



Light
is our passion

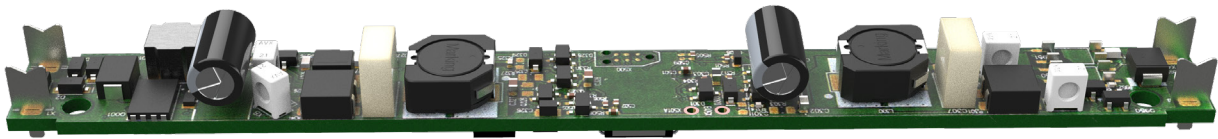
32W DALI-2 'Dim to Dark' LED Driver

DUALdrive

LED technology enables further miniaturization of track lighting. To meet the ever-tighter form factor constraints, these tracks rely on small LED drivers that are powered by a remote 48V DC power supply.

eldoLED developed a family of LED drivers that are mechanically designed to offer a seamless integration into the track adapters of the Stucchi MULTISYSTEM and MULTISYSTEM EVO track systems. This LED driver delivers the Quality of Light and Dynamic White Lighting functionality that is required for specification-grade track lighting by dimming to 0.1%, meeting IEEE P1789 recommendations on flicker, enabling controls interoperability through DALI-2 certification, and supporting tunable white with eldoLED LightShape technology.

Product offering



DUALdrive 32P-D2Z0D

Part number P/N	DL32P-D2Z0D1
Product description	DUALdrive DC, 32W, DALI-2, 2 control channel, constant current, 2 x 40V LED output, open frame, compatible with Stucchi MULTISYSTEM track adapter

Features & benefits

Stucchi MULTISYSTEM	Compatible with the Stucchi MULTISYSTEM track adapter 9519-166 single spot series
Programmable	Fine-tune your driver across a wide operating window for any application
Camera compatibility	Hybrid HydraDrive technology is proven to work in TV studios and security camera environments
Natural dimming	Dim to dark, smooth brightness changes, excellent flicker performance, adaptable dimming curves, configurable minimum dimming level
LightShape	Tunable White: colour temperature and intensity control

Programming tools

Programming interface	TOOLbox pro (TLU20504)
Programming cable set	TOOLbox pro to LED driver, programming cable, 5pcs (TLC03051)
Programming	Hand-held, Touch-and-Go PJ0050HL1
Programming software	FluxTool

Warranty

Warranty period	General Terms and Conditions
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Input characteristics

Nominal input voltage range 48VDC \pm 2VDC

Efficiency at full load 91%

Maximum standby power < 5mW

Output characteristics

Maximum LED output power 32W

Number of LED outputs 2

Programmable LED output current range 150 - 1050mA (per LED output)
1200mA (cumulative)

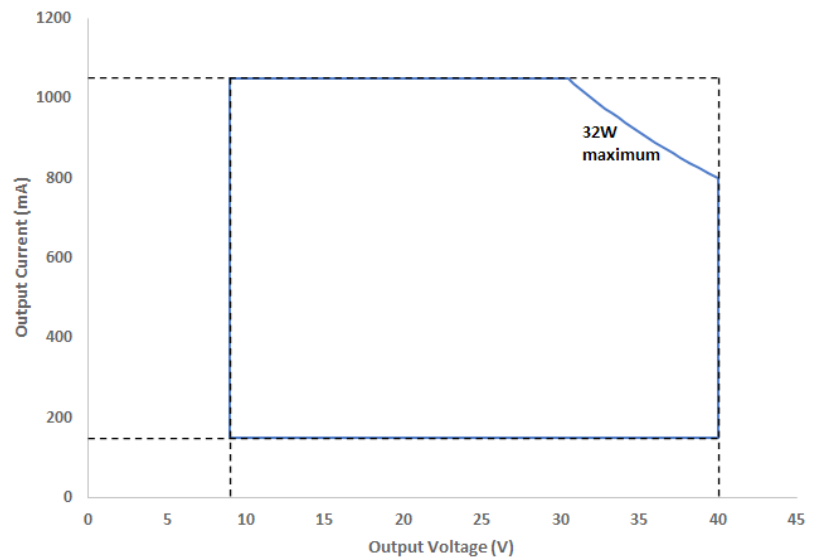
LED output current resolution Programmable in 1mA increments within specified current range

