OT 165/170-240/1A0 4DIM NFC G3 CE

OPTOTRONIC - 4DIM NFC IP20 G3 | DALI-2, AstroDIM, StepDIM, MainsDIM – constant current LED drivers



Product family features

- Supply voltage: 220…240 V
- Wide current output range: 150 mA…1050 mA or 1500 mA
- 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
- MainsDIM function for dimming via reduction of line voltage amplitude
- Isolated DALI interface for bidirectional telemanagement systems
- Standby power consumption: < 0.35 W
- Constant Lumen Output (CLO)
- Integrated customizable thermal management (Driver Guard)

Product family benefits

- 4DIM functionality in one device (StepDIM, AstroDIM, MainsDIM, DALI)
- DALI-2 certified incl. Parts 251, 252, 253
- 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
- High surge DALI protection: 1 kV
- 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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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

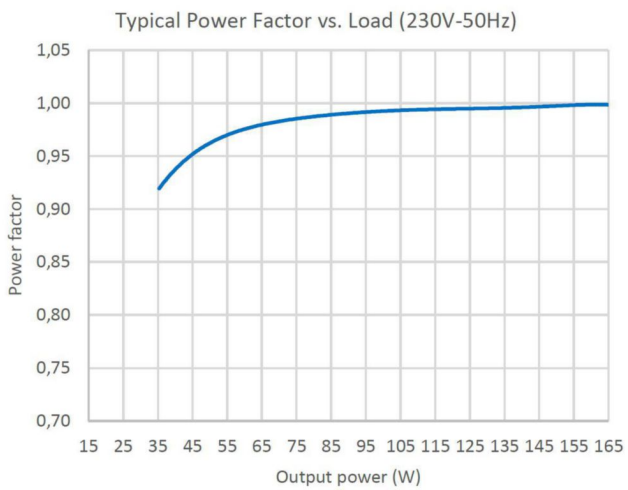
Electrical data

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)]
Nominal input current at 230 V	0.80 A
Total harmonic distortion	< 5 % [3)]
Power factor λ	0.65C...0.99 [3)]
Efficiency in full-load	94 % [4)]
Device power loss	11.5 W
Inrush current	71 A [5)]
Max. ECG no. on circuit breaker 10 A (B)	6
Max. ECG no. on circuit breaker 16 A (B)	10
Surge capability (L-N)	6 kV
Surge capability (L/N-Ground)	10 kV
Nominal output voltage	90…260 V
U-OUT (working voltage)	320 V
Nominal output current	150…1050 mA
Minimum output current	70 mA
Default output current	700 mA
Output current tolerance	±3 % [6)]
Output ripple current (100 Hz)	< 4 %
Output PSTLM	≤1
Output SVM	≤0.4
Output current LEDset open	70 mA
Output current LEDset shorted	Not allowed
Nominal output power	165 W [7)]
Maximum output power	165 W

1) Permitted voltage range
2) Additional fuse needed in DC operation
3) At full power
4) at 230 V, 50 Hz
5) At 175 µs
6) +/- 5% for LEDset down to 150mA
7) Max. 75% in DC operating mode

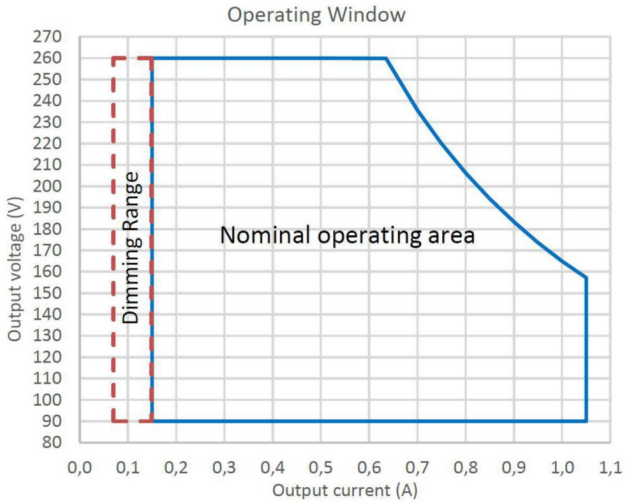
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Typical Power Factor v Load



