



Features:

- Universal AC input / Full range (up to 305VAC)
- · Built-in active PFC function
- Protections: Short circuit / Over current / Over voltage / Over temperature
- · Cooling by free air convection
- · Output constant current level adjustable
- · Class 2 power unit
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for built in LED lighting system
- Suitable for dry / damp locations
- 100% full load burn-in test
- · 3 years warranty

SPECIFICATION









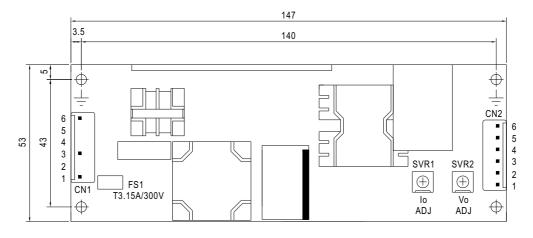
MODEL		HLP-40H-12	HLP-40H-15	HLP-40H-20	HLP-40H-24	HLP-40H-30	HLP-40H-36	HLP-40H-42	HLP-40H-48	HLP-40H-54				
	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V				
	CONSTANT CURRENT REGION Note.4	7.2 ~12V	9 ~ 15V	12 ~ 20V	14.4 ~ 24V	18 ~ 30V	21.6 ~ 36V	25.2 ~ 42V	28.8 ~ 48V	32.4 ~ 54V				
	RATED CURRENT	3.33A	2.67A	2A	1.67A	1.34A	1.12A	0.96A	0.84A	0.75A				
	RATED POWER	40W	40W	40W	40.1W	40.2W	40.3W	40.3W	40.3W	40.5W				
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	300mVp-p	300mVp-p	300mVp-p				
	VOLTAGE ADJ. RANGE	10.8 ~ 13.5V	13.5 ~ 17V	17 ~ 22V	22 ~ 27V	27 ~ 33V	33 ~ 40V	40 ~ 46V	44 ~ 53V	49 ~ 58V				
OUTPUT		Can be adjusted by internal potentiometer or through output connector												
	CURRENT ADJ. RANGE	2 ~ 3.33A	1.6 ~ 2.67A	1.2 ~ 2A	1 ~ 1.67A	0.8 ~ 1.34A	0.67 ~ 1.12A	0.58 ~ 0.96A	0.5 ~ 0.84A	0.45 ~ 0.75A				
	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	1500ms, 80m	s / 115VAC at f	ull load 1	000ms, 80ms /	230VAC at full	load							
	HOLD UP TIME (Typ.)	16ms/230VA		15VAC at full I										
	, , , ,	90 ~ 305VAC	127 ~ 43	IVDC										
	FREQUENCY RANGE	47 ~ 63Hz												
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load (Please refer to "Power Factor Characteristic" curv												
	EFFICIENCY (Typ.)	87%	87%	88%	88%	88.5%	89%	89%	89.5%	89.5%				
	AC CURRENT (Typ.)	0.43A / 115VAC												
	INRUSH CURRENT(Typ.)	COLD START 70A/230VAC												
	LEAKAGE CURRENT	<0.75mA / 277VAC												
		95 ~ 108%												
	OVER CURRENT Note.4	Protection type : Constant current limiting, recovers automatically after fault condition is removed												
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed												
PROTECTION		15 ~ 21V	18 ~ 24V	23 ~ 30V	28 ~ 35V	35 ~ 43V	41 ~ 49V	48 ~ 58V	54 ~ 63V	59 ~ 68V				
	OVER VOLTAGE	Protection typ	e : Shut down	o/p voltage, re	-power on to re	cover								
		Protection type : Shut down o/p voltage, re-power on to recover 85°C ±10°C (RTH2)												
	OVER TEMPERATURE	Protection type : Shut down o/p voltage, re-power on to recover												
	WORKING TEMP.	-40 ~ +70°C (Refer to "Derating Curve")												
	WORKING HUMIDITY	20 ~ 95% RH non-condensing												
ENVIRONMENT	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												
		UL8750, CSA C22.2 No. 250.0-08 (except for 48V, 54V), EN61347-1, EN61347-2-13 approved; design refer to UL60950-1,												
	SAFETY STANDARDS	TUV EN60950-1, EN60335-1												
SAFETY &	WITHSTAND VOLTAGE				O/P-FG:0.5K	VAC								
EMC	ISOLATION RESISTANCE				0VDC / 25°C/									
	EMC EMISSION		-		ass C (≧60% l		0-3-3							
	EMC IMMUNITY				EN61547, EN5	, ·		ne 4KV) criter	ia A					
	MTBF	287.9Khrs mi		K-217F (25°⊜)	-	ooz-+, ngin mat	actif lovel (suit	, onto	w.n.					
OTHERS	DIMENSION	147*53*27mn		(20 ()										
CITICINO	PACKING		15.4Kg/1.09CL	IFT										
	All parameters NOT special	0, 1			out rated load	and 25°C of a	mhiant tampa	ratura						

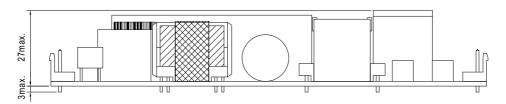
- 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
- 3. Tolerance : includes set up tolerance, line regulation and load regulation.
- 4. Constant current operation region is within 60% ~100% rated output voltage. 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. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.



