

OT 50/120-277/1A2 2DIMLT2 P

OPTOTRONIC - 2DIM IP64 | 0...10 V, AstroDIM – constant current LED drivers



Product family features

- Available with different wattage: 50 W, 100 W, 110 W
- Input voltage: 120...277 V
- Available with output current range: up to 1,400 mA
- Flexible current setting with one additional wire (LEDset2)
- AstroDIM for autonomous dimming with five independent levels (astro mode)
- Isolated 0...10 V interface for unidirectional telemanagement systems
- Constant Lumen Output (CLO)
- Overtemperature protection with external NTC or LEDset2 interface

Product family benefits

- 2DIM functionality in one device (AstroDIM, 0...10 V)
- High surge protection: up to 6 kV (in protection class I or II)
- Fast programming without mains voltage
- High efficiency
- Great flexibility due to wide operating temperature range of -40...55 °C
- Protection through double isolation between mains input and LED output
- IP rating: IP64

Areas of application

- Street and urban lighting
- Industry
- Suitable for luminaires of protection classes I and II

Technical data

Electrical data

Max. ECG no. on circuit breaker 10 A (B)	11 ¹⁾
Max. ECG no. on circuit breaker 16 A (B)	17 ¹⁾
Maximum output power	50 W
Minimum output current	180 mA
Nominal output current	600...1250 mA
Nominal output power	50 W ²⁾
Nominal output voltage	20...55 V
Nominal input voltage	120...277 V
Input voltage AC	108...305 V ³⁾
Input voltage DC	not relevant
Device power loss	9.6 W ⁴⁾
Efficiency in full-load	86 % ⁵⁾
Galvanic isolation primary/secondary	3.75 kV ⁶⁾
Inrush current	30 A ⁷⁾
Power factor λ	0.95 / 0.90 ⁸⁾
Mains frequency	50...60 Hz
Surge capability (L-N)	6 kV ⁹⁾
Surge capability (L/N-Ground)	6 kV ¹⁰⁾
U-OUT (working voltage)	60 V
Output current tolerance	± 5 % ¹¹⁾
Output ripple current (100 Hz)	30 %
Total harmonic distortion	15 % ¹²⁾
Default output current	1000 mA

1) Type B

2) Partial load 12...50 W / Not dimmed

3) Permitted voltage range

4) Maximum

5) at 230 V, 50 Hz

6) SELV

7) $t_{width} = 250 \mu s$ (measured at 50 % I_{peak})

8) Minimum / Full load at 230 V / Half load at 230 V

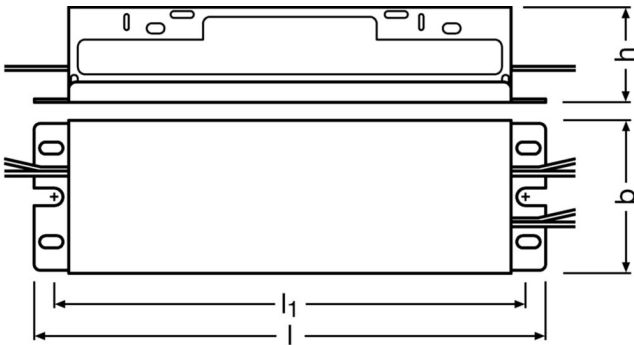
9) @ 2 Ohm, acc. to EN61547

10) EQUI @ 12 Ohm acc. to EN 61547

11) Within nominal output current range

12) Max. output power at 230 V_{AC}

Dimensions & weight



Product weight	490.00 g
Length	168.0 mm
Height	30.0 mm
Width	50.0 mm
Cable/wire length, input side	300 mm ¹⁾
Cable/wire length, output side	280 mm ¹⁾
Mounting hole spacing, length	152.0 mm
Wire preparation length, input side	10 mm
Wire preparation length, output side	10 mm

1) ± 20 mm

Colors & materials

Casing material	Metal
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Temperatures & operating conditions

Ambient temperature range	-40...+55 °C
Max.housing temperature in case of fault	120 °C
Maximum temperature at tc test point	80 °C ¹⁾
Permitted rel. humidity during operation	5...85 % ²⁾
Permitted relative humidity at storage	5...85 %
Temperature range at storage	-25...80 °C

1) Maximum at the Tc-point

2) Non condensing, absolute humidity: 36g/m³

Expected Lifetime

Product name				
OT 50/120-277/1A2 2DIMLT2 P	ECG ambient temperature [ta]	55	45	40
	Temperature at tc-point [°C]	80	70	65
	Lifetime [h]	50000	80000	100000