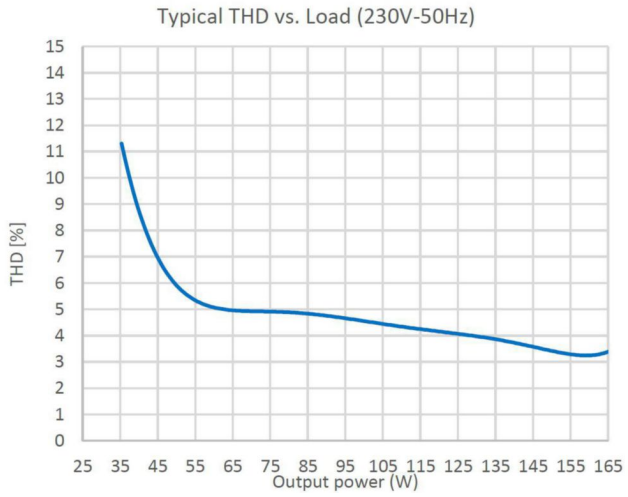
OT 165 1A0 NFC G3 Typical power factor vs Load

Operating Window



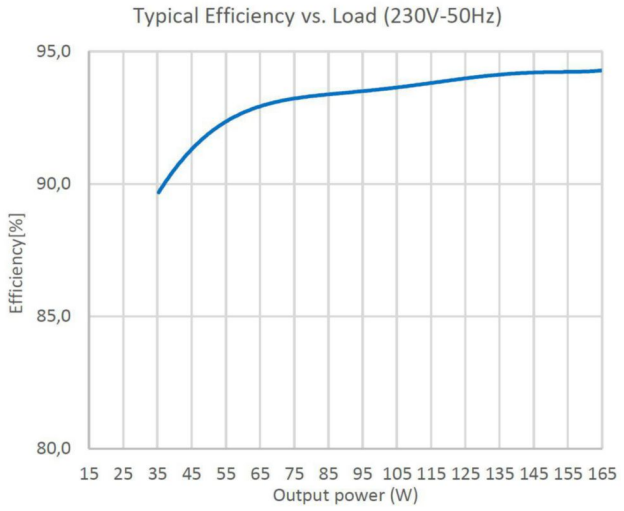
OT 165 1A0 NFC G3 Operating Window

Typical THD v Load



OT 165 1A0 NFC G3 Typical THD vs Load

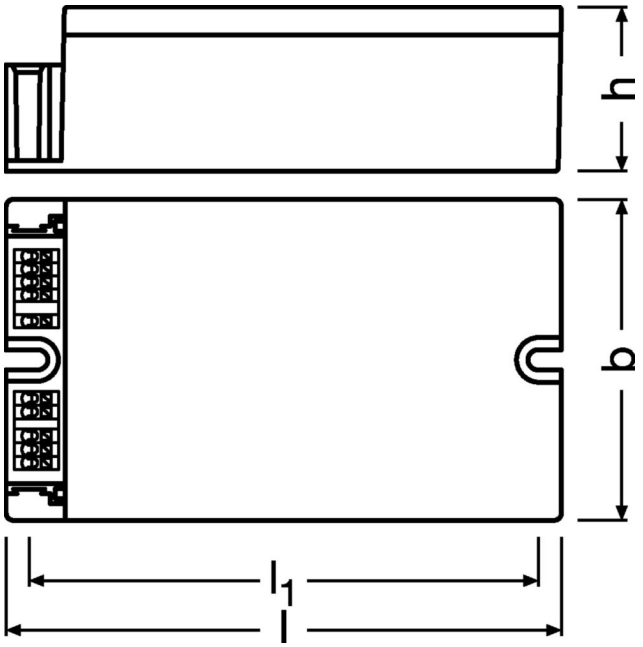
Typical Efficiency v Load 230 V 50 Hz



OT 165 1A0 NFC G3 Typical Efficiency vs Load

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Dimensions & weight



Product weight	780.00 g
Length	150.0 mm
Width	90.0 mm
Height	40.0 mm
Mounting hole spacing, length	134.0 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

