



## Features :

- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- High efficiency up to 93.5%
- 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
- Three in one dimming function (1~10Vdc or PWM signal or resistor)
- Suitable for LED lighting and street lighting applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations
- 5 years warranty (Note.10)



HLG-120H-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 10V PWM signal or resistor.

## SPECIFICATION

| LED APPLICATION                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                   |                                                    |                                                        |             |                |                 |                            |             |             |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------|-------------|----------------|-----------------|----------------------------|-------------|-------------|
| MODEL                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | HLG-120H-12                                                                                                       | HLG-120H-15                                        | HLG-120H-20                                            | HLG-120H-24 | HLG-120H-30    | HLG-120H-36     | HLG-120H-42                | HLG-120H-48 | HLG-120H-54 |
| OUTPUT                                 | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 12V                                                                                                               | 15V                                                | 20V                                                    | 24V         | 30V            | 36V             | 42V                        | 48V         | 54V         |
|                                        | CONSTANT CURRENT REGION <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 6 ~ 12V                                                                                                           | 7.5 ~ 15V                                          | 10 ~ 20V                                               | 12 ~ 24V    | 15 ~ 30V       | 18 ~ 36V        | 21 ~ 42V                   | 24 ~ 48V    | 27 ~ 54V    |
|                                        | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10A                                                                                                               | 8A                                                 | 6A                                                     | 5A          | 4A             | 3.4A            | 2.9A                       | 2.5A        | 2.3A        |
|                                        | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 120W                                                                                                              | 120W                                               | 120W                                                   | 120W        | 120W           | 122.4W          | 121.8W                     | 120W        | 124.2W      |
|                                        | RIPPLE & NOISE (max.) <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 150mVp-p                                                                                                          | 150mVp-p                                           | 150mVp-p                                               | 150mVp-p    | 200mVp-p       | 200mVp-p        | 200mVp-p                   | 200mVp-p    | 200mVp-p    |
|                                        | VOLTAGE ADJ. RANGE <small>Note.6</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10.8 ~ 13.5V                                                                                                      | 13.5 ~ 17V                                         | 17 ~ 22V                                               | 22 ~ 27V    | 27 ~ 33V       | 33 ~ 40V        | 38 ~ 46V                   | 43 ~ 53V    | 49 ~ 58V    |
|                                        | CURRENT ADJ. RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Can be adjusted by internal potential meter or through output cable                                               |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5 ~ 10A                                                                                                           | 4 ~ 8A                                             | 3 ~ 6A                                                 | 2.5 ~ 5A    | 2 ~ 4A         | 1.7 ~ 3.4A      | 1.4 ~ 2.9A                 | 1.2 ~ 2.5A  | 1.1 ~ 2.3A  |
|                                        | VOLTAGE TOLERANCE <small>Note.3</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±2.5%                                                                                                             | ±2.0%                                              | ±1.0%                                                  | ±1.0%       | ±1.0%          | ±1.0%           | ±1.0%                      | ±1.0%       | ±1.0%       |
|                                        | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ±0.5%                                                                                                             | ±0.5%                                              | ±0.5%                                                  | ±0.5%       | ±0.5%          | ±0.5%           | ±0.5%                      | ±0.5%       | ±0.5%       |
|                                        | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ±2.0%                                                                                                             | ±1.5%                                              | ±0.5%                                                  | ±0.5%       | ±0.5%          | ±0.5%           | ±0.5%                      | ±0.5%       | ±0.5%       |
| SETUP, RISE TIME <small>Note.8</small> | 2500ms, 50ms at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                   | 230VAC / 115VAC ; B type 2500ms, 200ms at 95% load |                                                        |             |                | 230VAC / 115VAC |                            |             |             |
| HOLD UP TIME (Typ.)                    | 12ms at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                   | 230VAC / 115VAC                                    |                                                        |             |                |                 |                            |             |             |
| INPUT                                  | VOLTAGE RANGE <small>Note.5</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 90 ~ 305VAC                                                                                                       |                                                    | 127 ~ 431VDC                                           |             |                |                 |                            |             |             |
|                                        | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 47 ~ 63Hz                                                                                                         |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | POWER FACTOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | PF ≥ 0.95/230VAC                                                                                                  |                                                    | PF ≥ 0.98/115VAC at full load and rated output voltage |             |                |                 | PF ≥ 0.9 at 50 ~ 100% load |             |             |
|                                        | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 92%                                                                                                               | 92%                                                | 93%                                                    | 93%         | 93%            | 93%             | 93%                        | 93.5%       | 93.5%       |
|                                        | AC CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.4A / 115VAC                                                                                                     |                                                    | 0.6A / 230VAC                                          |             | 0.55A / 277VAC |                 |                            |             |             |
|                                        | INRUSH CURRENT(Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | COLD START 75A/230VAC                                                                                             |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <0.75mA / 277VAC                                                                                                  |                                                    |                                                        |             |                |                 |                            |             |             |
| PROTECTION                             | OVER CURRENT <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 14 ~ 17V                                                                                                          | 18 ~ 21V                                           | 23 ~ 27V                                               | 28 ~ 34V    | 34 ~ 38V       | 41 ~ 46V        | 47 ~ 53V                   | 54 ~ 60V    | 59 ~ 65V    |
|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery                             |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 100℃ ±10℃ (RTH2)<br>Protection type : Shut down o/p voltage, recovers automatically after temperature goes down   |                                                    |                                                        |             |                |                 |                            |             |             |
| ENVIRONMENT                            | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -40 ~ +60℃ @ full load ; +70℃ @ 60% load (Refer to derating curve)                                                |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 20 ~ 95% RH non-condensing                                                                                        |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -40 ~ +80℃, 10 ~ 95% RH                                                                                           |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ±0.03%/℃ (0 ~ 50℃)                                                                                                |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes                                           |                                                    |                                                        |             |                |                 |                            |             |             |
| SAFETY & EMC                           | SAFETY STANDARDS <small>Note.7</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | UL8750, EN61347-1, EN61347-2-13 independent IP65 or IP67 approved ; Design refer to UL60950-1, TUV EN60950-1      |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC                                                                   |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                         |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | EMI CONDUCTION & RADIATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliance to EN55015, EN55022 (CISPR22) Class B                                                                  |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | HARMONIC CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Compliance to EN61000-3-2 Class C (≥ 50% load) ; EN61000-3-3                                                      |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | EMS IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN61547, EN55024, heavy industry level (surge 4KV), criteria A  |                                                    |                                                        |             |                |                 |                            |             |             |
| OTHERS                                 | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 192.2Khrs min. MIL-HDBK-217F (25℃)                                                                                |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 220*68*38.8mm (L*W*H)                                                                                             |                                                    |                                                        |             |                |                 |                            |             |             |
|                                        | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1.12Kg; 12pcs/14.4Kg/0.76CUFT                                                                                     |                                                    |                                                        |             |                |                 |                            |             |             |
| NOTE                                   | <p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.</p> <p>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>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.</p> <p>5. Derating may be needed under low input voltages. Please check the static characteristics for more details.</p> <p>6. Type A only.</p> <p>7. Safety and EMC design refer to EN60598-1, CNS15233, GB7000.1, FCC part18.</p> <p>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.</p> <p>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.</p> <p>10. Refer to warranty statement.</p> |                                                                                                                   |                                                    |                                                        |             |                |                 |                            |             |             |

