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 / Over current / 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

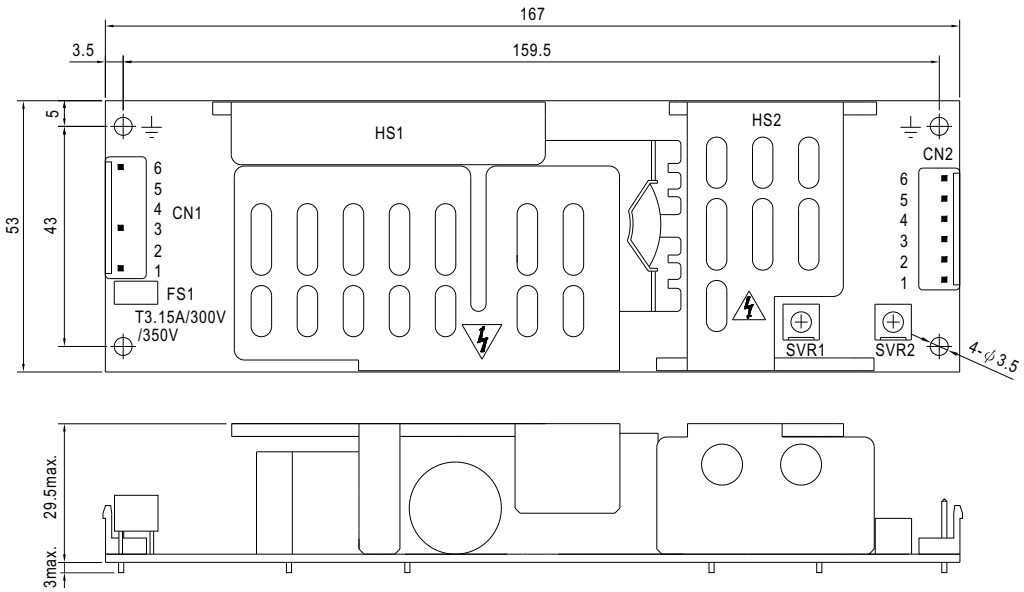
MODEL		HLP-80H-12	HLP-80H-15	HLP-80H-20	HLP-80H-24	HLP-80H-30	HLP-80H-36	HLP-80H-42	HLP-80H-48	HLP-80H-54
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	CONSTANT CURRENT REGION Note.4	7.2 ~12V	9 ~ 15V	12 ~ 20V	14.4 ~ 24V	18 ~ 30V	21.6 ~ 36V	25.2 ~ 42V	28.8 ~ 48V	32.4 ~ 54V
	RATED CURRENT	5A	5A	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%								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	14 ~ 17V	18 ~ 21V	23 ~ 27V	28 ~ 34V	34 ~ 38V	41 ~ 46V	47 ~ 53V	54 ~ 60V	59 ~ 65V
		Protection type : Shut down o/p voltage, re-power on to recover								
	OVER TEMPERATURE	95℃ ±10℃ (RTH2)								
		Protection type : Shut down o/p voltage, re-power on to recover								
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	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℃/ 70% RH								
	EMC EMISSION	Compliance to EN55015, EN61000-3-2 Class C (≧60% load, 12V model ≧65% 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	MTBF	316.2Khrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	167*53*29.5mm (L*W*H)								
	PACKING	0.27Kg; 36pcs/11.2Kg/0.67CUFT								

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ 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. 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. Heat Sink HS1,HS2 can not be shorted.

