

OT DX 165/220-240/1A0 DIMA LT2 E

OPTOTRONIC - DEXAL NFC IP20 | D4i, DEXAL, AstroDIM, StepDIM - constant current LED drivers



Product family features

- DEXAL interface based on DALI-2 communication
- Available with different wattage: 40 W, 75 W, 110 W, 165 W
- Current output range: 70...1,050 mA
- AstroDIM for autonomous dimming with five independent levels (astro, time mode)
- Standby power consumption: < 0.5 W
- Integrated customizable thermal management (Driver Guard)
- Constant Lumen Output (CLO)

Product family benefits

- For Zhaga Book18 Luminaires and D4i certified incl. Parts 25x + AUX
- Electrical interface and data communication fully based on open standards
- Fully programmable via software (DALI Interface, NFC)
- Low luminous efficacy tolerance through low output current tolerance of $\pm 3\%$
- High surge protection: up to 10 kV (1 pulse) in protection class I or II
- Lifetime: up to 100,000 h (depending on T_c temperature, max. 10 % failure rate)
- Mains input undervoltage protection
- Very high efficiency
- Fulfill safety requirement due to overload, overtemperature, Hot Plug protection



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

Technical data

Electrical data

Nominal input voltage	220...240 V
Mains frequency	0/50/60 Hz ¹⁾
Input voltage AC	198...264 V ²⁾
Input voltage DC	176...276 V ¹⁾
Total harmonic distortion	< 10 % ³⁾
Power factor λ	0.77C...0.99 ⁴⁾
Efficiency in full-load	94 % ⁵⁾
Device power loss	13 W ⁶⁾
Inrush current	77 A ⁷⁾
Max. ECG no. on circuit breaker 10 A (B)	5 ⁸⁾
Max. ECG no. on circuit breaker 16 A (B)	9 ⁸⁾
Surge capability (L-N)	6 kV ⁹⁾
Surge capability (L/N-Ground)	10 kV ¹⁰⁾
Nominal output voltage	130...260 V
U-OUT (working voltage)	300 V
Nominal output current	200...1050 mA
Minimum output current	70 mA
Default output current	700 mA
Output current tolerance	± 3 % ¹¹⁾
Output ripple current (100 Hz)	10 %
Output current LEDset open	70 mA
Output current LEDset shorted	Not allowed
Nominal output power	165 W ¹²⁾
Maximum output power	165 W
Auxiliary Power Supply	24 V ¹³⁾

1) Additional fuse needed in DC operation

2) Permitted voltage range

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

4) Full Load/Half Load at 230V 50Hz

5) at 230 V, 50 Hz

6) Maximum

7) At 180 μ s

8) Type B

9) @ 2 Ohm, acc. to EN61547

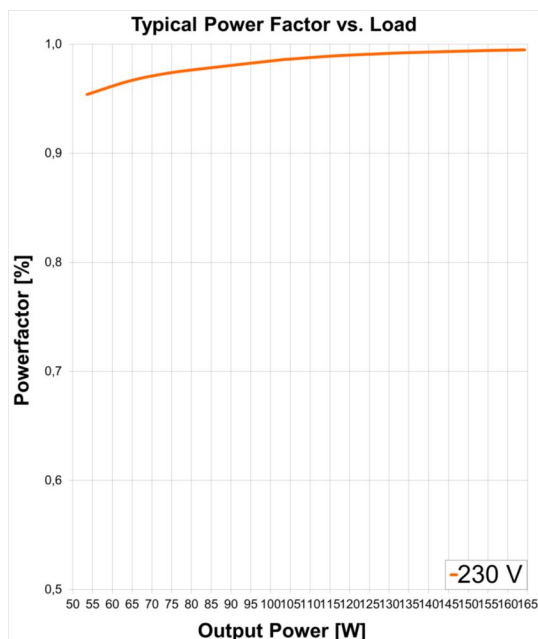
10) Single pulse 10kV / 12 Ohm (1.2/50 μ s)

