



## 80W Single Output Switching Power Supply

## HLP-80H series



## ■ Features :

- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function, PF>0.96
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Output constant current level adjustable
- 100% full load burn-in test
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for built in LED lighting system
- Suitable for dry / damp location
- 3 years warranty



## SPECIFICATION

MODEL	HLP-80H-12	HLP-80H-15	HLP-80H-20	HLP-80H-24	HLP-80H-30	HLP-80H-36	HLP-80H-42	HLP-80H-48	HLP-80H-54		
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V	
	CONSTANT CURRENT REGION Note.4	7.2 ~ 12V	9 ~ 15V	12 ~ 20V	14.4 ~ 24V	18 ~ 30V	21.6 ~ 36V	25.2 ~ 42V	28.8 ~ 48V	32.4 ~ 54V	
	RATED CURRENT	5A	5A	4A	3.4A	2.7A	2.3A	1.95A	1.7A	1.5A	
	RATED POWER	60W	75W	80W	81.6W	81W	82.8W	81.9W	81.6W	81W	
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	
	VOLTAGE TOLERANCE Note.3	±2.5%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	
	LOAD REGULATION	±2.0%	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	
	SETUP, RISE TIME Note.6	2000ms, 200ms / 115VAC at full load		1000ms, 200ms / 230VAC at full load							
HOLD UP TIME (Typ.)	16ms at full load		230VAC / 115VAC								
INPUT	VOLTAGE RANGE Note.5	90 ~ 305VAC		127 ~ 431VDC							
	FREQUENCY RANGE	47 ~ 63Hz									
	POWER FACTOR (Typ.)	PF>0.96/115VAC, PF>0.96/230VAC, PF>0.94/277VAC at full load (Please refer to "Power Factor Characteristic" curve)									
	EFFICIENCY (Typ.)	87.5%	88.5%	89.5%	90%	90%	90%	90%	90%	90%	
	AC CURRENT (Typ.)	0.85A / 115VAC		0.425A / 230VAC		0.4A / 277VAC					
	INRUSH CURRENT(Typ.)	COLD START 70A/230VAC									
LEAKAGE CURRENT	<0.75mA / 277VAC										
PROTECTION	OVER CURRENT Note.4	95 ~ 108%									
	OVER VOLTAGE	14 ~ 17V		18 ~ 21V	23 ~ 27V	28 ~ 34V	34 ~ 38V	41 ~ 46V	47 ~ 53V	54 ~ 60V	59 ~ 65V
	OVER TEMPERATURE	95°C ±10°C (RTH2)									
ENVIRONMENT	WORKING TEMP.	-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	±0.03%/°C (0 ~ 50°C)									
	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes									
SAFETY & EMC	SAFETY STANDARDS	UL8750, EN61347-1, EN61347-2-13 approved ; Design refer to UL60950-1, TUV EN60950-1									
	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									
	EMC EMISSION	Compliance to EN55015, EN61000-3-2 Class C (≥60% load, 12V model ≥65% load) ; EN61000-3-3									
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge 4KV), criteria A									
	MTBF	316.2Khrs min. MIL-HDBK-217F (25°C)									
	DIMENSION	167*53*29.5mm (L*W*H)									
NOTE	PACKING	0.27Kg; 36pcs/11.2Kg/0.67CUFT									
	NOTE	<ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>4. Constant current operation region is within 60% ~ 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.</li> <li>5. Derating may be needed under low input voltages. Please check the static characteristics for more details.</li> <li>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.</li> <li>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.</li> <li>8. Heat Sink HS1,HS2 can not be shorted.</li> </ol>									

