



■ Features :

- Universal AC input / Full range
- Built-in active PFC function
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potential meter
- IP67 / IP65 design for indoor or outdoor installations
- Optional dimming function (1~10Vdc or PWM signal or resistor)
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet location or outdoor application
- 3 years warranty



HLG-120-12 [A] Blank : IP67 rated. Cable for I/O connection.

A : IP65 rated. Output voltage and constant current level can be adjusted through internal potential meter.

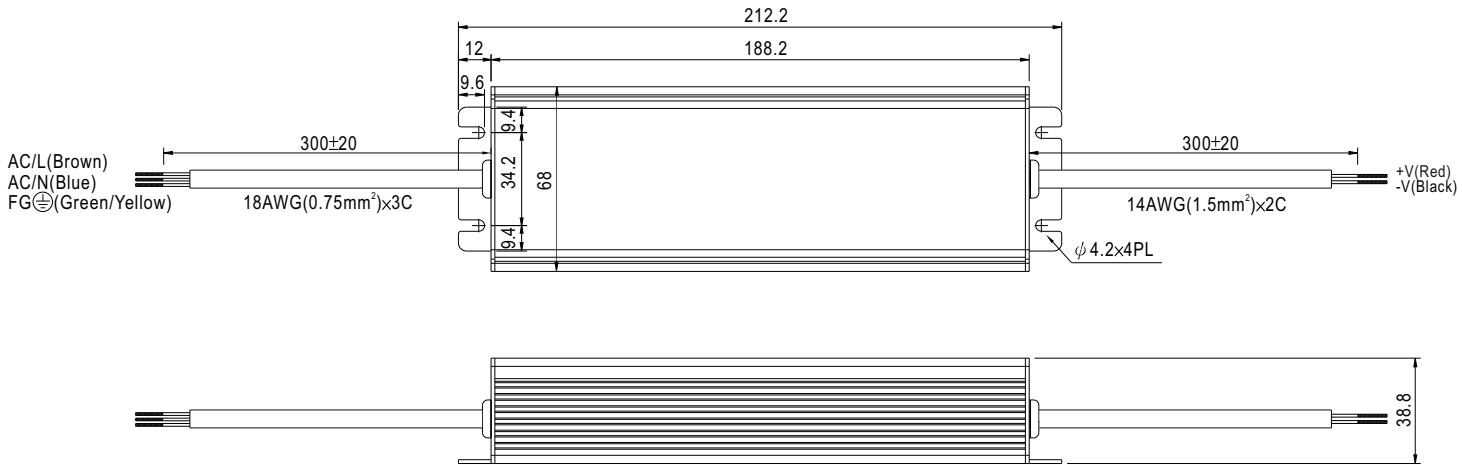
B : IP67 rated. Constant current level adjustable through output cable with 1~10Vdc or PWM signal or resistor.

