Specification

PSU320/12V
320W Single Output Switching Power Supply

Features

- Universal AC input/Full range (up to 305VAC)
- Built-in active PFC function
- Protections: Short circuit/Over current/Over voltage/Over temp
- Cooling by free air convection
- OCP point adjustable through internal potentiometer
- IP65 design for indoor or outdoor installations
- Suitable for LED lighting and street lighting applications
- Suitable for dry/damp/wet locations
- 1 year warranty (Note. 9)

SELV IP65

Description

PSU320/12V is a 320W AC/DC LED driver featuring the dual mode constant voltage and constant current output. PSU320/12V operates from 90 – 305VAC. Thanks to the high efficiency 91%, with the fanless design, this PSU is able to operate for -40°C to +70°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 application. PSU320/12V is equipped with the option to adjust the output voltage between 10.8 – 13.5V.

Specification

Model		**PSU320/12V**
Ouput	DC Voltage	12V
	Constant Current Region (Note. 4)	6 – 12V
	Rated Current	22A
	Rated Power	264W
	Ripple & Noise (max.) (Note. 2)	150mVp-p
	Voltage Adj. Range	10.8 – 13.5V
	Current Adj. Range	Can be adjusted by internal potentiometer 11 – 22A
	Voltage Tolerance (Note. 3)	±3.0%
	Line Regulation	±0.5%
	Load Regulation	±2.0%
	Setup, Rise Time (Note. 7)	2500ms, 80ms at full load 230VAC/115VAC
	Hold Up Time (Typ.)	15ms at full load 230VAC/115VAC
Input	Voltage Range (Note. 5)	90 – 305VAC 127 – 431VDC
	Frequency Range	47 – 63Hz
	Power Factor (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.94/277VAC at full load (Please refer to "Power Factor Characteristic" curve)
	Efficiency (Typ.) (230VAC)	91%
	Efficiency (Typ.) (277VAC)	91.5%
	AC Current (Typ.)	3.5A / 115VAC 1.65A / 230VAC 1.45A / 277VAC
	Inrush Current (Typ.)	Cold Start 75A/230VAC
	Leakage Current	<0.75mA / 277VAC

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Protection	Over Current (Note. 4)	95 – 108%
		Protection type: Constant current limiting, recovers automatically after fault condition is removed
	Short Circuit	Hiccup mode, recovers automatically after fault condition is removed
	Over Voltage	14 – 17V
		Protection type: Shut down and latch off o/p voltage, re-power on to recover
	Over Temperature	100°C ±10°C (RTH2)
		Protection type: Shut down and latch off o/p voltage, re-power on to recover
Environment	Working Temperature	-40°C to +70°C (Refer to “Derating Curve”)
	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 50°C)
	Vibration	10 – 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes
Safety & EMC	Safety Standards (Note. 6)	UL8750, CSA C22.2 No. 250.0-08, EN61347-1, EN61347-2-13 independent, IP65, J61347-1, J61347-2-13 approved; design refer to UL60950-1, TUV EN60950-1
	Withstand Voltage	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH
	EMC Emission	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥50% load); EN61000-3-3
	EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge 4KV), criteria B
Others	MTBF	157.1Khrs min. MIL-HDBK-217F (25°C)
	Dimensions	252 x 90 x 43.8 mm (L x W x H)
	Packing	1.88Kg; 8pcs/16Kg/0.92CUFT
Note	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. 2. 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. 3. Tolerance: includes set up tolerance, line regulation and load regulation. 4. Constant current operation region is within 50% – 100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design. 5. Derating may be needed under low input voltages. Please check the static characteristics for more details. 6. Safety and EMC design refer to EN60598-1 subject, CNS15233, GB7000.1, FCC part 18. 7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time. 8. The power supply 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. 9. Refer to warranty statement.	

