

## OT DX 165/220...240/1A0 DIMA LT2 E

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



### 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 family benefits

- Zhaga Book18 compliant 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



## Product datasheet

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### 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)

## Technical data

### Electrical data

<b>Nominal voltage</b>	220...240 V
<b>Input voltage AC</b>	198...264 V <sup>1)</sup>
<b>Nominal current</b>	0.78 A
<b>Mains frequency</b>	0/50/60 Hz <sup>2)</sup>
<b>Power factor <math>\lambda</math></b>	0.95/0.90 <sup>3)</sup>
<b>Total harmonic distortion</b>	< 10 % <sup>4)</sup>
<b>Device power loss</b>	13 W <sup>5)</sup>
<b>Inrush current</b>	68 A <sup>6)</sup>
<b>Max. ECG no. on circuit breaker 10 A (B)</b>	7 <sup>7)</sup>
<b>Max. ECG no. on circuit breaker 16 A (B)</b>	11 <sup>7)</sup>
<b>Max. ECG no. on circuit breaker 25 A (B)</b>	30 <sup>7)</sup>
<b>Surge capability (L/N-Ground)</b>	10 kV <sup>8)</sup>
<b>Surge capability (L-N)</b>	6 kV <sup>9)</sup>
<b>Nominal output power</b>	165 W <sup>10)</sup>
<b>ECG efficiency</b>	94 % <sup>11)</sup>
<b>Nominal output voltage</b>	130...260 V
<b>Nominal output current</b>	200...1050 mA
<b>Default output current</b>	700 mA
<b>Output current tolerance</b>	$\pm 3$ % <sup>12)</sup>
<b>Output ripple current (100 Hz)</b>	10 %
<b>Minimum output current</b>	70 mA
<b>Galvanic isolation</b>	Double
<b>U-OUT (working voltage)</b>	300 V
<b>Nominal input voltage (SD port)</b>	220...240 V <sup>13)</sup>
<b>Auxiliary Power Supply</b>	24 V <sup>14)</sup>

<sup>1)</sup> Permitted voltage range

<sup>2)</sup> additional fuse needed in DC operation

<sup>3)</sup> Minimum load at 230 V/Full load at 230 V/Half load at 230 V

<sup>4)</sup> Max. output power at 230 V<sub>AC</sub>

<sup>5)</sup> Maximum

<sup>6)</sup>  $t_{width} = 200 \mu s$  (measured at 50 %  $I_{peak}$ )

<sup>7)</sup> Type B

<sup>8)</sup> Single pulse 10kV / 12 Ohm (1.2/50  $\mu s$ )

<sup>9)</sup> @ 2 Ohm, acc. to EN61547

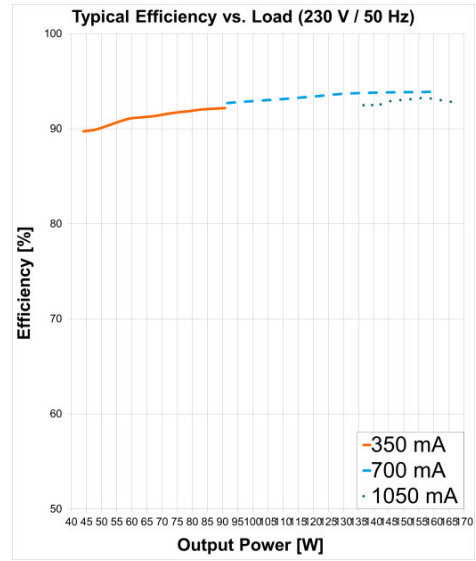
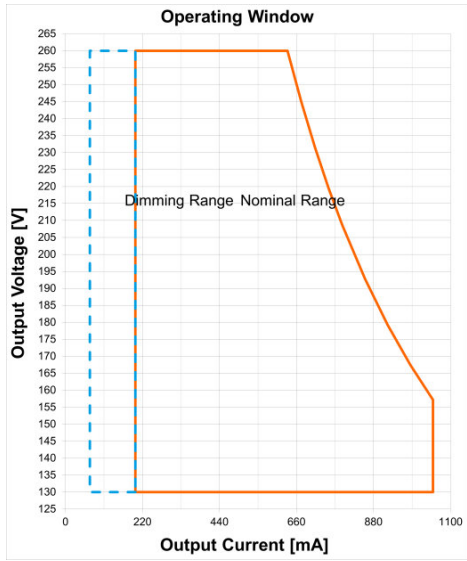
<sup>10)</sup> Max. 75% in DC operating mode

