# OPTOTRONIC Outdoor – Non dimmable (SELV)

Constant current LED driver

## Areas of application

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

## Product family benefits

- High surge protection: up to 6 kV (L-N) / 6 kV (L/N-PE)
- High efficiency
- Great flexibility due to wide operating temperature range of -40…50 °C or 55 °C
- IP rating: IP65

## Product family features

- Available with different wattage: 50 W, 100 W, 180 W, 250 W
- Input voltage: 120…277 V
- Output current: 700 mA
- Overtemperature protection

## Technical data

### Electrical data

| Product description | Nominal voltage | Input voltage AC | Nominal current | Mains frequency | Power factor λ | Total harmonic distortion |
|---|---|---|---|---|---|---|
| OT 50/120…277/700 P5 | 120…277 V | 108…305 V [1)] | 0.25 A [2)] | 50…60 Hz | 0.95/0.90 [3)] | 10 % [4)] |
| OT 100/120…277/700 P5 | 120…277 V | 108…305 V [1)] | 0.49 A [12)] | 50…60 Hz | 0.95/0.90 [13)] | 10 % [4)] |
| OT 180/120…277/700 P5 | 120…277 V | 108…305 V [1)] | 0.86 A [15)] | 50…60 Hz | 0.95/0.90 [13)] | 10 % [4)] |
| OT 250/120…277/700 P5 | 120…277 V | 108…305 V [1)] | 1.20 A [17)] | 50…60 Hz | 0.95/0.90 [13)] | 10 % [4)] |

| Product description | Device power loss | Inrush current | Max. ECG no. on circuit breaker 10 A (B) | Max. ECG no. on circuit breaker 16 A (B) | Max. ECG no. on circuit breaker 25 A (B) |
|---|---|---|---|---|---|
| OT 50/120…277/700 P5 | 7.5 W [5)] | 50 A [6)] | 8 [7)] | 13 [7)] | 20 [7)] |
| OT 100/120…277/700 P5 | 12 W [5)] | 100 A [6)] | 4 [7)] | 7 [7)] | 12 [7)] |
| OT 180/120…277/700 P5 | 18 W [5)] | 110 A [6)] | 4 [7)] | 7 [7)] | 12 [7)] |
| OT 250/120…277/700 P5 | 21 W [5)] | 65 A [6)] | 6 [7)] | 9 [7)] | 16 [7)] |

| Product description | Surge capability (L/N-Ground) | Surge capability (L-N) | Nominal output power | ECG efficiency | Nominal output voltage |
|---|---|---|---|---|---|
| OT 50/120…277/700 P5 | 6 kV | 6 kV [8)] | 50 W [9)] | 87 % [10)] | 24…74 V |
| OT 100/120…277/700 P5 | 6 kV | 6 kV [8)] | 100 W [14)] | 90 % [10)] | 55…152 V |
| OT 180/120…277/700 P5 | 6 kV | 6 kV [8)] | 180 W [16)] | 90 % [10)] | 115…257 V |
| OT 250/120…277/700 P5 | 6 kV | 6 kV [8)] | 250 W [18)] | 92 % [10)] | 180…357 V |

| Product description | U-OUT (working voltage) | Nominal output current | Output current tolerance | Galvanic isolation |
|---|---|---|---|---|
| OT 50/120…277/700 P5 | 80 V | 700 mA [11)] | ±5 % | SELV |
| OT 100/120…277/700 P5 | 220 V | 700 mA [11)] | ±5 % | double/reinforced |
| OT 180/120…277/700 P5 | 290 V | 700 mA [11)] | ±5 % | basic |
| OT 250/120…277/700 P5 | 410 V | 700 mA [11)] | ±5 % | basic |

1) Permitted voltage range

2) At 230 V/0.50 A for 120 $V_{AC}$

3) Full load at 230 V/Half load at 230 V

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

5) Maximum / At 230 $V_{AC}$

6) $t_{width}$ = 200 µs (measured at 50 % $I_{peak}$)