SPECIFICATION

Mechanical Specification

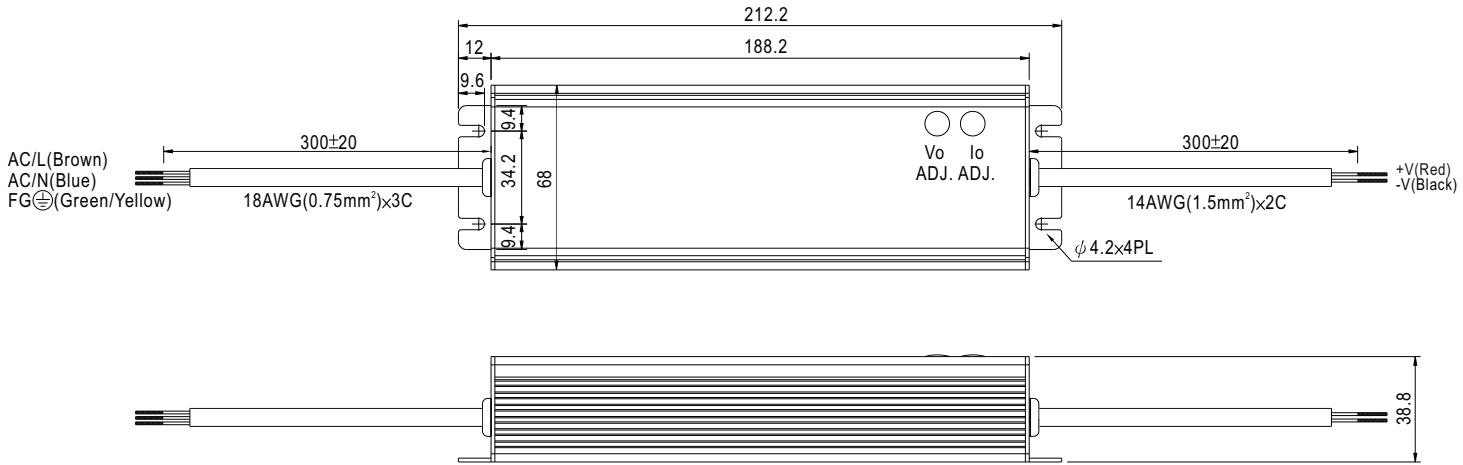
Case No.994A Unit:mm

Blank:(HLG-120)



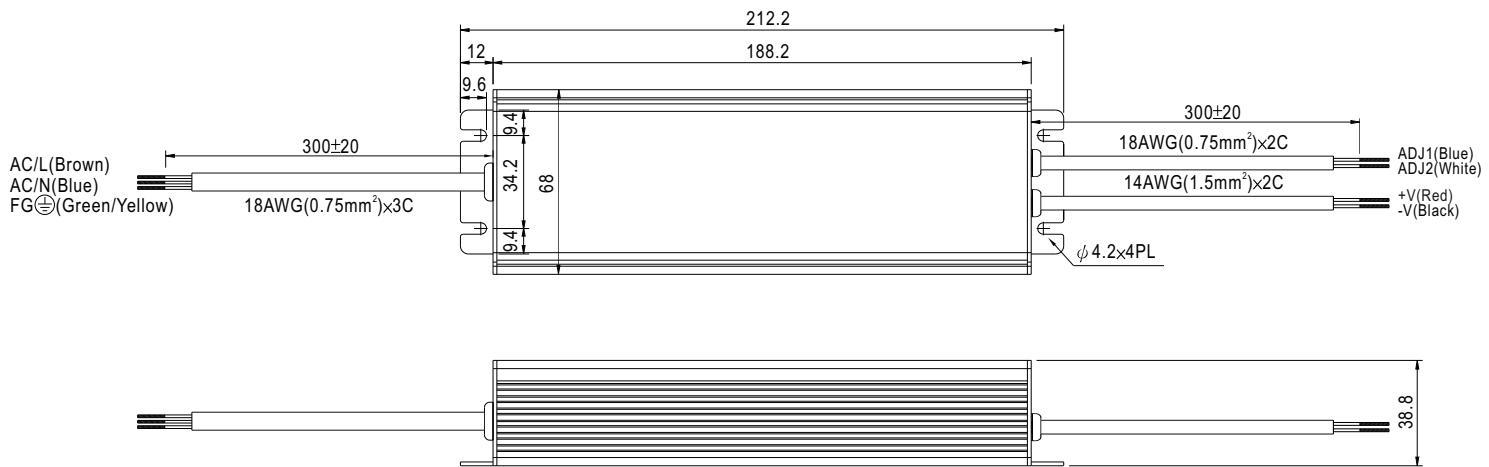
※IP67 rated. Cable for I/O connection.

A Type:(HLG-120- A)



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

B Type:(HLG-120_B)



※ IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistor or 1~10Vdc or PWM signal between ADJ1 and ADJ2.