LED output type Constant current

LED output current tolerance +/- 5% at programmed LED output current

LED output voltage range 9 - 40V

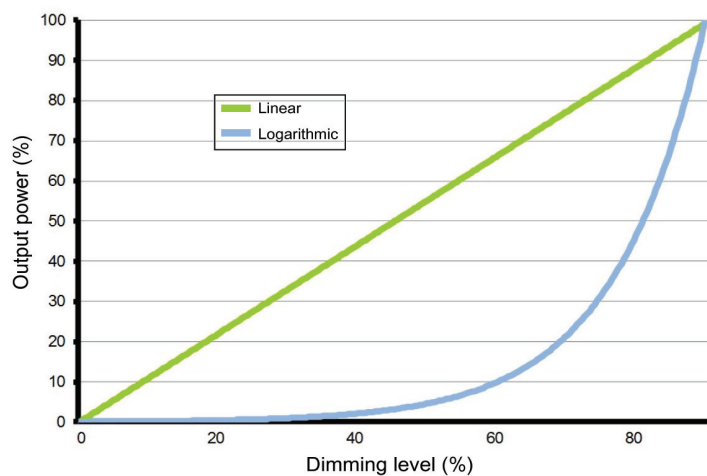
Operating window



Control characteristics

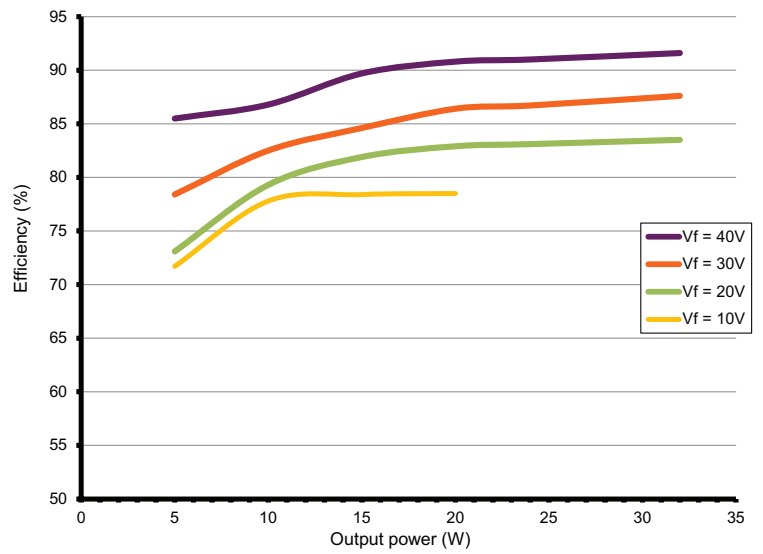
Control channels	2
Control protocol	DALI-2 Device Type 6
Dimming range	100% - 0.1%
Dimming curve options	Logarithmic (default) Linear
Dimming method	Hybrid HydraDrive
LightShape	Tunable White, 2x pc-white

