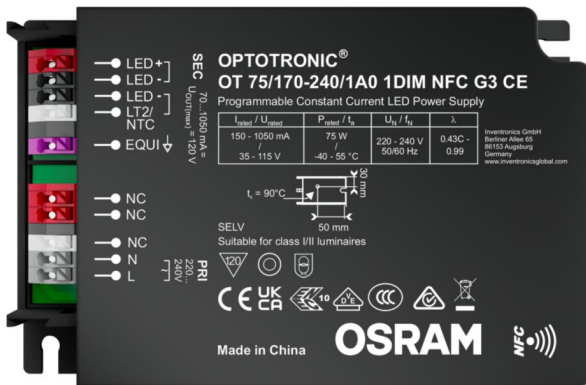# OT 75/170-240/1A0 1DIM NFC G3 CE

OPTOTRONIC - 1DIM NFC IP20 G3 | AstroDIM – constant current LED drivers

## Product family features

- Supply voltage: 220…240 V
- Easy and fast wireless luminaire programming via NFC
- 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
- Standby power consumption: < 0.35 W
- Constant Lumen Output (CLO)
- Integrated customizable thermal management (Driver Guard)
- Wide current output range: 150 mA…1050 mA

## Product family benefits

- Easy and fast wireless luminaire programming
- Very high efficiency
- High surge protection: up to 10 kV (in protection class I or II)
- 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
- Optimized NFC for programming from the top: easy accessibility in luminaires

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Mon Mar 25 15:07:43 CST 2024

## 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

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## Technical data

**Electrical data**

| | |
|---|---|
| **Nominal input voltage** | 220…240 V |
| **Mains frequency** | 0/50/60 Hz |
| **Input voltage AC** | 170…264 V [1] |
| **Input voltage DC** | 176…276 V [2] |
| **Total harmonic distortion** | < 5 % [3] |
| **Power factor λ** | 0.43C…0.99 [4] |
| **Efficiency in full-load** | 92 % [5] |
| **Device power loss** | 6.5 W |
| **Inrush current** | 62 A [6] |
| **Max. ECG no. on circuit breaker 10 A (B)** | 6 |
| **Max. ECG no. on circuit breaker 16 A (B)** | 10 |
| **Surge capability (L/N-Ground)** | 10 kV |
| **Surge capability (L-N)** | 6 kV |
| **Nominal output voltage** | 35…115 V |
| **U-OUT (working voltage)** | 120 V |
| **Nominal output current** | 150…1050 mA |
| **Default output current** | 700 mA |
| **Output current tolerance** | ±3 % [7] |
| **Output current LEDset open** | 70 mA |
| **Output current LEDset shorted** | Not allowed |
| **Output ripple current (100 Hz)** | < 4 % |
| **Output PSTLM** | ≤1 |
| **Output SVM** | ≤0.4 |
| **Nominal output power** | 75 W [8] |
| **Maximum output power** | 75 W |
| **Galvanic isolation** | SELV |

1) Permitted voltage range
2) Additional fuse needed in DC operation
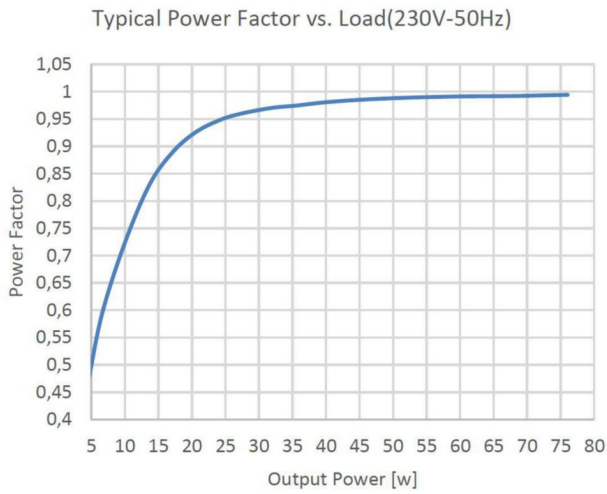3) At full power
4) Within the full operating window
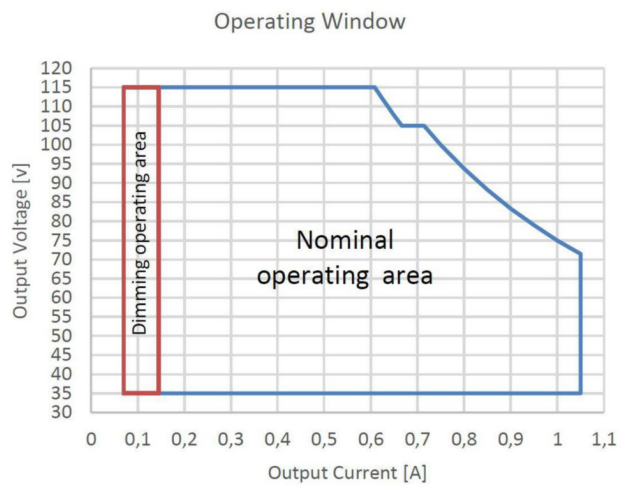5) at 230 V, 50 Hz
6) At 202 µs
7) +/- 5% for LEDset down to 150mA
8) Max. 75% in DC operating mode

