OSRAM

OT 20/170...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

Product datasheet

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 datasheet

Technical data

Electrical data

Nominal voltage	220...240 V
Input voltage AC	170...264 V [1]
Input voltage DC	176...276 V [2]
Nominal current	0.12 A
Mains frequency	0/50/60 Hz
Power factor λ	0.39C...0.99 [3]
Total harmonic distortion	< 5 % [3]
Device power loss	3.5 W
Inrush current	21 A [4]
Max. ECG no. on circuit breaker 10 A (B)	30
Max. ECG no. on circuit breaker 16 A (B)	48
Max. ECG no. on circuit breaker 25 A (B)	74
Surge capability (L/N-Ground)	10 kV
Surge capability (L-N)	6 kV
Nominal output power	22 W [5]
Maximum output power	22 W
Efficiency in full-load	87 % [6]
Nominal output current	150...1050 mA
Default output current	700 mA
Output current tolerance	±3 % [7]
Output ripple current (100 Hz)	< 4 %
Output PSTLM	≤1
Output SVM	≤0.4
Minimum output current	70 mA
Galvanic isolation	SELV
Nominal output voltage	10...38 V
U-OUT (working voltage)	60 V

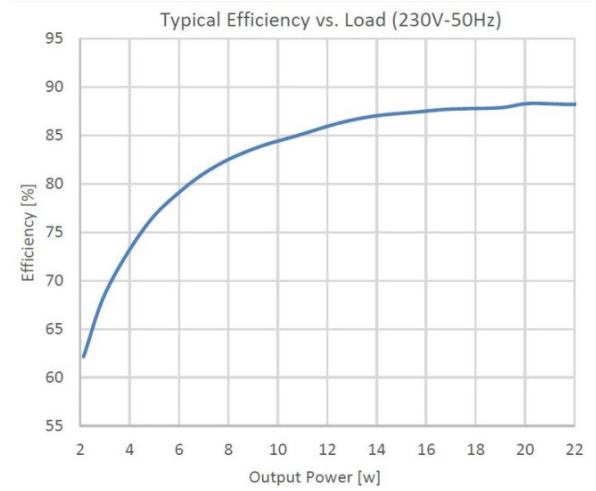[1] Permitted voltage range

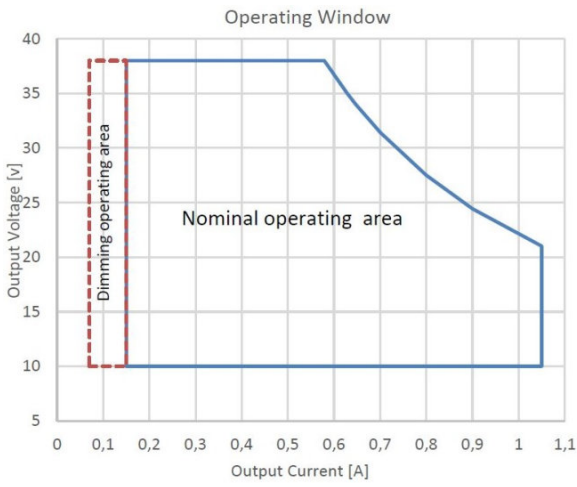[2] Additional fuse needed in DC operation

[3] At full power

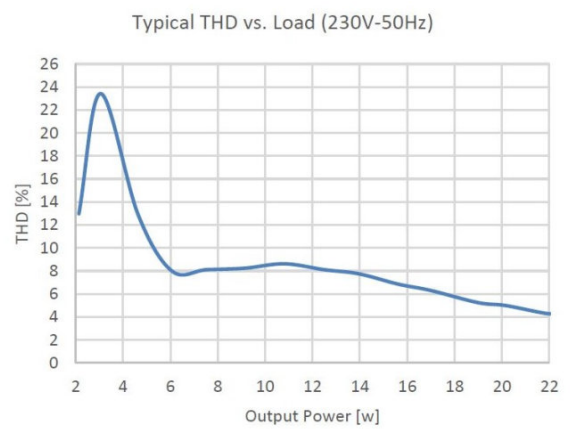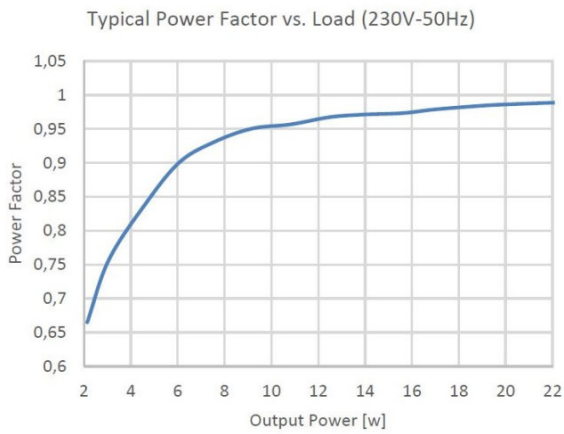[4] At 180 μs