11) +/- 5% for LEDset down to 300mA

12) Max. 75% in DC operating mode

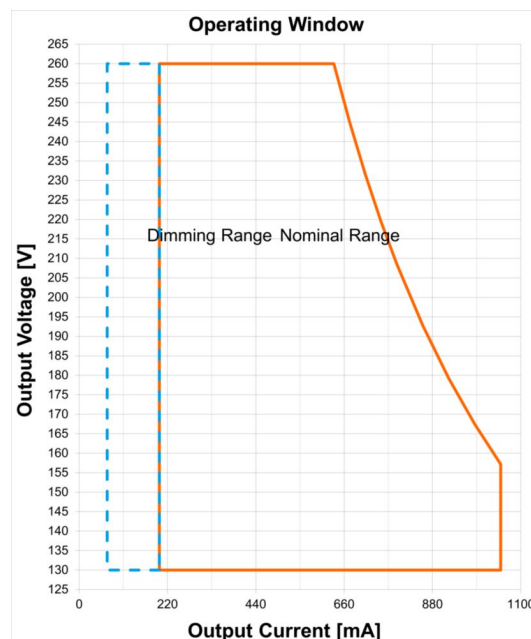
13) 3W average, 6W peak power

Typical Power Factor v Load



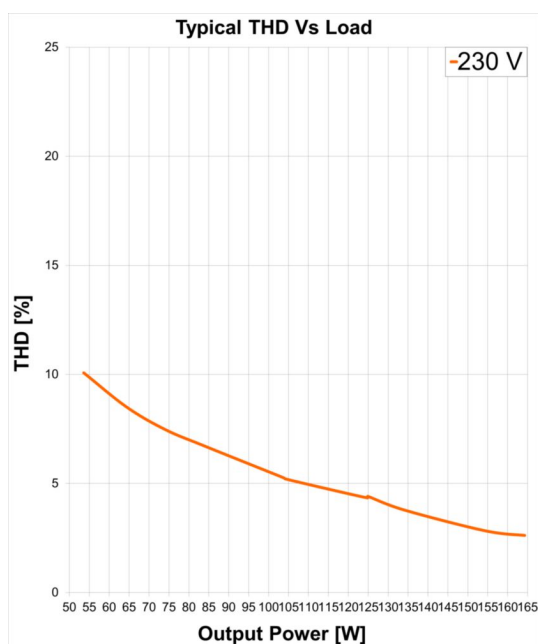
Typical Power Factor vs. Load OT DX 165 1A0 DIMA LT2 E

Operating Window



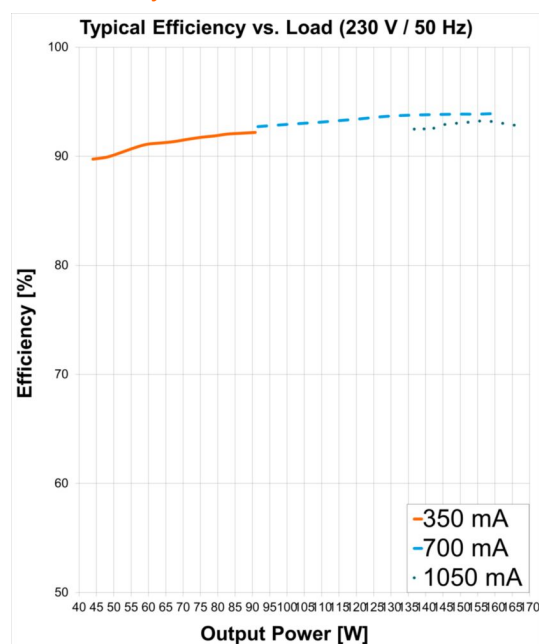
Operating Window OT DX 165 1A0 DIMA LT2 E

Typical THD v Load



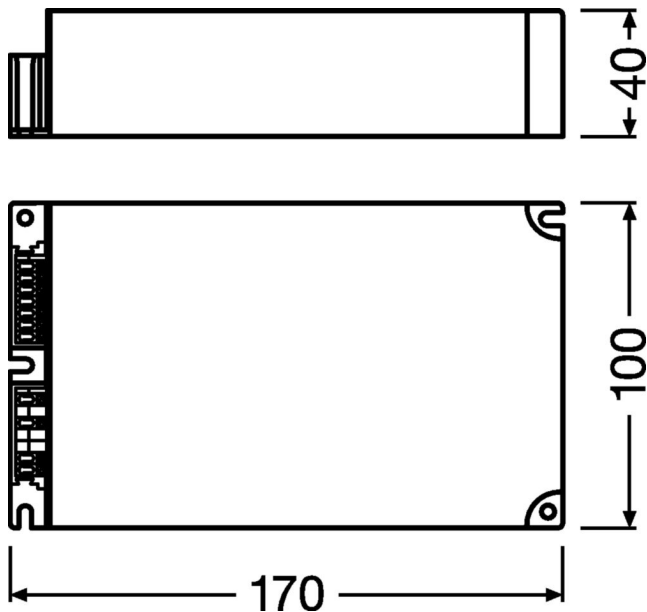
Typical THD Vs Load OT DX 165 1A0 DIMA LT2 E

