

HLG-600H-B Series

600W Single Output Switching Power Supply



Features

- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- High Efficiency up to 96%
- -40°C ~ +70°C wide operating range
- Protections: Short circuit: OC / OV / OT
- Fan-less design, cooling by free air convection
- IP65 Design for indoor or outdoor installations
- Withstand 5G vibration test
- Three in one dimming function (0~10Vdc or PWM signal or resistance)
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations
- 5 years warranty



Specification

	Voltage	90 ~ 305VAC 127 ~ 431VDC									
	Frequency	47 ~ 63 Hz									
	Power Factor	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load (please refer to "Power Factor Characteristic" curve)									
	Total Harmonic Distortion	Total harmonic distortion <20% when output loading \geq 50% at 115VAC/230VAC input and output loading \geq 75% at 277VAC input									
INPUT	Efficiency (230VAC)	92%	93.5%	94.5%	95%	95%	95.5%	96%	96%	96%	
	Efficiency (277VAC)	92.5%	93.5%	94.5%	95%	95%	95.5%	96%	96%	96%	
	AC Current	7A/115VAC 3.3A/230VAC 2.9A/277VAC									
	Inrush Current (Typ.)	Cold start 70A (twidth=1000 μ s measured at 50% Ipeak) at 230VAC									
	Leakage Current	<0.75mA/277VAC									
OUTPUT	MODEL No.	HLG-600H-12A	HLG-600H-15A	HLG-600H-20A	HLG-600H-24A	HLG-600H-30A	HLG-600H-36A	HLG-600H-42A	HLG-600H-48A	HLG-600H-54A	
	DC Voltage	12V	15V	20V	24V	30V	36V	42V	48V	54V	
	Constant Current Region	6 ~ 12V	7.5 ~ 15V	10 ~ 20V	12 ~ 24V	15 ~ 30V	18 ~ 36V	21 ~ 42V	24 ~ 48V	27 ~ 54V	
	Rated Current	40A	36A	28A	25A	20A	16.7A	14.3A	12.5A	11.2A	
	Rated Power	480W	540W	560W	600W	600W	601.2W	600.6W	600W	604.8W	
	R&N	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	250mVp-p	250mVp-p	250mVp-p	350mVp-p	
	Voltage Adj. Range	10.2 ~ 12.6V	12.7 ~ 115.8V	17 ~ 21V	20.4 ~ 25.2V	25.5 ~ 31.5V	30.6 ~ 37.8V	35.7 ~ 44.1V	40.8 ~ 50.4V	45.9 ~ 56.7V	
	Voltage Tolerance	\pm 3.0%	\pm 2.0%	\pm 1.5%	\pm 1.0%	\pm 1.0%	\pm 1.0%	\pm 1.0%	\pm 1.0%	\pm 1.0%	
	Line Regulation	\pm 0.5%	\pm 0.5%	\pm 0.5%	\pm 0.5%	\pm 0.5%	\pm 0.5%	\pm 0.5%	\pm 0.5%	\pm 0.5%	
	Load Regulation	\pm 2.0%	\pm 1.5%	\pm 1.0%	\pm 0.5%	\pm 0.5%	\pm 0.5%	\pm 0.5%	\pm 0.5%	\pm 0.5%	
	Setup Rise Time	500ms, 80ms at full load 230VAC/115VAC									
	Hold Up Time	15ms at full load 230VAC/115VAC									
PROTECTION	Over Current	95 ~ 108% Protection type: Constant current limiting, recovers automatically after fault condition is removed									
	Short Circuit	Constant current limiting, recovers automatically after fault condition is removed									
	Over Voltage	13 ~ 16V	16.5 ~ 20.5V	22 ~ 26V	29 ~ 30V	32.5 ~ 36.5V	39.5 ~ 43.5V	46 ~ 50V	52.5 ~ 56.5V	59 ~ 63V	
	Over Temperature	Protection type: Shut down o/p voltage, re-power onto recover Shut down o/p voltage, re-power on to recover									
FUNCTION	Remote ON/OFF Control	Power on: "Hi" >2 ~ 5V or (open circuit) Power off: "Low" <0 ~ 0.5V or (Short circuit)									
	5V Standby	5Vsb: 5V at 0.5A; tolerance \pm 5% ripple: 100mVp-p (max.)									
ENVIRONMENT	Working Temperature	-40 ~ +70 °C (Refer to "Derating Curve")									
	Working Humidity	20 ~ 95% RH non-condensing									
	Storage Temp., Humidity	-40 ~ +80 °C, 10 ~ 95%RH									
	Temp Coefficient	\pm 0.03%/°C (0 ~ 60°C)									
	Vibration	10 ~ 500Hz, 5G 12 min./1cycle, period for 72 min. each along X, Y, Z axes									
SAFETY & EMC	Safety Standards	UL8750, CSA C22.2 No. 250. 13-12, EN61347-1, EN61347-2-13, independent IP65 approved									
	Withstand Voltage	I/P-O/P:3.75VAC 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 (\geq 50% load); EN61000-3-3									
	EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (Surge4KV), criteria A									
OTHERS	M.T.B.F.	76.9Khrs min. MIL-HDBK-217F (25°C)									
	Packing	3.9Kg, 4pcs/16.6Kg/0.9CUFT									

