



## Features

- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- No load power consumption <0.5W at remote OFF
- High efficiency up to 96%
- -40°C ~ +70°C wide operating range
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Fanless design, cooling by free air convection
- IP67 / IP65 design for indoor or outdoor installations
- Withstand 5G vibration test
- Three in one dimming function (0~10Vdc or PWM signal or resistance)
- LED indicator for power on (A-Type)
- Suitable for dry / damp / wet location
- 5 years warranty (Note.10)

## Applications

- LED street lighting
- LED high-bay lighting
- Parking space lighting
- LED searchlight
- LED fishing lamp

## Description

HLG-600H series is a high performance dustproof and waterproof AC-to-DC LED power supply up to 600W. The fully-potted silicone and the aluminum case facilitate the heat dissipation. Above all, it delivers the efficiency up to 96% that tops the LED power supply field. Other features include the wide working temperature range between -40°C and +70°C, the fan-less design, the adjustable output voltage and current, the surge susceptibility up to 4KV (EN61000-4-5), low no-load power consumption (<0.5W) at remote OFF and workable for 277VAC input. These attributes all make HLG-600H the fit for the indoor/outdoor LED lighting application requiring remarkable reliability.

## Model Encoding

**HLG - 600H - 12 (A)**

Function mode option

Output voltage

High input voltage up to 305VAC

Output wattage

Series name

- A : IP65, Vo and Io level can be adjusted through internal potentiometer.
- B : IP67, Io adjustable with 0~10Vdc, PWM signal or resistance.



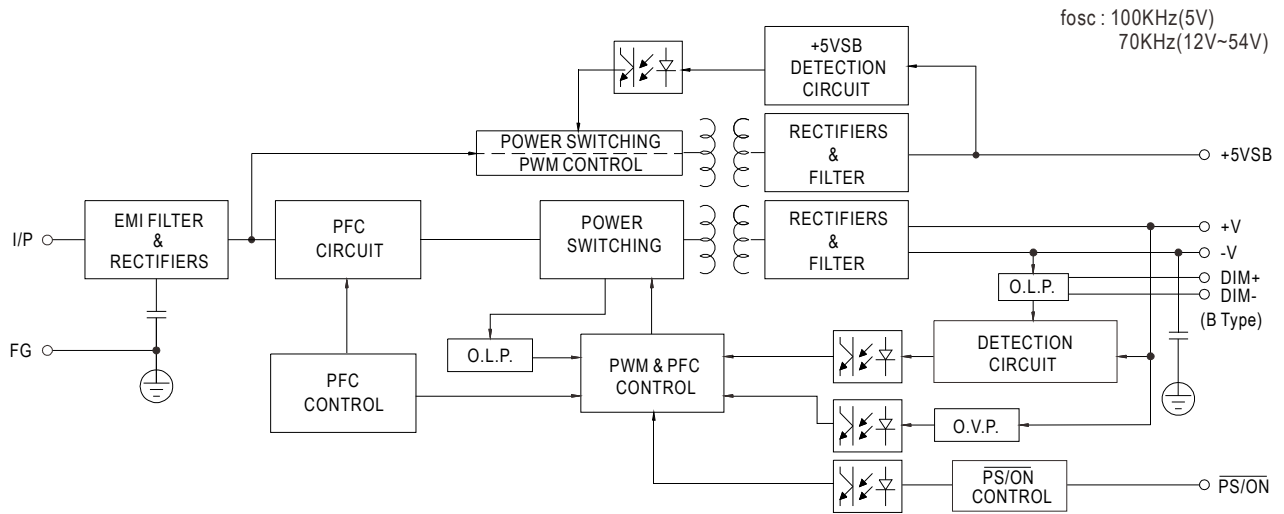
## 600W Single Output Switching Power Supply