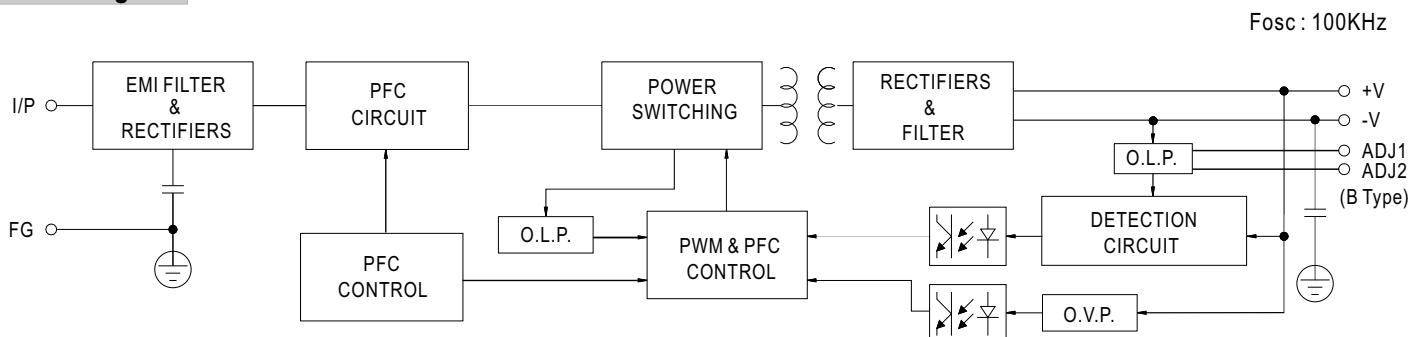
※ Reference resistance value for output current adjustment (Typical)

Resistance value	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

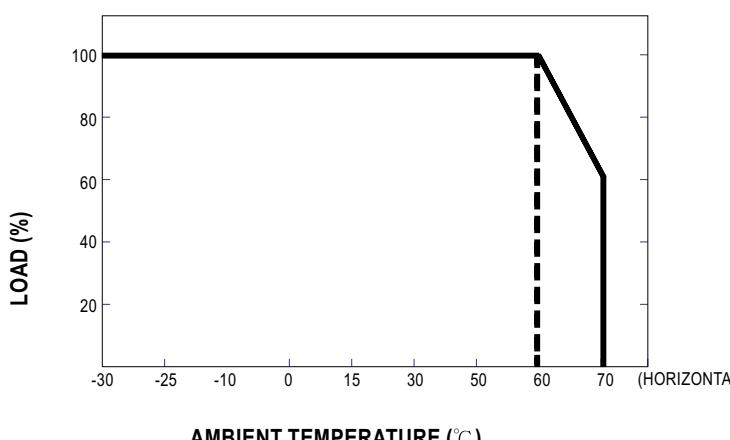
※ 1~10V dimming function for output current adjustment (Typical)

