

Light is OSRAM

OSRAM

Product data sheet: EM 250/120-277/700 P7

Constant Current LED Driver

ELEMENT LED Power Supply is the good choice for industry and outdoor lighting applications. This driver offers output current of 700mA and an input voltage range 120V – 277V*.

Benefits

High surge protection up to 6 kV;
High efficiency and reliability;
Fix current for optimized fixture design
High Ambient temperature up to 60° C
IP67
Long life time

Applications

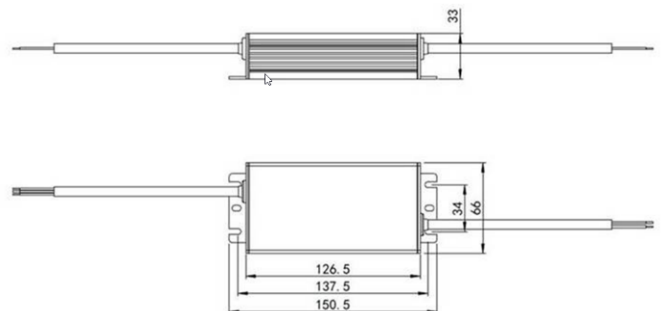
Industrial, high bay, flood lighting
Suitable for luminaires of protection class I

Approvals



In preparation, if not already printed on product label

Housing material: Aluminum Color: Silver



Product Features

- Fix output current 700mA
- Output power up to 240 W
- Uout: 240 - 343Vdc
- High surge capability up to 6/6 kV
- Mains voltage 120 – 277 V
- IP67
- Wide t_a range -40°C...+60°C
- 50'000 h lifetime at $t_c = 75^\circ\text{C}$