■ Mechanical Specification

Unit:mm





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

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

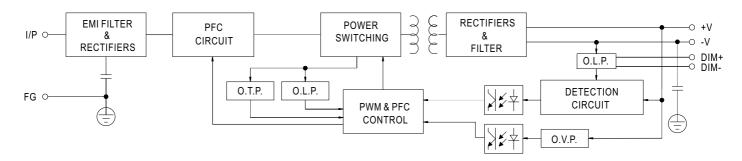
DC Output Connector (CN2): JST B6P-VH or equivalent

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

±: Grounding required

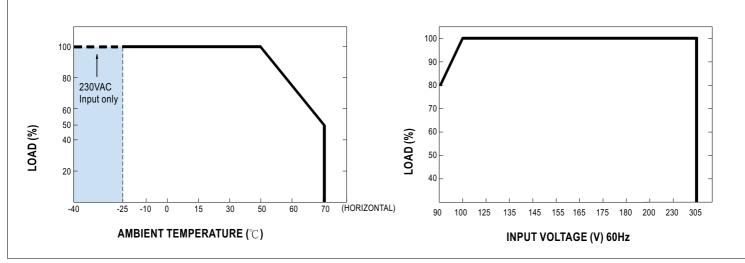
■ Block Diagram

fosc: 100KHz



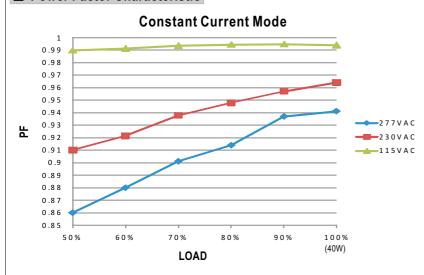
■ Derating Curve

■ Static Characteristics



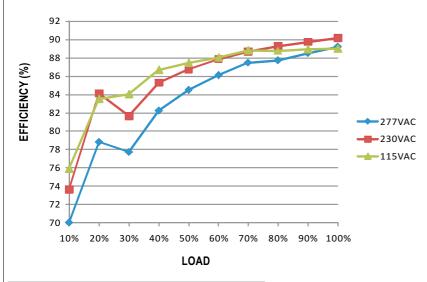


■ Power Factor Characteristic



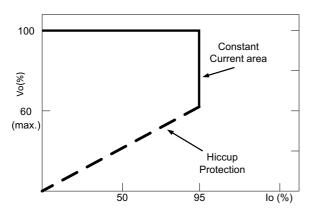
■ EFFICIENCY vs LOAD (48V Model)

HLG-40H series possess superior working efficiency that up to 89.5% can be reached in field applications.



■ DRIVING METHODS OF LED MODULE

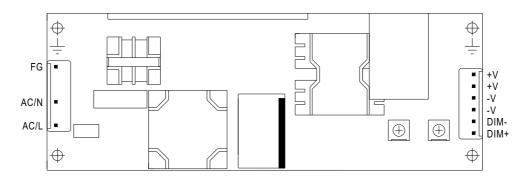
This LED power supply is suggested to work in constant current mode area (CC) to drive the LEDs.



Typical LED power supply I-V curve



■ DIMMING OPERATION



- X 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".
- X Reference resistance value for output current adjustment (Typical)

Resistance value	Single driver	10K Ω	20K Ω	30K Ω	40K Ω	50K Ω	60K Ω	70K Ω	80K Ω	90K Ω	100K Ω	OPEN
	Multiple drivers (N=driver quantity for synchronized dimming operation)	10KΩ/N	20K Ω/N	30KΩ/N	40K Ω/N	50KΩ/N	60KΩ/N	70KΩ/N	80KΩ/N	90K Ω/N	100KΩ/N	
Percentage	e of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~105%

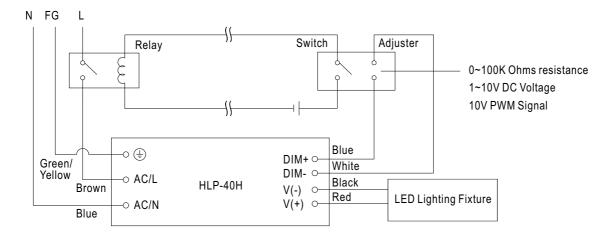
Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~105%

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

<u> </u>		,	() ('	, ,						
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%	95%~105%

**Wusing 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 $\mbox{ON/OFF}$:



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 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.