


**IP65 IP67**


(for 42V, 48V, 54V only)



(us (except for 42V, 48V, 54V))



## Features

- Wide input range 180 ~ 528VAC
- Constant Voltage + Constant Current mode output
- Metal housing with Class I design
- Built-in active PFC function
- IP67 / IP65 rating for indoor or outdoor installations
- Function options: output adjustable via potentiometer; 3 in 1 dimming (dim-to-off); Timer dimming
- Typical lifetime > 50,000 hours
- 5 years warranty

## Applications

- LED street lighting
- LED high-bay lighting
- Parking space lighting
- LED fishing lamp
- LED greenhouse lighting
- Type "HL" for use in Class I, Division 2 hazardous (Classified) location.

## Description

HVG-100 series is a 100W AC/DC LED driver featuring the dual mode constant voltage and constant current output. HVG-100 operates from 180~528VAC and offers models with different rated voltage ranging between 15V and 54V. Thanks to the high efficiency up to 91%, with the fanless design, the entire series is able to operate for -40°C ~ +90°C case temperature under free air convection. The design of metal housing and IP67/IP65 ingress protection level allows this series to fit both indoor and outdoor applications. HVG-100 is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system.

## Model Encoding

**HVG - 100 - 20 A**

Function options

Rated output voltage (15/20/24/30/36/42/48/54V)

Rated wattage

Series name

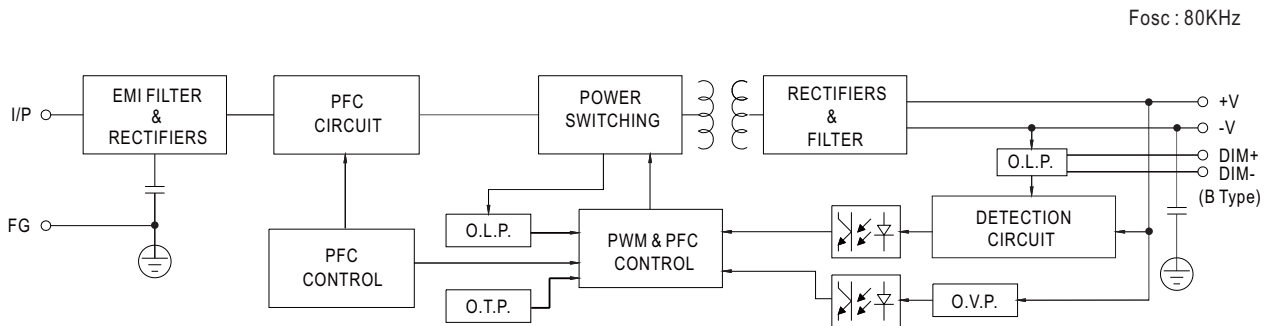
| Type | IP Level | Function                                                         | Note       |
|------|----------|------------------------------------------------------------------|------------|
| A    | IP65     | Io and Vo adjustable through built-in potentiometer.             | In Stock   |
| B    | IP67     | 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance) | In Stock   |
| D    | IP67     | Built-in Smart timer dimming function by user request.           | By request |



