

HLG-320H-B Series

320W IP67 Constant Voltage LED Lighting Power Supplies



Case: 8014ER
252 x 90 x 43.8 mm

Features

- Constant voltage mode power supply
- Universal AC input up to 305VAC
- IP67 level
- Built in active PFC function
- OCP point adjustable through output cable
- Dimming via 1~10Vdc, PWM signal or resistance
- Short circuit, over current, over voltage, over temperature protections
- Cooling by free air convection
- Suitable for dry, damp, wet locations



Specification

INPUT	Voltage	90V~305VAC or 127V~431VDC.				
	Frequency	47 ----- 63 Hz				
	Current	3.5A/ 115VAC	1.65A/ 230VAC	1.45A/ 277VAC		
	Inrush Current	75A@230VAC, Cold start				
	Leakage Current	<0.75mA@277VAC input				
OUTPUT	MODEL No.	HLG-320H-12B	HLG-320H-15B	HLG-320H-20B	HLG-320H-24B	HLG-320H-30B
	Voltage	12V	15V	20V	24V	30V
	Voltage Adj. Range	10.8~13.5V	13.5~17V	17~22V	21~26V	26~32V
	Constant Current Region	6~12V	7.5~15V	10~20V	12~24V	15~30V
	Rated Current	22A	19A	15A	13.34A	10.7A
	Current Adj. Range	11~22A	9.5~19A	7.5~15A	6.67~13.34A	5.35~10.7A
	Power	264W	285W	300W	320.16W	321W
	Ripple & Noise	150mV	150mV	150mV	150mV	200mV
	Efficiency (TYP. 230VAC)	91%	92.5%	93.5%	94%	94%
	Efficiency (TYP. 277VAC)	91.5%	93%	94%	94.5%	94.5%
PROTECTION	Over Voltage	14~17V	17.5~21V	22.5~27V	27~33V	33~37V
		Shutdown and latch off output voltage, re-power on to recover				
	Short Circuit	Hiccup mode, recovers automatically after fault condition is removed				
	Over Temperature	100°C ±10°C (RTH2); shutdown and latch off output voltage, re-power on to recover				
	Over Current	95~108% rated output current; constant current limiting, recovers automatically after fault condition is removed				
ELEC. CHAR.	Rise Time	80mS@230Vac& 115VAC, full load				
	Hold Up Time	15mS@230V/115VAC, full load condition				
	Voltage Tolerance	±3.0% for 12V; ±2.0% for 15V; ±1.5% for 20V; ±1.0% all others				
	Line Regulation	±0.5%				
	Load Regulation	±2.0% for 12V; ±1.5% for 15V; ±1.0% for 20V; ±0.5% all others				
ENVIRONMENT	Setup Time	2500ms@230VAC & 115VAC				
	Temperature	Operating: -40~+70°C ; De-rating: 60~70°C@60% load ; Storage: -40~ +80°C				
	Humidity	Operating: 20%~95% RH; Storage: 10%~95% RH (non condensing)				
	Temp. Coefficient	±0.03%/°C (0~50°C)				
	Vibration	10~500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes				
SAFETY	Withstand Voltage	I/P-O/P:3.75KVAC	I/P-FG:1.88KVAC	O/P-FG:0.5KVAC		
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25°C/ 70% RH				
	Safety Standard	Compliance to UL 8750, CSA C22.2 No. 250.0-08, EN61347-1, EN61347-2-13. Design refers to UL60950-1, TUV EN60950-1				
EMC	EMC Emission	Compliance to EN55015, EN55022 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 A				
OTHERS	M.T.B.F.	157.1K hrs min. MIL-HDBK-217F (25°C)				
	Packing	N.W.:1.88Kg / 1pc ; 8pcs / 16Kgs 0.83CUFT / 1 CTN				

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 50~100% rated output voltage. This is a suitable operation region for LED related applications, but please reconfirm if there are special electrical requirements for specific system designs.
5. Derating may be needed under low input voltage. Please check the static characteristics for more details.