Dimming curves



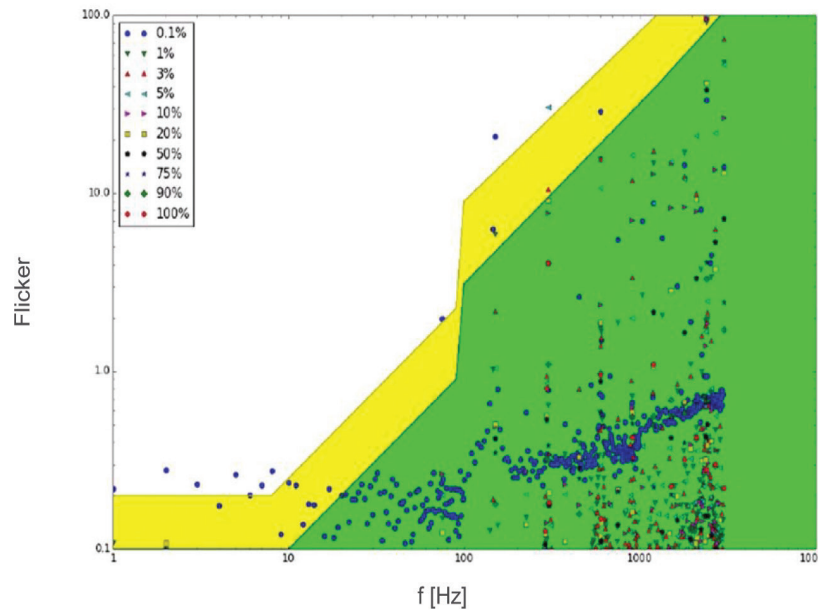
Performance

Typical efficiency vs load
Tested with the specified loads at 25°C ambient temperature.



Typical flicker performance

Typical flicker percent as a function of frequency, measured across the dimming range. The results are overlaid with the low-risk (yellow) and no observable effect (green) levels as defined in IEEE P1789.

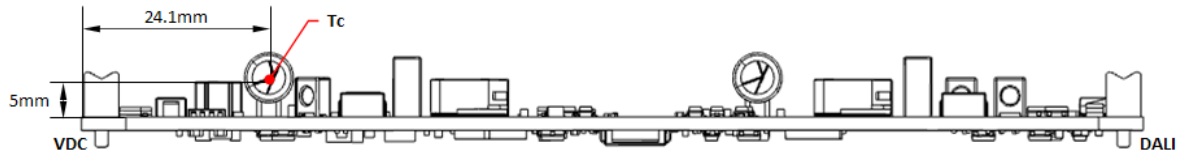


Environmental conditions

Operating ambient temperature (T_a) range -20 °C to +48 °C (see the Design Guide for details)

Lifetime 50000 hours at a maximum case temperature (T_c) of 83 °C

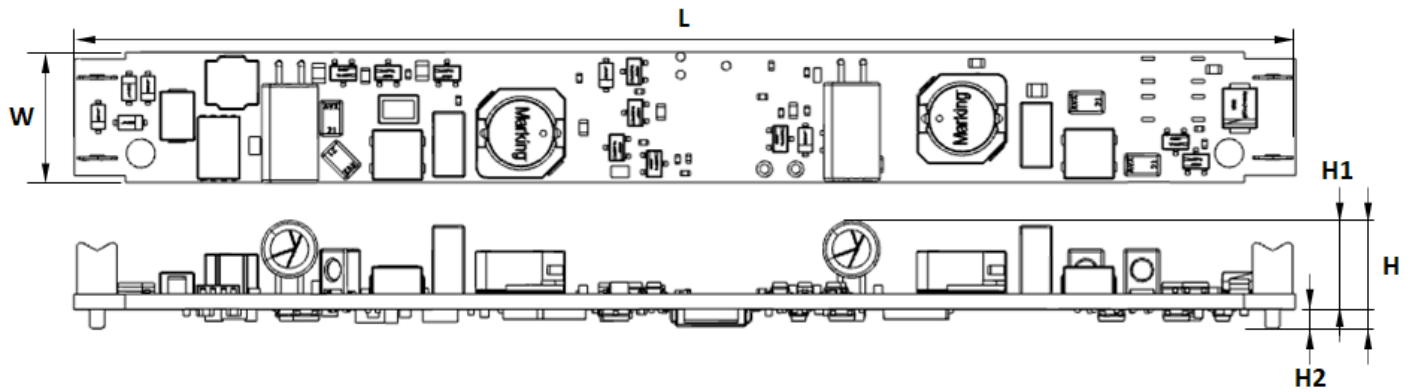
TC point location



LED driver protection

Thermal	The LED output current is decreased whenever the internal LED driver temperature exceeds factory preset temperature. The LED output current is increased again once the internal LED driver temperature drops below this internal temperature threshold. If the internal LED driver temperature continues to increase, despite a decrease in output current, the LED driver will shut down.
LED output short circuit	The LED output current is cut off whenever the LED driver detects a short-circuit. The LED driver will attempt a restart every 400ms after a short-circuit is detected.
LED output overload	The LED driver decreases the LED output current sequentially, until it reaches its maximum rated power, whenever a load that exceeds the LED driver's maximum rated power is connected to the LED output.
Reverse polarity	The LED driver will not yield any current if the polarity of the load on the LED output is reversed. This situation will not damage the LED driver but may damage the LED load.