## SPECIFICATION

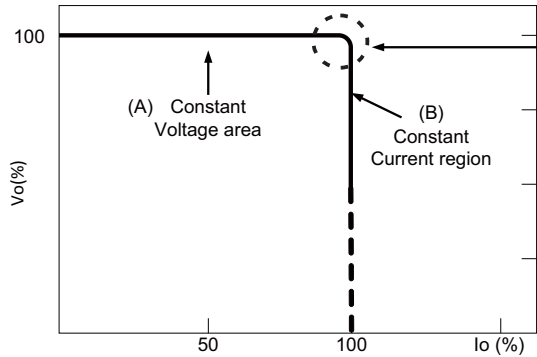
| MODEL        |                                               | HVG-100-15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | HVG-100-20  | HVG-100-24 | HVG-100-30  | HVG-100-36   | HVG-100-42   | HVG-100-48 | HVG-100-54   |
|--------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|-------------|--------------|--------------|------------|--------------|
| OUTPUT       | DC VOLTAGE                                    | 15V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20V         | 24V        | 30V         | 36V          | 42V          | 48V        | 54V          |
|              | CONSTANT CURRENT REGION <small>Note.4</small> | 9~15V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10~20V      | 12~24V     | 15~30V      | 18~36V       | 21~42V       | 24~48V     | 27~54V       |
|              | RATED CURRENT                                 | 5A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4.8A        | 4A         | 3.2A        | 2.65A        | 2.28A        | 2A         | 1.77A        |
|              | RATED POWER                                   | 75W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 96W         | 96W        | 96W         | 95.4W        | 95.76W       | 96W        | 95.58W       |
|              | RIPPLE & NOISE (max.) <small>Note.2</small>   | 150mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 150mVp-p    | 150mVp-p   | 200mVp-p    | 200mVp-p     | 200mVp-p     | 200mVp-p   | 200mVp-p     |
|              | VOLTAGE ADJ. RANGE                            | Adjustable for A-Type only (via the built-in potentiometer)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |            |             |              |              |            |              |
|              |                                               | 13.5 ~ 17V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 17 ~ 22V    | 22 ~ 27V   | 27 ~ 33V    | 33 ~ 40V     | 38 ~ 46V     | 43 ~ 53V   | 49 ~ 58V     |
|              | CURRENT ADJ. RANGE                            | Adjustable for A-Type only (via the built-in potentiometer)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |            |             |              |              |            |              |
|              |                                               | 2.75 ~ 5A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2.64 ~ 4.8A | 2.2 ~ 4A   | 1.76 ~ 3.2A | 1.45 ~ 2.65A | 1.25 ~ 2.28A | 1.1 ~ 2A   | 0.97 ~ 1.77A |
|              | VOLTAGE TOLERANCE <small>Note.3</small>       | ±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%        |
|              | LOAD REGULATION                               | ±1.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ±0.5%       | ±0.5%      | ±0.5%       | ±0.5%        | ±0.5%        | ±0.5%      | ±0.5%        |
| INPUT        | SETUP, RISE TIME <small>Note.6</small>        | 500ms, 80ms /230VAC, 347VAC, 480VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |            |             |              |              |            |              |
|              | HOLD UP TIME (Typ.)                           | 30ms/347VAC, 480VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |            |             |              |              |            |              |
|              | VOLTAGE RANGE <small>Note.5</small>           | 180 ~ 528VAC    254VDC ~ 747VDC<br>(Please refer to "STATIC CHARACTERISTIC" section)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |            |             |              |              |            |              |
|              | FREQUENCY RANGE                               | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |            |             |              |              |            |              |
|              | POWER FACTOR (Typ.)                           | PF ≥ 0.98/230VAC, PF ≥ 0.98/277VAC, PF ≥ 0.97/347VAC, PF ≥ 0.93/480VAC @full load<br>(Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |            |             |              |              |            |              |
|              | TOTAL HARMONIC DISTORTION                     | THD < 20% (@ load ≥ 50%/230VAC, 277VAC, 347VAC [ @ load ≥ 60% only for 15V model]; @ load ≥ 75%/480VAC)<br>(Please refer to "TOTAL HARMONIC DISTORTION (THD)" section)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |            |             |              |              |            |              |
|              | EFFICIENCY (Typ.)                             | 89%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 90%         | 91%        | 91%         | 90.5%        | 90.5%        | 91%        | 91%          |
|              | AC CURRENT (Typ.)                             | 0.38A / 347VAC    0.28A / 480VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |            |             |              |              |            |              |
|              | INRUSH CURRENT (Typ.)                         | COLD START 25A(twidth=900μs measured at 50% I <sub>peak</sub> ) at 480VAC; Per NEMA 410                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |            |             |              |              |            |              |
|              | MAX. No. of PSUs on 16A CIRCUIT BREAKER       | 5 units (circuit breaker of type B) / 8 units (circuit breaker of type C) at 480VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |            |             |              |              |            |              |