## HLG-600H series

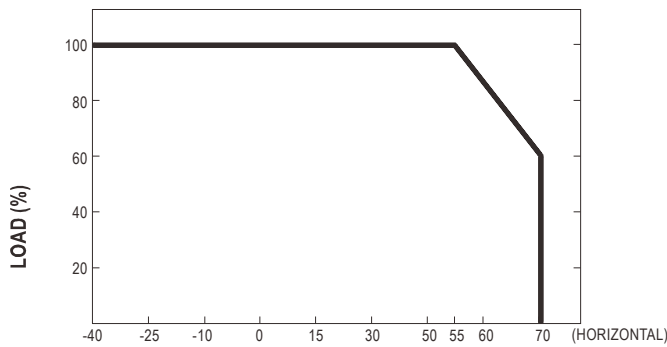
## SPECIFICATION

| MODEL        |                                | HLG-600H-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | HLG-600H-15  | HLG-600H-20 | HLG-600H-24  | HLG-600H-30  | HLG-600H-36  | HLG-600H-42  | HLG-600H-48  | HLG-600H-54  |
|--------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|
| OUTPUT       | DC VOLTAGE                     | 12V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 15V          | 20V         | 24V          | 30V          | 36V          | 42V          | 48V          | 54V          |
|              | CONSTANT CURRENT REGION Note.4 | 6 ~ 12V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 7.5 ~ 15V    | 10 ~ 20V    | 12 ~ 24V     | 15 ~ 30V     | 18 ~ 36V     | 21 ~ 42V     | 24 ~ 48V     | 27 ~ 54V     |
|              | RATED CURRENT                  | 40A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 36A          | 28A         | 25A          | 20A          | 16.7A        | 14.3A        | 12.5A        | 11.2A        |
|              | RATED POWER                    | 480W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 540W         | 560W        | 600W         | 600W         | 601.2W       | 600.6W       | 600W         | 604.8W       |
|              | RIPPLE & NOISE (max.) Note.2   | 150mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 150mVp-p     | 150mVp-p    | 150mVp-p     | 200mVp-p     | 250mVp-p     | 250mVp-p     | 250mVp-p     | 350mVp-p     |
|              | VOLTAGE ADJ. RANGE Note.6      | 10.2 ~ 12.6V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 12.7 ~ 15.8V | 17 ~ 21V    | 20.4 ~ 25.2V | 25.5 ~ 31.5V | 30.6 ~ 37.8V | 35.7 ~ 44.1V | 40.8 ~ 50.4V | 45.9 ~ 56.7V |
|              | CURRENT ADJ. RANGE             | Can be adjusted by internal potentiometer A type only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |             |              |              |              |              |              |              |
|              |                                | 20 ~ 40A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 18 ~ 36A     | 14 ~ 28A    | 12.5 ~ 25A   | 10 ~ 20A     | 8.3 ~ 16.7A  | 7.1 ~ 14.3A  | 6.2 ~ 12.5A  | 5.6 ~ 11.2A  |
|              | VOLTAGE TOLERANCE Note.3       | ±3.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ±2.0%        | ±1.5%       | ±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.8        | 500ms, 80ms at full load 230VAC /115VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |             |              |              |              |              |              |              |
|              | HOLD UP TIME (Typ.)            | 15ms at full load 230VAC /115VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |             |              |              |              |              |              |              |
| INPUT        | VOLTAGE RANGE Note.5           | 90 ~ 305VAC 127 ~ 431VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |             |              |              |              |              |              |              |
|              | FREQUENCY RANGE                | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |             |              |              |              |              |              |              |
|              | POWER FACTOR (Typ.)            | PF>0.98/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load (Please refer to "Power Factor Characteristic" curve)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |             |              |              |              |              |              |              |
|              | TOTAL HARMONIC DISTORTION      | THD< 20% when output loading ≥ 50% at 115VAC/230VAC input and output loading ≥ 75% at 277VAC input                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |             |              |              |              |              |              |              |
|              | EFFICIENCY (Typ.)              | 230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 92%          | 93.5%       | 94.5%        | 95%          | 95%          | 95.5%        | 96%          | 96%          |
|              |                                | 277VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 92.5%        | 93.5%       | 94.5%        | 95%          | 95%          | 95.5%        | 96%          | 96%          |
|              | AC CURRENT (Typ.)              | 7A / 115VAC 3.3A / 230VAC 2.9A / 277VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |             |              |              |              |              |              |              |
|              | INRUSH CURRENT(Typ.)           | COLD START 70A(twidth=1000μs measured at 50% Ipeak) at 230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |             |              |              |              |              |              |              |