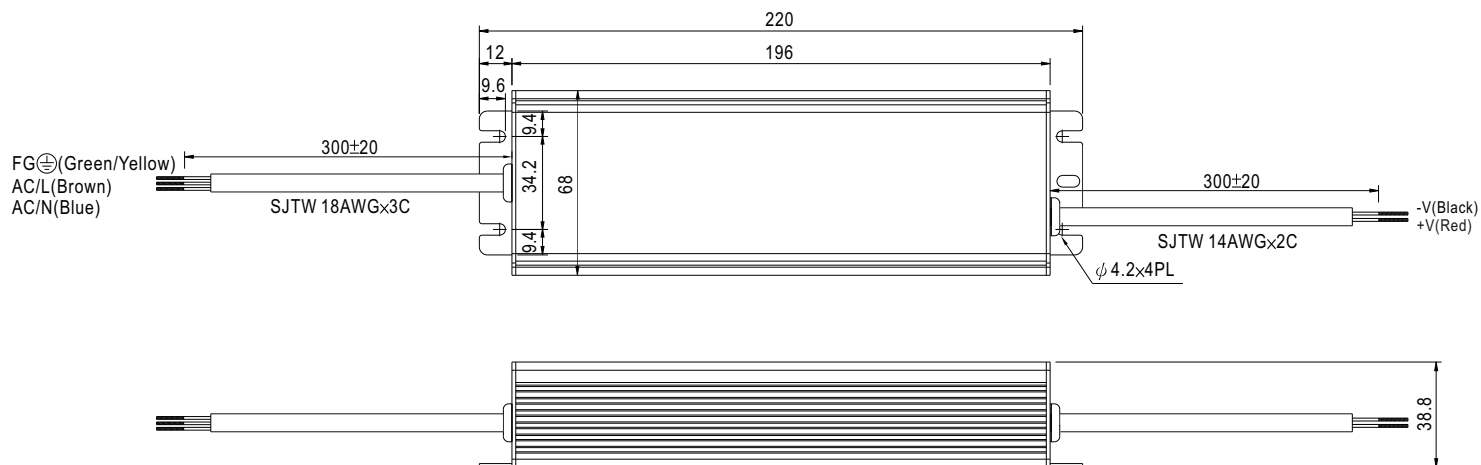
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Constant current operation region is within 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.
5. Derating may be needed under low input voltages. Please check the static characteristics for more details.
6. Type A only.
7. Safety and EMC design refer to EN60598-1, CNS15233, GB7000.1, FCC part18.
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.
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.
10. Refer to warranty statement.

