

# Product data sheet:

## EM 75/100-277/2A5 DIM P7

### Constant Current LED Driver

ELEMENT LED Power Supply is the good choice for industry and outdoor lighting applications. This driver offers adjustable output current by NFC and an input voltage range 100V – 277V\*.

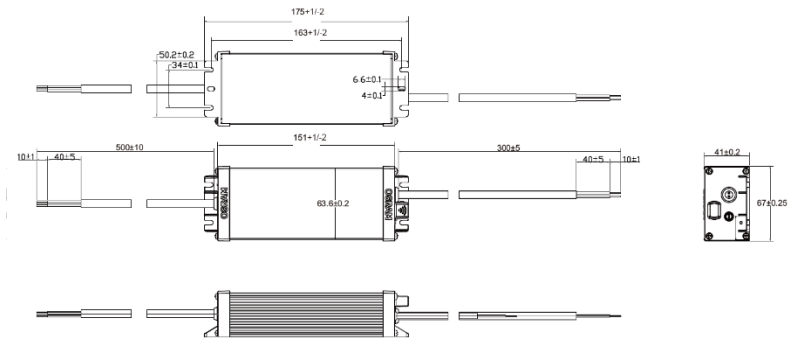
#### Benefits

- High surge protection up to 10kV;
- High efficiency and reliability
- SELV output (<60V)
- Current adjustment by NFC
- High Ambient temperature up to 55° C
- 1-10V dimming
- IP67
- Long life time

#### Applications

- Street and Urban lighting
- Industrial lighting
- Suitable for luminaries of protection class I

#### Approvals



In preparation, if not already printed on product label

Housing material: Aluminum Color: Silver

## Product Features

- Output current 0.7 – 2.5A
- Output power up to 75 W
- Uout: 27 – 56 Vdc
- High surge capability up to 6/10 kV
- For protection Class I
- Mains voltage 100 – 277 V
- IP67
- Wide  $t_a$  range -40°C...+50°C\*\*
- 50'000 h lifetime at  $t_c = 75$  °C
- 1-10V dimming