File Name:HLP-80H-SPEC 2011-06-13

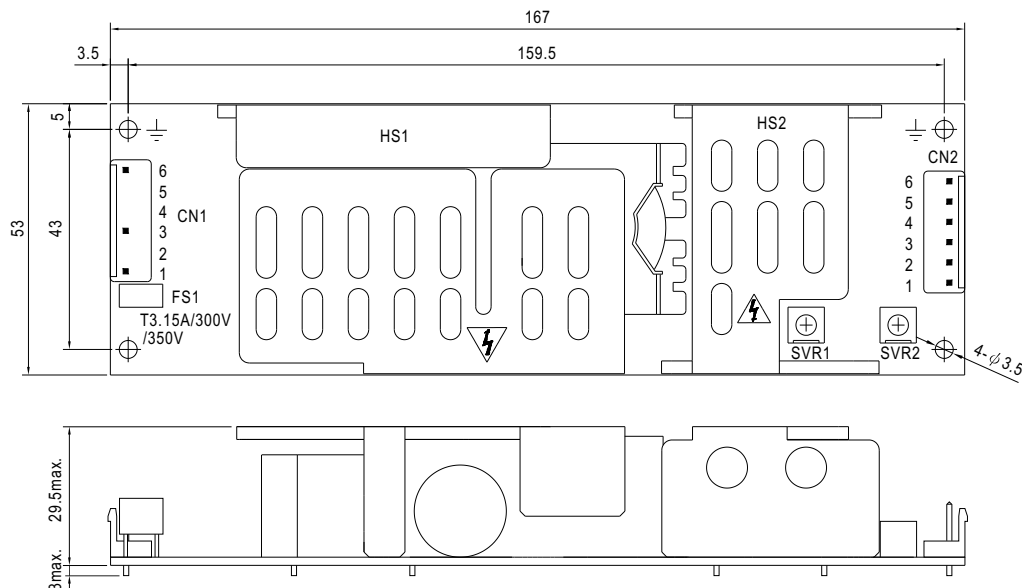


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## Mechanical Specification

Unit:mm



AC Input Connector (CN1) : JST B6P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	AC/L	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2,4,5	No Pin		
3	AC/N		
6	FG		

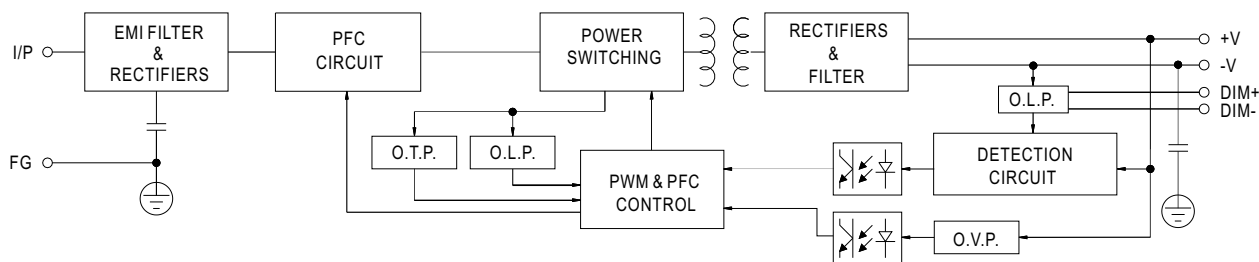
DC Output Connector (CN2) : JST B6P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	DIM+(VR1)	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
2	DIM-(VR2)		
3,4	+V		
5,6	-V		