Typical Efficiency v Load 230 V 50 Hz



Typical Efficiency vs. Load (230 V / 50 Hz) OT DX 165/1A0 DIMA LT2 E

Dimensions & weight



Product weight	1050.00 g
Length	170.0 mm
Width	100.0 mm
Height	40.0 mm
Mounting hole spacing, length	160.0 mm
Mounting hole spacing, width	90.0 mm
Cable cross-section, input side	0.2...1.5 mm ² ¹⁾
Cable cross-section, output side	0.2...1.5 mm ² ¹⁾
Wire preparation length, input side	8.5...9.5 mm

1) Solid/ Flexible Leads

Colors & materials

Casing material	Plastic
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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	-25...85 °C
Permitted rel. humidity during operation	5...85 % ¹⁾

1) Non condensing, absolute humidity: 36g/m³

Expected Lifetime

Product name				
OT DX 165/220-240/1A0 DIMA LT2 E	ECG ambient temperature [ta]	55	45	43
	Temperature at tc-point [°C]	90	80	78
	Lifetime [h]	50000	85000	100000

Lifespan

ECG lifetime	100000 h ¹⁾
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1) At $T_{case} = 78^{\circ}\text{C}$ at T_c point / 10% failure rate

Capabilities

Dimmable	Yes
Dimming interface	AstroDIM / DALI/DEXAL/D4i / StepDIM ¹⁾
Dimming range	10...100 %
DALI-2 Diagnostic Data	Yes ²⁾
DALI-2 Energy Data	Yes ³⁾
Constant lumen function	Yes
LEDset	Yes
Max. cable length to lamp/LED module	2.0 m ⁴⁾
Suitable for fixtures with prot. class	I / II
Suitable for emergency lighting	Yes
Number of channels	1
Overheating protection	Yes
Overload protection	Yes
Short-circuit protection	Yes
Intended for no-load operation	No
No-load proof	Yes

1) StepDIM functionality with external component 'OT DX SD BOX' only

2) Acc. DALI part 253

3) Acc. DALI part 252

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

Programming

Programming device	DALI / NFC
Tuner4TRONIC	Yes
Tuner4TRONIC Field App	Yes

Programmable features

DALI-2 Luminaire Data	Yes ¹⁾
Configuration Lock	Yes
AstroDIM	Yes
StepDIM	Yes ²⁾
MainsDIM	No
Driver Guard	Yes
Thermal Protection	Yes
Emergency Mode	Yes

1) Acc. DALI part 251

2) StepDIM functionality with external component 'OT DX SD BOX' only

Certificates & standards

Approval marks – approval	CE / ENEC / VDE / VDE-EMC / CCC / EL / DALI-2 / D4i / RCM
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 / IEC 62386-150 / IEC 62386-250 / IEC 62386-251, -252, -253
Type of protection	IP20

Logistical data

Commodity code	85044083900
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Environmental information

Information according Art. 33 of EU Regulation (EC) 1907/2006 (REACH)	
Date of Declaration	13-02-2025
Primary Article Identifier	4052899999695
Declaration No. in SCIP database	In work
SCIP_STATUS	In work
SCIP_ID	

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.

