



■ 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
- OCP point adjustable through output cable or internal potentiometer
- IP64 design for indoor or outdoor installations
- Class 2 power unit
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for LED lighting and moving sign applications
- Suitable for dry / damp locations or outdoor application
- 3 years warranty

IP64

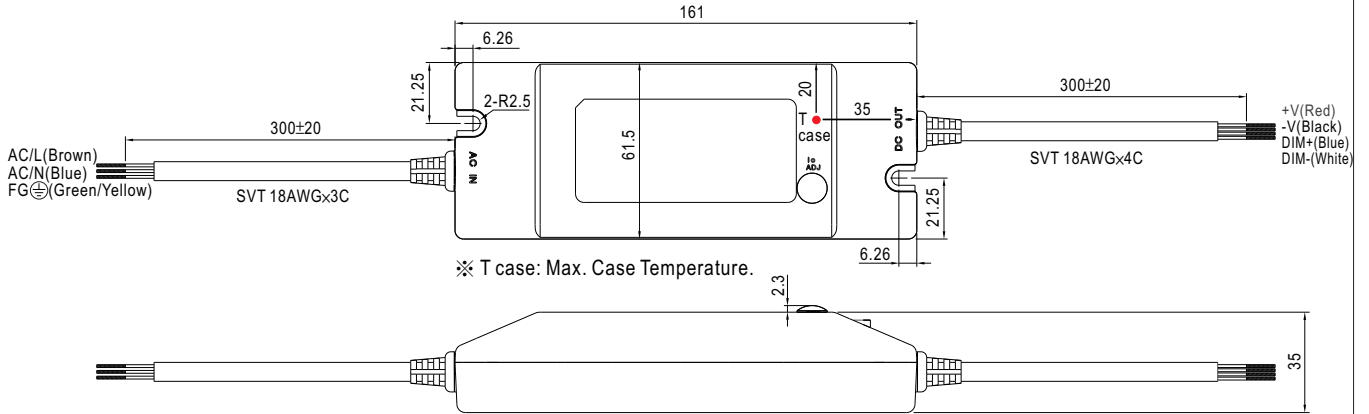
**SPECIFICATION**

MODEL	HLN-40H-12AB	HLN-40H-15AB	HLN-40H-20AB	HLN-40H-24AB	HLN-40H-30AB	HLN-40H-36AB	HLN-40H-42AB	HLN-40H-48AB	HLN-40H-54AB	
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	CONSTANT CURRENT REGION <small>Note.4</small>	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.) <small>Note.2</small>	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
	CURRENT ADJ. RANGE	Fixed. Can be modified between the range.								
	VOLTAGE TOLERANCE <small>Note.3</small>	Can be adjusted by internal potentiometer or through output cable								
	LINE REGULATION	±2.5%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±2.0%	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME <small>Note.6</small>	1500ms, 80ms / 115VAC at full load				1000ms, 80ms / 230VAC at full load				
HOLD UP TIME (Typ.)	16ms/230VAC		16ms/115VAC at full load							
INPUT	VOLTAGE RANGE <small>Note.5</small>	90~305VAC		127~431VDC						
	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" curve)								
	EFFICIENCY (Typ.)	86.5%	86.5%	87.5%	88%	88.5%	88.5%	88.5%	89%	89%
	AC CURRENT (Typ.)	0.43A / 115VAC		0.24A / 230VAC		0.23A / 277VAC				
	INRUSH CURRENT(Typ.)	COLD START 70A/230VAC								
	LEAKAGE CURRENT	<0.75mA / 277VAC								
PROTECTION	OVER CURRENT <small>Note.4</small>	95~108%								
	SHORT CIRCUIT	Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	15~21V	18~24V	23~30V	28~35V	35~43V	41~49V	48~58V	54~63V	59~68V
	OVER TEMPERATURE	70°C ±10°C (RTH2) Protection type : Shut down o/p voltage, re-power on to recover								
ENVIRONMENT	WORKING TEMP.	-40~+50°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 (0~40°C)								
	VIBRATION	10~500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS	UL8750, CSA C22.2 No. 250.0-08 (except for 48V, 54V), IP64, approved Design refer to UL60950-1, TUV EN60950-1, EN60335-1								
	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) ; 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	336.5K hrs min. MIL-HDBK-217F (25°C)								
	DIMENSION	161*61.5*35mm (L*W*H)								
	PACKING	0.35Kg;32pcs/12.2Kg/1.10CUFT								
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> </ol>									

**Mechanical Specification**

Case No.HLN-60A Unit:mm

AB Type:(HLN-40H\_AB)

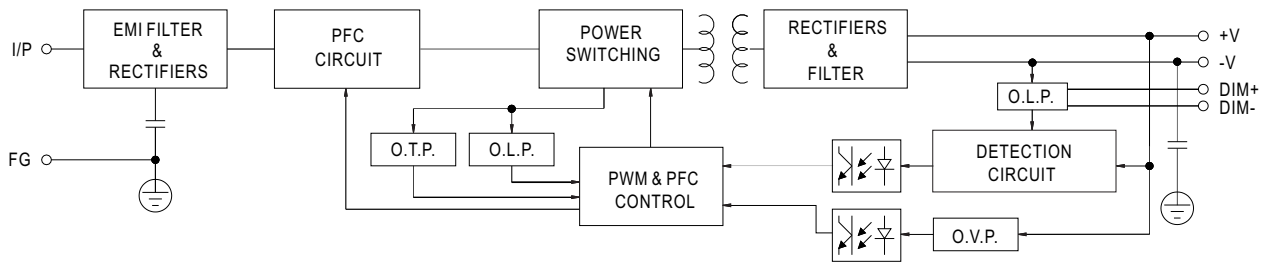


※ T case: Max. Case Temperature.