Please see next page for more Notes

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	Frequency	47 ----- 63 Hz			
	Current	3.5A/ 115VAC	1.65A/ 230VAC	1.45A/ 277VAC	
	Inrush Current	75A@230VAC, Cold start			
	Leakage Current	<0.75mA@277VAC input			
OUTPUT	MODEL No.	HLG-320H-36B	HLG-320H-42B	HLG-320H-48B	HLG-320H-54B
	Voltage	36V	42V	48V	54V
	Voltage Adj. Range	32~39V	38~45V	43~52V	49~58V
	Constant Current Region	18~36V	21~42V	24~48V	27~54V
	Rated Current	8.9A	7.65A	6.7A	5.95A
	Current Adj. Range	4.45~8.9A	3.8~7.65A	3.35~6.7A	2.97~5.95A
	Power	320.4W	321.3W	321.6W	321.3W
	Ripple & Noise	250mV	250mV	250mV	350mV
	Efficiency (TYP. 230VAC)	94.5%	95%	95%	95%
	Efficiency (TYP. 277VAC)	95%	95%	95%	95%
PROTECTION	Over Voltage	40~46V	46.5~53V	53.5~60V	59~65V
	Short Circuit	Shutdown and latch off output voltage, re-power on to recover			
	Over Temperature	Hiccup mode, recovers automatically after fault condition is removed			
	Over Current	100°C ±10°C (RTH2); shutdown and latch off output voltage, re-power on to recover			
	Over Current	95~108% rated output current; constant current limiting, recovers automatically after fault condition is removed			
ELEC. CHAR.	Rise Time	80mS@230Vac& 115VAC, full load			
	Hold Up Time	15mS@230V/115VAC, full load condition			
	Voltage Tolerance	±3.0% for 12V; ±2.0% for 15V; ±1.5% for 20V; ±1.0% all others			
	Line Regulation	±0.5%			
	Load Regulation	±2.0% for 12V; ±1.5% for 15V; ±1.0% for 20V; ±0.5% all others			
ENVIRONMENT	Setup Time	2500ms@230VAC & 115VAC			
	Temperature	Operating: -40~+70°C ; De-rating: 60~70°C@60% load ; Storage: -40~ +80°C			
	Humidity	Operating: 20%~95% RH; Storage: 10%~95% RH (non condensing)			
	Temp. Coefficient	±0.03%/°C (0~50°C)			
	Vibration	10~500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes			
SAFETY	Withstand Voltage	I/P-O/P:3.75KVAC	I/P-FG:1.88KVAC	O/P-FG:0.5KVAC	
	Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25°C/ 70% RH			
	Safety Standard	Compliance to UL 8750, CSA C22.2 No. 250.0-08, EN61347-1, EN61347-2-13. Design refers to UL60950-1, TUV EN60950-1			
EMC	EMC Emission	Compliance to EN55015, EN55022 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 A			
OTHERS	M.T.B.F.	157.1K hrs min. MIL-HDBK-217F (25°C)			
	Packing	N.W.:0.84Kg / 1pc ; 16pcs / 14.4Kgs 0.54CUFT / 1 CTN			

6. The power supply is considered 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.

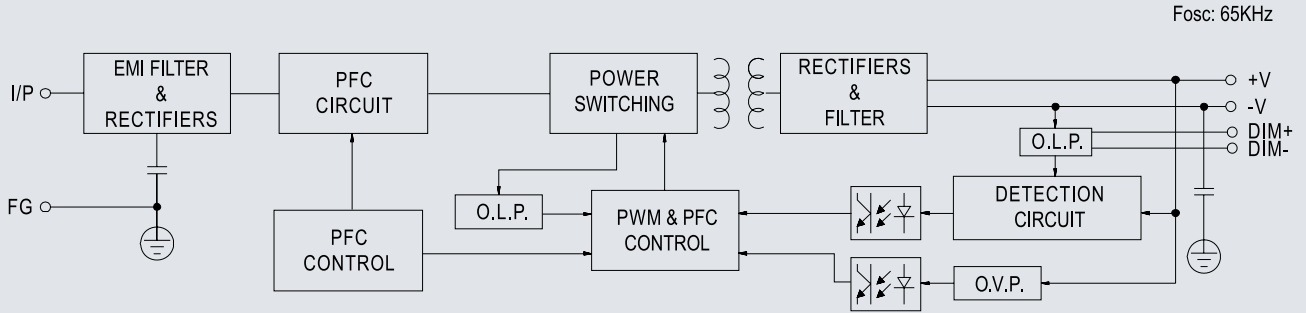
7. Length of set up time is measured at first cold start. Turning the power supply ON/OFF may lead to increase of the set up time.