7) Type B

8) @ 2 Ohm, acc. to EN61547

9) Partial Load 17…50 W

10) At full load and 230 V

11) ±5%

12) At 230 V/1.00 A for 120 $V_{AC}$

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

14) Partial Load 39...100 W

15) At 230 V/1.67 A for 120 $V_{AC}$

16) Partial Load 80...180 W

17) At 230 V/2.3 A for 120 $V_{AC}$

18) Partial Load 125...250 W

### Dimensions & weight

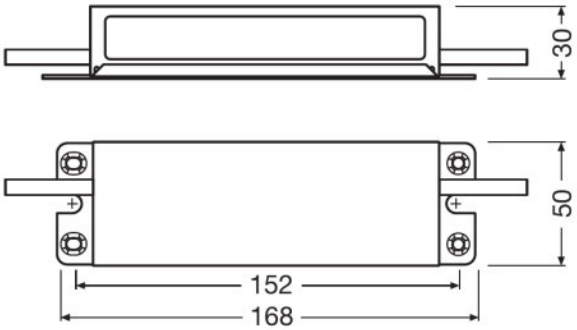
| Product description | Length | Width | Height | Mounting hole spacing, length | Product weight | Cable cross-section, input side |
|---|---|---|---|---|---|---|
| OT 50/120...277/700 P5 | 168.0 mm | 50.0 mm | 30.0 mm | 152.0 mm | 500.00 g | 0.5 mm² |
| OT 100/120...277/700 P5 | 168.0 mm | 60.0 mm | 39.0 mm | 152.0 mm | 665.00 g | 0.5 mm² |
| OT 180/120...277/700 P5 | 251.0 mm | 60.0 mm | 39.0 mm | 236.3 mm | 1000.00 g | 0.75 mm² |
| OT 250/120...277/700 P5 | 267.0 mm | 89.0 mm | 55.0 mm | 254.6 mm | 2200.00 g | 0.75 mm² |

| Product description | Cable cross-section, output side | Wire preparation length, input side | Cable/wire length, input side | Cable/wire length, output side |
|---|---|---|---|---|
| OT 50/120...277/700 P5 | 0.5 mm² | 10 mm | 280 mm 1) | 280 mm 1) |
| OT 100/120...277/700 P5 | 0.5 mm² | 10 mm | 280 mm 1) | 280 mm 1) |
| OT 180/120...277/700 P5 | 0.5 mm² | 10 mm | 355 mm 1) | 355 mm 1) |
| OT 250/120...277/700 P5 | 0.5 mm² | 10 mm | 355 mm 1) | 355 mm 1) |

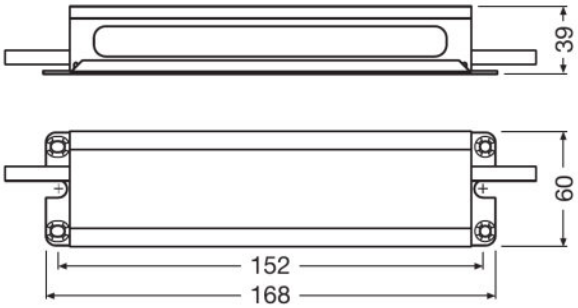
| Product description | Cable/wire length, control input |
|---|---|
| OT 50/120...277/700 P5 | |
| OT 100/120...277/700 P5 | - |
| OT 180/120...277/700 P5 | |
| OT 250/120...277/700 P5 | |