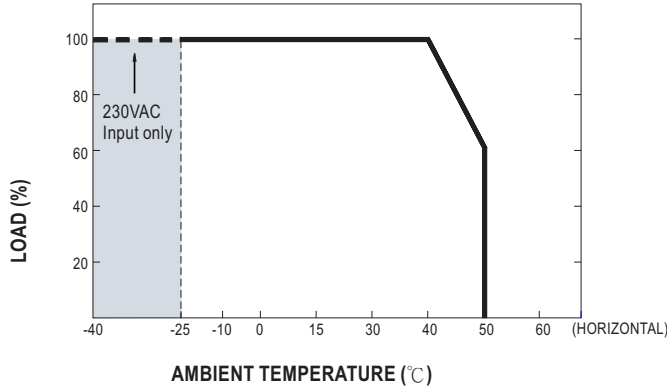
※IP64 rated. Output voltage and constant current level can be adjusted through internal potentiometer. (can access by removing the rubber stopper on the case).

**Block Diagram**

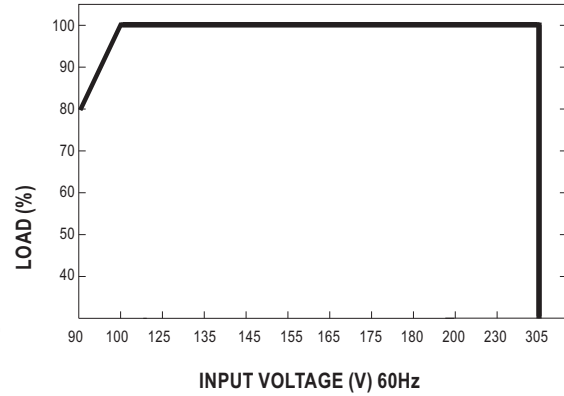
fosc : 100KHz



### Derating Curve

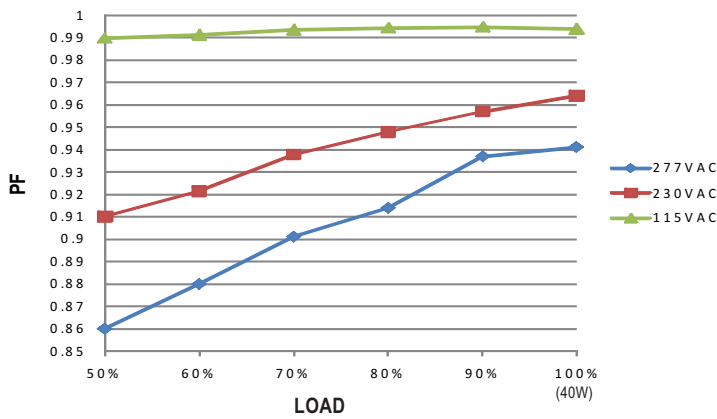


### Static Characteristics



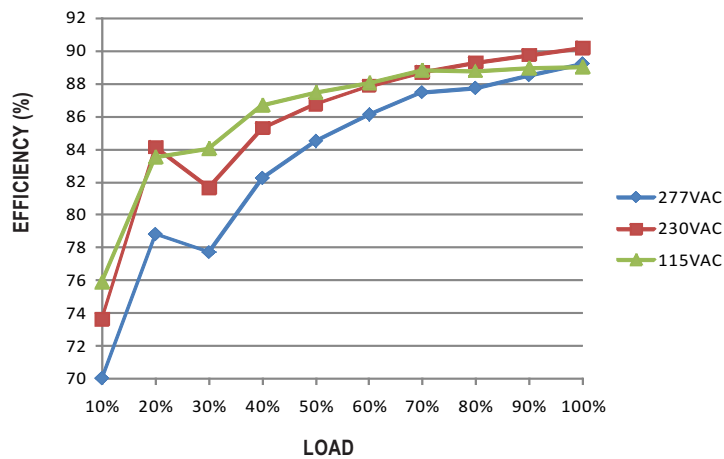
### Power Factor Characteristic

#### Constant Current Mode



### EFFICIENCY vs LOAD (48V Model)

HLN-40H series possess superior working efficiency that up to 89% can be reached in field applications.

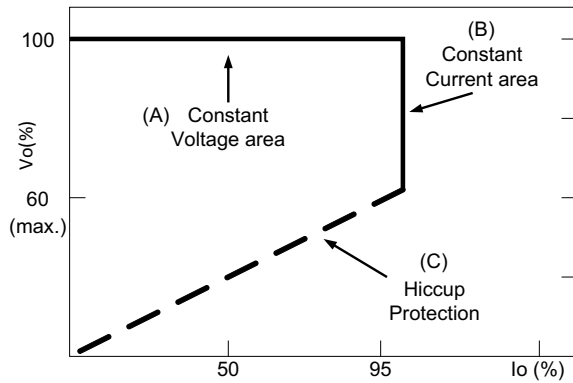


## DRIVING METHODS OF LED MODULE

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, IP64 rated. 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-.

※ 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%	95%~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%	95%~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%	95%~108%



## Стандарт Электрон Связь

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