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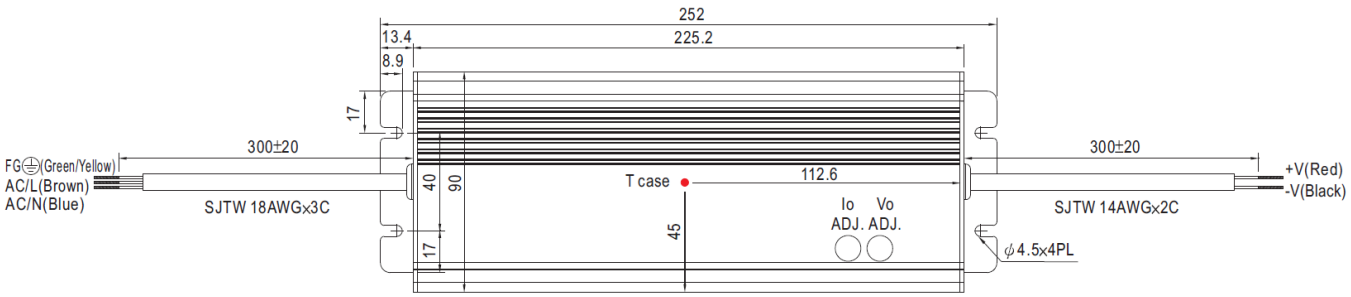
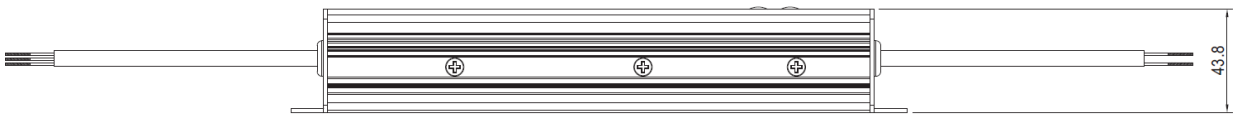
Mechanical Specification

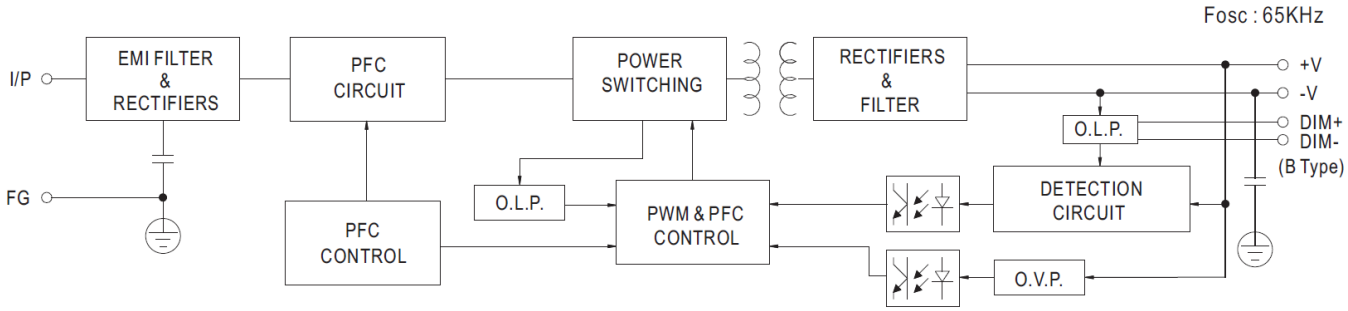


※ T case: Max. Case Temperature.



※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer. (Can access by removing the rubber stopper on the case)