1) ± 30 mm

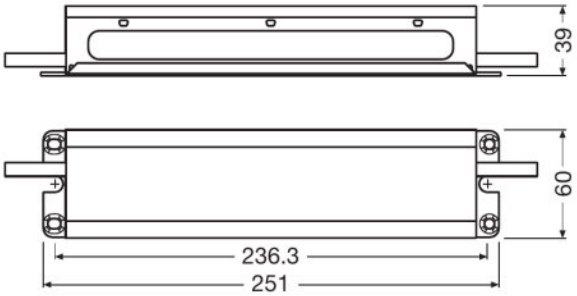
**Product line drawing**



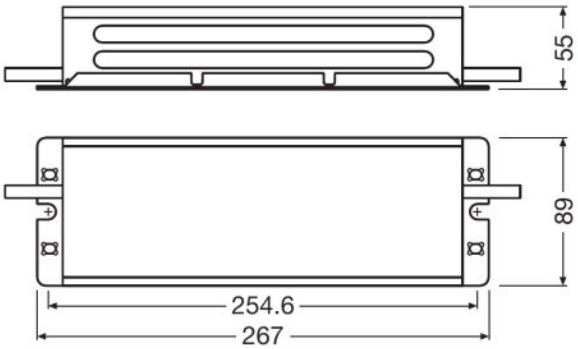

OT 50/120...277/700 P5




OT 100/120...277/700 P5




OT 180/120...277/700 P5




OT 250/120...277/700 P5

### Temperatures & operating conditions

| Product description | Ambient temperature range | Temperature range at storage | Maximum temperature at tc test point | Max.housing temperature in case of fault |
|---|---|---|---|---|
| OT 50/120...277/700 P5 | -40...+55 °C | -25...80 °C | 80 °C [1] | 120 °C |
| OT 100/120...277/700 P5 | -40...+55 °C | -25...80 °C | 85 °C [1] | 120 °C |
| OT 180/120...277/700 P5 | -40...+55 °C | -25...80 °C | 90 °C [1] | 120 °C |
| OT 250/120...277/700 P5 | -40...+50 °C | -25...80 °C | 75 °C [1] | 120 °C |

[1] Maximum at the Tc-point

### Lifespan

| Product description | ECG lifetime |
|---|---|
| OT 50/120...277/700 P5 | 80000 h [1] |
| OT 100/120...277/700 P5 | 80000 h [2] |
| OT 180/120...277/700 P5 | 80000 h [3] |
| OT 250/120...277/700 P5 | 80000 h [4] |

[1] At $T_{case}$ = 70°C at $T_c$ point / 10% failure rate
[2] At $T_{case}$ = 75°C at $T_c$ point / 10% failure rate
[3] At $T_{case}$ = 80°C at $T_c$ point / 10% failure rate
[4] At $T_{case}$ = 65°C at $T_c$ point / 10% failure rate

### Expected Lifetime

| Product name | | | | |
|---|---|---|---|---|
| OT 50/120...277/700 P5 | ECG ambient temperature [ta] | 55 | 50 | 45 |
| | Temperature at tc-point [°C] | 80 | 75 | 70 |
| | Lifetime [h] | 50000 [1] | 65000 [1] | 80000 [1] |
| OT 100/120...277/700 P5 | ECG ambient temperature [ta] | 55 | 50 | 45 |
| | Temperature at tc-point [°C] | 85 | 80 | 75 |
| | Lifetime [h] | 50000 [2] | 65000 [2] | 80000 [2] |
| OT 180/120...277/700 P5 | ECG ambient temperature [ta] | 55 | 50 | 45 |
| | Temperature at tc-point [°C] | 90 | 85 | 80 |
| | Lifetime [h] | 50000 [3] | 65000 [3] | 80000 [3] |
| OT 250/120...277/700 P5 | ECG ambient temperature [ta] | 50 | 45 | 40 |
| | Temperature at tc-point [°C] | 75 | 70 | 65 |
| | Lifetime [h] | 50000 [4] | 65000 [4] | 80000 [4] |

[1] Max. 10% failure rate at tc max and input voltage 230 $V_{AC}$
[2] Max. 10% failure rate at tc max and input voltage 230 $V_{AC}$

[3] Max. 10% failure rate at tc max and input voltage 230 $V_{AC}$

[4] Max. 10% failure rate at tc max and input voltage 230 $V_{AC}$

## Capabilities

| Product description | Dimmable | Suitable for fixtures with prot. class | Number of channels |
|---|---|---|---|
| OT 50/120...277/700 P5 | No | I | 1 |
| OT 100/120...277/700 P5 | No | I | 1 |
| OT 180/120...277/700 P5 | No | I | 1 |
| OT 250/120...277/700 P5 | No | I | 1 |

