

OT 90/220...240/700 3DIMLT+ E

OPTOTRONIC | Constant current LED power supplies with 3DIM/DALI



Areas of application

- Suitable for luminaires of protection classes I and II
- Suitable for outdoor applications in luminaires with IP > 54

Product benefits

- Large output power range: up to 150 W
- High surge protection: up to 4/6 kV (L-N), 4/6 kV (L/N-PE)
- Different dimming modes and levels can be set
- Stand-alone dimming function enables operation in existing installations

Product features

- 3DIM functionality (StepDIM/AstroDIM/DALI)
- Current output range: 75...700 mA
- Flexible current setting
- Constant lumen function
- Overtemperature protection via external NTC (3DIMLT+ version only)

Technical data

Electrical data

Nominal voltage	220...240 V
Input voltage AC	195...264 V ¹⁾
Nominal current	0.45 A ²⁾
Mains frequency	50...60 Hz
Nominal input voltage (SD port)	220...240 V ³⁾
Power factor λ	0.95/0.90 ⁴⁾
Total harmonic distortion	10 %
Device power loss	10 W ⁵⁾
Inrush current	40 A ⁶⁾
Max. ECG no. on circuit breaker 10 A (B)	6 ⁷⁾
Max. ECG no. on circuit breaker 16 A (B)	12 ⁷⁾
Max. ECG no. on circuit breaker 25 A (B)	20 ⁷⁾
Max. no. of ECGs on 16A MCB with EBN-OS	24
Surge capability (L/N-Ground)	4 kV ⁸⁾
Surge capability (L-N)	4 kV ⁹⁾
Surge capability (L/N – SD)	4 kV ⁹⁾
Surge capability (SD – Ground)	4 kV ⁸⁾
Nominal output power	90 W ¹⁰⁾
ECG efficiency	90 % ¹¹⁾
Nominal output voltage	64...245 V
U-OUT (working voltage)	260 V
Nominal output current	350...700 mA
Output current tolerance	±5 %
Output ripple current (100 Hz)	15 %
Minimum output current	75 mA
Galvanic isolation	double/reinforced

1) Permitted voltage range

2) Maximum at 230 V

3) In relation to L/N / Active: input current > 650 μA_{pk} / Inactive: input current < 12 μA_{pk}

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

5) Maximum

6) $t_{\text{width}} = 330 \mu\text{s}$ (measured at 50 % I_{peak})

7) Type B

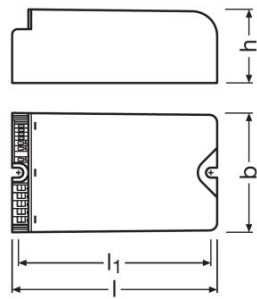
8) EQUI @ 12 Ohm acc. to EN 61547

9) @ 2 Ohm, acc. to EN61547

10) Partial load 23...90 W / Not dimmed

11) At full load and 230 V

Dimensions & weight



Mounting hole spacing, length	122.5 mm
Mounting hole spacing, width	-
Length	133.0 mm
Width	77.0 mm
Height	48.0 mm
Product weight	725.00 g
Cable cross-section, input side	0.25...2.5 mm ² ¹⁾
Cable cross-section, output side	0.25...1.5 mm ² ²⁾
Wire preparation length, input side	10...11 mm ³⁾

¹⁾ Flexible / Solid leads / Equipotential pole only 0.25...1.5 mm²

²⁾ LEDset only 0.2...0.5 mm² / Solid leads / Flexible

³⁾ Equipotential pole 8.5...9.5

Temperatures & operating conditions

Ambient temperature range	-30...+55 °C
Maximum temperature at tc test point	90 °C ¹⁾
Max.housing temperature in case of fault	110 °C
Permitted rel. humidity during operation	5...85 %

¹⁾ Maximum at the Tc-point

Lifespan

ECG lifetime	85000 h ¹⁾
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¹⁾ At $T_{case} = 80^{\circ}C$ at T_c point / 10% failure rate

Expected Lifetime

Product name				
OT 90/220...240/700 3DIMLT+ E	ECG ambient temperature [ta]	55	45	40
	Temperature at tc-point [°C]	90	80	75
	Lifetime [h]	50000 ¹⁾	85000 ¹⁾	100000 ¹⁾

¹⁾ Max. 10% failure rate at tc max and input voltage 230 V_{AC}

Capabilities

Dimmable	No
Dimming interface	3DIM / DALI / StepDIM / AstroDIM
Dimming range	10...100 % ¹⁾
Constant lumen function	Programmable
NTC input	Yes ²⁾
Overheating protection	Automatic reversible
Overload protection	Automatic reversible
Short-circuit protection	Automatic reversible
No-load proof	Yes
Max. cable length to lamp/LED module	2.0 m