8. Safety and EMC design refer to EN60598-1, subject CNS15233, GB7000.1, FCC part18.

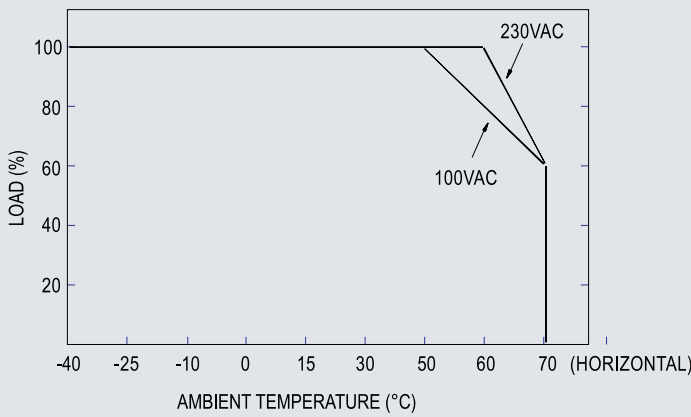
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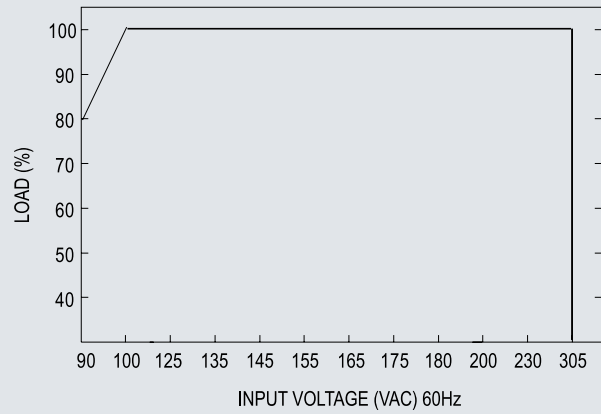
Block Diagram



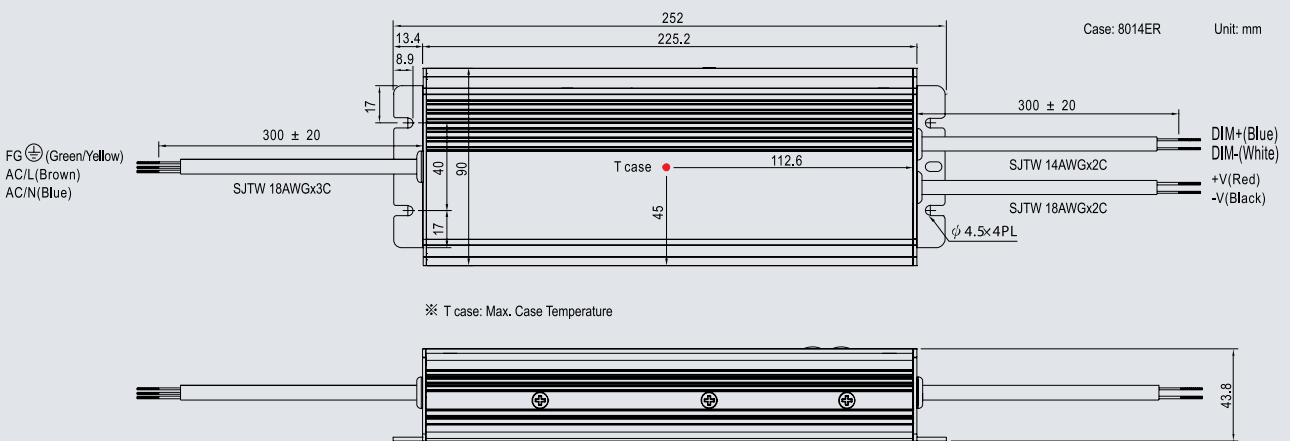
De-Rating Curve



Static Characteristics



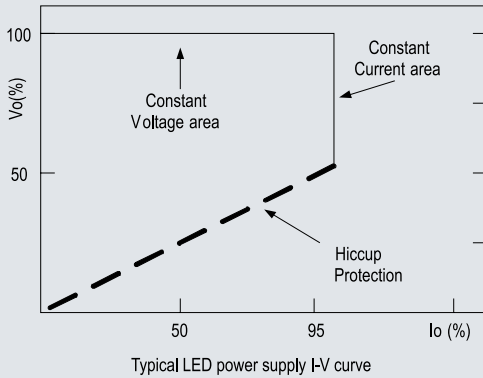
Dimensions



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Driving Methods of LED Module



There are two main kinds of LED driver 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.

Our LED power supply with CV+CC characteristics can be operated at both CV mode and CC mode as this diagram shows.

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, 1~10Vdc 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	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
	Multiple drivers	10KΩ/N	20KΩ/N	30KΩ/N	40KΩ/N	50KΩ/N	60KΩ/N	70KΩ/N	80KΩ/N	90KΩ/N	100KΩ/N	----
Percentage of rated current		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	98%~108%

(N=driver quantity for synchronised dimming operation)

1~10V dimming for output current adjustment (Typical)