Lifespan

ECG lifetime	80000 h ¹⁾
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1) At $T_{case} = 70^{\circ}C$ at T_c point / 10% failure rate

Capabilities

Max. cable length to lamp/LED module	10 m ¹⁾
Number of channels	1
Dimmable	Yes
Dimming interface	2DIM / 1...10 V / AstroDIM
Dimming range	30...100 %
Overload protection	Automatic reversible
Overheating protection	Yes
Short-circuit protection	Yes
Suitable for fixtures with prot. class	I / II
Type of connection, output side	Wires
Constant lumen function	Programmable
No-load proof	Yes

1) Output wires must be routed as close as possible to each other

Certificates & standards

Type of protection	IP64
Standards	Acc. to EN 61347-1 / Acc. to EN 61347-2-13 / Acc. to EN 62384 / Acc. to EN 55015:2006 + A1:2007 + A2:2009 / Acc. to EN 61547 / Acc. to FCC 47 part 15 class A / Acc. to IEC 61000-3-2 / Acc. to IEC 61000-3-3 / UL-8750
Approval marks – approval	CE / ENEC 15 / UR / CQC

Logistical data

Commodity code	85044083900
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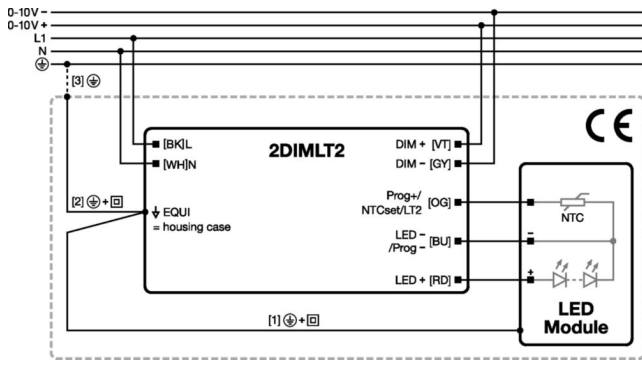
Environmental information

Information according Art. 33 of EU Regulation (EC) 1907/2006 (REACH)	
Date of Declaration	21-08-2024
Primary Article Identifier	4052899173804 4050732453854
Declaration No. in SCIP database	In work
SCIP_STATUS	In work
SCIP_ID	

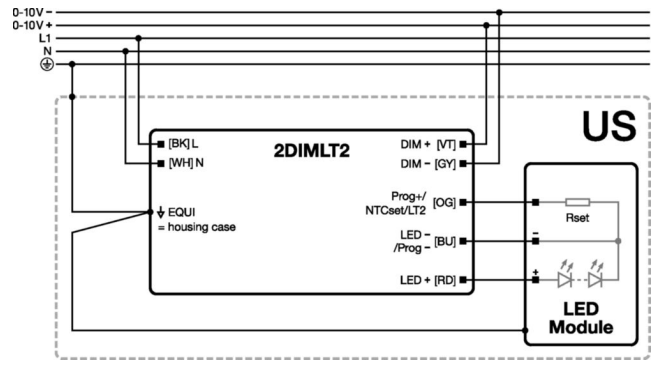
Equipment / Accessories

- OT Programmer hardware for configuration of 2DIM ECGs necessary
- Programmable via Tuner4TRONIC™ software

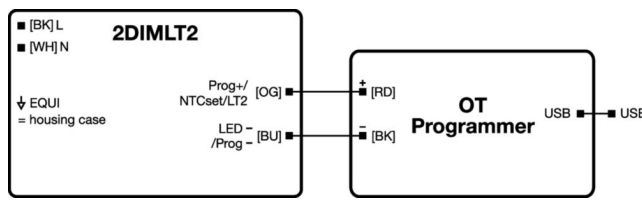
Wiring Diagram



494748_Wiring Diagramm 2DIMLT2 with NTC



494749_Wiring Diagramm 2DIMLT2 with LEDset2



494750_Wiring Diagramm 2DIMLT2 with OT Programmer

Ecodesign regulation information:

Intended for use with LED modules.

The forward voltage of the LED light source shall be within the defined operating window of the control gear in all operating conditions including dimming if applicable.