## Typical Power Factor v Load

Typical Power Factor vs. Load(230V-50Hz)
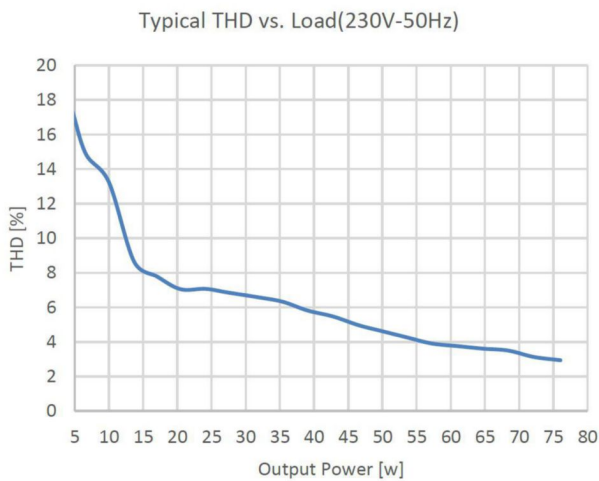
OT 75 1A0  NFC G3 Typical power factor vs Load

## Operating Window

Operating Window

OT 75 1A0  NFC G3 Operating Window

## Typical THD v Load

Typical THD vs. Load(230V-50Hz)

OT 75 1A0  NFC G3 Typical THD vs Load

## Typical Efficiency v Load 230 V 50 Hz

Typical Efficiency vs. Load(230V-50Hz)
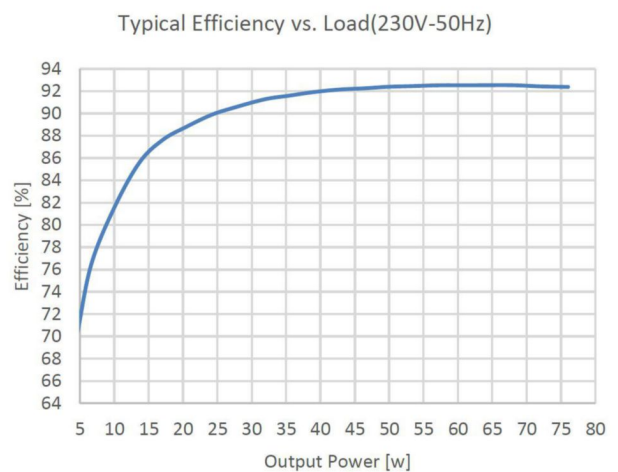
OT 75 1A0  NFC G3 Typical Efficiency vs Load

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## Dimensions & weight
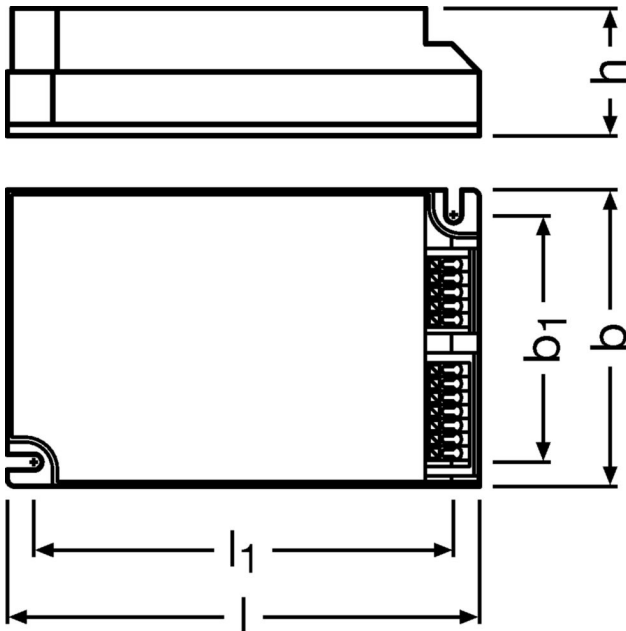


