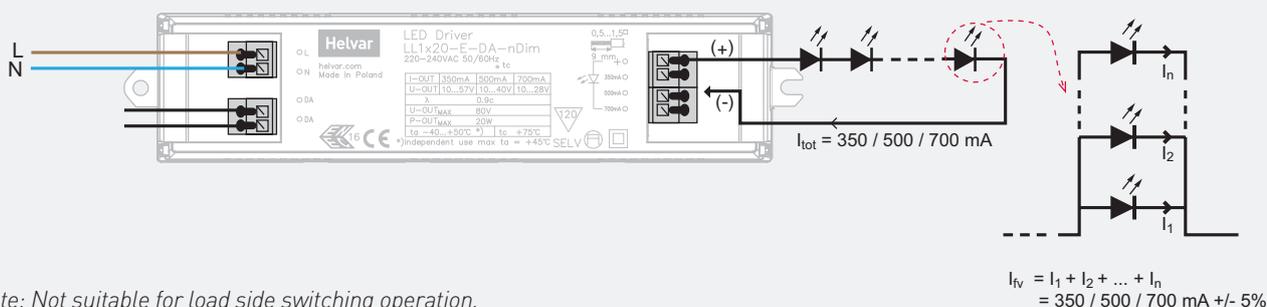
- Suitable for nightDim Standalone Solution *
- Scene recall over the mains
- Perfect for refurbishment
- Constant Lumen Output (CLO) operation optional
- Selectable constant current output: 350 / 500 / 700 mA
- Maximum 20 W load
- Protected up to 4 kV power network fast transients
- High efficiency, 0.88
- Moisture protection by lacquer coating



* For further operational information, please refer to the user guide



Connections



Note: Not suitable for load side switching operation.

Mains Characteristics

| | |
|--------------------------------|--|
| Voltage range | 198 - 264 VAC |
| DC range | 176 - 280 VDC, starting voltage > 190 VDC |
| Max mains current at full load | 0.10 - 0.14 A |
| Frequency | 0 / 50 - 60 Hz |
| U-OUTmax (abnormal) | 80 V |
| Stand-by power | < 1 W |

Load Output

| | |
|-----------------------------------|--------------------|
| Output current | 350 / 500 / 700 mA |
| Max output power | 20 W |
| Efficiency, at full load, typical | ≥ 0.88 |

| I-OUT | 350 mA | 500 mA | 700 mA |
|-------------|---------|---------|---------|
| P-out (max) | 20 W | 20 W | 19.6 W |
| U-OUT | 10-57 V | 10-40 V | 10-28 V |
| λ | 0.90c | 0.90c | 0.90c |
| η @ max | 0.88 | 0.85 | 0.84 |

Operating Conditions and Characteristics

| | |
|------------------------------|---|
| Max. temperature at tc point | 75 °C |
| Ambient temperature range | -40...+50 °C |
| | (* Independent use t _{a,max} = +45 °C) |
| Storage temperature range | -40...+80 °C |
| Maximum relative humidity | partially allowed condensation |
| Life time | 50 000 h, at TC max (90 % survival rate) |

Connections and Mechanical Data

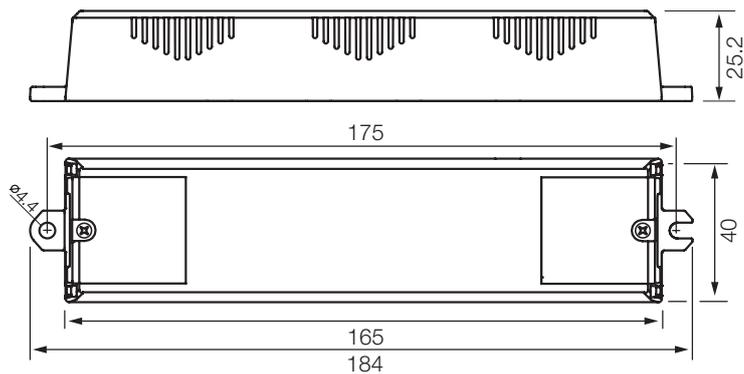
| | |
|-----------------------------------|------------------------------|
| Wire size | 0.5 - 1.5 mm ² |
| Wire type | solid core and fine-stranded |
| Maximum driver to LED wire length | 5m |
| Weight | 110 g |
| IP rating | IP20 |
| Switch for scene setting | Mains rated |

Conformity & Standards

| | |
|--|---------------|
| 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 & SELV marked

Note: See page 2 for dimensions



The LL1x20-E-DA-nDim LED driver is suited for use in either inbuilt or independent luminaires. In order to have safe and reliable LED driver operation, the LED luminaires must 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. Earth connection can be left out if luminaire safety is guaranteed by its construction.
- When using a SELV-rated LED driver, then the SELV driver output has to be insulated from the luminaire earth connection (ref. EN60598-1 luminaire standard).

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.

Strain Relief for independent use

- The LL1x20-E-nDim LED driver can be used both inside the luminaire and outside the luminaire. Built-in strain relief ensures the mains and driver output wiring are safely connected.
- 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.