\*refer to input vs load, page 3

\*\*refer to Ambient temperature range, page 2

## Electrical Specifications

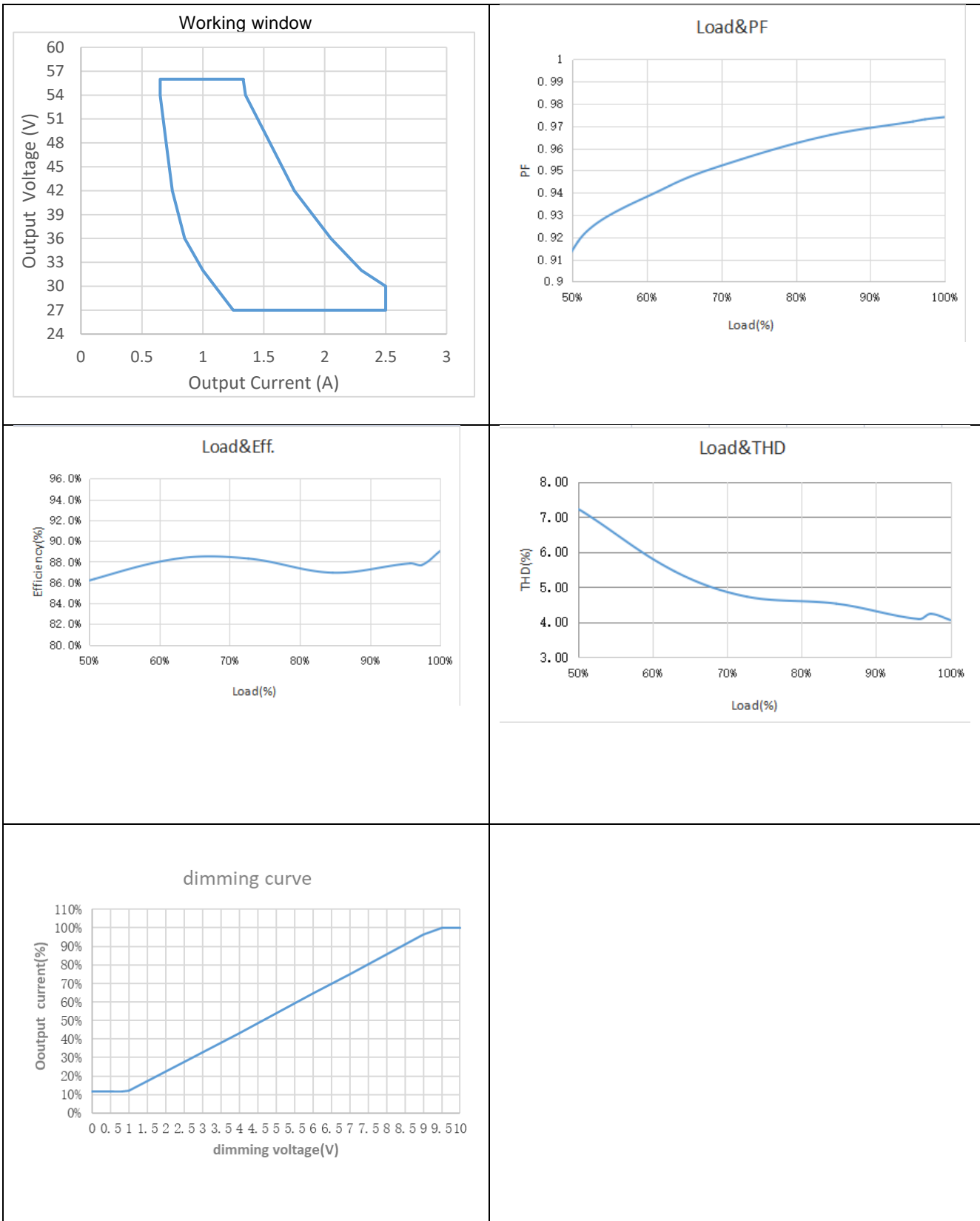
	Item	Value	Unit	Remarks
INPUT	Nominal Voltage	100 - 277	V	
	Nominal frequency	50 / 60	Hz	
	AC voltage range	90 – 305	V	
	DC voltage range	n/a	V	
	Maximum voltage	320	V <sub>AC</sub>	2hrs max. Above 270V the load might switch off
	Nominal current	0.7	A	At Vin 230V 50Hz
	Total Harmonic Distortion (THD)	< 10	%	Full load 230V, 50Hz
	Power factor	≥ 0.95		Full load 230V, 50Hz @ 56V Full load
	Efficiency in full load	89	%	Full load 230V, 50Hz
	No-load power	n/a	W	Load switching on output side is not permitted
	Standby power	n/a	W	
	Protection class	I		Suitable for class I luminaires
	Touch Current	< 0.7	mA pk	acc. to EN 60598-1 Annex G and EN 61347-1 Annex A
	Inrush current	37	A pk	Max, th = 144 μs @ 50% Ipk
Max. units per circuit breaker	B10: 12 B16: 16 B25: 25			
OUTPUT	Nominal voltage range	27 - 56	V	At 100-277V input. Refer to input & load at page 3.
	Maximum voltage	60	V	No load protection
	Nominal current range	700 - 2500	mA	Nominal Input Voltage: 200-277Vac
	Current accuracy	± 5	%	
	Current ripple	< 5	%	Low frequency ≤100Hz, full load @ 230V
	Nominal power range	37-75	W	Nominal Input Voltage: 200-277Vac
	Maximum power	75	W	LED output. Nominal Input Voltage: 200-277Vac
	Galvanic isolation	Reinforced		
DIM	Dimming control	1-10V		
	Dimming range	10 - 100	%	
	Galvanic isolation from output circuits	Basic		
	Galvanic isolation from input circuits	Reinforced		
	NFC	Yes		By T4T
	DALI-2 Luminaire Data	n/a		
	DALI-2 Energy Data	n/a		
DALI-2 Diagnostic Data	n/a			
ENVIRONMENT	Ambient temperature range t <sub>a</sub>	-40 ... +55	°C	Nominal Input Voltage: 100-277Vac
	Maximum case temperature t <sub>c</sub>	90	°C	Measured on t <sub>c</sub> point indicated of the product label, t <sub>c</sub> not exceeded
	Max. case temp. in fault condition	110	°C	
	Storage temperature range	-40...+85	°C	
	Relative humidity	5 ... 95	%	Not condensing, Absolute humidity: 36g/m <sup>3</sup>
	Surge transient protection	6 10	kV	L - N acc to EN 61547 L/N – PE acc to EN 61547
	IP rating	IP 67		Potted
	Mains switching cycles	> 100'000		10 sec on, 10 sec off
	Expected lifetime	50'000	hrs	t <sub>c</sub> = 75°C with max. 10% failure rate
	Weight	800	g	
	Dimensions	175 x 67 x 41	mm	

### Protections

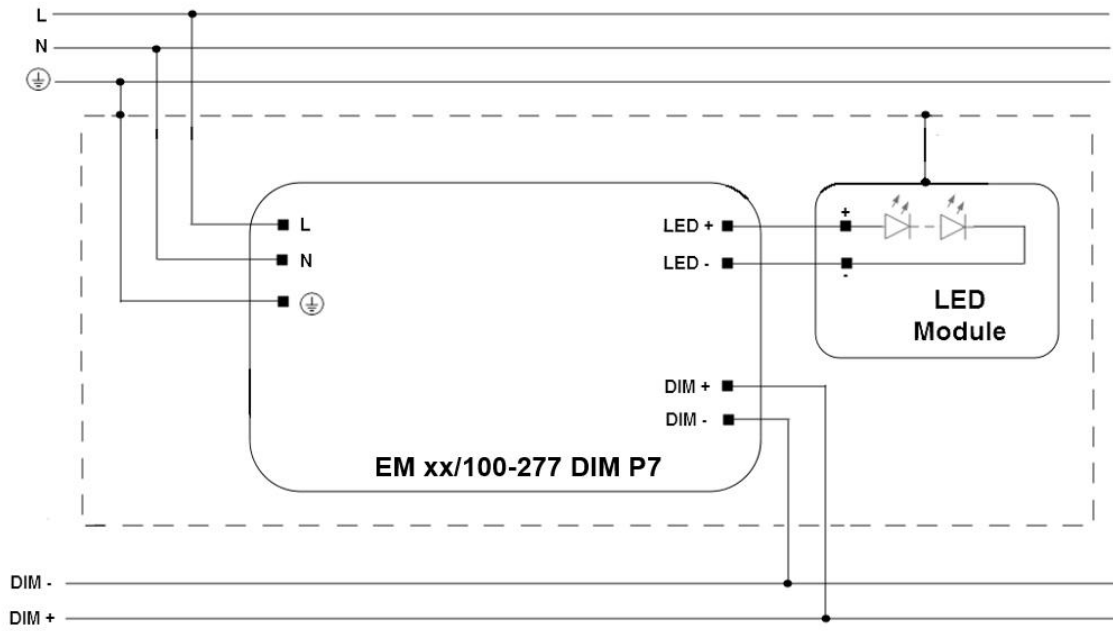
#### Overload, No load, Short-circuit, Output Overvoltage