[5] Max. 75% in DC operating mode

[6] at 230 V, 50 Hz

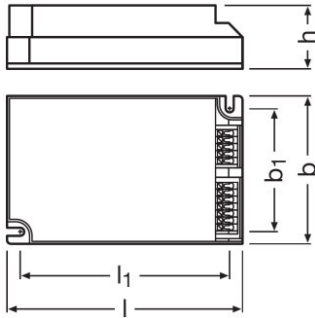[7] +/- 5% for LEDset down to 150mA

OT 20 1A0 NFC G3 Operating Window

OT 20 1A0 NFC G3 Typical Efficiency vs Load

OT 20 1A0 4DIM NFC G3 Typical power factor vs Load

OT 20 1A0 NFC G3 Typical THD vs Load

Product datasheet

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
Product weight	210.00 g
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

Temperatures & operating conditions

Ambient temperature range	-40...+60 °C
Temperature range at storage	-40...+85 °C
Maximum temperature at tc test point	75 °C
Max.housing temperature in case of fault	120 °C
Permitted rel. humidity during operation	5...95 % [1]

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

Lifespan

ECG lifetime	50000 / 100000 h [1]

[1] At maximum T_c = 75°C / 10% failure rate / At T_c = 63°C / 10% failure rate

Expected Lifetime

Product name				
OT 20/170...240/1A0 4DIM NFC G3 CE	ECG ambient temperature [ta]	60	50	48
	Temperature at tc-point [°C]	75	65	63
	Lifetime [h]	50000	85000	100000

Additional product data

Predecessor EAN	4052899981928

Capabilities

Dimmable	Yes
Dimming interface	4DIM / AstroDIM / DALI / MainsDIM / StepDIM
Dimming range	10...100 %
Suitable for fixtures with prot. class	I / II
Constant lumen function	Programmable
NTC input	Yes
Short-circuit protection	Automatic reversible
No-load proof	Yes
Intended for no-load operation	No
Max. cable length to lamp/LED module	2.0 m [1]
Overload protection	Automatic reversible
LEDset	Yes
Number of channels	1
DALI-2 Energy Data	Yes [2]
DALI-2 Diagnostic Data	Yes [3]

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

[2] Acc. DALI part 252

[3] Acc. DALI part 253

Programming

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

Programmable features

Constant Lumen	Yes

Product datasheet

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

[1] Acc. DALI part 251

Certificates & standards

|	
Type of protection	IP20
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
Approval marks – approval	CCC / CE / DALI-2 / EL / ENEC / RCM / VDE

Logistical data

Commodity code	85044083900

Environmental information

Information according Art. 33 of EU Regulation (EC) 1907/2006 (REACh)	
Date of Declaration	30-10-2023
Primary Article Identifier	4062172218917
Candidate List Substance 1	Lead
CAS No. of substance 1	7439-92-1
Safe Use Instruction	The identification of the Candidate List substance is sufficient to allow safe use of the article.
Declaration No. in SCIP database	955484cd-c98c-400d-b404-0bdcb8b18e61

Wiring Diagram
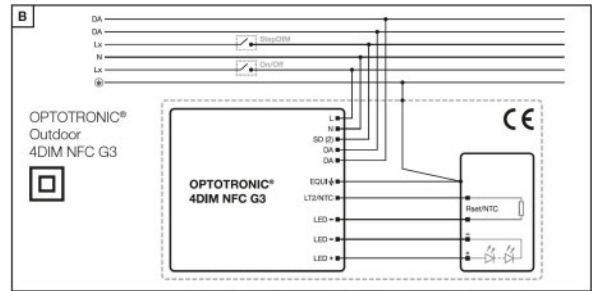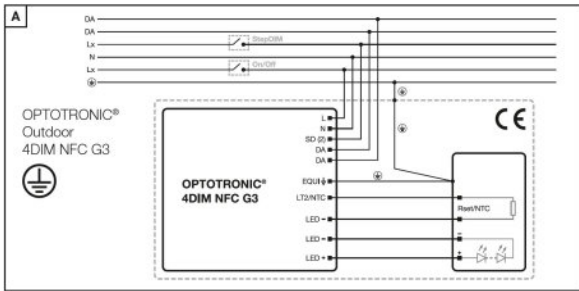
OT 4DIM NFC G3 Wiring Diagram I

OT 4DIM NFC G3 Wiring diagram II

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Product datasheet

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.

Download Data

	File
📄	User instruction OPTOTRONIC Outdoor
📄	Certificates OT VDE ENEC 40050684 290923
📄	Certificates OT 4DIM NFC G3 ZHAGA 4497157 111023

Product datasheet

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	SD	EQUI	DALI	LEDset	LED Output	Case	NTC
Input / Mains	-	-	Double	Basic	SELV	SELV	Double	SELV
SD	-	-	Double	Basic	Double	Double	Double	Double
EQUI	Double	Double	-	Double	Basic	Basic	Basic	Double
DALI	Basic	Basic	Double	-	Double	Double	Double	Double
LEDset	SELV	Double	Basic	Double	-	-	Basic	-
LED Output	SELV	Double	Basic	Double	-	-	Basic	-
Case	Double	Double	Basic	Double	Basic	Basic	-	Basic
NTC	SELV	Double	Double	Double	-	-	Basic	-

Logistical Data

Product code	Product description	Packaging unit (Pieces/Unit)	Dimensions (length x width x height)	Volume	Gross weight
4062172218917	OT 20/170...240/1A0 4DIM NFC G3 CE	Shipping carton box 18	272 mm x 260 mm 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.