

LC1x70-E-DA-nDim

1x70 W **Energy Efficient** LED driver for nightDim operation

70 W 220-240 VAC 50-60 Hz

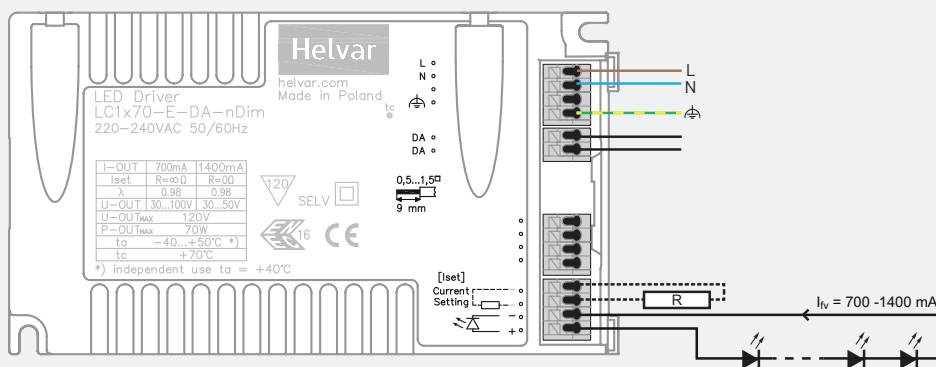
- Suitable for nightDim Standalone Solution *
- Scene recall over mains
- Perfect for refurbishment
- Constant Lumen Output (CLO) operation optional
- Adjustable constant current output: 700 mA (default) - 1400 mA
- Protected up to 4 kV power network fast transients
- Overload, open & short circuit protection
- Moisture protection by lacquer coating



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



Connections



Current setting (p.2)	
Resistor R	output I _v
Open	700 mA
3.9 kΩ	1050 mA
0 Ω	1400 mA

• 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	0.33-0.40 A
Frequency	0 / 50 - 60 Hz
U-OUT _{max} (abnormal)	120 V
Stand-by power	< 0.5 W

Load Output

Output current (I-OUT)	700 mA (default) - 1400 mA	
Max output power	70 W	
Efficiency, at full load, typical	≥ 0.91	

	700 mA	1400 mA
P-out (max)	70 W	70 W
U-OUT	30 - 100 V	30 - 50 V
λ	0.98	0.98
η @ max	0.91	0.88

Operating Conditions and Characteristics

Max. temperature at tc point	70 °C
Ambient temperature range	-40...+50 °C *
	(* Independent use t _{a,max} = +40 °C)
Storage temperature range	-40...+80 °C
Maximum relative humidity	partially allowed condensation
Life time	50 000h, 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	300 g (+25 g, strain relief LC1x70-SR)
IP rating	IP20
Switch for scene setting	Main rated

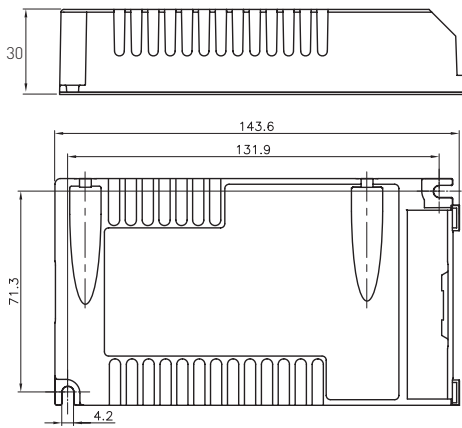
Conformity & Standards

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	EN 61347, 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

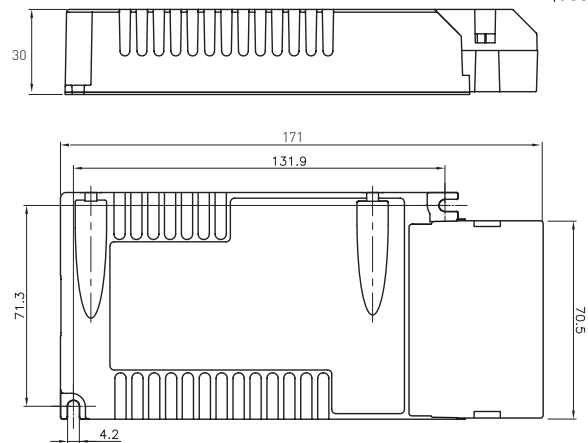
Compliant with relevant EU directives, ENEC, CE & SELV marked

Dimensions

freedom in lighting



With strain relief (LC1x70-SR)



The LC1x70-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.
- 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 LC1x70-E-DA-nDim LED driver can be used both inside the luminaire and outside the luminaire, via the LC1x70-SR strain relief. The 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.

Current setting resistor

The Helvar LC1x70 driver platform 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, please refer to the enclosed table below.

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

R (Ω)	0	1k	1.2K	1.5K	1.8K	2.2K	2.7K	3.3K	3.9K	4.7K	5.6K	6.8K	8.2K	10K	12K	15K	22K	27K	33K	39K	47K	56K	100K	150K	330K	Open
I_{out} (mA)	1400	1260	1230	1190	1160	1130	1100	1070	1050	1020	980	950	920	890	860	830	800	790	780	770	750	740	720	715	710	700