

HBG-160 Series

160W Single Output Switching Power Supply



132 Diameter x 66.5mm

Features

- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- High efficiency up to 93.5%
- Protections: Short circuit / Over Current / Over Voltage / Over temperature
- OCP point adjustable through internal potentiometer
- IP65 design for indoor or outdoor installations
- Suitable for dry / damp / wet locations
- 5 years warranty, Tc70°C 50000hrs



Specification

INPUT	Voltage	90~305VAC 127~431VDC			
	Frequency	47 ~ 63 Hz			
	Power Factor	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load (Please refer to 'Power Characteristic' curve)			
	Efficiency	92%	92%	93%	93.5%
	AC Current	1.7A@115VAC	0.78A@230VAC	0.7A@277VAC	
	Max LED Drive Number on MCB C Type 16A	15 Units@230VAC			
	Inrush Current (Typ.)	Cold Start 65A(twidth=425µs measured at 50% Ipeak) @230VAC			
	Leakage Current	<0.75mA@277VAC			
OUTPUT	MODEL No.	HBG-160-24	HBG-160-36	HBG-160-48	HBG-160-60
	DC Voltage	24V	36V	48V	60V
	Constant Current Region	14.4~24V	21.6~36V	28.8~48V	36~60V
	Rated Current	6.5A	4.4A	3.3A	2.6A
	Rated Power	156W	158.4W	158.4W	156W
	Ripple Noise MAX.	200mVp-p	300mVp-p	300mVp-p	300mVp-p
	Voltage Tolerance	±2.0%			
	Line Regulation	±0.5%			
	Load Regulation	±1.0%			
	Set Up Rise Time	2500ms, 200ms / 115VAC at full load 500ms, 200ms / 230VAC at full load			
	Hold Up Time	12ms at full load 115VAC/230VAC			
PROTECTION	Over Current	95~108% Protection Type: Constant Current Limiting, recovers automatically after fault condition is removed			
	Over Voltage	28~34V	41~47V	54~62V	65~75V
	Over Temperature	Shut down o/p voltage, recover automatically after temperature goes down			
ENVIRONMENT	Working Temperature	-40 ~ +60°C (Refer to derating curve)			
	Working Humidity	20 ~ 95% RH non-condensing			
	Storage Temp., Humidity	-40 ~ +80°C, 10~95%RH			
	Temp. Co-efficient	±0.03%/°C (0~50°C)			
SAFETY & EMC	Vibration	10~500Hz, 5G 12min./1cycle, period for 72 min. each along X, Y, Z axes			
	Safety Standards	UL8750, CSA C22.2 No.250.13-12, EN61347-1, EN61347-2-13 approved, design refer to EN60950			
	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, EN61000-3-2 (Class C (≥60% load)); EN61000-3-3			
OTHERS	EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level (surge 4kV), criteria A			
	M.T.B.F.	252.3Khrs min. MIL-HDBK-217F (25°C)			
	Packaging	1.52Kg; 8pcs/13.16Kg/1.5CUFT			

1. All parameters Not specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance: Includes set up tolerance, line regulation and load regulation.
4. Constant current operation region is within 60% ~ 100% rated output voltage, and the output power must be more that 60% rated output power. 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. 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.
7. 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.
8. To fulfill requirements of the latest Erp regulation for lighting fixtures, this LED power supply can only be used behind a switch without permanently connected to the mains.

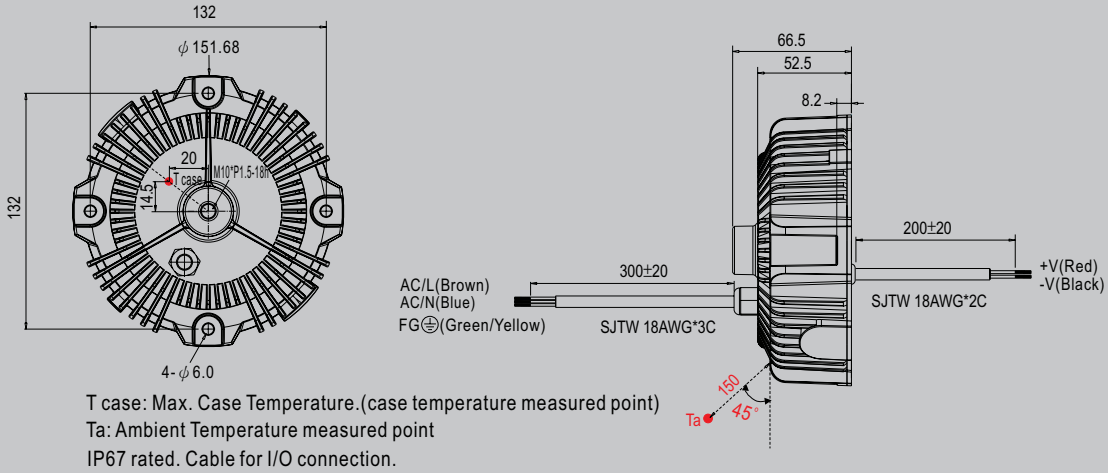
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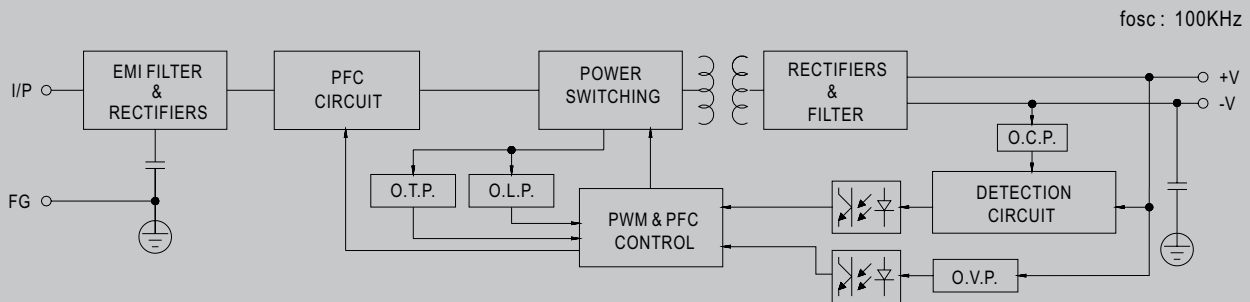