LED driver mechanical details



Length (L) typical: 136.4 mm / 5.37 in

Width (W) typical: 14.5 mm / 0.57 in

Height (H) typical: 12.0 mm / 0.47 in

Height PCB + top components (H1) typical: 9.8 mm / 0.39 in

Height bottom components (H2) typical: 2.1 mm / 0.08 in

3D files available on product web page IGS
STEP

Weight 18g

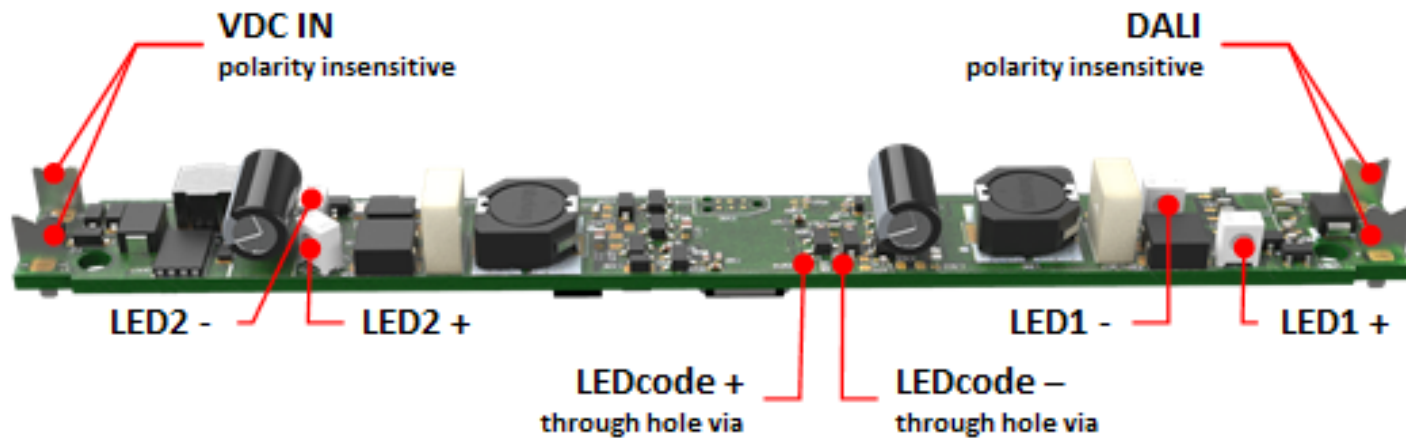
Packaging

Length x Width x Height 337 x 178 x 159 mm / 13 x 7 x 6 in

Weight (including products) 1.4 kg

Products per box 50 pcs

Connector layout



Output wiring specifications

Connector type	Insulation Displacement
Connector supplier and series	AVX 009176001601906
Wire type	stranded copper
Wire core cross section	0.5 mm ² AWG 20

Standards and compliance

UL, Recognized component	UL 1310 UL 8750
ENEC safety	EN 61347-1 EN 61347-2-13
ENEC performance	EN 62384
Conducted emissions	EN 55015, Class B FCC Title 47 CFR part 15 Class B
Radiated emissions	EN 55015 Class B FCC Title 47 CFR part 15 Class B
Radio disturbance characteristics	EN 55022
Electrostatic discharge	EN 61000-4-2
Conducted radio frequency	EN 61000-4-6
ECODesign 2019/2020: Controlgear + luminaire	Flicker for LED: Pst LM ≤ 1.0 at full-load Stroboscopic effect for LED: SVM ≤ 0.4 at full load
Restriction of hazardous substances	RoHS3 (Directives 2011/65/EU-2015/863/EU)
SVHC-list substances	REACH Art.33
DALI-2	IEC 62386-101 Edition 2.0, IEC 62386-102 Edition 2.0, IEC 62386-207 Edition 1

Certifications



Order number configurator

Standard

DL32P - D2Z0D1 0000 mA 000 00.0 min
P/N LED Output Current Dimming Curve Minimum Dimming Level

Multi-Current

DL32P - D2Z0D1 MCUR mA 000 00.0 min
P/N LED Output Current Dimming Curve Minimum Dimming Level