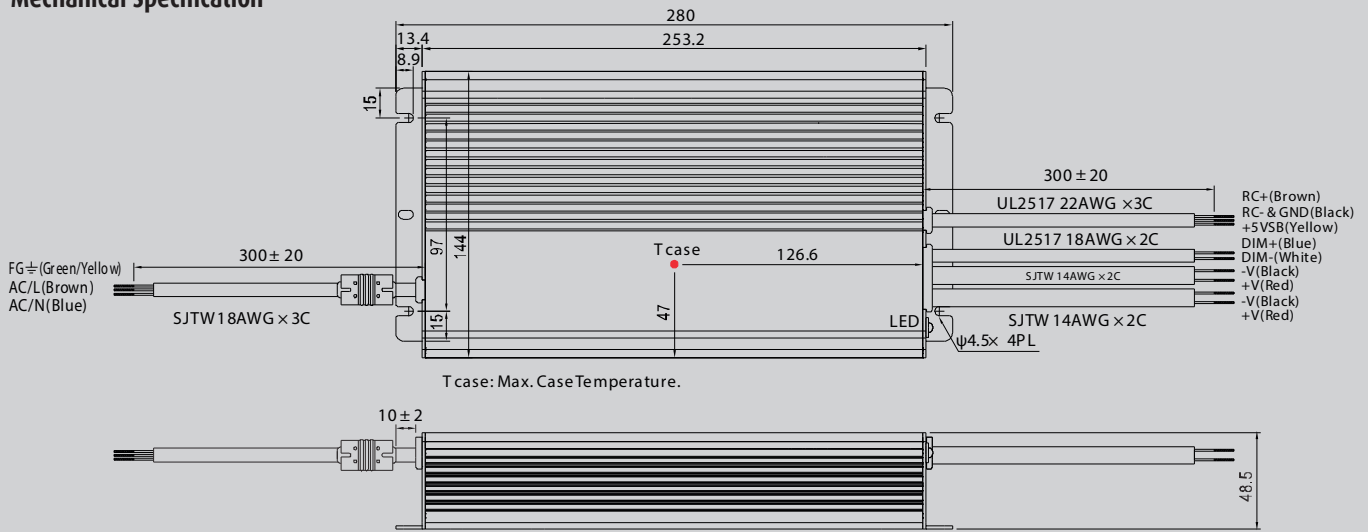
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25 °C of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μ f & 47 μ f parallel capacitor.
3. Tolerance: includes set up tolerance, line regulation and load regulation.
4. Constant current operation region is within 50%~100% rated output voltage. This is the suitable operation region for the 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 part18.
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.