*refer to input vs load, page 3

Electrical Specifications

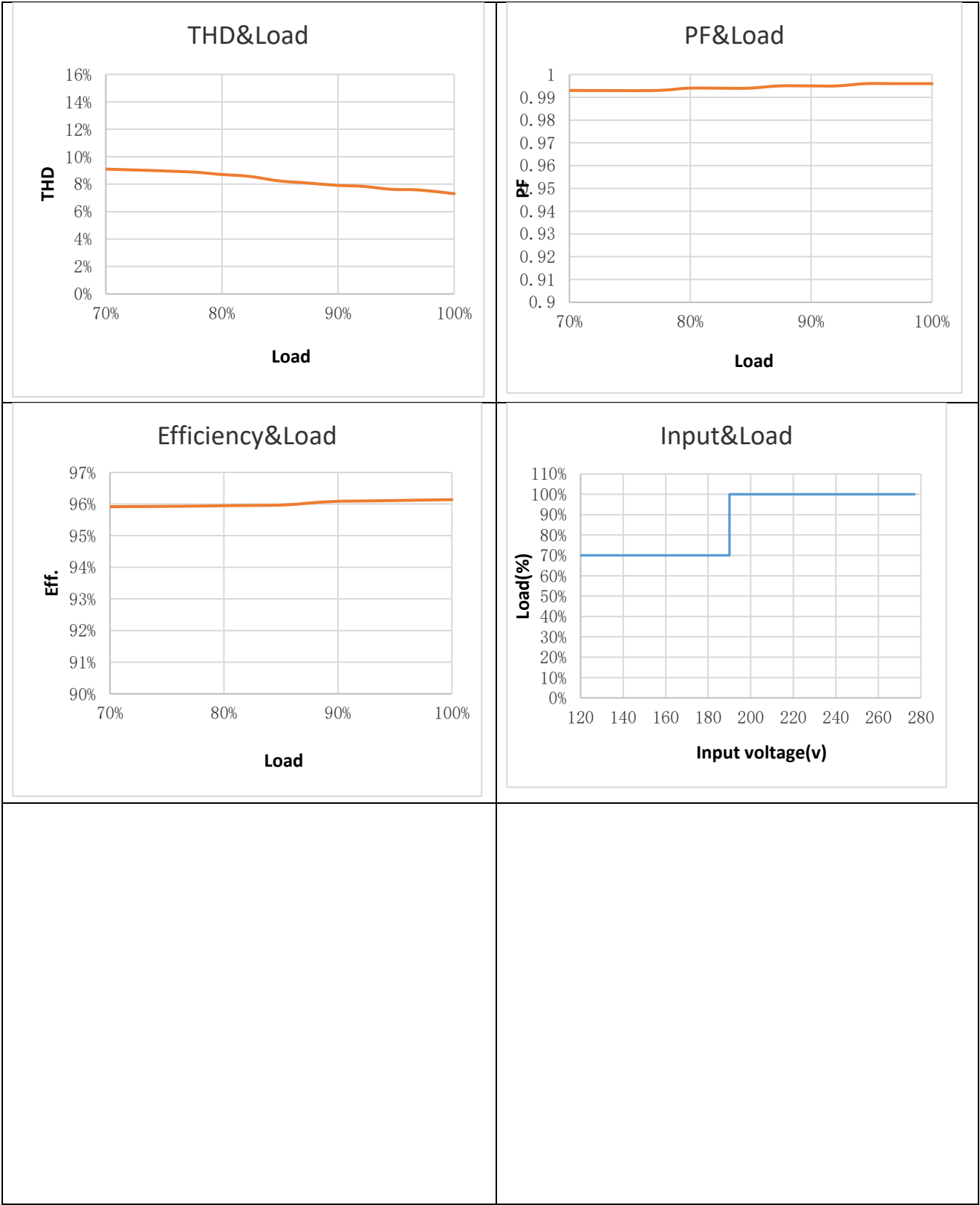
	Item	Value	Unit	Remarks
INPUT	Nominal Voltage	120 - 277	V	
	Nominal frequency	50 / 60	Hz	
	AC voltage range	108 – 305	V	
	DC voltage range	n/a	V	
	Maximum voltage	300	V _{AC}	2hrs max. Above 270V the load might switch off
	Nominal current	1.6	A	At Vin 230V 50Hz
	Total Harmonic Distortion (THD)	< 10	%	Full load 230V, 50Hz
	Power factor	≥ 0.98		Full load 230V, 50Hz
	Efficiency in full load	96	%	Full load 230V, 50Hz
	Power losses	11	W	Vin 230v 50Hz
	No-load power	n/a	W	Load switching on output side is not permitted
	Networked 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	45	A pk	Max, th = 350 μs @ 50% Ipk
OUTPUT	Max. units per circuit breaker	B10: 5 B16: 9 B25: 15		TBD
	Nominal voltage range	240 - 343	V	At 190-277V input. Refer to input & load at page 3.
	Maximum voltage	400	V	No load protection
	Nominal current range	700	mA	
	Current accuracy	± 5	%	
	Current ripple	< 5	%	Low frequency ≤100Hz, full load @ 230V
	Nominal power range	168 – 240	W	
	Maximum power	240	W	LED output
DIM	Galvanic isolation	No		
	Dimming control	n/a		
	Dimming range	n/a	%	
	Galvanic isolation from output circuits	n/a		
	Galvanic isolation from input circuits	n/a		
	LEDset2	n/a		
	NTC input	n/a		
	DALI-2 Luminaire Data	n/a		
	DALI-2 Energy Data	n/a		
ENVIRONMENT	DALI-2 Diagnostic Data	n/a		
	Ambient temperature range t _a	-40 ...+60	°C	Nominal Input Voltage: 120-277Vac
	Maximum case temperature t _c	90	°C	Measured on t _c point indicated of the product label, tc not exceeded
	Max. case temp. in fault condition	n/a	°C	
	Storage temperature range	-40...+85	°C	
	Relative humidity	5 ... 95	%	Not condensing, Absolute humidity: 36g/m3
	Surge transient protection	6 6	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 _c = 75°C with max. 10% failure rate
	Weight	550	g	
	Dimensions	150.5 x 66 x 33	mm	