| | |
|---|---|
| **Length** | 123.0 mm |
| **Width** | 79.0 mm |
| **Height** | 33.0 mm |
| **Mounting hole spacing, length** | 111.0 mm |
| **Mounting hole spacing, width** | 67.0 mm |
| **Cable cross-section, input side** | 0.2…1.5 mm² |
| **Cable cross-section, output side** | 0.2…1.5 mm² |
| **Wire preparation length, input side** | 8.5…9.5 mm |
| **Product weight** | 210.00 g |

## Colors & materials

| | |
|---|---|
| **Casing material** | Plastic |

## Temperatures & operating conditions

| | |
|---|---|
| **Ambient temperature range** | -40…+55 °C |
| **Maximum temperature at tc test point** | 90 °C |
| **Max.housing temperature in case of fault** | 120 °C |
| **Temperature range at storage** | -40…+85 °C |
| **Permitted rel. humidity during operation** | 5…95 % [1] |

1) The luminaire manufacturer must ensure that condensation water cannot be created within the fixture.

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**Expected Lifetime**

| Product name | | | | |
|---|---|---|---|---|
| OT 75/170-240/1A0 1DIM NFC G3 CE | ECG ambient temperature [ta] | 60 | 50 | 48 |
| | Temperature at tc-point [°C] | 85 | 75 | 73 |
| | Lifetime [h] | 50000 | 85000 | 100000 |

**Lifespan**

| ECG lifetime | 50000 / 100000 h [1] |
|---|---|

1) At maximum $T_c$ = 90°C / 10% failure rate / At $T_c$ = 78°C / 10% failure rate

**Capabilities**

| Dimmable | Yes |
|---|---|
| Dimming interface | AstroDIM |
| Dimming range | 10…100 % |
| DALI-2 Diagnostic Data | No |
| DALI-2 Energy Data | No |
| Constant lumen function | Programmable |
| LEDset | Yes |
| Max. cable length to lamp/LED module | 2.0 m [1] |
| Suitable for fixtures with prot. class | I / II |
| Number of channels | 1 |
| Overload protection | Automatic reversible |
| Short-circuit protection | Automatic reversible |
| Intended for no-load operation | No |
| No-load proof | Yes |

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

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## Programming

| Programming device | NFC |
|---|---|
| **Tuner4TRONIC** | Yes |
| **Tuner4TRONIC Field App** | Yes |
| **Box programming** | Yes |

## Programmable features

| Emergency Mode | No |
|---|---|
| **DALI-2 Luminaire Data** | No |
| **Configuration Lock** | Yes |
| **AstroDIM** | Yes |
| **StepDIM** | No |
| **MainsDIM** | No |
| **Driver Guard** | Yes |
| **Thermal Protection** | Yes |
| **Emergency Mode** | No |

## Certificates & standards

| Approval marks – approval | CCC / CE / ENEC / RCM / VDE |
|---|---|
| **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 B / 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 / UL-8750 |
| **Type of protection** | IP20 |
| **Protection class** | 1-2 |

## Logistical data

| Commodity code | 85044083900 |
|---|---|

## Environmental information

| Information according Art. 33 of EU Regulation (EC) 1907/2006 (REACh) | |
|---|---|
| **Date of Declaration** | 22-03-2024 |
| **Primary Article Identifier** | 4052899631908 |
| **Declaration No. in SCIP database** | In work |

