

Lighting Specification

PSU150/12V 150W Constant Voltage & Constant Current LED Driver

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Features

- Constant Voltage and Constant Current mode output
- Metal housing with I class
- IP65 rating for indoor or outdoor installations
- Output adjustable by potentiometer
- Typical lifetime > 62,000 hours
- 1 year warranty (Note. 10)



Description

PSU150/12V is a 150W AC/DC LED driver featuring the dual mode constant voltage and constant current output. PSU150/12V operates from 90 – 305VAC. Thanks to the high efficiency up to 91.5%, with its fanless design, this PSU is able to operate for -40°C to +90°C case temperature under free air convection. The design of the metal housing offers IP65 ingress protection level allowing this PSU to fit both indoor and outdoor applications. PSU150/12V is equipped with the option to adjust the output voltage between 10.8 – 13.5V.

Specification

Model	PSU150/12V	
Output	DC Voltage	12V
	Constant Current Region <small>Note.4</small>	6 – 12V
	Rated Current	12.5A
	Rated Power	150W
	Ripple & Noise (max.) <small>Note.2</small>	150mVp-p
	Voltage Adj. Range	Adjustable via built-in potentiometer 10.8 – 13.5V
	Current Adj. Range	Adjustable via built-in potentiometer 7.5 – 12.5A
	Voltage Tolerance <small>Note.3</small>	±2.5%
	Line Regulation	±0.5%
	Load Regulation	±2.0%
	Setup, Rise Time <small>Note.6</small>	1000ms, 200ms/115VAC 500ms, 200ms/230VAC
Hold Up Time (Typ.)	16ms/115VAC, 230VAC	
Input	Voltage Range <small>Note.5</small>	90 – 305VAC 127 – 431VDC (Please refer to "Static Characteristics" section)
	Frequency Range	47 – 63Hz
	Power Factor (Typ.)	PF≥0.98/115VAC, PF≥0.95/230VAC , PF≥0.92/277VAC at full load. (Please refer to "Power Factor (PF) Characteristics" curve)
	Total Harmonic Distortion	THD< 20% (@ load≥60% / 115VAC,230VAC; @ load≥75% / 277VAC) (Please refer to "Total Harmonic Distortion (THD)" section)
	Efficiency (Typ.)	91.5%
	AC Current (Typ.)	1.7A / 115VAC 0.75A / 230VAC 0.7A / 277VAC
	Inrush Current (Typ.)	Cold Start 65A (twidth=425µs measured at 50% Ipeak) at 230VAC; Per NEMA 410
	Max. No. Of PSUs On 16A Circuit Breaker	4 units (circuit breaker of type B) / 7 units (circuit breaker of type C) at 230VAC
Leakage Current	<0.75mA / 277VAC	