| PROTECTION   | LEAKAGE CURRENT                | <0.75mA / 277VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |             |              |              |              |              |              |              |
|              | OVER CURRENT Note.4            | 95 ~ 108%<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |             |              |              |              |              |              |              |
|              | SHORT CIRCUIT                  | Constant current limiting, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |             |              |              |              |              |              |              |
|              | OVER VOLTAGE                   | 13 ~ 16V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 16.5 ~ 20.5V | 22 ~ 26V    | 26 ~ 30V     | 32.5 ~ 36.5V | 39.5 ~ 43.5V | 46 ~ 50V     | 52.5 ~ 56.5V | 59 ~ 63V     |
|              |                                | Protection type : Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |             |              |              |              |              |              |              |
| FUNCTION     | OVER TEMPERATURE               | Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |             |              |              |              |              |              |              |
|              | REMOTE ON/OFF CONTROL          | Power on : "Hi" >2 ~ 5V or Open circuit Power off : "Low" <0 ~ 0.5V or Short circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |             |              |              |              |              |              |              |
| ENVIRONMENT  | 5V STANDBY                     | 5V <sub>SB</sub> : 5V@0.5A ; tolerance ±5%, ripple : 100mVp-p(max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |             |              |              |              |              |              |              |
|              | WORKING TEMP.                  | -40 ~ +70°C (Refer to "Derating Curve")                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |             |              |              |              |              |              |              |
| SAFETY & EMC | WORKING HUMIDITY               | 20 ~ 95% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |             |              |              |              |              |              |              |
|              | STORAGE TEMP., HUMIDITY        | -40 ~ +85°C, 10 ~ 95% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |             |              |              |              |              |              |              |
|              | TEMP. COEFFICIENT              | ±0.03%/°C (0 ~ 60°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |             |              |              |              |              |              |              |
|              | VIBRATION                      | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |             |              |              |              |              |              |              |
| OTHERS       | SAFETY STANDARDS Note.7        | UL8750, CSA C22.2 No. 250.13-12, ENEC EN61347-1, EN61347-2-13 independent, EN62384, 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, EN55022(CISPR22) Class B, EN61000-3-2 Class C (≥ 50% 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |             |              |              |              |              |              |              |
| NOTE         | MTBF                           | 76.9K hrs min. MIL-HDBK-217F (25°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |             |              |              |              |              |              |              |
|              | DIMENSION                      | 280*144*48.5mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |             |              |              |              |              |              |              |
|              | PACKING                        | 3.9Kg; 4pcs/16.6Kg/0.9CUFT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |             |              |              |              |              |              |              |
| NOTE         |                                | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. Constant current operation region is within 50%~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.<br>5. Derating may be needed under low input voltages. Please check the static characteristics for more details.<br>6. A type only.<br>7. Safety and EMC design refer to EN60598-1, subject CNS15233, GB7000.1, FCC part18.<br>8. 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.<br>9. 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.<br>10. Refer to warranty statement |              |             |              |              |              |              |              |              |