<sup>11)</sup> At full load and 230 V

<sup>12)</sup> +/- 5% for LEDset down to 300mA

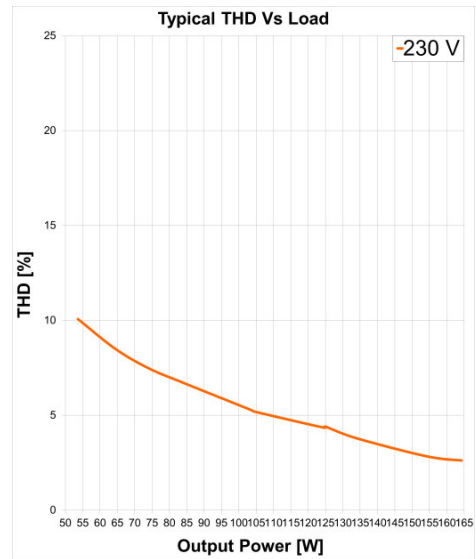
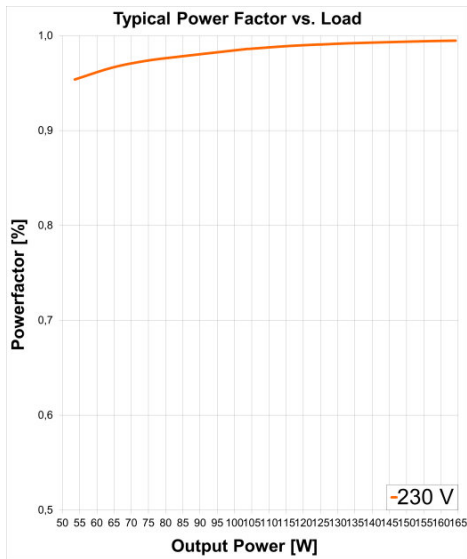
<sup>13)</sup> with external component 'OT DX SD BOX' only

<sup>14)</sup> 3W average, 6W peak power



Operating Window

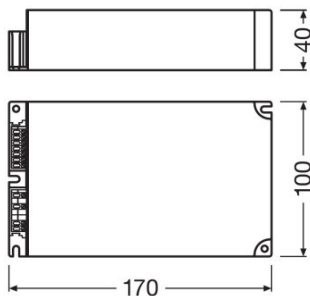
Typical Efficiency v Load 230 V 50 Hz



Typical Power Factor v Load

Typical THD v Load

## Dimensions & weight



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

<sup>1)</sup> Solid/ Flexible Leads

## Temperatures & operating conditions

<b>Ambient temperature range</b>	-40...+55 °C
<b>Temperature range at storage</b>	-25...85 °C
<b>Maximum temperature at tc test point</b>	90 °C
<b>Max.housing temperature in case of fault</b>	120 °C
<b>Permitted rel. humidity during operation</b>	5...85 % <sup>1)</sup>

<sup>1)</sup> Non condensing, absolute humidity: 36g/m<sup>3</sup>

## Lifespan

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

## Product datasheet

### 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

### Capabilities

<b>Dimmable</b>	Yes
<b>Dimming interface</b>	DEXAL / AstroDIM / StepDIM <sup>1)</sup>
<b>Dimming range</b>	10...100 %
<b>Suitable for fixtures with prot. class</b>	I / II
<b>Constant lumen function</b>	Yes
<b>NTC input</b>	Yes
<b>Overheating protection</b>	Yes
<b>Overload protection</b>	Yes
<b>Short-circuit protection</b>	Yes
<b>No-load proof</b>	Yes
<b>Max. cable length to lamp/LED module</b>	2.0 m
<b>LEDset</b>	Yes
<b>Number of channels</b>	1
<b>DALI-2 Energy Data</b>	Yes
<b>DALI-2 Diagnostic Data</b>	Yes

<sup>1)</sup> StepDIM functionality with external component 'OT DX SD BOX' only

### Programming

<b>Tuner4TRONIC</b>	Yes
<b>Tuner4TRONIC Field App</b>	No
<b>Programming device</b>	DALI / NFC

### Programmable features

<b>DALI-2 Luminaire Data</b>	Yes
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### Certificates & standards

<b>Type of protection</b>	IP20
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## Product datasheet

<b>Standards</b>	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
<b>Approval marks – approval</b>	CE / ENEC / VDE / VDE-EMC / CCC / EL






### Logistical data

<b>Commodity code</b>	850440829000
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### 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.

### Download Data

File	
	User instruction OPTOTRONIC Outdoor
	Brochures Technical application guide DEXAL LED drivers (EN)
	Brochures Technical Application Guide - 4DIMLT2 G2 CE LED drivers (EN)
	Certificates OT ENEC 40050684 090620
	Certificates OT EMC 40050085 200220

## Product datasheet

	Certificates OT DX DIMA LT2 E CB DE1 63485 060520
	Declarations of conformity OT DX DIMA LT2 E CE 3745354 051219
	CAD data OT DX 165 DIMA LT2E IGS 120220
	CAD data OT DX 165 DIMA LT2E STEP 120220
	CAD Data 2-dim OT DX 165 DIMA LT2E CAD2PDF 120220
	CAD data 3-dim OT DX 165 DIMA LT2E CAD3PDF 120220
	Video Overview of DEXAL Technology

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
405289999695	OT DX 165/220...240/1A0 DIMA LT2 E	Shipping carton box 10	303 mm x 285 mm x 205 mm	17.70 dm <sup>3</sup>	11137.00 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.

### Data privacy



## Product datasheet

This OSRAM driver can be configured using the Tuner4TRONIC software. This requires registering on [www.myosram.com](http://www.myosram.com) 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, OSRAM can read out operating data from devices for maintenance and service purposes even when a password key has been assigned. In individual cases, OSRAM 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.

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### Disclaimer

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