## Mechanical Specification

Case No.994A

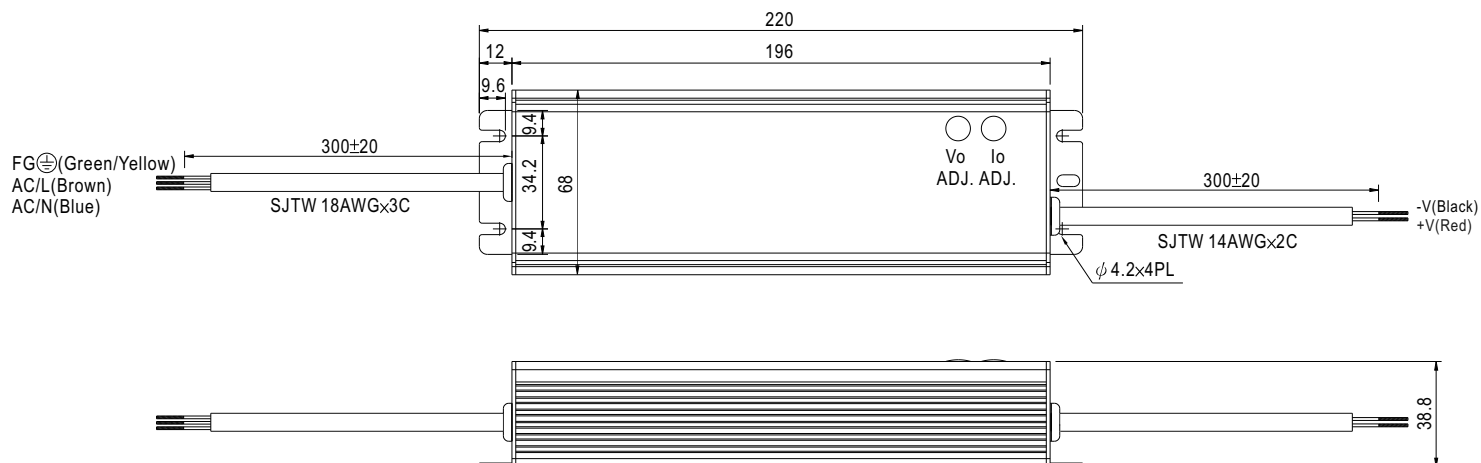
Unit:mm

Blank:(HLG-120H)