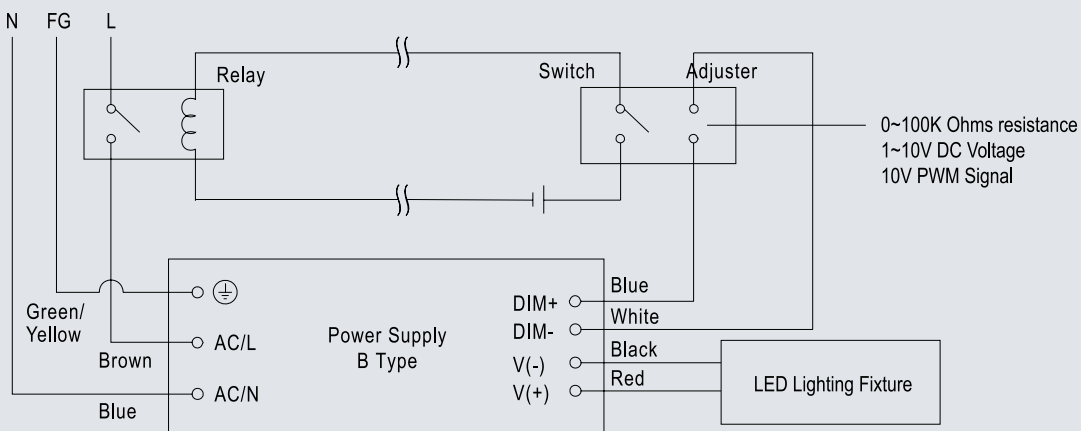
Dimming Value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	98%~108%

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

Duty Value	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	98%~108%

Using the built-in dimming function on B-type model can't turn the lighting fixture totally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.

Dimming connection diagram for turning the lighting fixture ON/OFF:



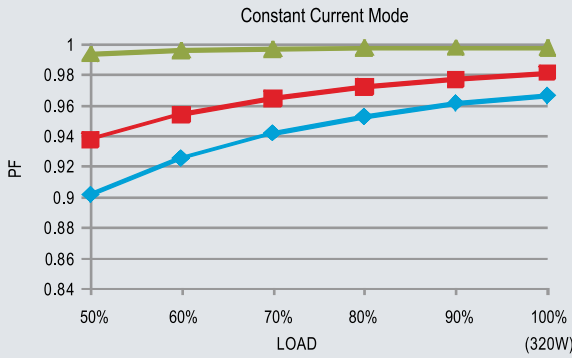
Using a switch and relay can turn ON/OFF the lighting fixture.

1. Output constant current level can be adjusted through the output cable by connecting a resistor, 1~10Vdc or 10V PWM signal between DIM+ and DIM-.
2. The LED lighting fixture can be turned ON/OFF via the switch.

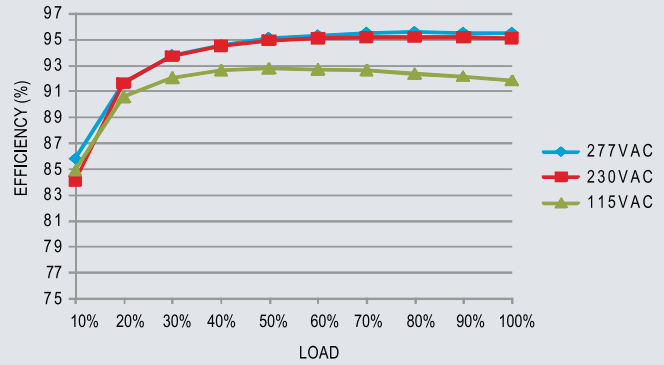
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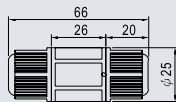
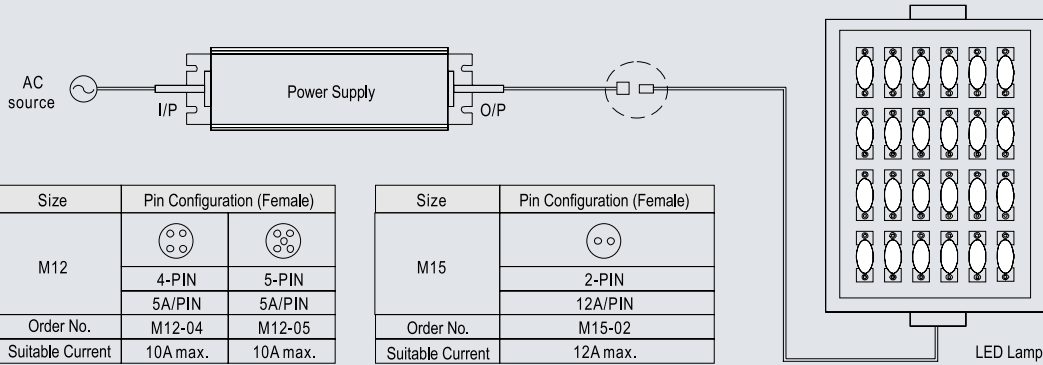
Power Factor Characteristics



Efficiency vs Load (48V Model)



Waterproof Connection



CJ04-1 Suitable for 14AWG~16AWG
CJ04-2 Suitable for 18AWG~22AWG



Up to four wires can be connected through this cable joiner by soldering or clamping by tools.

