

1x35 W **Dimmable DALI** LED driver

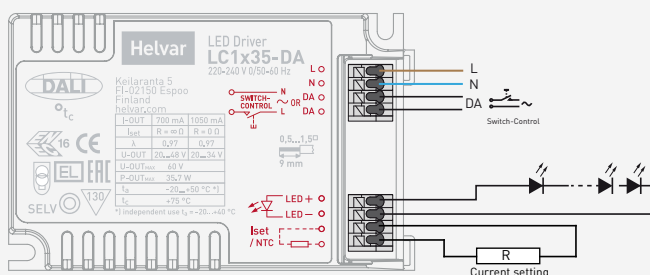
- DALI control input 1% – 100% dimming range (DALI revision 2.0)
- Hybrid dimming technique for high quality light
- Adjustable constant current output with LEDset resistor values
- Overload, open and short circuit protection
- Suitable for use in emergency lighting applications
- Optional click-on strain relief (LC1x30-SR) for installation outside of a luminaire
- Suitable for classes I, II and III luminaires
- Long lifetime of 60,000 h



35 W
220 VAC – 240 VAC
50 Hz – 60 Hz



Connections



Note:

- Not suitable for load side switching operation.

Current setting (p. 2)

Resistor R	output I_{lv}
open	700 mA
0 Ω	1050 mA

Mains Characteristics

Voltage range	198 VAC – 264 VAC
DC range	176 VDC – 280 VDC, starting voltage > 190 VDC
Max mains current at full load	0.17 A – 0.19 A
Frequency	0 / 50 Hz – 60 Hz
Stand-by power consumption	0.46 W

Load Output (SELV < 60 V)

Output current (I_{out})	700 mA (default) – 1050 mA
- Accuracy	$\pm 5\%$
- Ripple	< $\pm 25\%$ high frequency
$U_{out(max)}$ (abnormal)	60 V
EOFx (EL use)	> 0.98

	I_{out} 700 mA	1050 mA
$P_{out(max)}$	33.6 W	35.7 W
U_{out}	20 V – 48 V	20 V – 34 V
λ	0.97	0.97
Half power λ	0.97 @ 21 W	0.97 @ 21 W
Efficiency (η), max load	0.89	0.87

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	135 g
IP rating	IP20

Functional Description

- DALI memory bank functionality
- Adaptive overload protection
- Programmable output current, DALI setting, external LEDset resistor values (default)
- Multipurpose terminal; Iset* / NTC
- Multipurpose terminal; DALI / Switch control
- NTC function (default trigger level at 8k Ω)
- Constant Light Output (CLO) (default disabled)
- Full load recognition: automatic recovery
- Power consumption monitor (real time)
- Running hour monitor (accumulative)
- Energy management (accumulative)
- Adaptive internal thermal protection

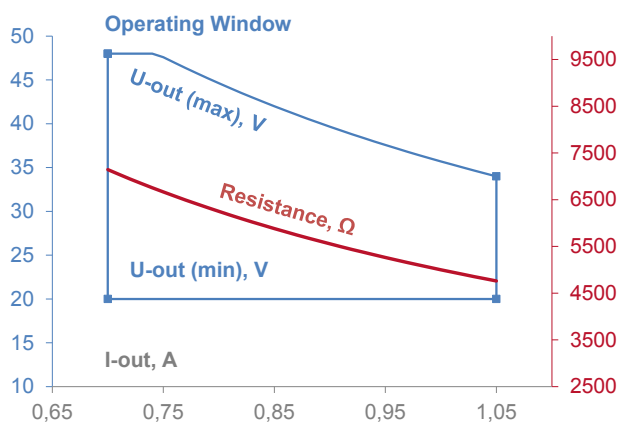
Operating Conditions and Characteristics

Max. temperature at t_c point	75 °C
Ambient temperature range	-20 °C – +50 °C
on independent use	-20 °C – +40 °C
Storage temperature range	-40 °C – +80 °C
Maximum relative humidity	no condensation
Life time	60 000 h, at t_c (max) (90 % survival rate)

* Selection of the resistors have been made easy by designing the product to comply with LEDset resistor values.

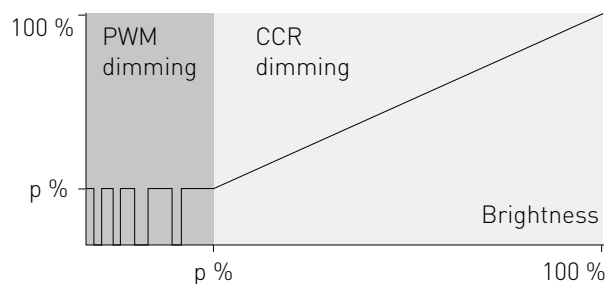
Note: See page 2 - 3 for dimensions and additional information

Load output



Hybrid dimming technique

I-OUT



Dimming range	Dimming technique
1 % – 30 %	Pulse Width Modulation (PWM)*
30 % – 100 %	Constant Current Reduction (CCR)

* PWM dimming frequency 800 Hz

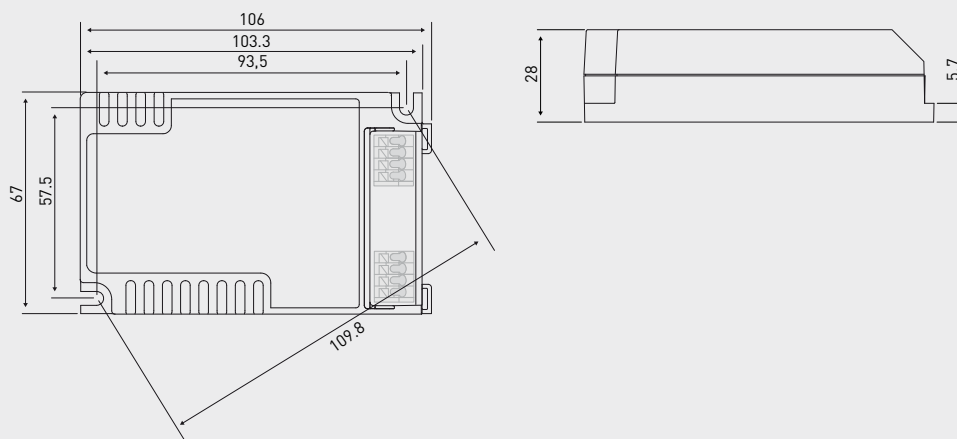
Current setting resistor values, E24 series (Nominal I_{out} ($\pm 5\%$ tol.))

R (Ω)	0	5k1	5k6	6k2	6k8	Open
I_{out} (mA)	1050	980	893	806	735	700

Current setting resistor values, E96 series (Nominal I_{out} ($\pm 5\%$ tol.))

R (Ω)	0	4870	4990	5110	5230	5360	5490	5620	5760	5900	6040	6190	6340	6490	6650	6810	6980	Open
I_{out} (mA)	1050	1027	1002	978	956	933	911	890	868	847	828	808	789	770	752	734	716	700

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, $I_{peak}^2 \Delta t$
53 pcs.	86 pcs.	25 A	177 μs	0.08 A ² s

LC1x35-DA 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.

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

LC1x35-DA 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
Digital addressing lighting interface (DALI Standard Rev 2)	EN62386-207
Compliant with relevant EU directives	
ENEC and CE marked	