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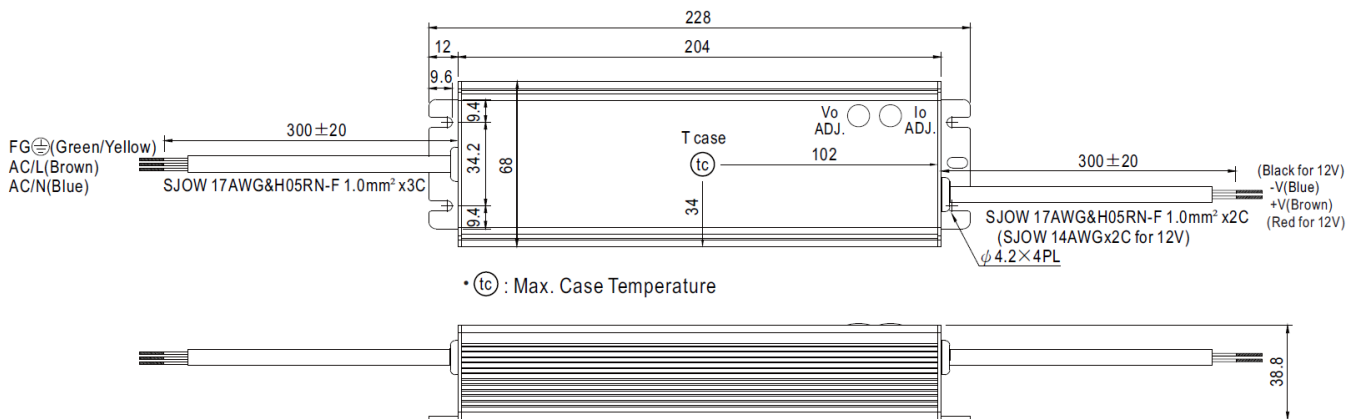
Protection	Over Current	95 – 108% Constant current limiting, recovers automatically after fault condition is removed
	Short Circuit	Constant current limiting, recovers automatically after fault condition is removed
	Over Voltage	14 – 17V Shut down o/p voltage with auto-recovery or re-power on to recover
	Over Temperature	Shut down o/p voltage, recovers automatically after temperature goes down
Environment	Working Temperature	Tcase = -40°C to +90°C (Please refer to “Output Load vs Temperature” section)
	Max. Case Temperature	Tcase = +90°C
	Working Humidity	20 – 95% RH non-condensing
	Storage Temperature, Humidity	-40°C to +80°C, 10 – 95% RH
	Temperature Coefficient	±0.03%/°C (0 to 60°C)
	Vibration	10 – 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes
Safety & EMC	Safety Standards	UL8750, CSA C22.2 No. 250.0-08; EN/AS/NZS 61347-1, EN/AS/NZS 61347-2-13 independent; GB19510.1, GB19510.14; IP65; J61347-1, J61347-2-13, EAC TP TC 004 approved; Design refer to UL60950-1, TUV EN60950-1
	Withstand Voltage	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C/ 70% RH
	EMC Emission	Compliance to EN55015, EN55032 (CISPR32) Class B, EN61000-3-2 Class C (at load ≥60%); EN61000-3-3, GB17743 and GB17625.1, EAC TP TC 020
	EMC Immunity	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN61547, EN55024, light industry level (surge immunity Line-Earth 4KV, Line-Line 2KV), EAC TP TC 020
Others	MTBF	192.2Khrs min. MIL-HDBK-217F (25°C)
	Dimensions	228 x 68 x 38.8 mm (L x W x H)
	Packing	1.15Kg; 12pcs/14.8Kg/0.8CUFT
Note	<ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature. Ripple and noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf and 47uf parallel capacitor. Tolerance: includes set up tolerance, line regulation and load regulation. Please refer to “Driving Methods of LED Module”. Derating may be needed under low input voltages. Please refer to “Static Characteristics” sections for details. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to an increase of the set up time. The driver is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED driver can only be used behind a switch without permanently connecting to the mains. This series meets the typical life expectancy of >62,000 hours of operation when Tcase, particularly (tc) point (or TMP, per DLC), is about 80°C or less. Please refer to our warranty statement. 	

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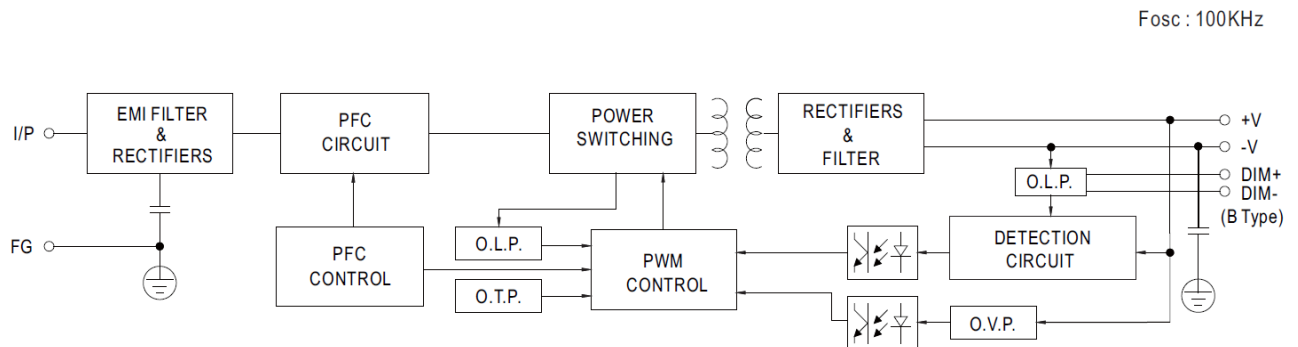
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Mechanical Specification



Block Diagram

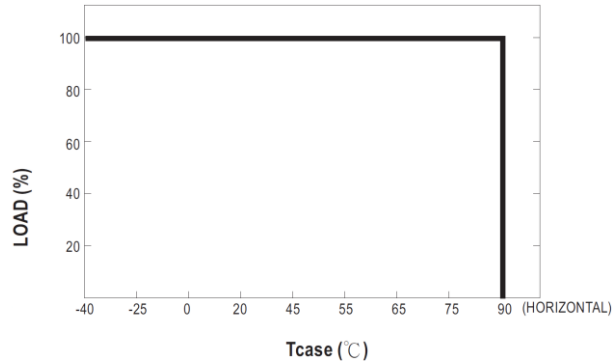
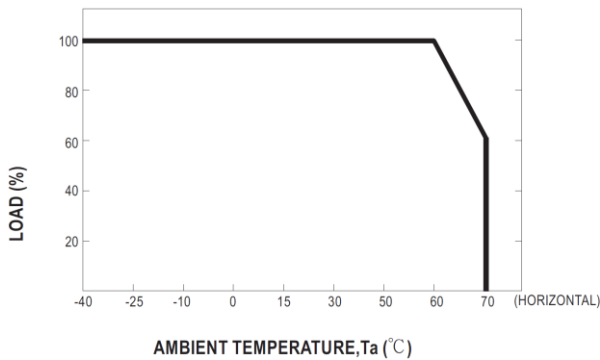


