



E-Star Power Development Co., Ltd. (E-STAR)
 1F., No.40, Juren Ln., Sec. 2, Sanmin Rd., Banciao Dist., New Taipei City
 22069, Taiwan (R.O.C.)
 Phone : 886-2-2957 5580 Fax : 886-2-2957 7473

250W LED Driver power supply < HLG-240H-C



Features

- Constant Current mode output
- Metal housing with Class I design
- Built-in active PFC function
- IP67 / IP65 design for indoor or outdoor installations
- Function options: output adjustable via potentiometer; 3 in 1 dimming; Smart timer dimming
- Typical lifetime > 62000 hours
- 7 years warranty

Applications

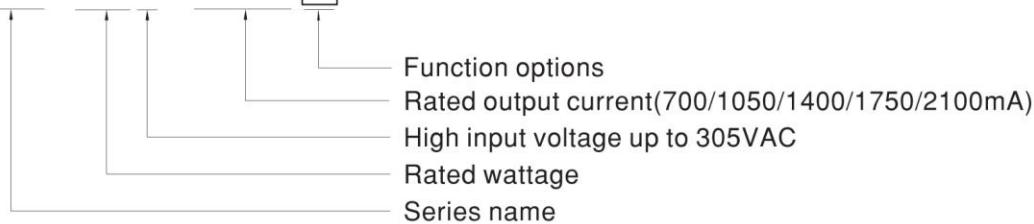
- LED street lighting
- LED fishing lamp
- LED harbor lighting
- LED building architectural lighting
- LED bay lighting
- Type "HL" for use in Class I, Division 2 hazardous (Classified) location.

Description

HLG-240H-C series is a 250W LED AC/DC LED driver featuring the constant current mode and high voltage output. HLG-240H-C operates from 90~305VAC and offers models with different rated current ranging between 700mA and 2100mA. Thanks to the high efficiency up to 94%, with the fanless design, the entire series is able to operate for -40°C ~ +90°C case temperature under free air convection. The design of metal housing and IP67/IP65 ingress protection level allows this series to fit both indoor and outdoor applications. HLG-240H-C is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system.

Model Encoding

HLG - 240H - C1050 A



Type	IP Level	Function	Note
A	IP65	Io adjustable through built-in potentiometer.	In Stock
B	IP67	3 in 1 dimming function (1~10Vdc, 10V PWM signal and resistance)	In Stock
Dx	IP67	Built-in Smart timer dimming function by user request.	By request
D2	IP67	Built-in Smart timer dimming and programmable function.	By request



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SPECIFICATION

MODEL		HLG-240H-C700□	HLG-240H-C1050□	HLG-240H-C1400□	HLG-240H-C1750□	HLG-240H-C2100□
OUTPUT	RATED CURRENT	700mA	1050mA	1400mA	1750mA	2100mA
	RATED POWER	249.9W	249.9W	250.6W	250.25W	249.9W
	CONSTANT CURRENT REGION Note.2	178 ~ 357V	119 ~ 238V	89 ~ 179V	71 ~ 143V	59 ~ 119V
	OPEN CIRCUIT VOLTAGE (max.)	360V	241V	182V	146V	122V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer (A type only)				
		350 ~ 700mA	525 ~ 1050mA	700 ~ 1400mA	875 ~ 1750mA	1050 ~ 2100mA
	CURRENT RIPPLE	5.0% max. @rated current				
	CURRENT TOLERANCE	±5%				
SET UP TIME Note.4	1000ms/115VAC, or 500ms/230VAC					
INPUT	VOLTAGE RANGE Note.3	90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)				
	FREQUENCY RANGE	47 ~ 63Hz				
	POWER FACTOR (Typ.)	PF ≥ 0.98/115VAC, PF ≥ 0.95/230VAC, PF ≥ 0.92/277VAC @full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)				
	TOTAL HARMONIC DISTORTION	THD < 20% (@ load ≥ 50% /115VAC, 230VAC; @ load ≥ 75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION (THD)" section)				
	EFFICIENCY (Typ.)	93.5%	93.5%	94%	94%	93.5%
	AC CURRENT (Typ.)	2.5A / 115VAC 1.3A / 230VAC 1.1A / 277VAC				
	INRUSH CURRENT(Typ.)	COLD START 75A(twidth=700μs measured at 50% Ipeak) at 230VAC; Per NEMA 410				
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	2 units (circuit breaker of type B) / 3 units (circuit breaker of type C) at 230VAC				
	LEAKAGE CURRENT	<0.75mA / 277VAC				
PROTECTION	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed				
	OVER VOLTAGE	375 ~ 410V	250 ~ 275V	188 ~ 206V	150 ~ 165V	125 ~ 137V
		Shut down and latch off o/p voltage, re-power on to recover				
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down				
ENVIRONMENT	WORKING TEMP.	Tcase=-40 ~ +90°C (Refer to "Derating Curve")				
	MAX. CASE TEMP.	Tcase=+90°C				
	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, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes				
SAFETY & EMC	SAFETY STANDARDS	UL8750(type"HL"), CSA C22.2 No. 250.13-12; ENEC EN61347-1, EN61347-2-13, EN62384 independent; GB19510.1, GB19510.14; IP65 or IP67 approved				
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC				
	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 (@ load ≥ 50%); EN61000-3-3, GB17743 and GB17625.1				
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level (surge immunity Line-Earth 4KV, Line-Line 2KV)				
OTHERS	MTBF	180K hrs min. MIL-HDBK-217F (25°C)				
	DIMENSION	244.2*68*38.8mm (L*W*H)				
	PACKING	1.3Kg; 12pcs/16.6Kg/0.84CUFT				
NOTE	<ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature. Please refer to "DRIVING METHODS OF LED MODULE". De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time. The driver 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. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED driver can only be used behind a switch without permanently connected to the mains. This series meets the typical life expectancy of >62,000 hours of operation when Tcase, particularly (Tc) point (or TMP, per DLC), is about 75°C or less. 					