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

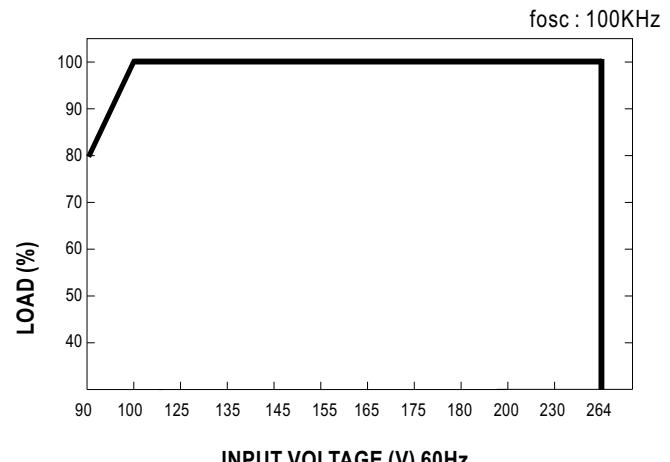
■ Block Diagram



■ Derating Curve



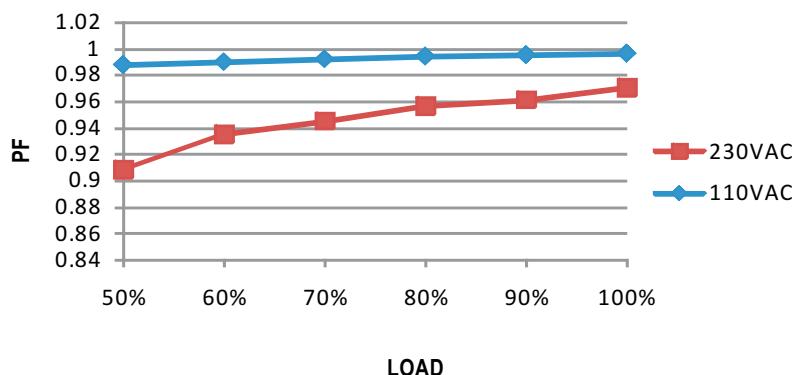
■ Static Characteristics



■ Power Factor Characteristic

Power factor will be higher than 0.9 when output loading is 50% or higher.

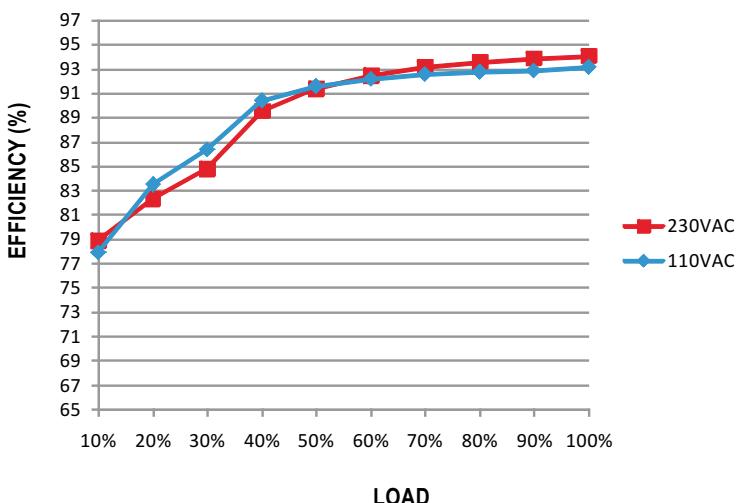
Constant Current Mode



LOAD

■ EFFICIENCY vs LOAD (48V Model)

HLG-120 series possess superior working efficiency that up to 94% can be reached in field applications.



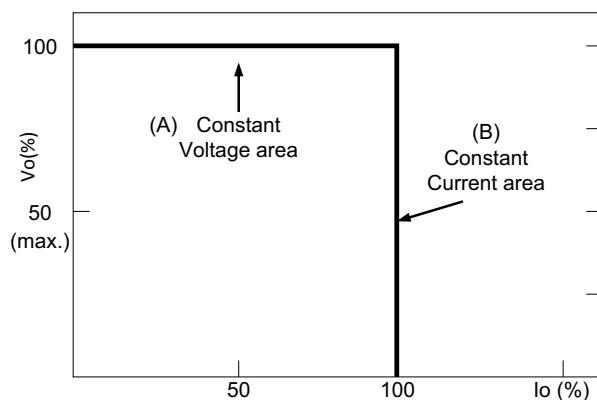
LOAD

■ 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

◎ Direct driving :

Under direct driving, the power supply will work in "constant current mode (CC)" and output voltage of the power supply will be clamped by sum of forward voltage (V_F) of the LED strip.

The total forward voltage of series connecting LEDs is suggested for 60%~95% of power supply rated output voltage due to concern of the best PF value and efficiency.