Protections

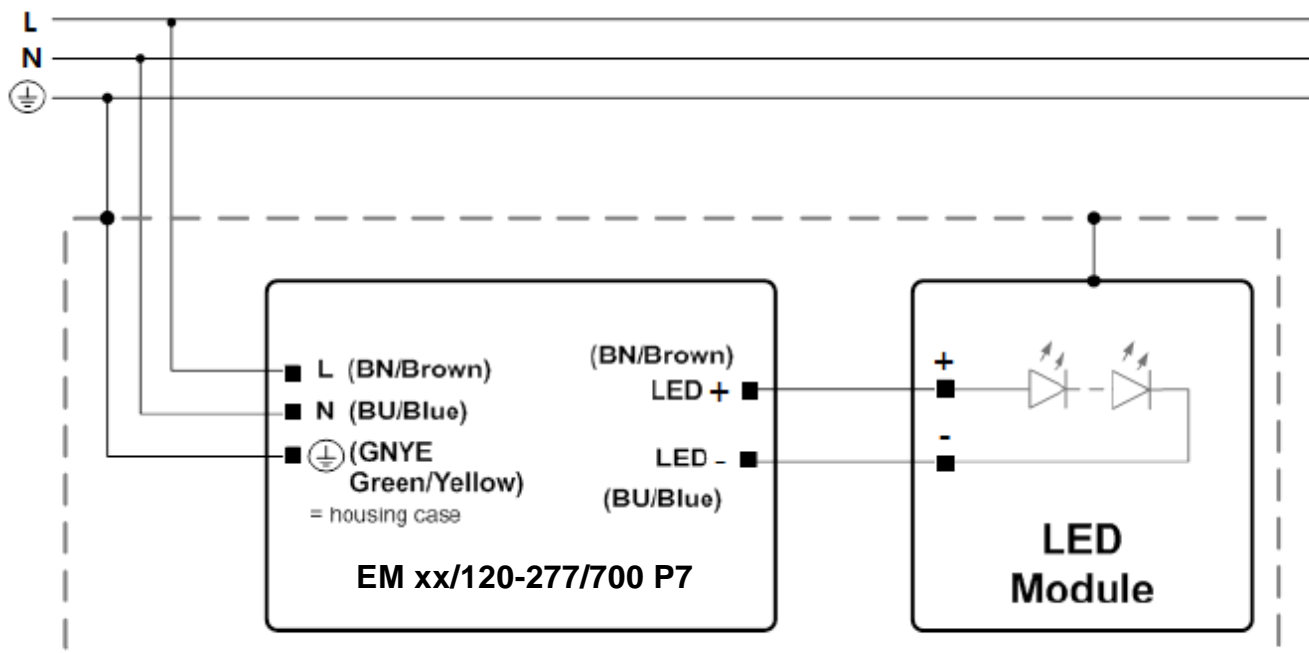
Overload, No load, Short-circuit, Output Overvoltage

See remarks on page 5.

Electrical characteristics



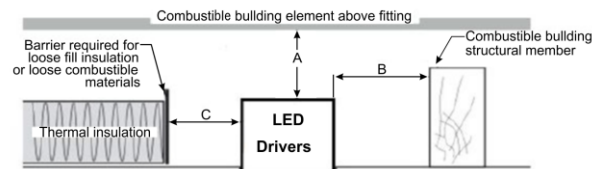
Wiring Diagram



	Item	Value	Unit	Remarks
INPUT	Cable cross section	1.0	mm ²	L (Brown/BN), N (Blue/BU), EQUI (Black/BK)
	Wire preparation length	10	mm	
	Type of wire	Flexible three core cable		
	Lead length	300 ± 20	mm	
OUTPUT	Cable cross section	1.0	mm ²	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	n/a		
	Wire preparation length	n/a		
	Type of wire	n/a		
	Lead length	n/a		
CABLE / LENGTH	LED+/LED-	< 2	m	

Remarks

- **Input voltage range:** Workable at 120 – 198Vac without safety issue (refer to graph Typical Input Voltage vs. Load), but normal performance such as THD, EMI, lifetime etc. are not guaranteed.
- **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. The driver needs a power cycle to restart or DALI command with the correct load connected.
- **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. The driver needs a power cycle to restart or DALI command with the correct load connected.
- 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.
- The dimmer should fulfill at least basic insulation between control voltage and dimming circuit (for Australia and New Zealand).
- The minimum clearance distance from the top and sides of the controlgear 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.

Standards

Ordering information

IEC 61347-1
IEC 61347-2-13
IEC 55015
IEC 61547
IEC 61000-3-2
IEC 61000-3-3
IEC 60598-1(Ed.8)

Product name	EAN10	EAN40	Pieces / box
EM 250/120-277/700 P7	4062172289092	4062172289108	20

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.osram.com

OSRAM GmbH

Head Office:

Marcel-Breuer-Strasse 6
80807 Munich, Germany
Phone +49 89 6213-0
www.osram.com

OSRAM