HLG-600H-B Series

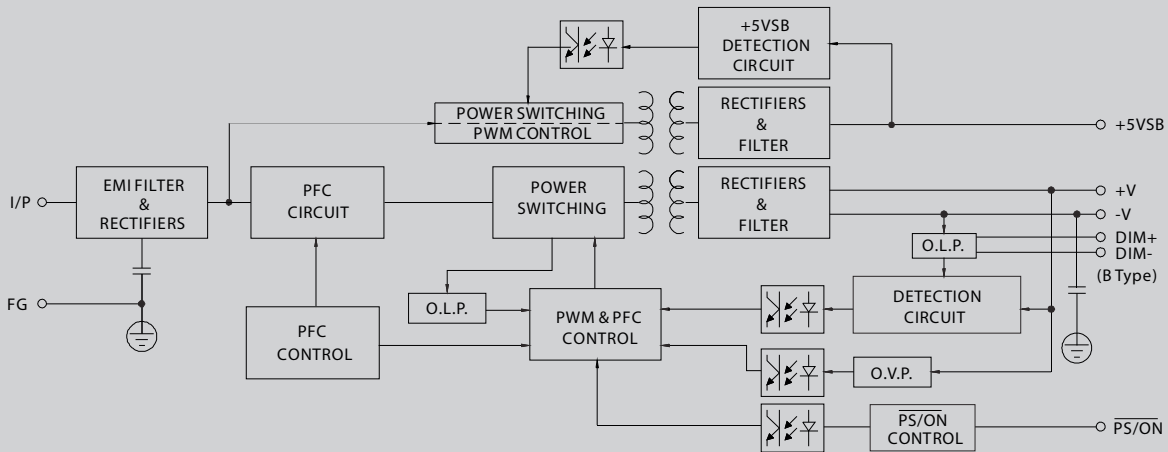
600W Single Output Switching Power Supply