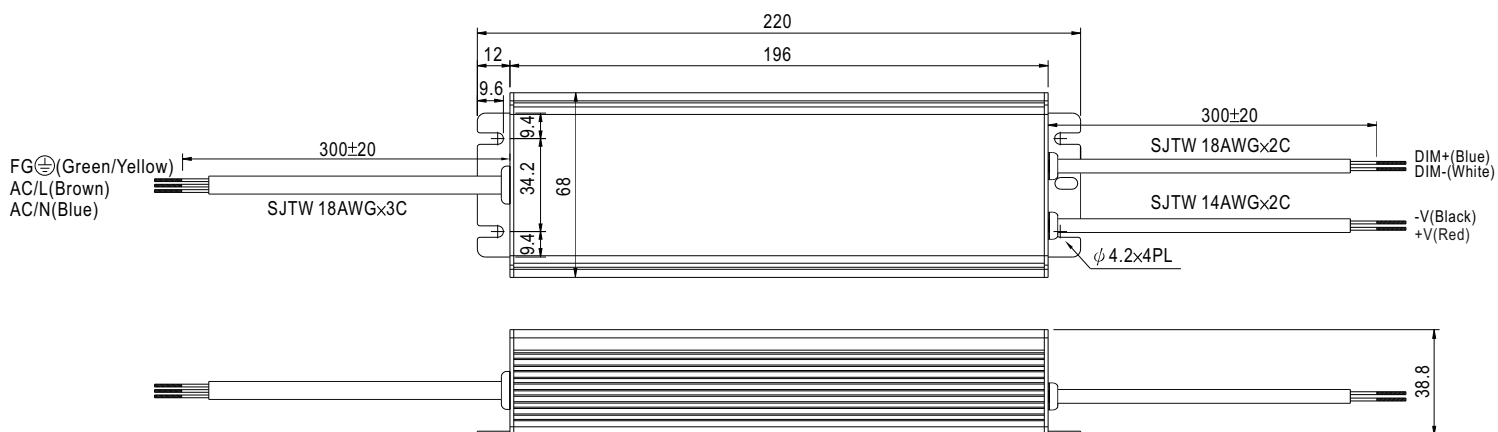
※IP67 rated. Cable for I/O connection.

A Type:(HLG-120H- \_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-120H-\_B)



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

※ Please DO NOT connect "DIM-" to "-V".

※ Reference resistance value for output current adjustment (Typical)

| Resistance value            | 10K $\Omega$ | 20K $\Omega$ | 30K $\Omega$ | 40K $\Omega$ | 50K $\Omega$ | 60K $\Omega$ | 70K $\Omega$ | 80K $\Omega$ | 90K $\Omega$ | 100K $\Omega$ | OPEN      |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|-----------|
| Percentage of rated current | 10%          | 20%          | 30%          | 40%          | 50%          | 60%          | 70%          | 80%          | 90%          | 100%          | 102%~108% |

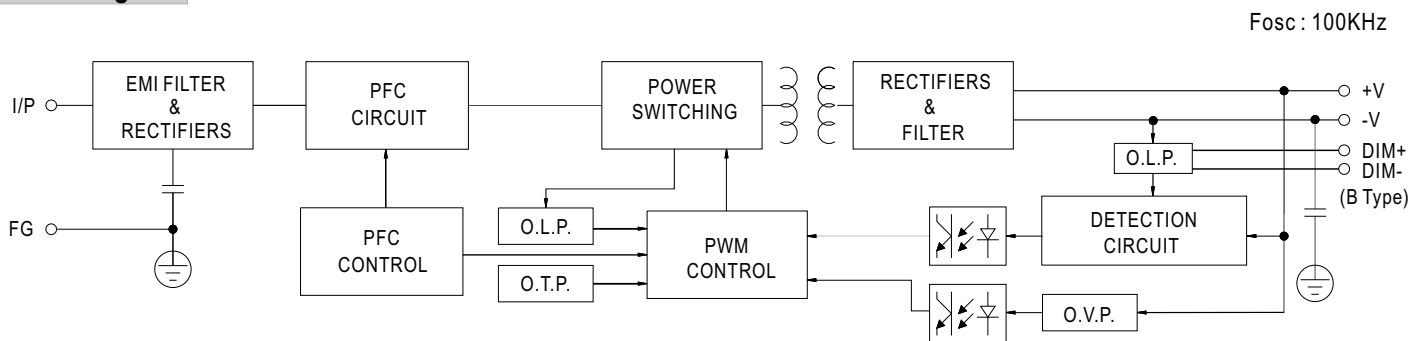
※ 1 ~ 10V dimming function for output current adjustment (Typical)

| Dimming value               | 1V  | 2V  | 3V  | 4V  | 5V  | 6V  | 7V  | 8V  | 9V  | 10V  | OPEN      |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----------|
| Percentage of rated current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 102%~108% |