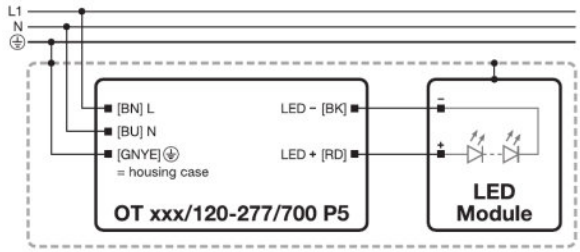
## Certificates & standards

| Product description | Type of protection | Standards | Approval marks – approval |
|---|---|---|---|
| OT 50/120...277/700 P5 | IP65 | Acc. to IEC 61347-1/Acc. to IEC 61347-2-13/Acc. to IEC 62384/Acc. to CISPR 15/Acc. to IEC 61547/Acc. to FCC 47 part 15 class B/Acc. to IEC 61000-3-2/Acc. to IEC 61000-3-3 | CE / CQC |
| OT 100/120...277/700 P5 | IP65 | Acc. to IEC 61347-1/Acc. to IEC 61347-2-13/Acc. to IEC 62384/Acc. to CISPR 15/Acc. to IEC 61547/Acc. to FCC 47 part 15 class B/Acc. to IEC 61000-3-2/Acc. to IEC 61000-3-3 | CE / CQC |
| OT 180/120...277/700 P5 | IP65 | Acc. to IEC 61347-1/Acc. to IEC 61347-2-13/Acc. to IEC 62384/Acc. to CISPR 15/Acc. to IEC 61547/Acc. to FCC 47 part 15 class B/Acc. to IEC 61000-3-2/Acc. to IEC 61000-3-3 | CE / CQC |
| OT 250/120...277/700 P5 | IP65 | Acc. to IEC 61347-1/Acc. to IEC 61347-2-13/Acc. to CISPR 15/Acc. to IEC 61547/Acc. to IEC 61000-3-2/Acc. to IEC 61000-3-3/Acc. to IEC 62384/FCC47 CFR part15 | CE / CQC |

### Logistical data

| Product description | Commodity code |
|---|---|
| OT 50/120...277/700 P5 | 850440829000 |
| OT 100/120...277/700 P5 | 850440829000 |
| OT 180/120...277/700 P5 | 850440829000 |
| OT 250/120...277/700 P5 | 850440829000 |

### Wiring Diagram




OT 50/120...277/700 P5, OT 100/120...277/700 P5, OT 180/120...277/700 P5, OT 250/120...277/700 P5

## Application advice

For more detailed application information and graphics please see product datasheet.

## Additional product information

- 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.
- The driver may increase the output current up to a maximum of 1.5 A in case the input voltage of the load is lower than the allowed minimum output voltage until the short circuit is removed or the correct load is connected. Make sure the system is safely operated, if this event might occur.
- 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.
- Hot-plug of the load or external switching on the secondary side is not allowed.
- The protective earth (GNYE/PE wire, housing) has to be connected to the heat sink of the LED module to improve the capability of the system to withstand a surge and EMI in critical luminaires.
- Time to reach the set output current upon start-up is less than 2 s.
- The driver is intended for built-in use. The luminaire manufacturer is responsible to prevent direct exposure for example to sunlight, water, snow, ice.

## Sales and Technical Support

Sales and Technical Support www.osram.com

## Download Data

| | File |
|---|---|
| | Brochures<br>Technical Application Guide - 4DIMLT2 G2 CE LED drivers (EN) |
| | Certificates<br>607415_CB Certificate OT 50120-277700 P5 |
| | Declarations of conformity<br>OT OUTDOOR P5 CE 3218662 121119 |
| | CAD data 3-dim<br>730736_CAD data OT 50 |
| | Certificates<br>664067_CB Certificate OT100-180-250P5 |
| | CAD data 3-dim<br>730731_CAD data OT 100 |
| | CAD data 3-dim<br>730732_CAD data OT 180 |
| | CAD data 3-dim<br>730733_CAD data OT 250 |

## Logistical Data

| Product code | Product description | Packaging unit (Pieces/Unit) | Dimensions (length x width x height) | Volume | Gross weight |
|---|---|---|---|---|---|
| 4052899259003 | OT 50/120...277/700 P5 | Shipping carton box 20 | 456 mm x 263 mm x 217 mm | 26.02 $dm^3$ | 11061.00 g |
| 4052899259065 | OT 100/120...277/700 P5 | Shipping carton box 20 | 491 mm x 287 mm x 217 mm | 30.58 $dm^3$ | 14475.00 g |
| 4052899259027 | OT 180/120...277/700 P5 | Shipping carton box 10 | 491 mm x 330 mm x 140 mm | 22.68 $dm^3$ | 11087.00 g |
| 4052899259041 | OT 250/120...277/700 P5 | Shipping carton box 6 | 437 mm x 366 mm x 135 mm | 21.59 $dm^3$ | 14263.00 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.