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 4,7 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 300 V AC for a maximum of two hours. An output load shutdown can occur in case the supply voltage exceeds the input voltage range defined.
- 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, as long as the input voltage of the load is within the declared output voltage range of the driver. In all other cases the driver may shut down the load.
- The driver is protected against temporary overheating by automatically reduction of the output current.
- 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 activated with following values: start derating: 6.3 kOhm, end derating 5.0 kOhm, shut off: 4.3 kOhm, derating level 50 %.
- If the dimming mode is changed via NFC while the driver is not powered, one additional power on/off cycle is needed before the dimming mode becomes active.
- The constant lumen feature is disabled by default.
- If any output level is below the physical min level, the physical min level will be used.
- The driver is intended for luminaire built-in use.
- Mind the polarity of the DALI lines. DA+ to DA+, DA- to DA- only.
- The DEXAL interface is polarity sensitive, even if the DEXAL bus power supply in the driver is turned off. Therefore the polarity of all connected drivers should not be mixed.
- For efficiency and standby power measurement, the D4i bus power supply shall be switched off by using Tuner4TRONIC. Refer to www.tuner4tronic.com.

Download Data

File		
Certificates	PDF	▶ OT VDE ENEC 40050684 160724
CAD data 3-dim	Compressed	▶ OT DX 165 DIMA LT2E CAD3PDF 120220
Brochures	PDF	▶ Technical application guide DEXAL LED drivers (EN)
Brochures	PDF	▶ 4 DIM NFC G3 CE LED drivers and T4T C (EN)
CAD data 2-dim	Compressed	▶ OT DX 165 DIMA LT2E CAD2PDF 120220
CAD data	Compressed	▶ OT DX 165 DIMA LT2E IGS 120220
CAD data	Compressed	▶ OT DX 165 DIMA LT2E STEP 120220
Mandatory Publications	PDF	▶ OT DX DIMA LT2 E CE 3745354 060921
Mandatory Publications	PDF	▶ OT DX DIMA LT2 E UK DoC 4294779 010621
User instruction	PDF	▶ OPTOTRONIC Outdoor

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

Logistical Data

Product code	Product description	Packaging unit (Pieces/Unit)	Dimensions (length x width x height)	Volume	Gross weight
4052899999695	OT DX 165/220-240/1A0 DIMA LT2 E	Shipping carton box 10 Pieces	303 x 285 x 205 mm	17.70 dm ³	1122.40 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

Data privacy

This Inventronics driver can be configured using the Tuner4TRONIC software. This requires registering on www.inventronicsglobal.com/ds and downloading the Tuner4TRONIC software from the Internet. The Tuner4TRONIC software enables users to access and view the operational data of a luminaire or driver via the corresponding programming interfaces. A password key (Config Lock) must be set up in the driver via the Tuner4TRONIC software in order to control which users can access and view operational data. Follow the instructions for password setup. To grant an external person or company rights to access or view operational data, you can assign password keys. In this case, however, you are responsible for ensuring that the third party concerned takes notice of the information described here.

However, Inventronics can read out operating data from devices for maintenance and service purposes even when a password key has been assigned. In individual cases, Inventronics will also use its access rights in order to optimize or improve driver hardware and driver functions. In accordance with data privacy principles, any user of operating data (luminaire manufacturers, third parties with access rights) must ensure that personal data (e.g. name, address, location IDs) are only merged with the prior written consent of the person (end user) concerned. The respective user of the operating data is responsible for providing evidence of consent.

Accessories Optional

Product description	Accessory name	Accessory code
OT DX 165/220-240/1A0 DIMA LT2 E	DALI magic	► 6977078996907
OT DX 165/220-240/1A0 DIMA LT2 E	DALI magic	► 4008321582768
OT DX 165/220-240/1A0 DIMA LT2 E	DALI magic	► 6977078997416
OT DX 165/220-240/1A0 DIMA LT2 E	PRH101 -USB	► 6977078996938
OT DX 165/220-240/1A0 DIMA LT2 E	PRH101 -USB	► 6937186112354
OT DX 165/220-240/1A0 DIMA LT2 E	CPR30 -USB	► 6977078996945
OT DX 165/220-240/1A0 DIMA LT2 E	CPR30 -USB	► 6937186112378
OT DX 165/220-240/1A0 DIMA LT2 E	NFC Scanner by TERTIUM Technology	► 4055462203571
OT DX 165/220-240/1A0 DIMA LT2 E	NFC Scanner by TERTIUM Technology	► 4055462290281
OT DX 165/220-240/1A0 DIMA LT2 E	NFC Scanner by TERTIUM Technology	► 6937186114891
OT DX 165/220-240/1A0 DIMA LT2 E	OT DX SD BOX	► 4062172048002

Disclaimer

Subject to change without notice. Errors and omission excepted. Always make sure to use the most recent release.