### Block Diagram



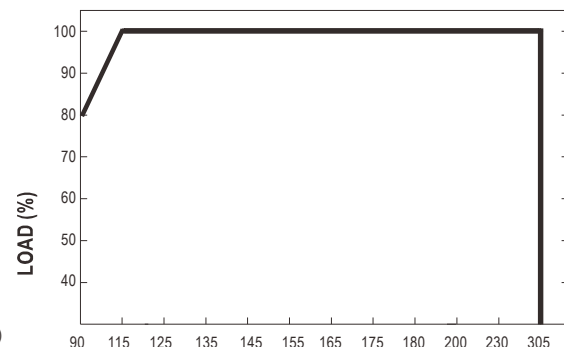
### Derating Curve



AMBIENT TEMPERATURE (°C)

Note : At high ambient temperature  $T_a=70^{\circ}\text{C}$ , if HLG-600H operates in C.C mode, the maximal current must not be greater than 60% of the rated current.

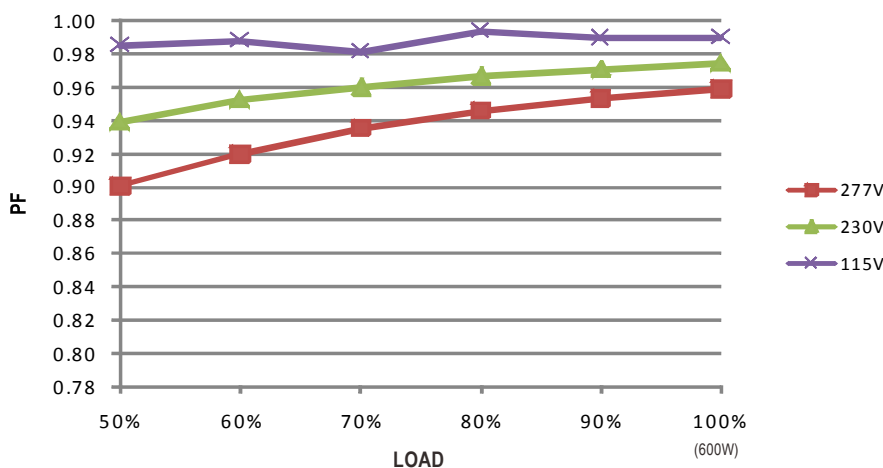
### Static Characteristics



INPUT VOLTAGE (V) 60Hz

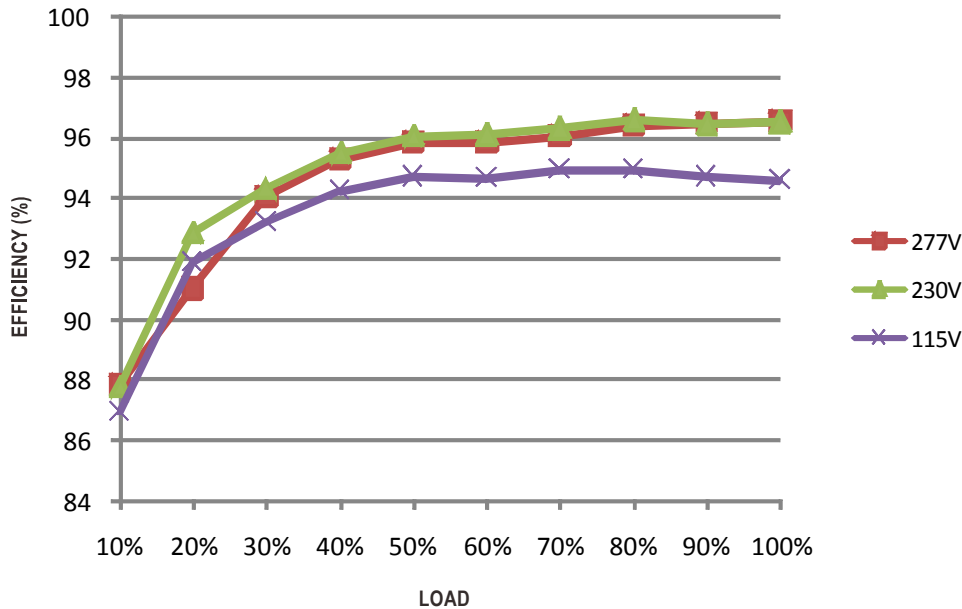
### Power Factor Characteristic

#### Constant Current Mode



### ■ EFFICIENCY vs LOAD (54V Model)

HLG-600H series possess superior working efficiency that up to 96% can be reached in field applications.

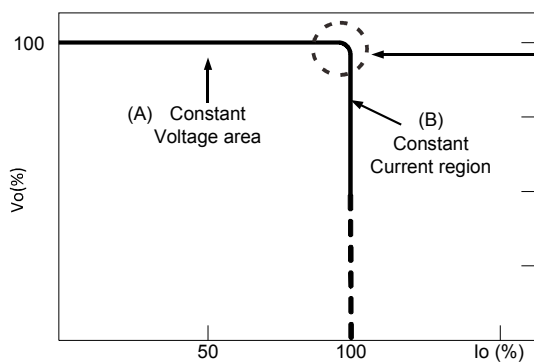


### ■ DRIVING METHODS OF LED MODULE

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 (C.V) or constant current mode (C.C)" to drive the LEDs.