See remarks on page 5.

**Electrical characteristics @ 230V50Hz**



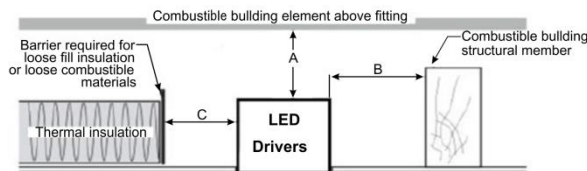
## Wiring Diagram



	Item	Value	Unit	Remarks
INPUT	Cable cross section	1.0	mm <sup>2</sup>	L (Brown/BN), N (Blue/BU), PE (Green/Yellow, GNYE)
	Wire preparation length	10	mm	
	Type of wire	Flexible three core cable		
	Lead length	500 ± 20	mm	
OUTPUT	Cable cross section	1.0	mm <sup>2</sup>	LED+ (Brown/BN), LED- (Blue/BU)
	Wire preparation length	10	mm	
	Type of wire	Flexible two core cable		
	Lead length	300 ± 20	mm	
DIMMING	Cable cross section	0.32	mm <sup>2</sup>	DIM+ (Violet), DIM- (Black/White), AWG22
	Wire preparation length	10	mm	
	Type of wire	Flexible two Core cable		
	Lead length	220 ± 20	mm	
CABLE/ LENGTH	LED+/LED-	< 2	m	

## Remarks

- **Input voltage range:** Workable at 100 – 277Vac (refer to graph Typical Input Voltage vs. Load)
- **Output short circuit protection:** shut down of driver occur in case of output short circuit without damage to the unit.
- **Output overload/voltage protection:** In case the input voltage of the load exceeds the output voltage range which is auto defined by output current setting of the driver ( $V_o = P_o / I_o$ ), it automatically reduces the output current. Auto reversible.
- **No load protection:** the driver automatically adjusts the output voltage to the maximum output voltage which is auto defined by output current setting of the driver ( $V_o = P_o / I_o$ ) if no load is connected. Auto reversible.
- **Over temperature protection:** the driver is protected against temporary overheating by reducing output current or shutting down until the overheating eliminated; The driver needs a power cycle to restart when temperature back to normal.
- Input Surge Protection: 6kV line-line, 10kV line-earth integrated in SPD
- Disconnect the power before servicing. Terminal block is not included, installation must be performed by qualified person;
- Suitable for luminaires of protection class I only. The earth connection is conducted as protection earth (PE). The LED Driver must be earthed via earth terminal or metal housing.
- The protective earth (GNYE/PE) wire and product casing 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;
- Not suitable to be mounted in ceiling corners.
- The LED control gear cannot be abutted against or covered by normally flammable materials or used in installations where building insulation or debris is, or may be, present in normal use.
- The external flexible cable or cord of this driver cannot be replaced; if the cord is damaged, the driver shall be destroyed.
- Dimming wire and Aux. output wire should be built-into lamp compartment, lighting column of the luminaires; Cannot be exposed directly at open air without any protection.
- The minimum clearance distance from the top and sides of the control gear to normally flammable building elements is  $A=B=C=\text{Min.}10\text{mm}$ , this clause does not apply when the LED driver is built-in the luminaires (for Australia and New Zealand).



- The startup time to reach the set output current is less than 2s.
- For further details please consult the application note.

## Notes

OSRAM products must never be directly exposed to external influences. Always provide adequate protection for relevant applications (covers, housings etc.) otherwise any warranty claim will be invalid.

## 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.

## Standards

## Ordering information

IEC 61347-2-13  
IEC 55015  
IEC 61547  
IEC 61000-3-2  
IEC 61000-3-3

Product name	EAN10	EAN40	Pieces / box
EM 75/100-277/2A5 DIM P7	4062172379229	4062172379236	10

## Disclaimer

Subject to change without notice. Errors and omission accepted. Always make sure to use the most recent release. The latest release of the datasheet is available under the following link [www.inventronicsglobal.com](http://www.inventronicsglobal.com)

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