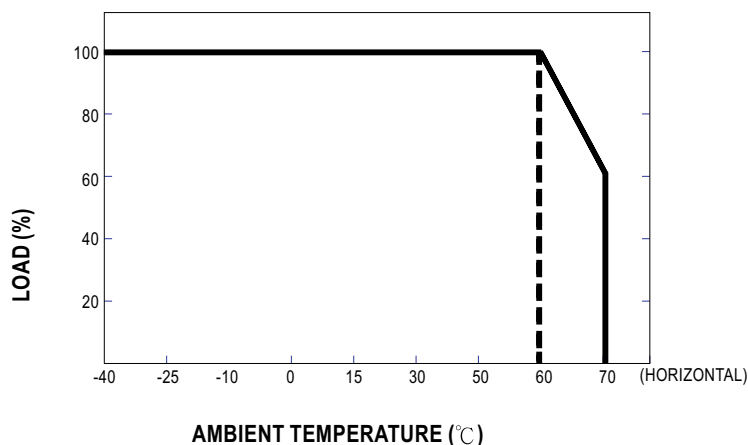
※ 10V PWM signal for output current adjustment (Typical): Frequency range : 100Hz ~ 3KHz

| Duty value                  | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | OPEN      |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----------|
| Percentage of rated current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 102%~108% |

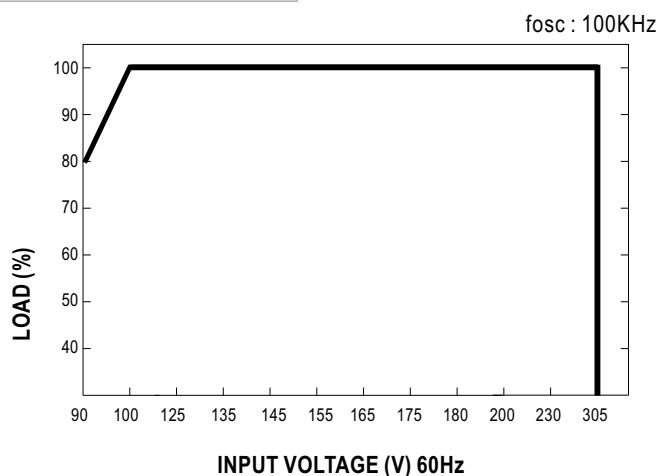
## Block Diagram



## Derating Curve



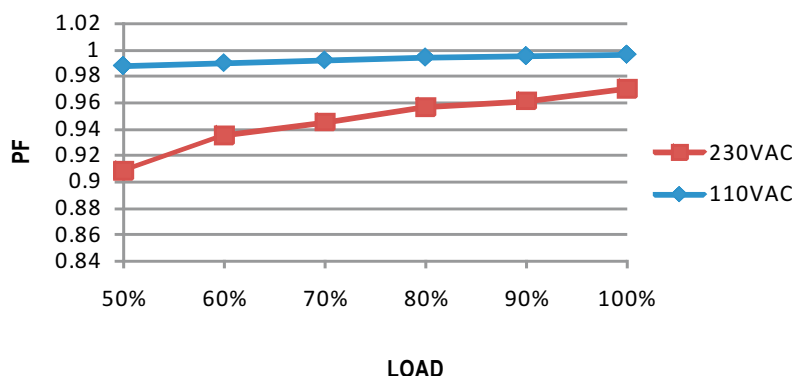
## Static Characteristics



## Power Factor Characteristic

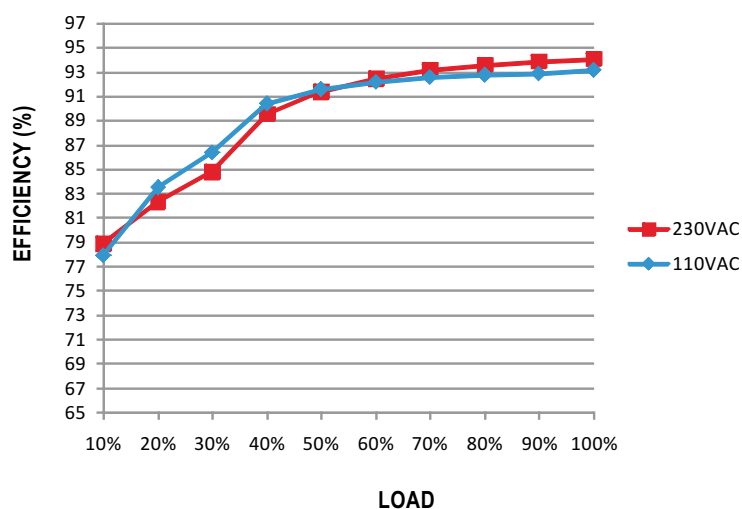
Power factor will be higher than 0.9 when output loading is 50% or higher.