Mean Well's LED power supply with C.V+ C.C characteristic can be operated at both C.V mode (with LED driver, at area (A) and C.C mode (direct drive, at area (B)).

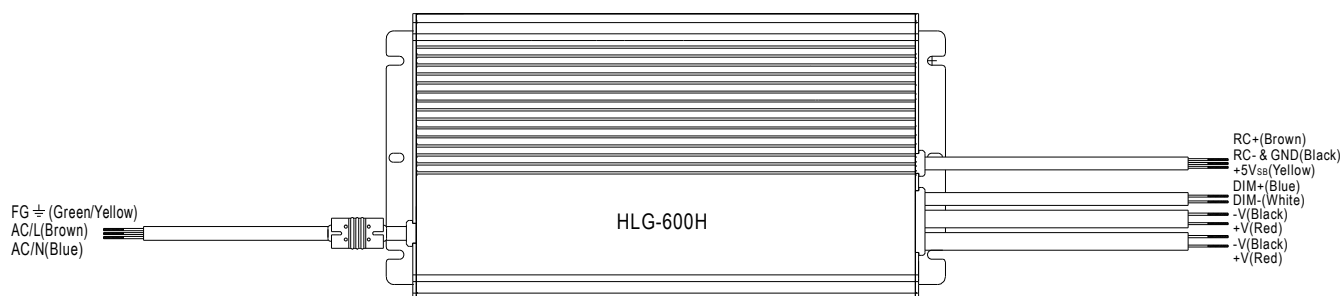


Typical LED power supply I-V curve

In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.

Should there be any compatibility issues, please contact MEAN WELL.

### ■ DIMMING OPERATION (for B-type only)



※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 0 ~ 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                                                              | Short | 10K $\Omega$    | 20K $\Omega$    | 30K $\Omega$    | 40K $\Omega$    | 50K $\Omega$    | 60K $\Omega$    | 70K $\Omega$    | 80K $\Omega$    | 90K $\Omega$    | 100K $\Omega$    | OPEN     |
|-----------------------------|----------------------------------------------------------------------------|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|----------|
|                             | Multiple drivers<br>(N=driver quantity for synchronized dimming operation) | Short | 10K $\Omega$ /N | 20K $\Omega$ /N | 30K $\Omega$ /N | 40K $\Omega$ /N | 50K $\Omega$ /N | 60K $\Omega$ /N | 70K $\Omega$ /N | 80K $\Omega$ /N | 90K $\Omega$ /N | 100K $\Omega$ /N | ----     |
| Percentage of rated current |                                                                            | 0%    | 10%             | 20%             | 30%             | 40%             | 50%             | 60%             | 70%             | 80%             | 90%             | 100%             | 95%~108% |

※ 0 ~ 10V dimming function for output current adjustment (Typical)

| Dimming value               | 0V | 1V  | 2V  | 3V  | 4V  | 5V  | 6V  | 7V  | 8V  | 9V  | 10V  | OPEN     |
|-----------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|
| Percentage of rated current | 0% | 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                  | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | OPEN     |
|-----------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|
| Percentage of rated current | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%~108% |