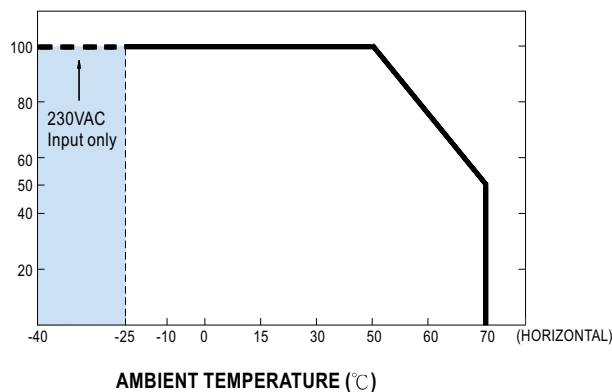
⚠ HS1,HS2 can not be shorted

## Block Diagram

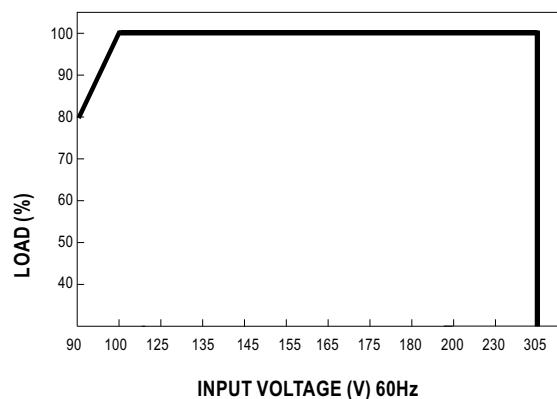
fosc : 100KHz



## Derating Curve



## Static Characteristics



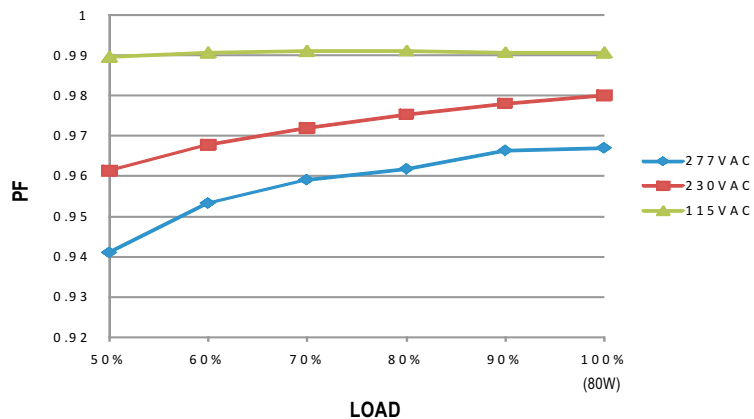


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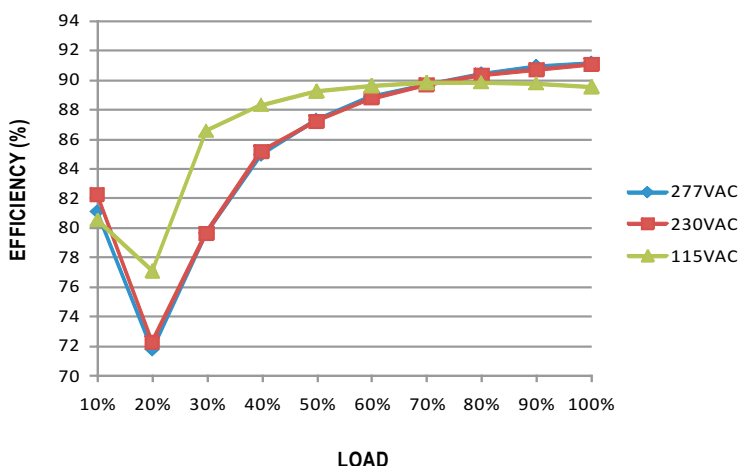
### Power Factor Characteristic

#### Constant Current Mode



### EFFICIENCY vs LOAD (48V Model)

HLP-80H series possess superior working efficiency that up to 90% can be reached in field applications.

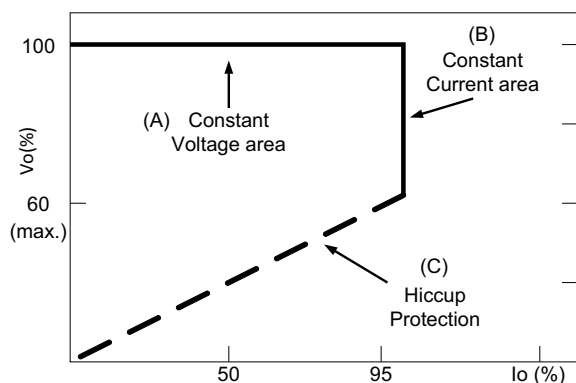


### DRIVING METHODS OF LED MODULE

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.

Mean Well's 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)).



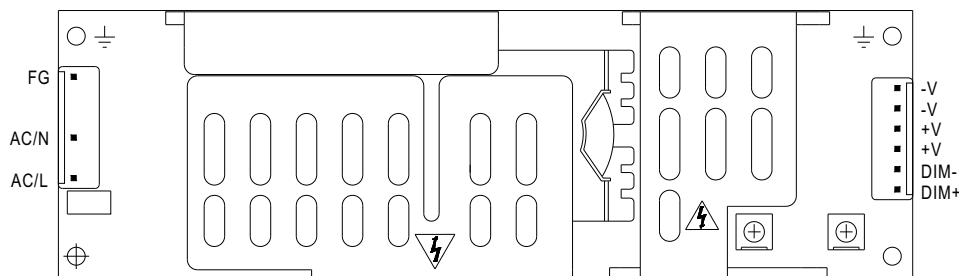
Typical LED power supply I-V curve



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## DIMMING OPERATION



※ Built-in 3 in 1 dimming function, output constant current level can be adjusted through output connector by 1~10VDC, PWM signal, or connecting a resistance 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 (N=driver quantity for synchronized dimming operation)	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%	102%~108%

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

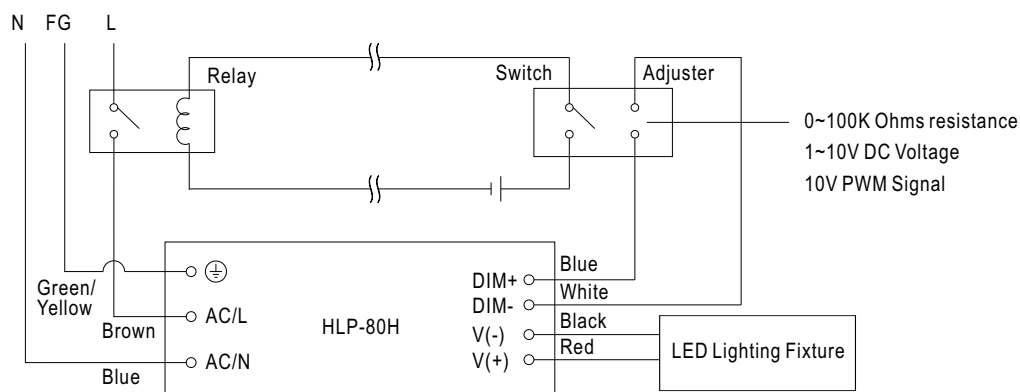
Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※ 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%	102%~108%

※Using the built-in dimming function 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 output connector by connecting a resistor or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.
2. The LED lighting fixture can be turned ON/OFF by the switch.