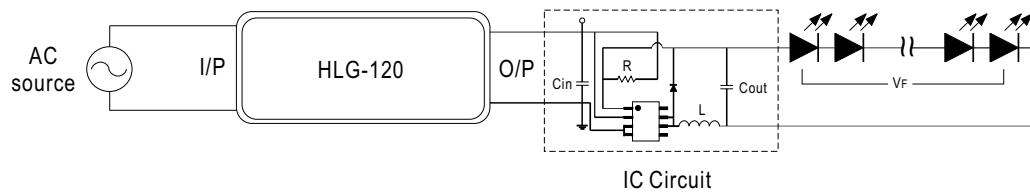


◎ With LED driver :

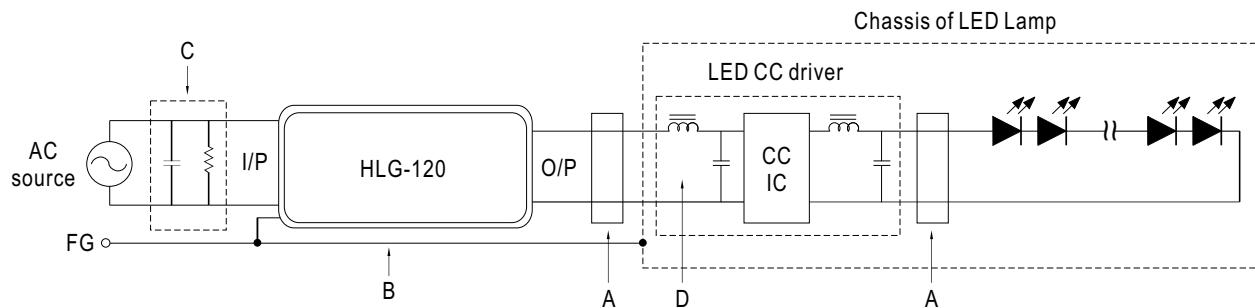
Using additional driver, the power supply will work in "constant voltage mode (CV)" and output voltage of the power supply will be kept in rated value. In this drive mode, several design issues need to be considered:

1. Output voltage of PSU must be higher than total forward voltage of series connecting LEDs by 3V minimum.
2. Input capacitor (C_{in}) of LED driver circuit should use 47uF ~ 100uF(typ.) of rating depends on the operating frequency of the LED driver.

The higher the operating frequency is used, the smaller value of C_{in} should be chosen, and vice versa.



■ EMI DEBUG SUGGESTION



- A. Add a common mode ferrite choke on output wires to reduce the common emission between 10M ~ 300MHz per lighting EMI regulation.
- B. Chassis of LED lamp and chassis of HLG-120 or the FG wire should be connected to the safety ground to reduce the EMI noise, including the conduction and radiation emission.
- C. The additional X-Cap and discharge resistor can reduce the low frequency conduction noise between 9K ~ 1MHz per lighting EMI regulation.
- D. L-C filter should be added at the DC input of LED constant current driver to avoid the differential emission and high frequency noise generated by the CC driver.

■ WATERPROOF CONNECTION

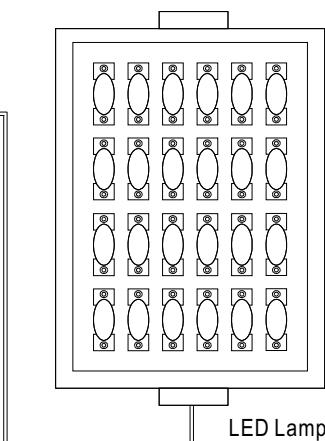
◎ Waterproof connector

Waterproof connector can be assembled on the output cable of HLG-120 to operate in dry/wet/damp or outdoor environment.



Size	Pin Configuration (Female)	
M12		
	4-PIN	5-PIN
	5A/PIN	5A/PIN
Order No.	M12-04	M12-05
Suitable Current	10A max.	10A max.

Size	Pin Configuration (Female)
M15	
	2-PIN
	12A/PIN
Order No.	M15-02
Suitable Current	12A max.



◎ Cable Joiner