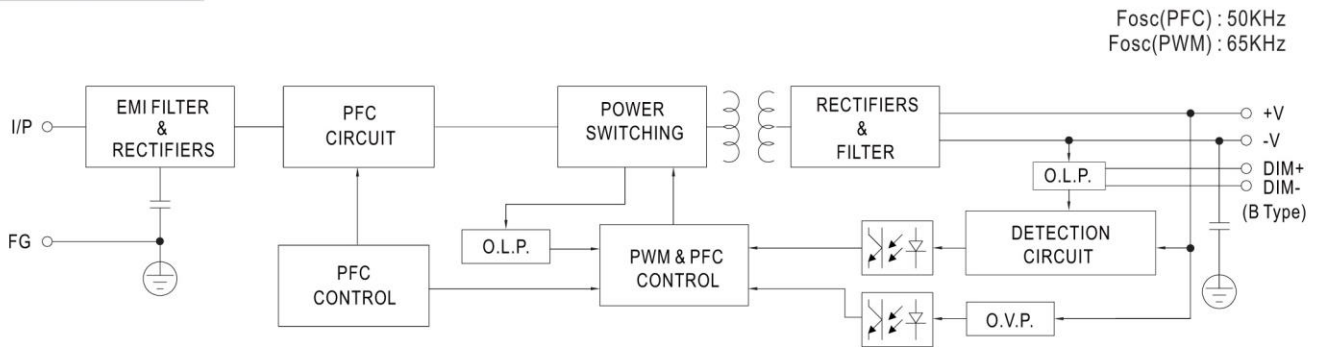
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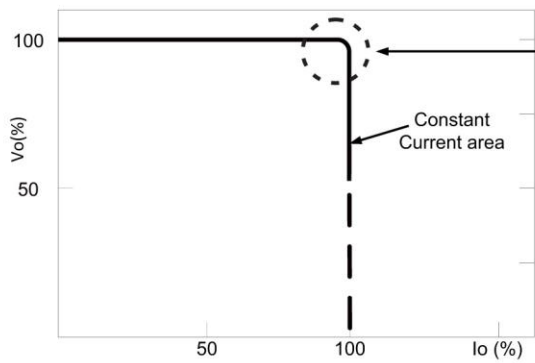
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■ BLOCK DIAGRAM