Separate control gear and light sources must be disposed of at certified disposal companies in accordance with Directive 2012/19/EU (WEEE) in the EU and with Waste Electrical and Electronic Equipment (WEEE) Regulations 2013 in the UK. For this purpose, collection points for recycling centres and take-back systems (CRSO) are available from retailers or private disposal companies, which accept separate control gear and light sources free of charge. In this way, raw materials are conserved and materials are recycled.

Additional product information

- 800 mA type: Default output current is 700 mA without any resistor connected to the LEDset port.
- 1250 mA type: Default output current is 1000 mA without any resistor connected to the LEDset port.
- 1400 mA type: Default output current is 1000 mA without any resistor connected to the LEDset port.
- The LEDset2 interface is disabled by default and needs to be activated by the programming software. In this case the LEDset2 interface is activated the external thermal protection feature is disabled.
- The driver withstands an input voltage of up to 350 Vac for a maximum of two hours.
- The driver may shut down the load if the input voltage of the load is below the allowed minimum output voltage until the short circuit is removed or the correct load is connected and a power off/on cycle is performed.
- In case the input voltage of the load exceeds the output voltage range of the driver, it automatically reduces the output current to keep the output voltage controlled to the maximum allowed output voltage.
- The driver automatically reduces the output current in case the maximum allowed output power is exceeded, as long as the input voltage of the load is within the declared output voltage range of the driver. In all other cases the driver may shut down the load.
- The driver may shut down in case no load is connected to the driver output until the correct load is connected and a power off/on cycle is performed. Hot-plug of the load or external switching on the secondary side is not allowed.
- The EQUI (housing) shall be connected to the heat sink of the LED module to improve the surge withstand capability of the system and EMI in critical luminaires.
- By default the LEDset / NTCset / Prog+ port is set as NTCset port in resistor based mode with following values: start derating: 6.3 kOhm, end derating 5.0 kOhm, derating level 50 %.
- The default dimming mode is 0...10 V, AstroDIM-PD is disabled.
 - 0...10 V: 30 % minimum dimming level
- The constant lumen feature is disabled by default.
- If any output level is below the physical min level, the physical min level will be used.
- Dimming down to 14 % of the maximum rated output current could be enabled through the programming software, but the compliance with EN 61000-3-2 must be checked below 30 %.
- The driver is intended for built-in use. The luminaire manufacturer is responsible to prevent direct exposure for example to sunlight, water, snow, ice.
- Time to reach the set output current upon start-up is less than 4 s.
- Programming of the driver via Prog+ and Prog- is only allowed without powering it via L/N.
- For further details please consult the 2DIMLT2 application guide.

Download Data

File		
Brochures	PDF	▶ 612095_Overvoltage protection for LED street lighting (EN)
Brochures	PDF	▶ 616680_Technical application guide 2DIMLT2 P LED drivers (GB)
Brochures	PDF	▶ 4 DIM NFC G3 CE LED drivers and T4T C (EN)
Certificates	PDF	▶ 725761_Certificate of analysis OT50
Certificates	PDF	▶ OT VDE ENEC 40050684 160724
Certificates	PDF	▶ OT 50 2DIMLT2P ENEC 01112 080120
Certificates	PDF	▶ 612485_UL Conformity OT 50/120_277/xxx 2DIMLT2 P
Certificates	PDF	▶ 617035_CCC Certificate OT 50/120-277/xxx 2DIMLT2 P
Certificates	PDF	▶ 600317_ENEC certificate OT 2DIMLT2 P
Mandatory Publications	PDF	▶ OT 2DIMLT2P CE 3676115 060921
Mandatory Publications	PDF	▶ OT 2DIML T2 P UK DoC 4307632 020621
Mandatory Publications	PDF	▶ 545682_EC-Conformity OT 50/120-277/xxx 2DIMLT2 P

Logistical Data

Product code	Product description	Packaging unit (Pieces/Unit)	Dimensions (length x width x height)	Volume	Gross weight
4052899173804	OT 50/120-277/1A2 2DIMLT2 P	Shipping carton box 20 Pieces	368 x 338 x 85 mm	10.57 dm ³	524.60 g

The mentioned product code describes the smallest quantity unit which can be ordered. One shipping unit can contain one or more single products. When placing an order, for the quantity please enter single or multiples of a shipping unit

Accessories Optional

Product description	Accessory name	Accessory code
OT 50/120-277/1A2 2DIMLT2 P	OT Programmer	▶ 4052899015098
OT 50/120-277/1A2 2DIMLT2 P	OT Programmer	▶ 4052899209640

Disclaimer

Subject to change without notice. Errors and omission excepted. Always make sure to use the most recent release.