### Constant Current Mode



## EFFICIENCY vs LOAD (48V Model)

HLG-120H series possess superior working efficiency that up to 93.5% can be reached in field applications.

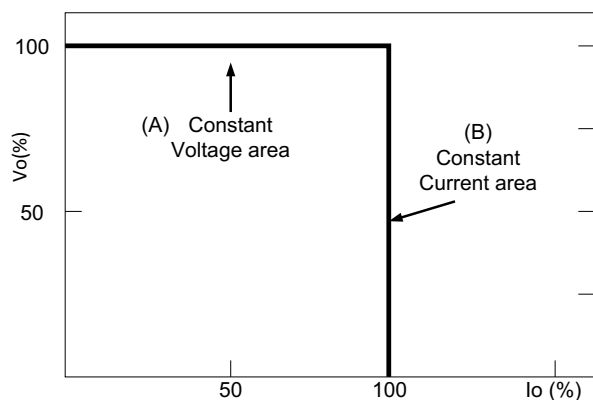


## DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".

A typical LED power supply may either work in "constant voltage mode (CV)" or constant current mode (CC)" to drive the LEDs.

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

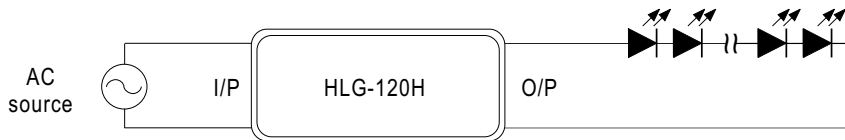


Typical LED power supply I-V curve

## ◎ 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.

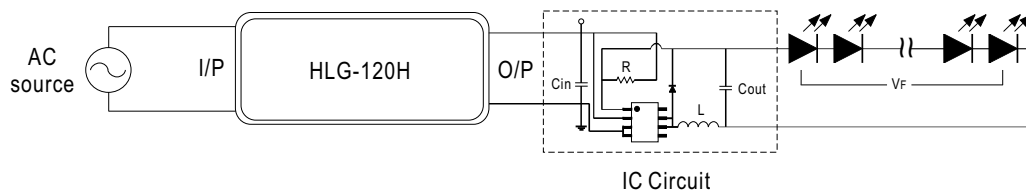


## ◎ With LED driver :

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:

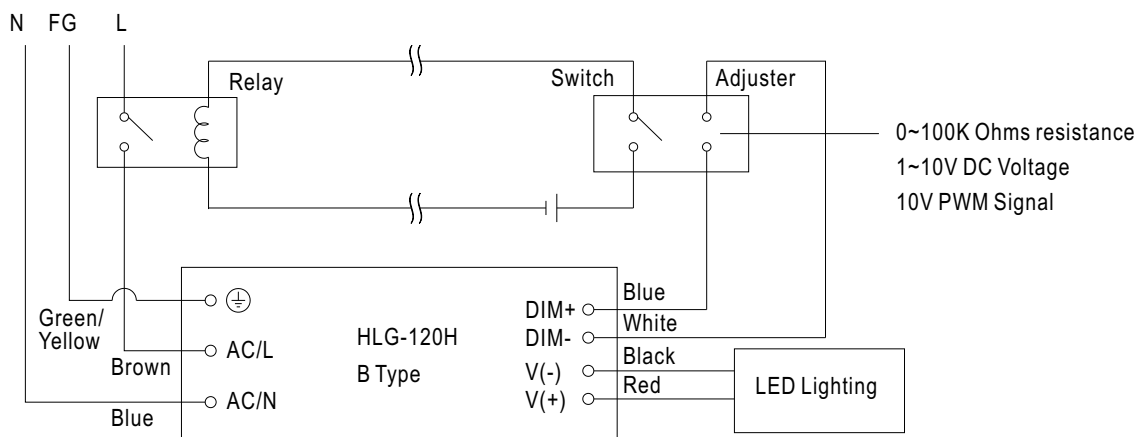
1. Output voltage of PSU must be higher than total forward voltage of series connecting LEDs by 3V minimum.
2. Input capacitor ( $C_{in}$ ) of LED driver circuit should use 47uF ~ 100uF (typ.) of rating depends on the operating frequency of the LED driver.  
The higher the operating frequency is used, the smaller value of  $C_{in}$  should be chosen, and vice versa.
3. Do not use B type with LED driver.