■ DRIVING METHODS OF LED MODULE

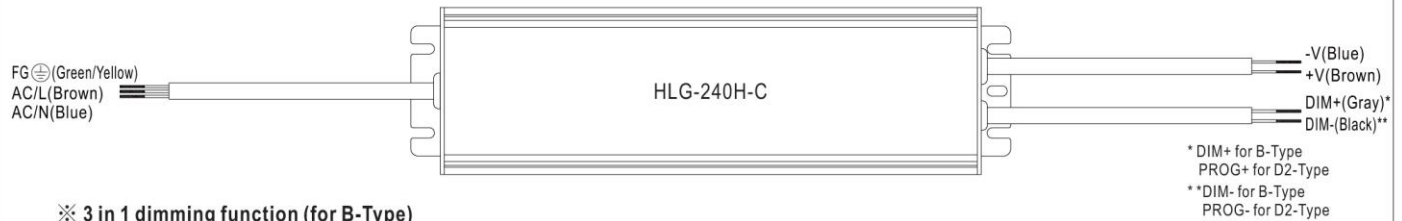
※ This series works in constant current mode to directly drive the LEDs.



Typical output current normalized by rated current (%)

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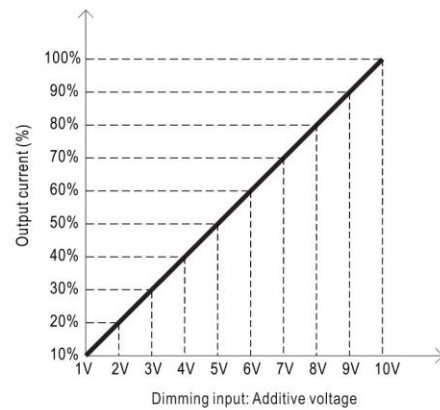
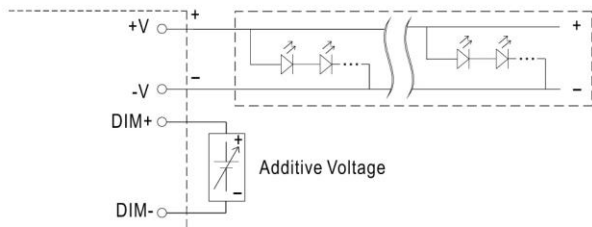
■ DIMMING OPERATION



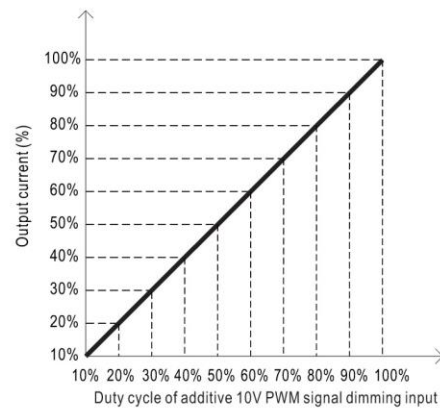
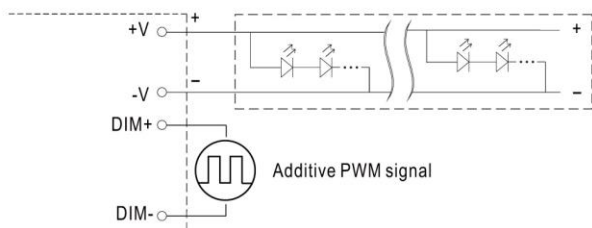
※ 3 in 1 dimming function (for B-Type)

- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-:
 1 ~ 10VDC, or 10V PWM signal or resistance.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.
- Dimming source current from power supply: 100 μ A (typ.)

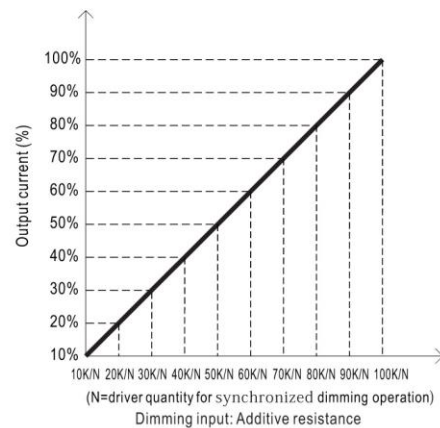
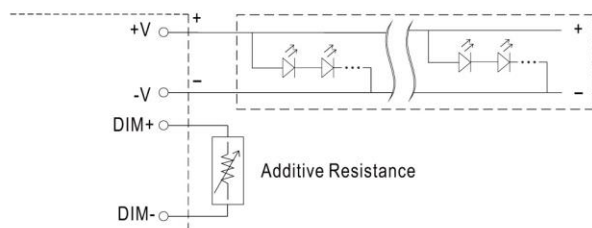
◎ Applying additive 1 ~ 10VDC



◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):

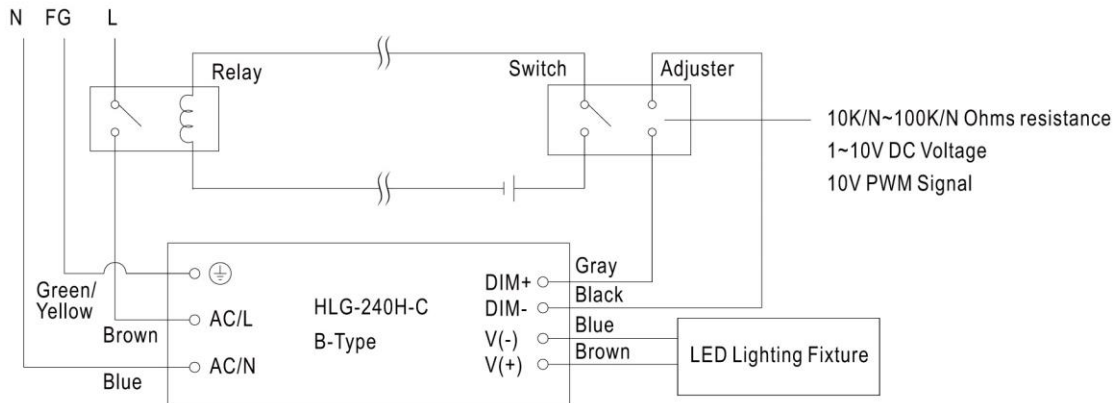


◎ Applying additive resistance:



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Note: In the case of turning the lighting fixture down to 0% brightness, please refer to the configuration as follow, or please contact MEAN WELL for other options.

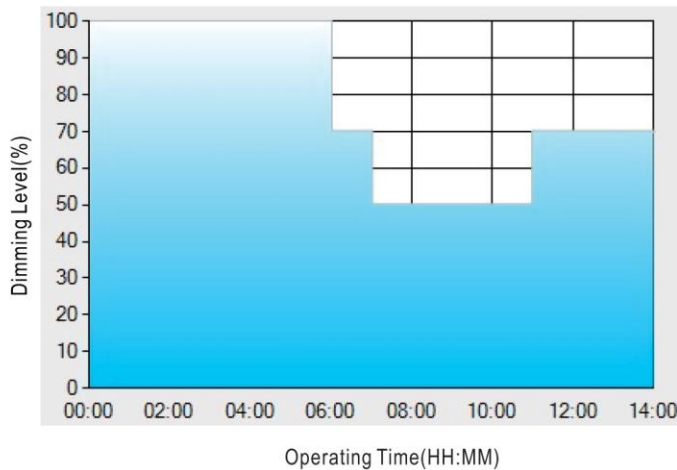


Using a switch and relay can turn ON/OFF the lighting fixture.

※ **Smart timer dimming function (for Dxx-Type by User definition)**

MEAN WELL Smart timer dimming primarily provides the adaptive proportion dimming profile for the output constant current level to perform up to 14 consecutive hours. 3 dimming profiles hereunder are defined accounting for the most frequently seen applications. If other options may be needed, please contact MEAN WELL for details.

Ex : ☉ D01-Type: the profile recommended for residential lighting



Set up for D01-Type in Smart timer dimming software program:

	T1	T2	T3	T4
TIME**	06:00	07:00	11:00	---
LEVEL**	100%	70%	50%	70%

** : TIME matches Operating Time in the diagram whereas LEVEL matches Dimming Level.

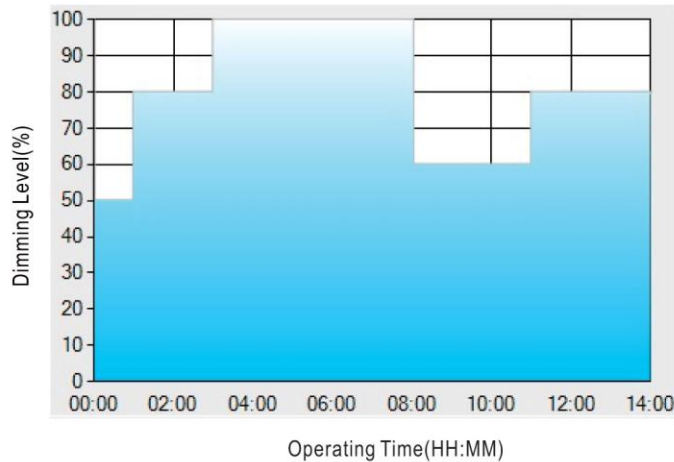
Example: If a residential lighting application adopts D01-Type, when turning on the power supply at 6:00pm, for instance:

- [1] The power supply will switch to the constant current level at 100% starting from 6:00pm.
 - [2] The power supply will switch to the constant current level at 70% in turn, starting from 0:00am, which is 06:00 after the power supply turns on.
 - [3] The power supply will switch to the constant current level at 50% in turn, starting from 1:00am, which is 07:00 after the power supply turns on.
 - [4] The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on.
- The constant current level remains till 8:00am, which is 14:00 after the power supply turns on.



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Ex: ☉ D02-Type: the profile recommended for street lighting



Set up for D02-Type in Smart timer dimming software program:

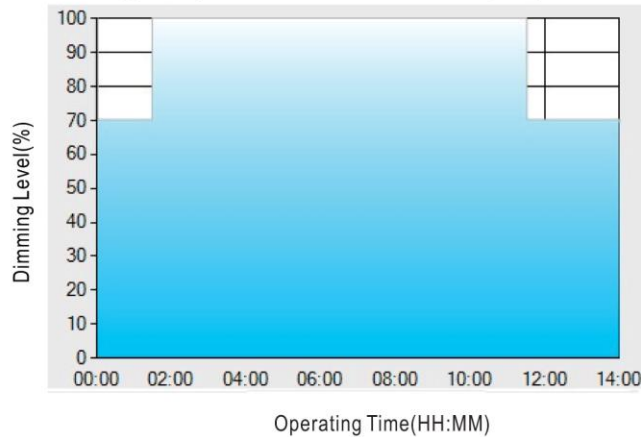
	T1	T2	T3	T4	T5
TIME**	01:00	03:00	8:00	11:00	---
LEVEL**	50%	80%	100%	60%	80%

** : TIME matches Operating Time in the diagram whereas LEVEL matches Dimming Level.

Example: If a street lighting application adopts D02-Type, when turning on the power supply at 5:00pm, for instance:

- [1] The power supply will switch to the constant current level at 50% starting from 5:00pm.
- [2] The power supply will switch to the constant current level at 80% in turn, starting from 6:00pm, which is 01:00 after the power supply turns on.
- [3] The power supply will switch to the constant current level at 100% in turn, starting from 8:00pm, which is 03:00 after the power supply turns on.
- [4] The power supply will switch to the constant current level at 60% in turn, starting from 1:00am, which is 08:00 after the power supply turns on.
- [5] The power supply will switch to the constant current level at 80% in turn, starting from 4:00am, which is 11:00 after the power supply turns on. The constant current level remains till 6:30am, which is 14:00 after the power supply turns on.

Ex: ☉ D03-Type: the profile recommended for tunnel lighting



Set up for D03-Type in Smart timer dimming software program:

	T1	T2	T3
TIME**	01:30	11:00	---
LEVEL**	70%	100%	70%

** : TIME matches Operating Time in the diagram whereas LEVEL matches Dimming Level.

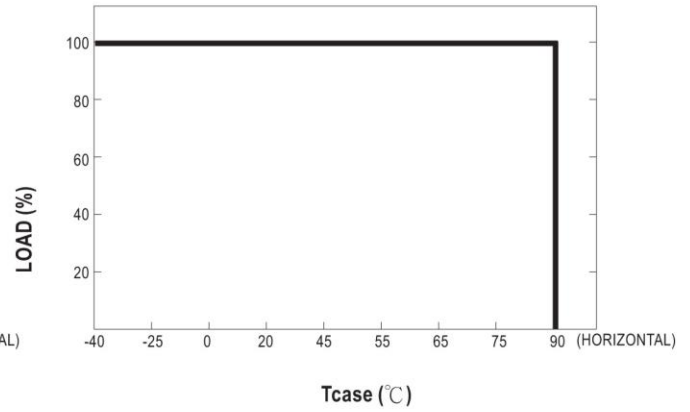
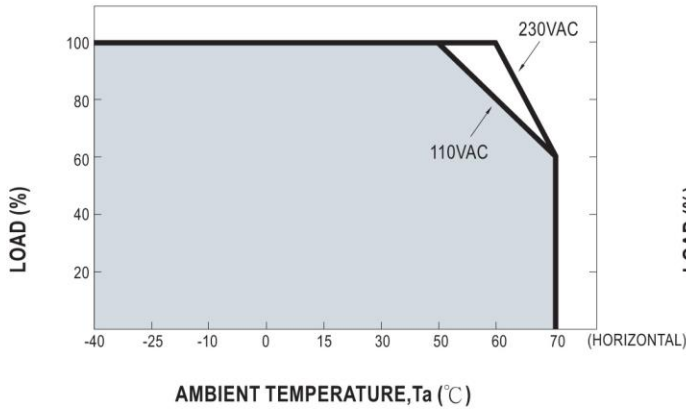
Example: If a tunnel lighting application adopts D03-Type, when turning on the power supply at 4:30pm, for instance:

- [1] The power supply will switch to the constant current level at 70% starting from 4:30pm.
- [2] The power supply will switch to the constant current level at 100% in turn, starting from 6:00pm, which is 01:30 after the power supply turns on.
- [3] The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on. The constant current level remains till 6:30am, which is 14:00 after the power supply turns on.

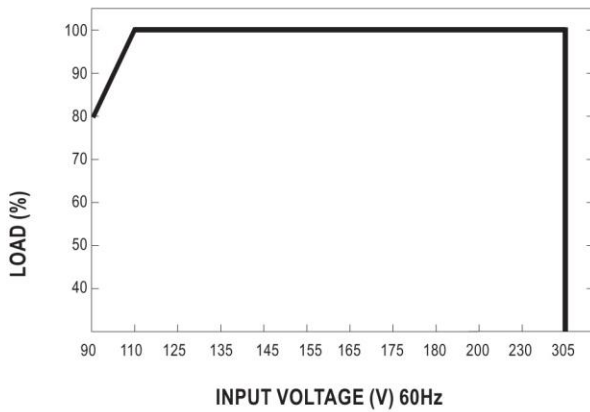


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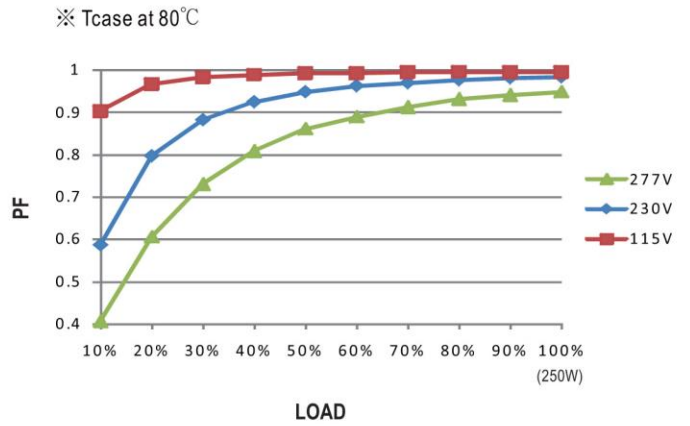
OUTPUT LOAD vs TEMPERATURE



STATIC CHARACTERISTIC

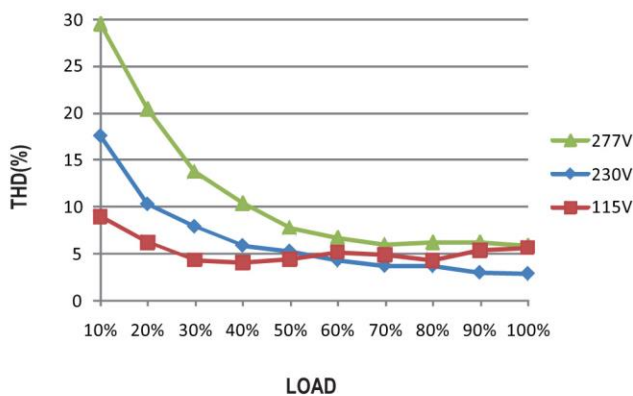


POWER FACTOR (PF) CHARACTERISTIC



TOTAL HARMONIC DISTORTION (THD)