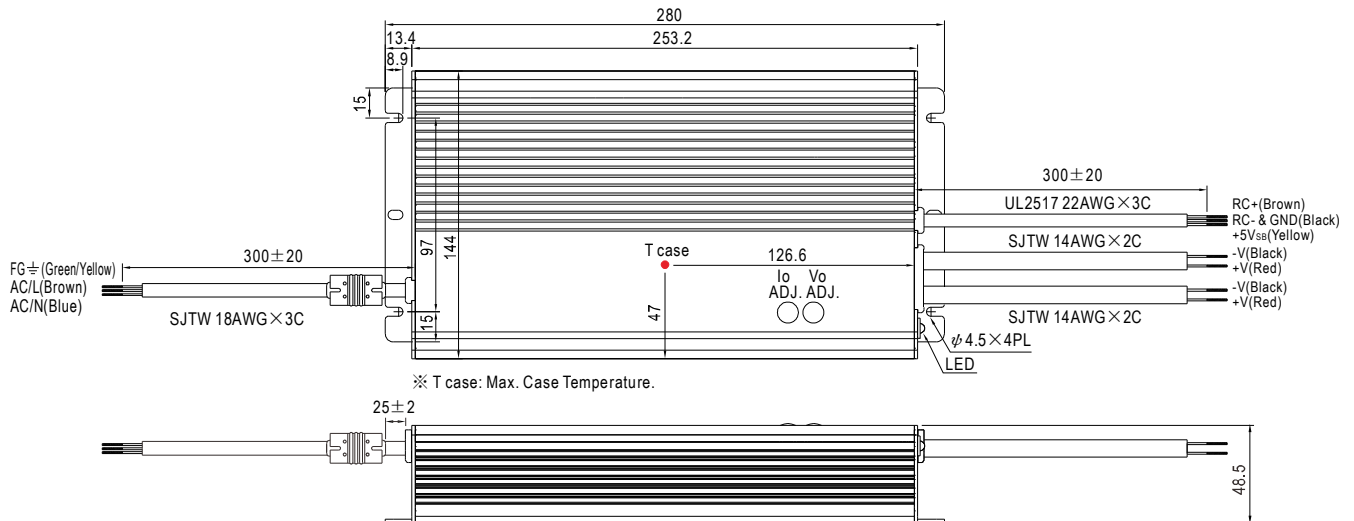
※Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

## Mechanical Specification

Case No. 228

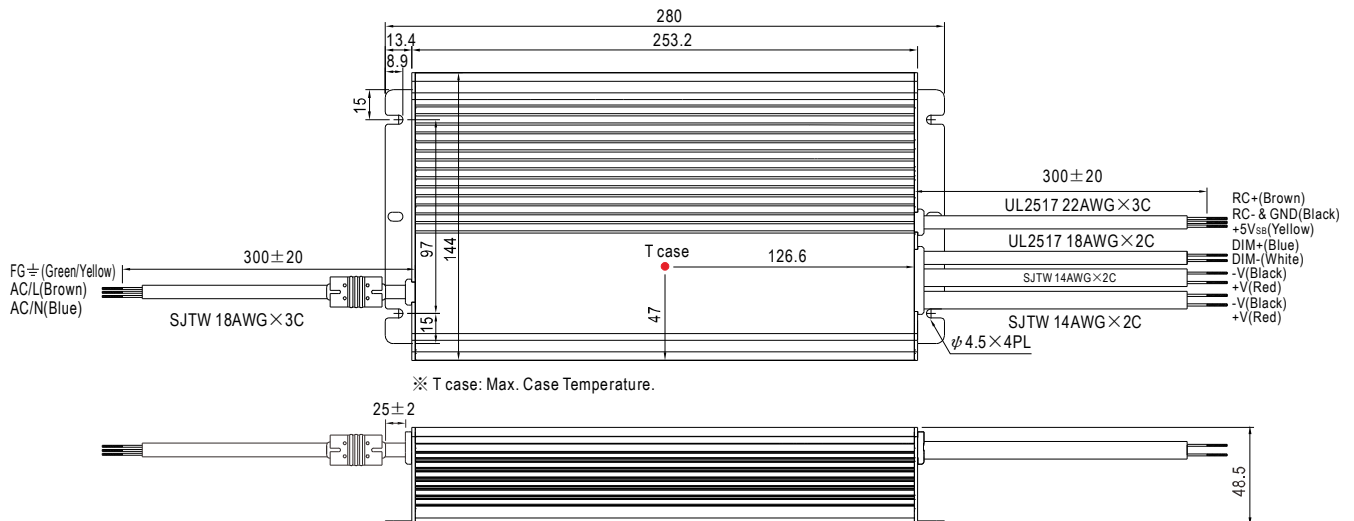
Unit:mm

### A Type:(HLG-600H- \_A)



※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.  
(Can access by removing the rubber stopper on the case.)

### B Type:(HLG-600H- \_B)



## Installation Manual

Please refer to : <http://www.meanwell.com/webnet/search/InstallationSearch.html>