Block Diagram



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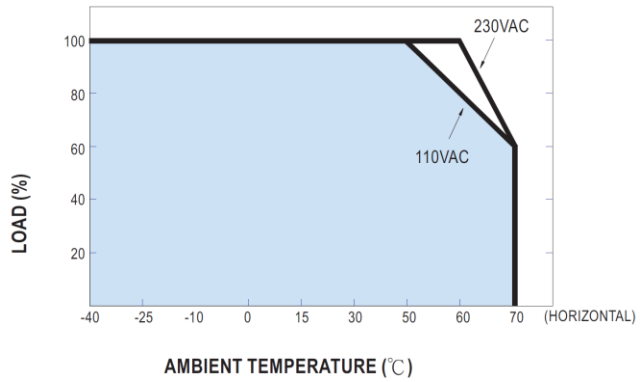
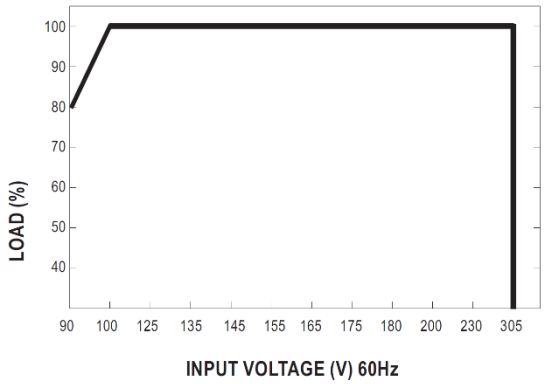
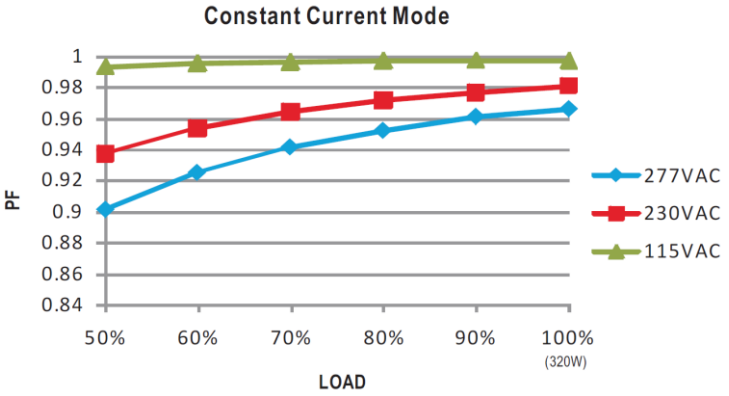
Derating Diagram



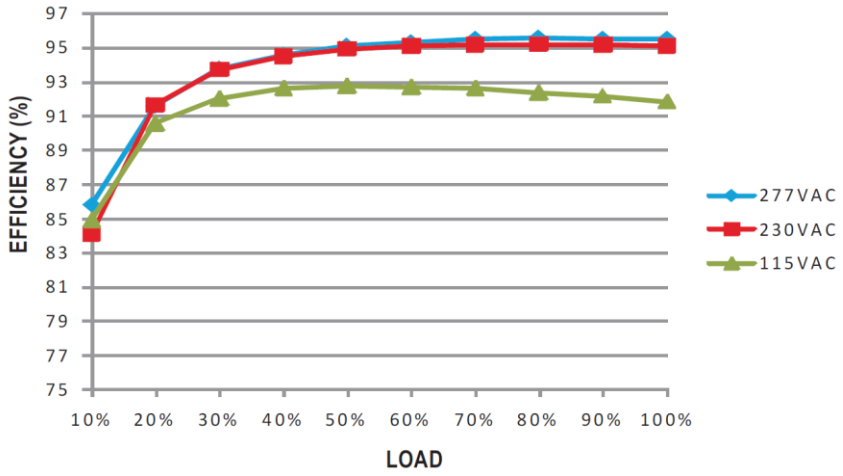
Static Characteristics



Power Factor Characteristic



Efficiency vs Load



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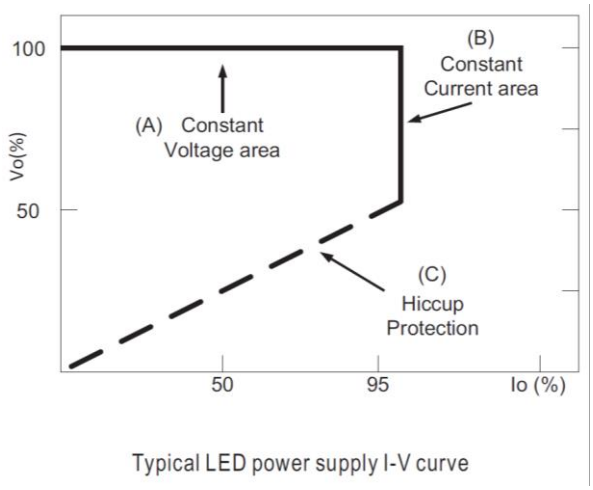
Driving methods of LED module

There are two major kinds of LED drive method "direct drive" and "with LED driver".

A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.

Gradus' PSU320/12V LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver) at area "A" and CC mode (direct drive), at area "B".



Typical LED power supply I-V curve