| PROTECTION   | LEAKAGE CURRENT                               | <0.75mA / 480VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |            |             |              |              |            |              |
|              | OVER CURRENT                                  | 95 ~ 108%<br>Constant current limiting, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |            |             |              |              |            |              |
|              | SHORT CIRCUIT                                 | Constant current limiting, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |            |             |              |              |            |              |
|              | OVER VOLTAGE                                  | 18 ~ 21V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 23 ~ 27V    | 28 ~ 34V   | 34 ~ 38V    | 41 ~ 46V     | 47 ~ 53V     | 54 ~ 60V   | 59 ~ 65V     |
|              | OVER TEMPERATURE                              | Shut down o/p voltage, recovers automatically after temperature goes down                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |            |             |              |              |            |              |
| ENVIRONMENT  | WORKING TEMP.                                 | T <sub>case</sub> = -40 ~ +90°C (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |            |             |              |              |            |              |
|              | MAX. CASE TEMP.                               | T <sub>case</sub> = +90°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |            |             |              |              |            |              |
|              | WORKING HUMIDITY                              | 20 ~ 95% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |            |             |              |              |            |              |
|              | STORAGE TEMP., HUMIDITY                       | -40 ~ +80°C, 10 ~ 95% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |            |             |              |              |            |              |
|              | TEMP. COEFFICIENT                             | ±0.03%/°C (0 ~ 60°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |            |             |              |              |            |              |
| SAFETY & EMC | VIBRATION                                     | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |            |             |              |              |            |              |
|              | SAFETY STANDARDS                              | UL8750(type"HL"), CSA C22.2 No. 250.0-08(except for 42V,48V, 54V), IP65 or IP67 approved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |            |             |              |              |            |              |
|              | WITHSTAND VOLTAGE                             | I/P-O/P:3.75KVAC    I/P-FG:2KVAC    O/P-FG:1.5KVAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |            |             |              |              |            |              |
|              | ISOLATION RESISTANCE                          | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |            |             |              |              |            |              |
|              | EMC EMISSION                                  | Compliance to EN55015, EN61000-3-2 Class C (@ load ≥ 50% load, @ load ≥ 60% only for 15V model) ; EN61000-3-3, FCC Part 15 Subpart B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |            |             |              |              |            |              |
| OTHERS       | EMC IMMUNITY                                  | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level (surge immunity Line-Earth 4KV, Line-Line 2KV)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |            |             |              |              |            |              |
|              | MTBF                                          | 174.9K hrs min.    MIL-HDBK-217F (25°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |            |             |              |              |            |              |
|              | DIMENSION                                     | 236*68*38.8mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |            |             |              |              |            |              |
| NOTE         | PACKING                                       | 1.18Kg; 12pcs/15.2Kg/0.74CUFT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |            |             |              |              |            |              |
|              |                                               | <ol style="list-style-type: none"><li>1. All parameters NOT specially mentioned are measured at 347VAC input, rated load and 25°C of ambient temperature.</li><li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li><li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li><li>4. Please refer to "DRIVING METHODS OF LED MODULE".</li><li>5. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.</li><li>6. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.</li><li>7. The driver is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.</li><li>8. This series meets the typical life expectancy of &gt;50,000 hours of operation when T<sub>case</sub>, particularly (T<sub>c</sub>) point (or T<sub>MP</sub>, per DLC), is about 80°C or less.</li><li>9. Please refer to the warranty statement on MEAN WELL's website at <a href="http://www.meanwell.com">http://www.meanwell.com</a></li></ol> |             |            |             |              |              |            |              |