CH1 - 0000 mA CH2 - 0000 mA
LED Output 1 LED Output 2

LightShape

DL32P - D2Z0D1 0000 mA TWH 000 00-00 K
P/N LED Output Current LightShape Control Dimming Curve Gamut CCT

00-00 lm 000 000 00 lm 00-00 K
Gamut Lumen Output CCT Control Curve Flux Optimization Method Maximum Luminous Flux Path CCT

LightShape Multi-Current

DL32P - D2Z0D1 MCUR TWH 000
P/N LED Output Current LightShape Control Dimming Curve

CH1 - 000000 mA CH2 - 000000 mA 00-00 K
LED Output 1 LED Output 2 Gamut CCT

00-00 lm 000 000 00 lm 00-00 K
Gamut Lumen Output CCT Control Curve Flux Optimization Method Maximum Luminous Flux Path CCT

P/N	LED driver part number.
LED output current, Standard	Output current identical for all outputs? Enter value in 1mA increments, e.g. "411" for 411mA.
LED output current, LightShape	Output current different per output? Enter "MCUR" in LED output current and specify the different currents for LED outputs 1 and 2. Note that the cumulative current is limited.
Dimming curve	"LOG" for logarithmic (default) "LIN" for linear
Minimum dimming level	Leave blank for default minimum dimming level of 0.1%. Specify in 0.1% increments, e.g. "10.5" for 10.5%.
LightShape control type	"TWH" stands for Tunable White
Gamut CCT	Enter the LEDs' CCT as "XX-YY" where XX is LED output 1 and YY is LED output 2. Available options per output: 18, 20, 22, 25, 27, 30, 35, 40, 50, 57 and 65. e.g. "18-50" for 1800K on LED output 1 and 5000K on LED output 2
Gamut lumen output	Enter the lumen output range for LED output 1 and 2 as "XX-YY" where XX is LED output 1 and YY is LED output 2. Available range per output: from "01" for 100lm to "99" for 9900lm. e.g. "10-12" for 1000lm on LED output 1 and 1200lm on LED output 2.
CCT control curve	Enter the required CCT control curve: "LOG" for logarithmic, "LIN" for linear (default)
Flux optimization method	Leave blank if a consistent luminous flux output over the full CCT range is required (default); enter "MAX" if the luminous flux must be limited to a maximum value for all outputs combined.
Maximum luminous flux	If Flux optimization method is set to "MAX", specify the required lumen output, e.g. "12" for 1200lm. If left blank it is constant (default).
Path CCT	Leave blank if Path CCT requires the same values as Gamut CCT. Or specify the Path CCT values as "XX-YY" where XX is LED output 1 and YY is LED output 2. Available options per output: 18, 20, 22, 25, 27, 30, 35, 40, 50, 57, 65. e.g. "18-50" for 1800K on LED output 1 and 5000K on LED output 2.

Safety



Risk of electrical shock. May result in serious injury or death. Disconnect power before servicing or installing.



The LED driver may only be connected and installed by a qualified electrician. All applicable regulations, legislation, and building codes must be observed. Incorrect installation of the LED driver can cause irreparable damage to the LED driver and the connected LEDs. Pay attention when connecting the LEDs: polarity reversal results in no light output and often damages the LEDs.



LED drivers are designed and intended to operate LED loads only. Powering non-LED loads may push the LED driver outside its specified design limits and is, therefore, not covered by any warranty.



eldoLED products are designed to meet the performance specifications as outlined at certain operating conditions in the data sheet. It is the responsibility of the fixture manufacturer to test and validate the design and operation of the system under expected and potential use cases, including faults.



Please observe voltage drop over long cable lengths. Longer cable lengths increase EMI susceptibility.



Product renderings and dimensional drawings are generic for the housing type. Product label, connector type and quantity may vary.

Europe, Rest of World

eldoLED B.V.
Science Park Eindhoven 5125
5692 ED Son
The Netherlands

E: info@eldoled.com
W: www.eldoled.com

North America

eldoLED America
One Lithonia Way
Conyers, GA 30012
USA

E: info@eldoled.com
W: www.eldoled.com
