PRODUCT DATASHEET
OT 90/170…240/1A0 4DIMLT2 E

OT 4DIM IP20 | DALI, AstroDIM, StepDIM, MainsDIM – constant current LED drivers

Areas of application

- Street and urban lighting
- Industry
- Suitable for outdoor applications in luminaires with IP > 54
- Suitable for use in outdoor luminaires of protection class I and II

Product benefits

- 4DIM functionality in one device (StepDIM, AstroDIM, MainsDIM, DALI)
- Very high efficiency
- High surge protection: up to 10 kV (1 pulse) / 8 kV, in protection class I or II
- Low luminous efficacy tolerance through low output current tolerance of ± 3 %
- Great flexibility due to wide operating temperature range of -40…55 °C or 60 °C
- Protection through double isolation between mains input and LED output

Product features

- Available with different wattage: 40 W, 60 W, 90 W, 165 W
- Input voltage: 120…277 V (40 W), 220…240 V (60 W, 90 W, 165 W)
- Current output range: 70…1,050 mA
- Flexible current setting with one additional wire (LEDset2)
- AstroDIM for autonomous dimming with five independent levels (astro, time mode)
- Allows for energy saving in twilight phases
- MainsDIM function for dimming via reduction of line voltage amplitude
- Isolated DALI interface for bidirectional telemanagement systems
- Standby power consumption: < 0.5 W
- Constant Lumen Output (CLO)
- Overtemperature protection via external NTC

TECHNICAL DATA

Electrical data

Nominal wattage	90.00 W
Nominal output power	90 W [1)]
Nominal voltage	220…240 V
Nominal output voltage	57…186 V
Input voltage AC	170…264 V [2)]
U-OUT (working voltage)	200 V
Nominal current	0.46 A
Nominal output current	70…1050 mA
Inrush current	57 A
Output current tolerance	±3 % [3)]
Output ripple current (100 Hz)	15 %
Mains frequency	50/60 Hz
Total harmonic distortion	10 % [4)]
Power factor λ	0.95 [5)]
ECG efficiency	91.5 % [6)]
Device power loss	9.6 W [7)]
Max. ECG no. on circuit breaker 10 A (B)	8 [8)]
Max. ECG no. on circuit breaker 16 A (B)	12 [8)]
Max. ECG no. on circuit breaker 25 A (B)	20 [8)]
Surge capability (L/N-Ground)	10 kV [9)]
Surge capability (L-N)	6 kV [10)]
Galvanic isolation	double/reinforced
Power loss in stand-by mode	< 0.5 W

1) Partial load 20…90 W / Not dimmed

2) Permitted voltage range

3) Within nominal output current range

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

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

6) At full load and 230 V

7) Maximum

8) Type B

9) Single pulse 10kV / 12 Ohm (1.2/50 µs)

10) @ 2 Ohm, acc. to EN61547

Dimensions & Weight

Length	133.00 mm

Mounting hole spacing, length	122,5 mm
Width	77.00 mm
Height	40.00 mm
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)
Wire preparation length, output side	8.5…9.5 mm
Product weight	340.00 g

1) Flexible / Solid leads / Equipotential pole only 0.2…1.5 mm^2

2) Flexible / Solid leads

3) Equipotential pole 8.5…9.5

Colors & materials

Casing material	Metal
Body material	Metal

Temperatures & operating conditions

Ambient temperature range	-40…+55 °C
Maximum temperature at tc test point	90 °C 1)
Max.housing temperature in case of fault	120 °C
Permitted rel. humidity during operation	5…85 % 2)

1) Maximum at the Tc-point

2) Non condensing, absolute humidity: 36g/m^3

Lifespan

ECG lifetime	85000 h 1)

1) At T_{case} = 80°C at T_c point / 10% failure rate

Capabilities

Dimmable	Yes
Dimming interface	4DIM / DALI / StepDIM / AstroDIM / MainsDIM
Dimming range	10…100 % 1)
Overheating protection	Automatic reversible
Overload protection	Automatic reversible
No-load proof	Yes
Short-circuit protection	Automatic reversible
Max. cable length to lamp/LED module	2,0 m
Suitable for fixtures with prot. class	I / II
Type of connection, output side	Push terminal

1) For ≥700 mA nominal output current

Certificates & Standards

Approval marks – approval	CE / ENEC 10 / VDE / VDE-EMC / CQC
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 IEC 61000-3-2 / Acc. to IEC 61000-3-3 / Acc. to IEC 62386-101 / Acc. to IEC 62386-102 / Acc. to IEC 62386-207
Protection class	II
Type of protection	IP20

LOGISTICAL DATA

Temperature range at storage	-25…80 °C

EQUIPMENT / ACCESSORIES

- DALI magic hardware for configuring 4DIM ECGs necessary
- Programmable via Tuner4TRONIC software

ADDITIONAL PRODUCT INFORMATION

- Default output current is 700 mA without any resistor connected to the LEDset port. As soon as the driver detects one time a resistor value within the resistor range of 2.37 kOhm (1050 mA) and 24.9 kOhm (200 mA) for more than 3 s, the driver activates the LEDset2 mode.
- The driver withstands an input voltage of up to 350 Vac for a maximum of two hours. Shut down of output load might occur in case the supply voltage exceeds the declared input voltage range.
- 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 driver automatically adjusts the output voltage to the maximum output voltage if no load is connected and switches off the load after some seconds. Hot-plug of the load or external switching on the secondary side is not allowed.
- The driver is protected against temporary overheating by automatic reduction of the output current down to 30 % and then switches off.
- 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 actived 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.
- For MainsDIM dimming mode and for 170 Vac input voltage condition the output power should not exceed 85 % of the maximum declared output power.
- For input voltage of 170…190 Vac, the maximum allowed output power is linear limited starting from 100 % at 190 Vac down to 85 % at 170 Vac, except for the 40 W type.
- If any output level is below the physical min level, the physical min level will be used.
- In case the 3DIM and 4DIMLT2 devices are operated on one common control phase connected to SD input the 3DIM devices needs to have a relay as described in the 3DIM application guide.
- The SD port is suitable for three phase systems with 220…240 Vac, for other input voltages only single phase systems are supported.
- For further details please consult the 4DIMLT2 application guide.

DOWNLOAD DATA

	Documents and certificates	Document name
PDF	Declarations of conformity	712567_Declaration of Conformity OT 4 DIM LT2 E
PDF	Declarations of conformity	OT 4DIMLT2E CE 3667769 211119
PDF	Declarations of conformity	607414_Synergrid Conformity 4DIMLT2
PDF	Declarations of conformity	EATON(CEAG)-Conformity declaration AA66408_OT90_170-240_1A0_4DIMLT2_E
PDF	Declarations of conformity	INOTEC- Conformity declaration AA66408_OT90_170-240_1A0_4DIMLT2_E
PDF	Certificates	VDE ENEC Certificate 40043863 appendix
PDF	Certificates	OT outdoor ENEC 40050684 100220
PDF	Certificates	VDE EMC Certificate 40038827
PDF	Certificates	541182_CB certificate 40W 60W 90W 4DIM
PDF	Certificates	VDE ENEC Certificate 40043863
PDF	Certificates	OT 4DIM LT2 E CB DE1 63483 060520
PDF	Certificates	725973_Certificate OT90 4DIM

LOGISTICAL DATA

Product code	Packaging unit (Pieces/Unit)	Dimensions (length x width x height)	Gross weight	Volume
4052899925205	Unpacked 1		340.00 g	
4052899173729	Shipping box 20	500 mm x 335 mm x 150 mm	7834.00 g	25.13 dm^3

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

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