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

Using the built-in dimming function on B-type model can't turn the lighting fixture totally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.

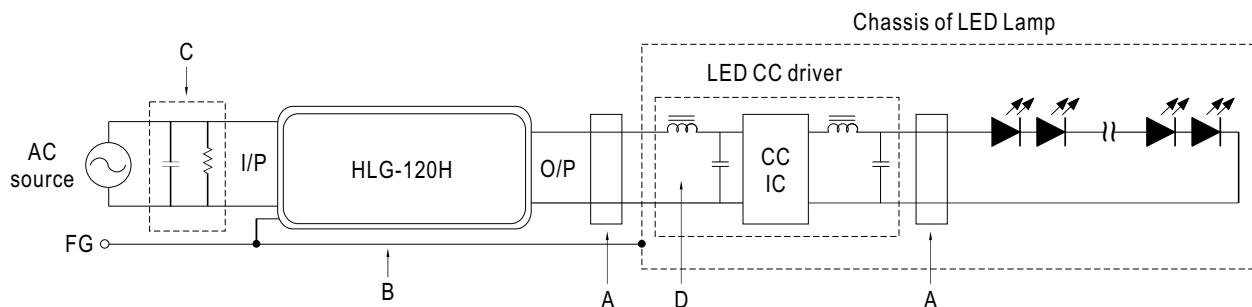
## ◎ Dimming connection diagram for turning the lighting fixture ON/OFF :



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

1. Output constant current level can be adjusted through output cable by connecting a resistor or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.
2. The LED lighting fixture can be turned ON/OFF by the switch.

## EMI DEBUG SUGGESTION

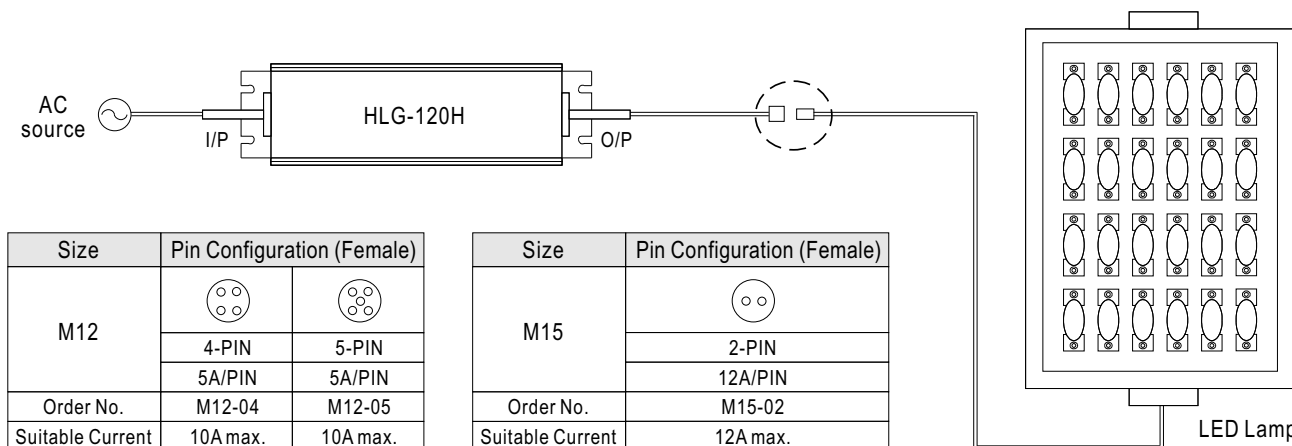


- A. Add a common mode ferrite choke on output wires to reduce the common emission between 10M ~ 300MHz per lighting EMI regulation.
- B. Chassis of LED lamp and chassis of HLG-120H or the FG wire should be connected to the safety ground to reduce the EMI noise, including the conduction and radiation 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-120H to operate in dry/wet/damp or outdoor environment.



### Cable Joiner