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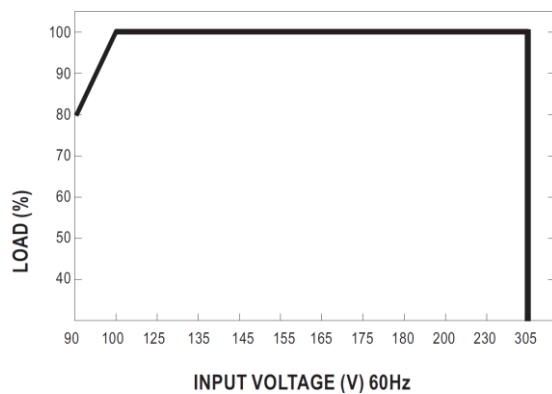
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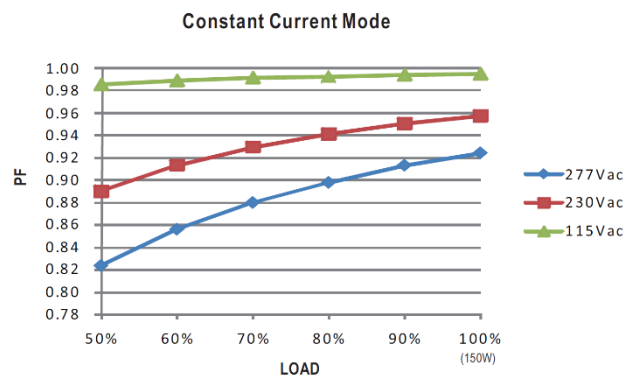
Output Load vs Temperature



Static Characteristics



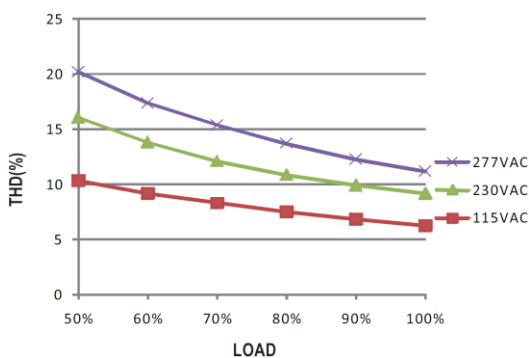
Power Factor (PF) Characteristics



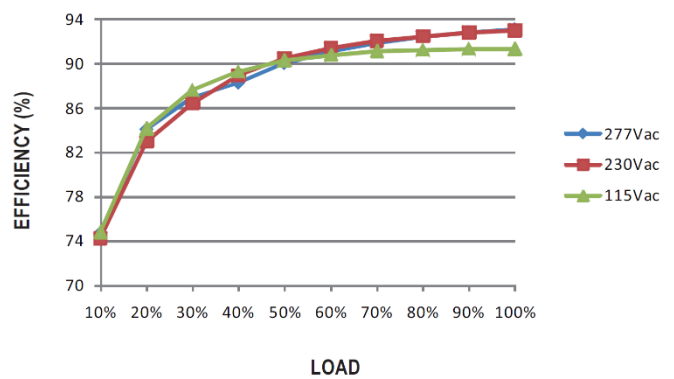
✘ Derating is needed under low input voltage.

✘ Tcase at 80°C

Total Harmonic Distortion (THD)



Efficiency vs Load



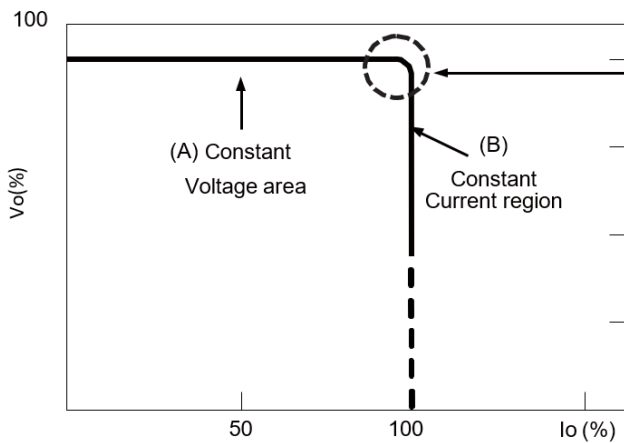
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Driving methods of LED module

✘ This unit is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to drive the LEDs.



Typical LED power supply I-V curve

In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.

Should there be any compatibility issues, please contact Gradus.