¹⁾ For 700mA nominal output current

²⁾ Supports 10K, 5 %, NCP18XH103J03RB / Supports 15K, 5 %, NCP18XW153J03RB / Supports 15K, 3 %, NCP15XW153E03RC + 390 Ohm / EPCOS B57423V2473H

Certificates & standards

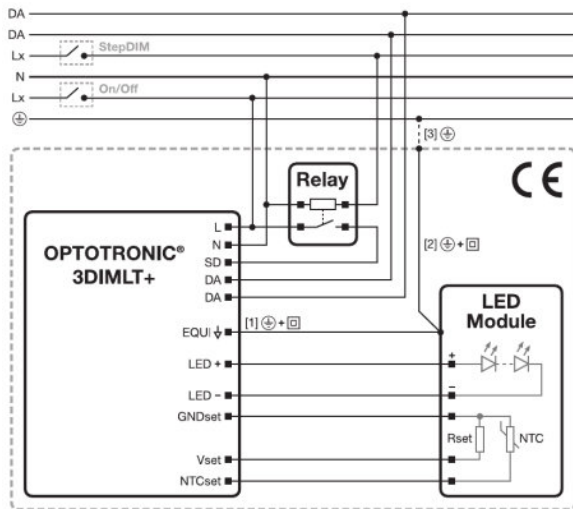
Type of protection	IP20 ¹⁾
Standards	Acc. to IEC 61347-1/Acc. to IEC 61347-2-13/Acc. to IEC 62384/Acc. to EN 55015:2006 + A1:2007 + A2:2009/Acc. to IEC 61000-3-2/Acc. to IEC 61000-3-3/Acc. to EN 61547/Acc. to IEC 62386-101/Acc. to IEC 62386-102/Acc. to IEC 62386-207
Approval marks – approval	CE / ENEC 10 / VDE

¹⁾ IP Fixture rating > IP54

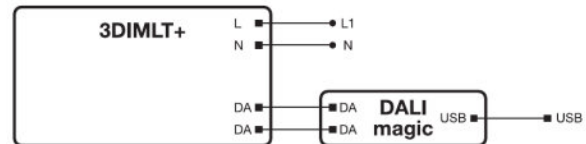
Logistical data

Temperature range at storage	-25...80 °C
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Wiring Diagram



Wiring diagram



Wiring diagram

Equipment / Accessories

- DALI magic hardware for configuring 3DIM ECGs necessary

Additional product information

- Shut down of output load happens if the input voltage of the load is below the allowed minimum output voltage of the driver. The driver automatically tries to switch on the load cyclically.
- 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.
- The EQUI pin 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.
- Several external NTCs are supported for temperature protection of the LED module or luminaire. The type of NTC can be selected in the programming software in the temperature based mode. By default the resistor based mode is activated with following values: start derating: 6.3 kOhm, end derating 5.0 kOhm, shut off: 4.3 kOhm, derating level 50 %.
- The default dimming mode is StepDIM / AstroDIM / DALI (wiring selection) with following values for:- StepDIM: 100 % on, 50 % dimming level if SD port is active, fade time 180 s- AstroDIM: 100 % on, 50 % dimming level, 6 h dimming duration, start of dimming duration 2 h before the middle of the average switched-on time, fade time 180 s
- 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.
- An external relay connected in front of the SD port is necessary in installations with leakage currents from N and L exceeding the defined limits per device (SD input current: active > 650 µAp and inactive < 12 µAp). The relay needs to be selected in a way that it is not switched or hold by the occurring leakage currents in the installation. This relay is also needed to ensure the compatibility with the new 4DIMLT2 OPTOTRONIC drivers.

Product datasheet

Download Data

File	
	Brochures APPLICATION GUIDE. The LEDset interface. (GB)
	Brochures LMS 3 DIM Flyer (GB)
	Brochures 3DIM - controll gears - Reliable, durable and efficient (G)
	Brochures 3DIM Application Guide (GB)
	Brochures Overvoltage protection for LED street lighting (EN)
	Declarations of conformity CE Conformity OT 90220-240700 3DIMLT+ E
	CAD data 3-dim CAD OT 50-90-3DIM LT
	Product movie 3DIM Astro, StepDIM, DALI Video

Logistical Data

Product code	Product description	Packaging unit (Pieces/Unit)	Dimensions (length x width x height)	Volume	Gross weight
4008321863515	OT 90/220...240/700 3DIMLT+ E	Shipping carton box 20	483 mm x 285 mm x 167 mm	22.99 dm ³	15471.00 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.

Disclaimer

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