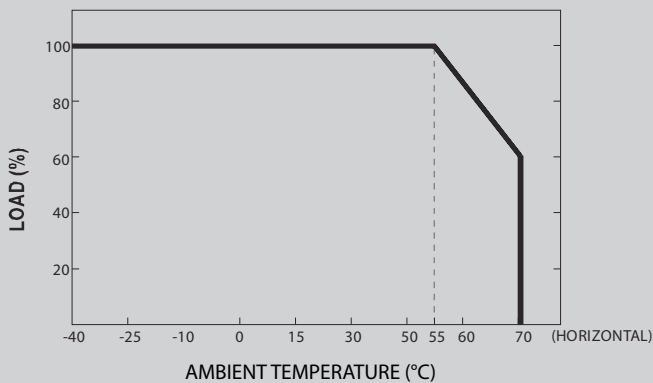
Mechanical Specification



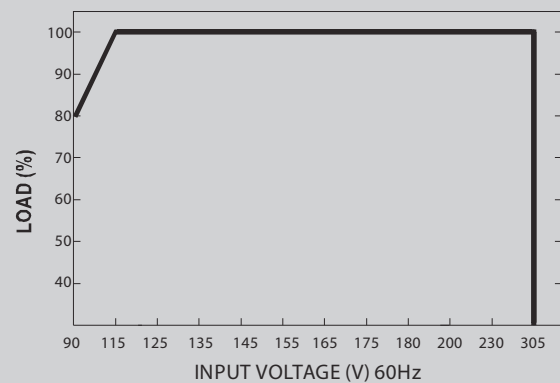
Block Diagram



Derating Curve

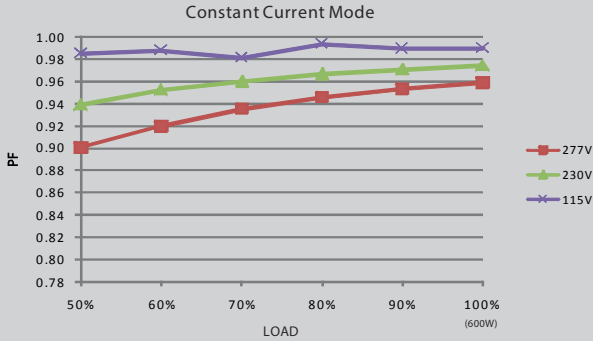


Static Characteristics



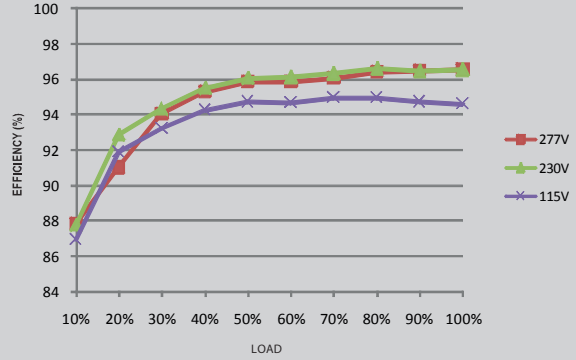
Note: At high ambient temperature $T_a = 70^\circ\text{C}$, if HLG-600H-A operates in C.C mode, the maximal current must not be greater than 60% of the rated current.

Power Factor Characteristic



Efficiency vs Load (54V Model)

HLG-600H series possess superior working efficiency that up to 96% can be reached in field applications

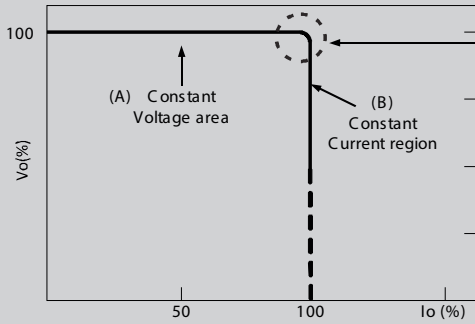


Driving Methods of LED Module

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 the LEDs.

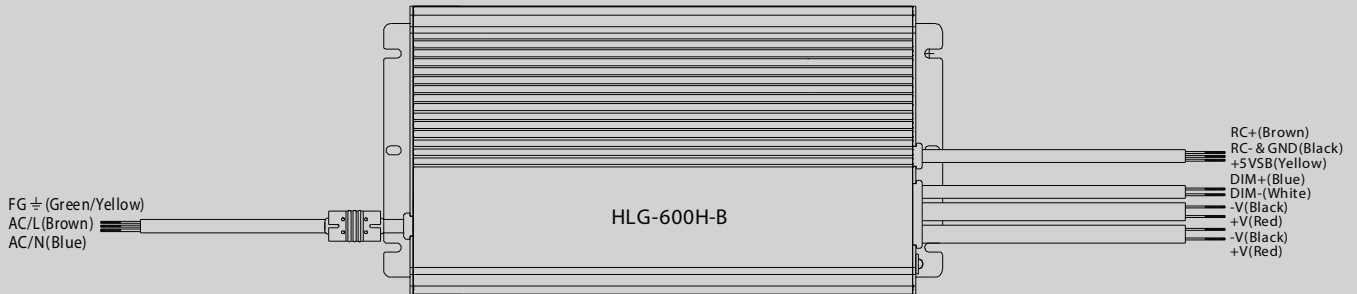
This LED power supply with CV+CC characteristics can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B)).



Typical LED power supply I-V curve

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

Dimming Operation



Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 0~10Vdc or 10V PWM signal between DIM+ and DIM-.

Please do not connect "DIM-" to "-V".

Reference resistance value for output current adjustment (Typical).

Resistance value	Single driver	Short	10K Ω	20K Ω	30K Ω	40K Ω	50K Ω	60K Ω	70K Ω	80K Ω	90K Ω	100K Ω	OPEN
	Multiple drivers (N=d river quantity for synchronized dimming operation)	Short	10K Ω /N	20K Ω /N	30K Ω /N	40K Ω /N	50K Ω /N	60K Ω /N	70K Ω /N	80K Ω /N	90K Ω /N	100K Ω /N	-----
Percentage of rated current		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

0 ~ 10V dimming function for output current adjustment (Typical)

Dimming value	0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

10V PWM signal for output current adjustment (Typical): Frequency range :100Hz ~ 3KHz

Duty value	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.