**Wiring Diagram**
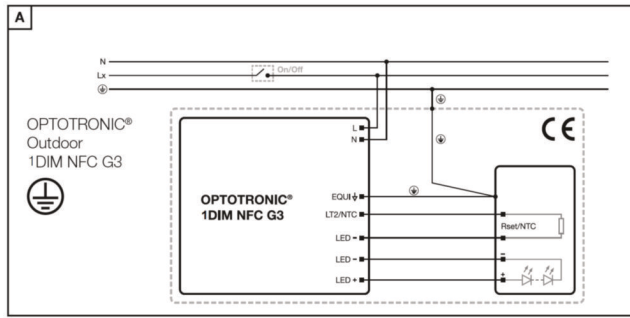


OT 1DIM G3 Wiring diagram I
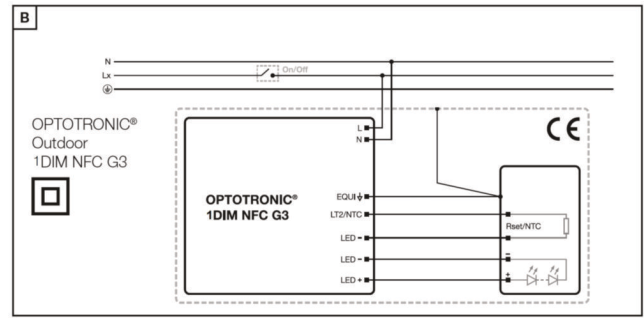


OT 1DIM G3 Wiring diagram II

## Additional product information

- To ensure an optimal communication during the NFC programming, the NFC antenna should be placed on the top of the LED Driver, above the NFC marking. This improves the accessibility to the NFC tag also in application, for instance within Luminaires.
- In order to ensure an optimal NFC programming of the Led Driver during the luminaire production, the luminaire maker shall not place any metal parts in proximity of the NFC reader, at least within a distance of 10 cm.
- Default output current is supplied without any resistor connected to the LEDset port. As soon as the driver detects one time a resistor value within the allowed resistor range for more than 3 s, the driver activates the LEDset2 mode.
- Typical resistor values: 4.76 kOhm for 1050 mA; 4.28 kOhm for 350 mA, 33.3 kOhm for 150 mA
- In case of miswiring the driver can withstand up to 350 Vac for up to two hours.
- The driver withstands an input voltage of up to 320 Vac with unlimited time. Shut down of output load might occur in case the supply voltage exceeds (270 Vac). Under operation conditions in which overvoltage level > 264 Vac occur, the product shall be additionally protected by an external fuse (400V 4A, time lag, I2 t > 160 160 A2s).
- 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.
- 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 maximum number of units per circuit breaker is an indicative value due mainly to high tolerance for the tripping current for narrow pulses.
- The EQUI pin should 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. By default, the following resistor values are set: start derating: 6.3 kOhm, end derating 5.0 kOhm, shut off: 4.5 kOhm, derating level 50 %.
- The dimming mode feature is disabled by default. If the dimming mode is changed via NFC while the driver is not powered, one additional power on/off cycle is needed before the new dimming mode becomes active.
- The constant lumen feature is disabled by default.
- 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.
- LEDset and NTC functionality share the same connection terminal; both features are not simultaneously available.
- LEDset functionalities are limited only to the current setting, via codified resistor, and thermal protection via PTC (5V supply, miswiring protection, thermal protection with NTC are not available).
- If any output level is below the physical min level, the physical min level will be used.
- All functionalities are ensured for output cables up to 10 m. For cable length more than 2 m, EMI compliance has to be checked in the application.

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Product datasheet

## Download Data

| File | | |
|------|------|------|
| Mandatory Publications | PDF | ▶ OT 1DIM 4DIM NFC G3 CE CE 4375359 270923 |
| User instruction | PDF | ▶ OPTOTRONIC Outdoor |

## 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.

| ISOLATION | Input/Mains | EQUI | DALI | LEDset | LED Output | Case | AUX | LSI | NTC |
|-----------|-------------|------|------|--------|------------|------|-----|-----|-----|
| Input/Mains | - | Double | | SELV | SELV | Double | | | SELV |
| EQUI | Double | - | | Basic | Basic | Basic | | | Double |
| DALI | | | - | | | | | | |
| LEDset | SELV | Basic | | - | | Basic | | | |
| LED Output | SELV | Basic | | | - | Basic | | | |
| Case | Double | Basic | | Basic | Basic | - | | | Basic |
| AUX | | | | | | | - | | |
| LSI | | | | | | | | - | |
| NTC | SELV | Double | | | | Basic | | | - |

*Specifications are subject to changes without notice.*

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## Logistical Data

| Product code | Product description | Packaging unit (Pieces/Unit) | Dimensions (length x width x height) | Volume | Gross weight |
|---|---|---|---|---|---|
| 4052899631908 | OT 75/170-240/1A0 1DIM NFC G3 CE | Shipping carton box 18 Pieces | 272 x 260 x 125 mm | 8.84 dm³ | 4152.00 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.

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