■ 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 ⏚		

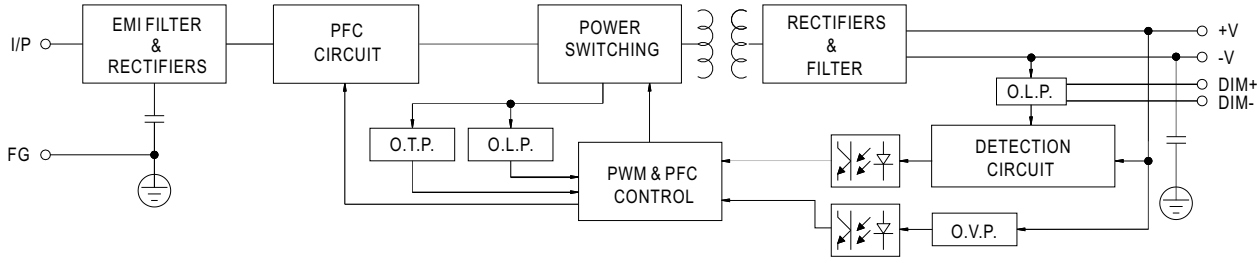
DC Output Connector (CN2) : JST B6P-VH or equivalent

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		

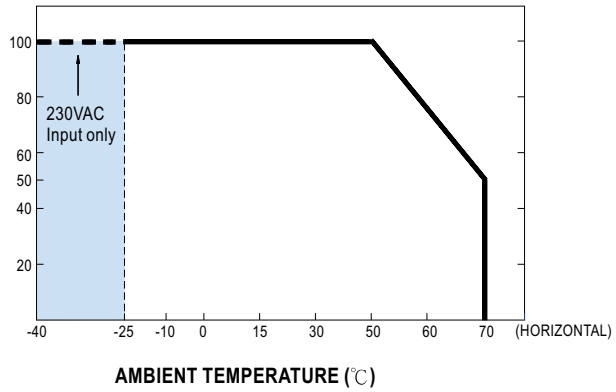
⚠ HS1,HS2 can not be shorted

■ Block Diagram

fosc : 100KHz

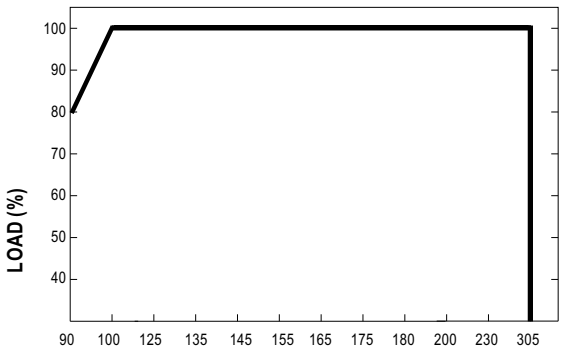


■ Derating Curve



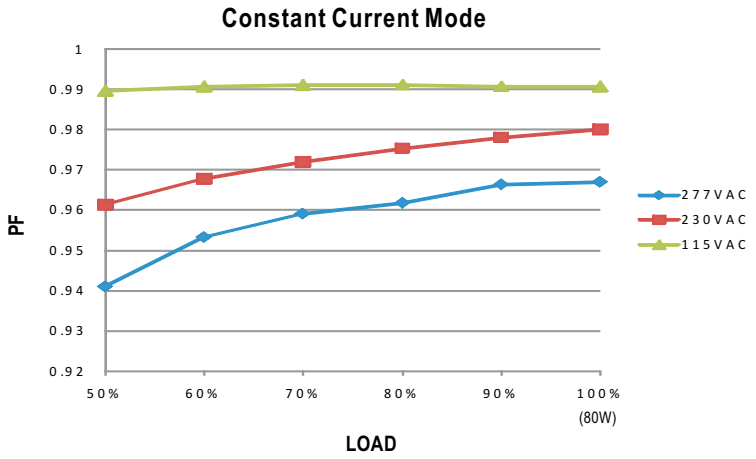
AMBIENT TEMPERATURE (℃)