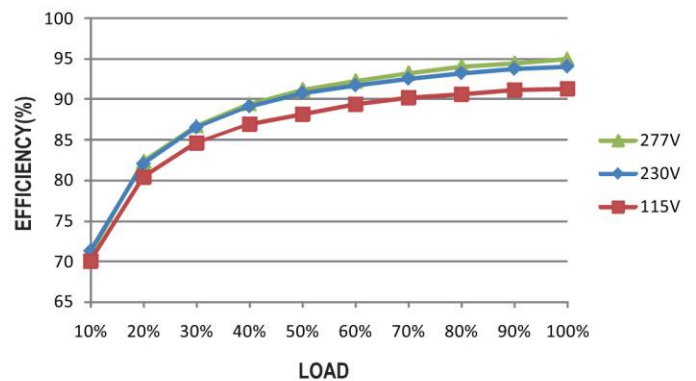
※ 1400mA Model, T_{case} at 80°C



EFFICIENCY vs LOAD

HLG-240H-C series possess superior working efficiency that up to 94% can be reached in field applications.

※ 1400mA Model, T_{case} at 80°C

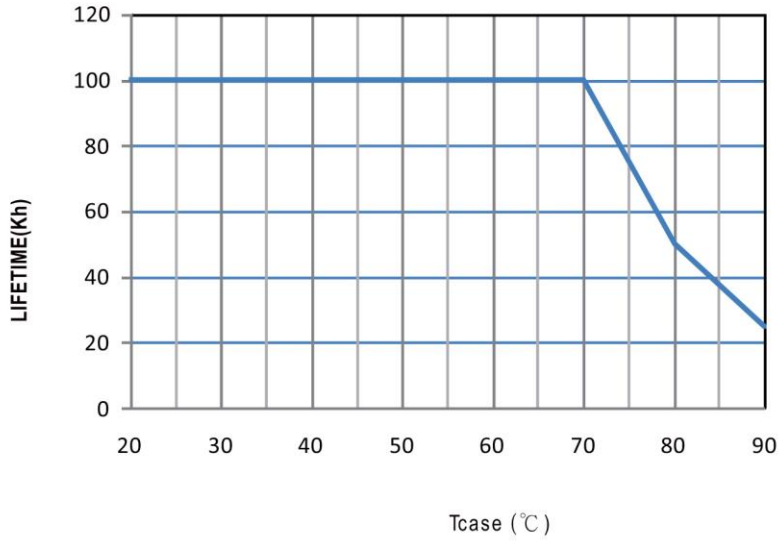




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■ LIFE TIME



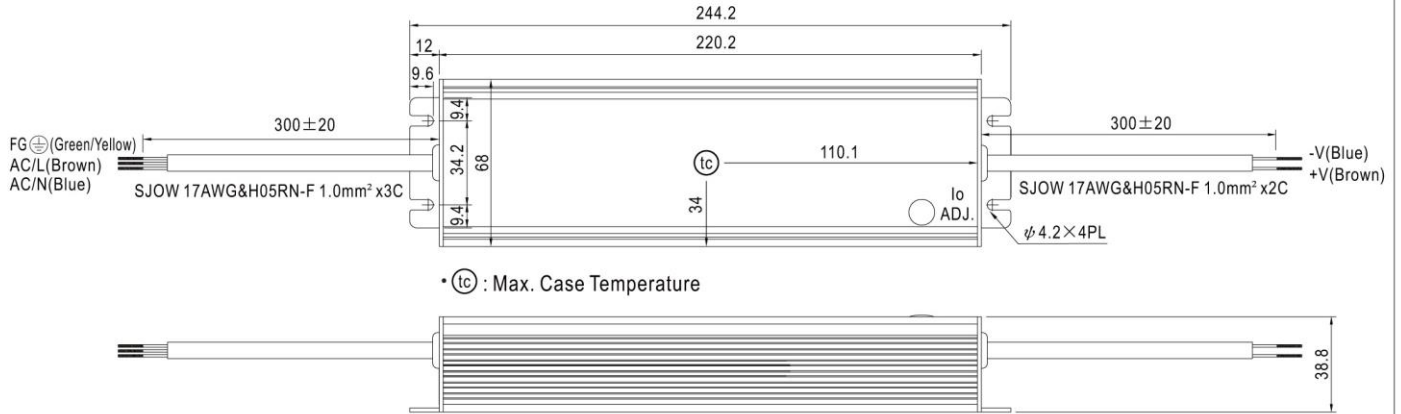


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MECHANICAL SPECIFICATION

Case No.954F Unit:mm

※ **A-Type**



※ **B/D2-Type**

