

1x25 W Dimmable DALI LED driver

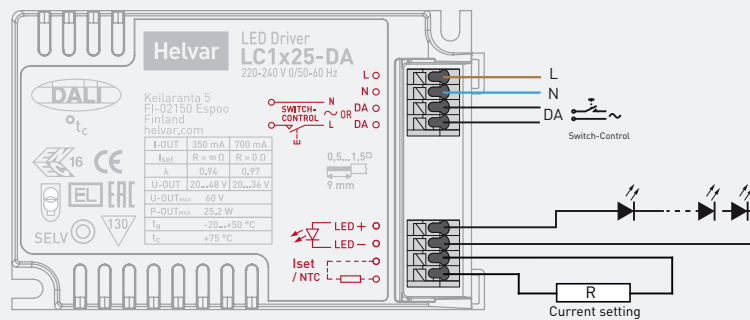
- DALI control input 1% – 100% dimming range
- Hybrid dimming technique for high quality light
- Adjustable constant current output: 350 mA (default) to 700 mA
- Suitable for use in emergency lighting applications
- Optional click-on strain relief (LC1x30-SR) for installation outside of a luminaire
- Suitable for use in class I, II and III luminaires
- Long lifetime, up to 100 000 h



25 W
220 VAC – 240 VAC
50 Hz – 60 Hz



Connections



Current setting (p. 2)	
Resistor R	output I _v
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	0.13 A – 0.14 A
Frequency	0 / 50 Hz – 60 Hz
Stand-by power consumption	0.43 W

Ambient temperature range	-20 °C – +50 °C
Storage temperature range	-40 °C – +80 °C
Maximum relative humidity	no condensation

Load output (SELV < 60 V)

Output current (I _{out})	350 mA (default) – 700 mA
Accuracy	± 5 %
Ripple	< ± 2 %, at ≤ 120 Hz* < ± 25 %, at > 20 kHz*
*) LED load: Cree XM-L LEDs	
U _{out} (max) (abnormal)	60 V
EOFx (EL use)	> 0.98

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

	I _{out} 350 mA	700 mA
P _{out} (max)	16.8 W	25.2 W
U _{out}	20 V – 48 V	20 V – 36 V
λ	0.94	0.97
Half power λ	0.90 @ 14 W	0.90 @ 14 W
Efficiency (η), max load	0.85	0.86

Functional description

- DALI memory bank functionality
- Adaptive overload protection. Reduces output current if overload of 1 - 4 V is connected.
- Open and short circuit protection
- Adaptive internal thermal protection
- Output current programmable via DALI
- Multipurpose terminal; Iset * / NTC
- Multipurpose terminal; DALI / Switch control
- NTC function (default trigger level at 8k2)
- Constant Light Output CLO (default disabled)
- Full load recognition: automatic recovery
- Power consumption monitor (real time)
- Running hour monitor (accumulative)
- Energy management (accumulative)

Insulation between circuits

Mains circuit - SELV circuit	Double/reinforced insulation
DALI circuit - SELV circuit	Double/reinforced insulation

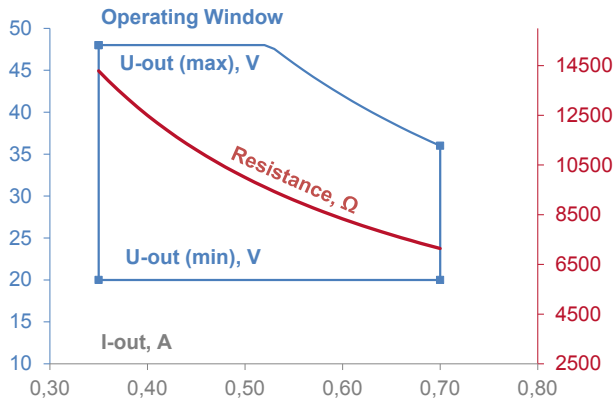
Operating conditions and characteristics

Highest allowed t _c point temperature	75 °C
Life time (90 % survival rate)	100 000 h, at t _c = 65 °C 90 000 h, at t _c = 70 °C 60 000 h, at t _c = 75 °C

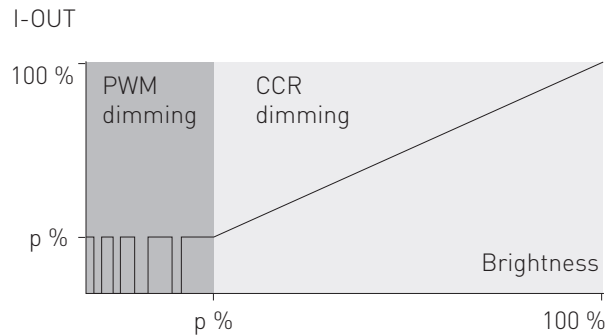
* Selection of the external resistors have been made easy by designing the product to comply with LEDset resistor values.

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

Load output



Hybrid dimming technique



Dimming range	Dimming technique
1 % – 40 %	Pulse Width Modulation (PWM)*
40 % – 100 %	Constant Current Reduction (CCR)

* PWM dimming frequency 800 Hz

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

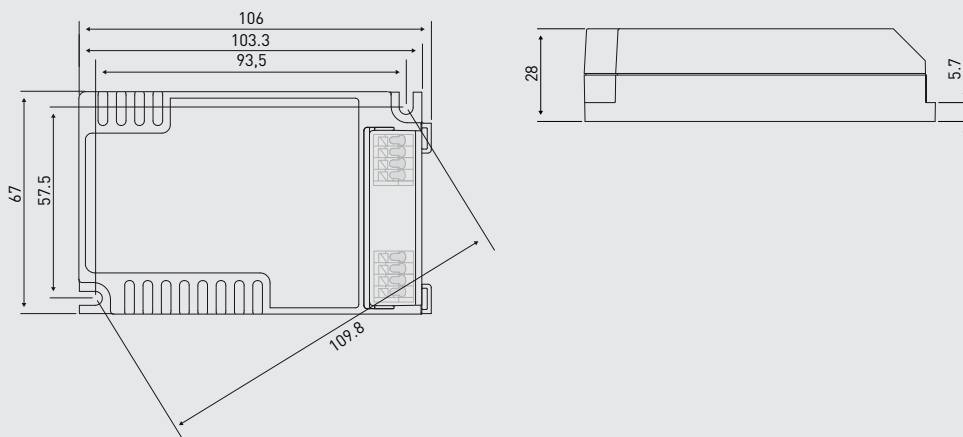
R (Ω)	0	8k2	9k1	10k	11k	12k	13k	Open
I _{out} (mA)	700	610	550	500	455	417	385	350

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

R (Ω)	0	7150	7320	7500	7680	7870	8060	8250	8450	8660	8870	9090	9310	9530	9760
I _{out} (mA)	700	699	683	667	651	635	620	606	592	577	564	550	537	525	512

R (Ω)	10k	10k2	10k5	10k7	11k	11k3	11k5	11k8	12k1	12k4	12k7	13k	13k3	13k7	14k	Open
I _{out} (mA)	500	490	476	467	454	442	435	424	413	403	394	384	376	365	357	350

Dimensions (mm)



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 Δt
86 pcs.	86 pcs.	24 A	115 μs	0.048 A ² s

LC1x25-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

LC1x25-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	EN62386-207
Compliant with relevant EU directives	
ENEC and CE marked	