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 165/170-240/1A0 4DIM NFC G3 CE	ECG ambient temperature [ta]	55	45	43
	Temperature at tc-point [°C]	90	80	78
	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	4DIM / AstroDIM / DALI / MainsDIM / StepDIM
Dimming range	10…100 %
DALI-2 Diagnostic Data	Yes [1)]
DALI-2 Energy Data	Yes [2)]
Constant lumen function	Programmable
LEDset	Yes
Max. cable length to lamp/LED module	2.0 m [3)]
Suitable for fixtures with prot. class	I / II
Suitable for emergency lighting	Yes
Number of channels	1
Overload protection	Automatic reversible
Short-circuit protection	Automatic reversible
Intended for no-load operation	No
No-load proof	Yes

1) Acc. DALI part 253
2) Acc. DALI part 252
3) Output wires must be routed as close as possible to each other

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Programming

Programming device	DALI / NFC
Tuner4TRONIC	Yes
Tuner4TRONIC Field App	Yes
Box programming	Yes

Programmable features

DALI-2 Luminaire Data	Yes [1)]
Configuration Lock	Yes
AstroDIM	Yes
StepDIM	Yes
MainsDIM	Yes
Driver Guard	Yes
Thermal Protection	Yes
Emergency Mode	Yes

1) Acc. DALI part 251

Certificates & standards

Approval marks – approval	CCC / CE / DALI-2 / EL / ENEC / RCM / VDE
Standards	EN 61347-1 / EN 61347-2-13 / EN 62384 / EN 55015:2006 + A1:2007 + A2:2009 / EN 61547 / FCC 47 part 15 class B / IEC 61000-3-2 / IEC 61000-3-3 / IEC 62386-101 / IEC 62386-102 / IEC 62386-207 / UL-8750
Type of protection	IP20

Logistical data

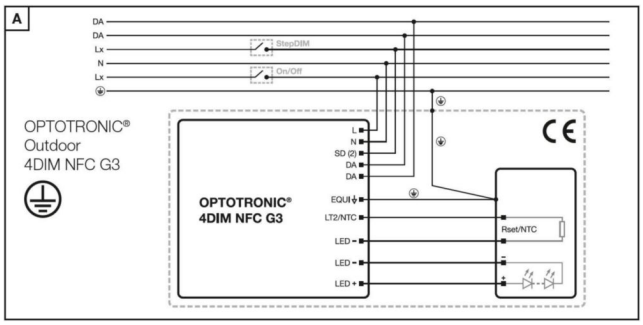
Commodity code	85044083900
Applicable region	APAC (excl. China, India, Japan) / CHINA / EUROPE / MEA

Environmental information

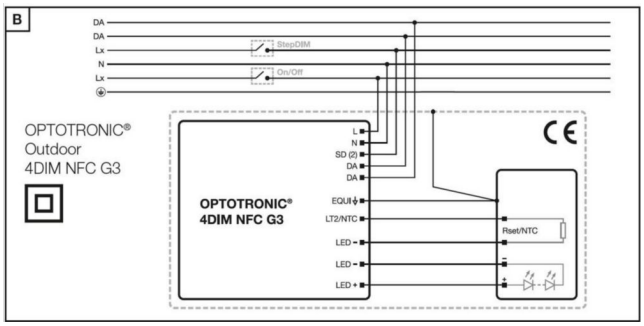
Information according Art. 33 of EU Regulation (EC) 1907/2006 (REACh)	
Date of Declaration	01-09-2026
Primary Article Identifier	4062172219075 | 6977770436046
Declaration No. in SCIP database	In work
SCIP_STATUS	In work
SCIP_ID	

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Wiring Diagram



OT 4DIM NFC G3 Wiring Diagram I



OT 4DIM NFC G3 Wiring diagram II

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.

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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: 3.33 kOhm for 1500 mA; 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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Download Data

File		
Certificates	PDF	►CED OT 4(1)DIM NFC G3 CE 2025-01
Certificates	PDF	►VDE ENEC Certificate 40050684 INV
Mandatory Publications	PDF	►OT 1DIM 4DIM NFC G3 CE CE 4375359 10 200125
User instruction	PDF	►UI OT 4DIM NFC G3 CE

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

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Logistical Data

Product code	Product description	Packaging unit (Pieces/Unit)	Dimensions (length x width x height)	Volume	Gross weight
6977770436046 INVENTRONICS	OT 165/170-240/1A0 4DIM NFC G3 CE	Shipping carton box 12 Pieces	319 x 210 x 156 mm	10.45 dm³	812.33 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

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