Mechanical Specification

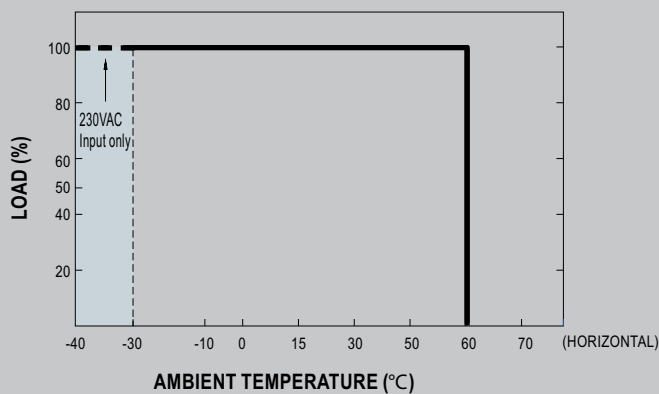
Unit: mm



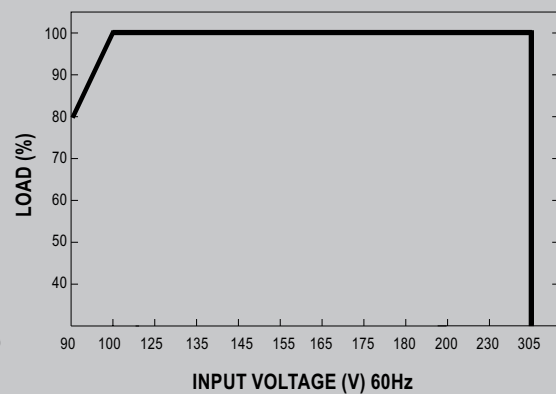
Block Diagram



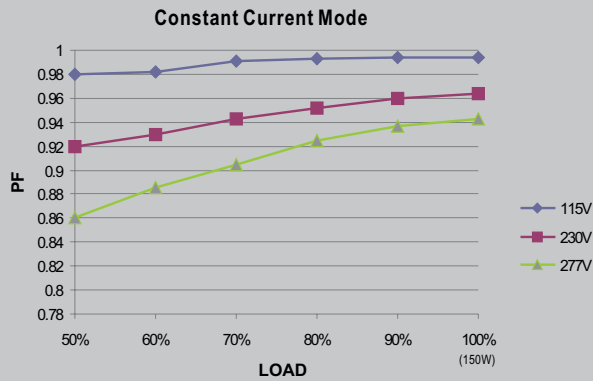
Derating Curve



Static Characteristics

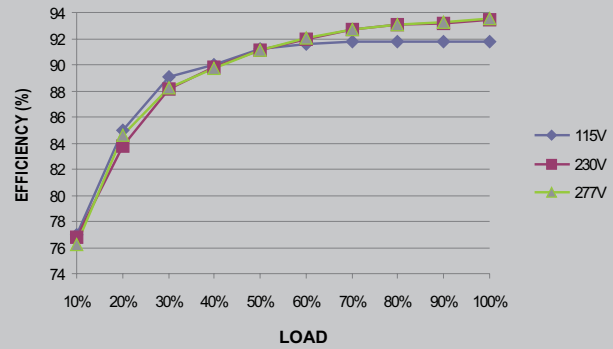


Power Factor Characteristic



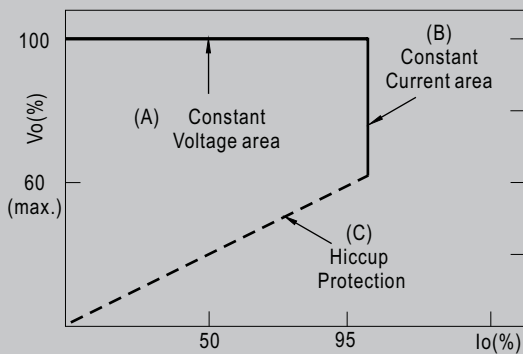
Efficiency vs Load (48 Model)

HBG-160 series possess superior working efficiency that up to 93% can be reached in field applications.



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 LEDs. This 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

Installations