■ Static Characteristics



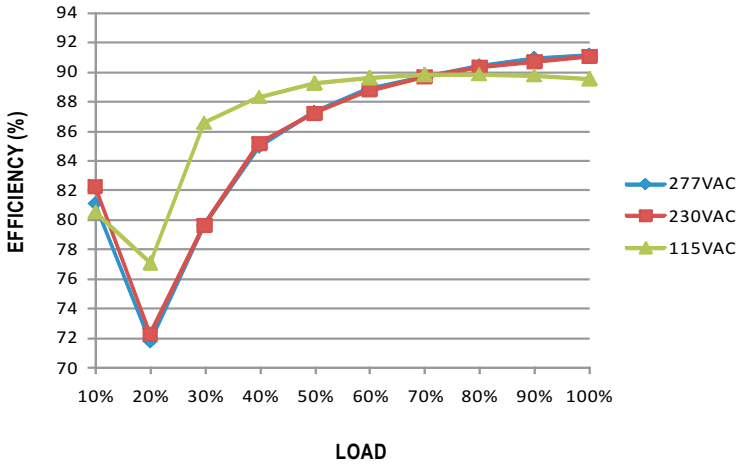
INPUT VOLTAGE (V) 60Hz

■ Power Factor Characteristic



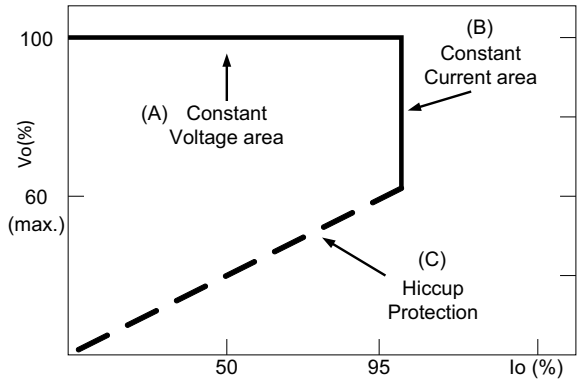
■ EFFICIENCY vs LOAD (48V Model)

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



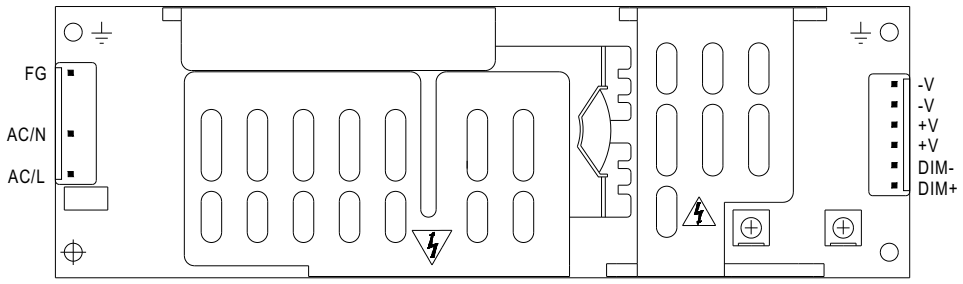
■ DRIVING METHODS OF LED MODULE

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

■ 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)

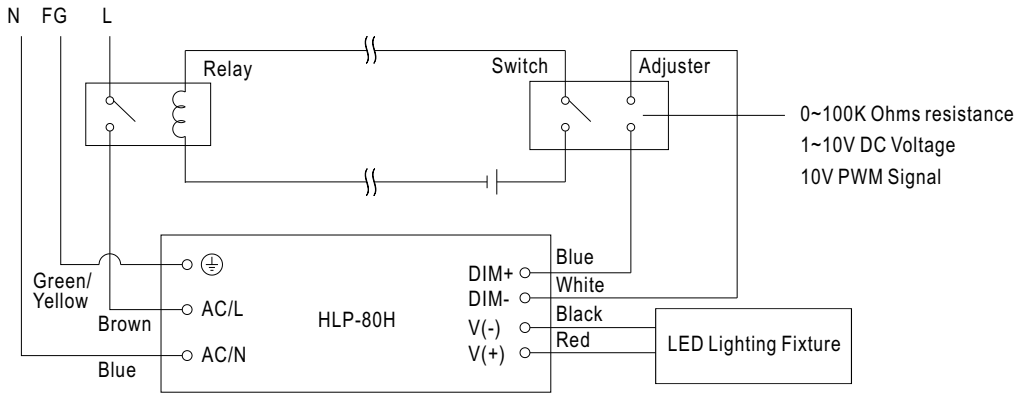
Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	102%~108%

※ 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 cable by connecting a resistance or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.

2.The LED lighting fixture can be turned ON/OFF by the switch.