### ■ Block Diagram



### ■ DRIVING METHODS OF LED MODULE

- ※ This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to drive the LEDs.

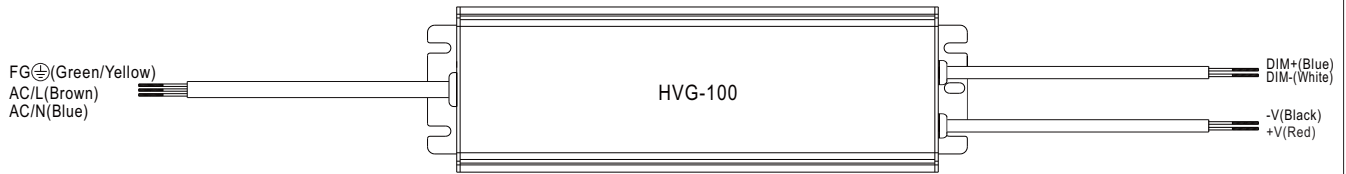


Typical output current normalized by rated current (%)

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.

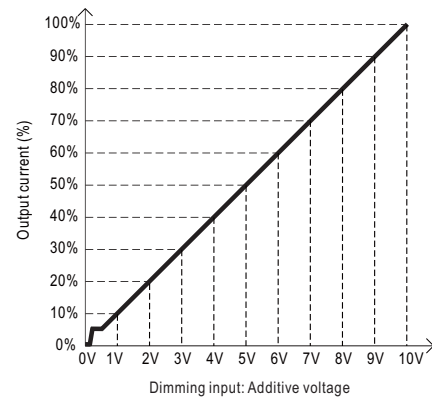
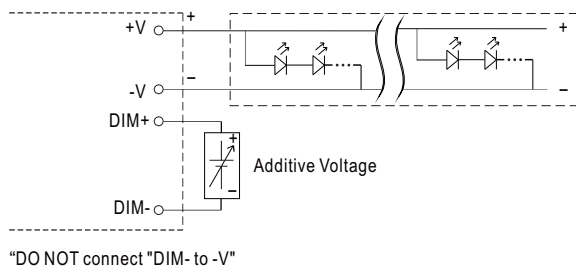
## DIMMING OPERATION



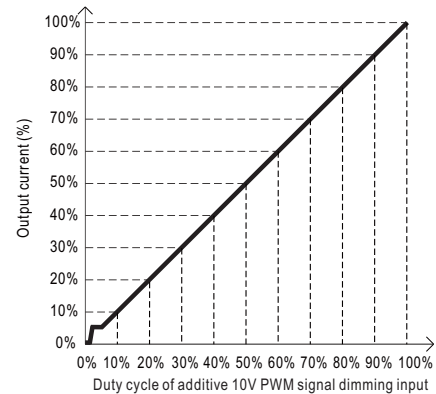
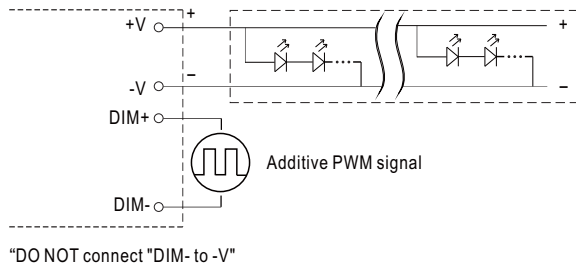
### ※ 3 in 1 dimming function (for B-Type)

- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 0 ~ 10VDC, or 10V PWM signal or resistance.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.
- Dimming source current from power supply: 100 $\mu$ A (typ.)

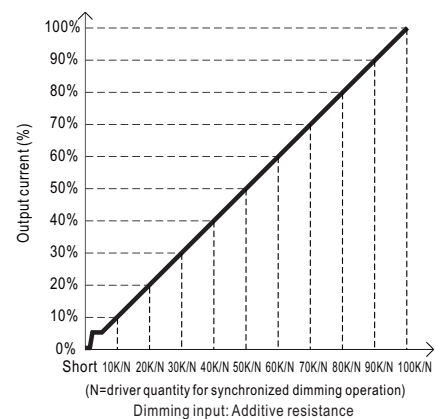
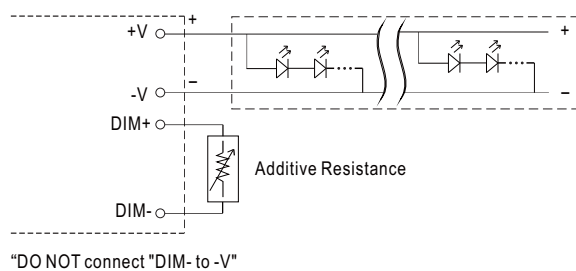
#### ◎ Applying additive 0 ~ 10VDC



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



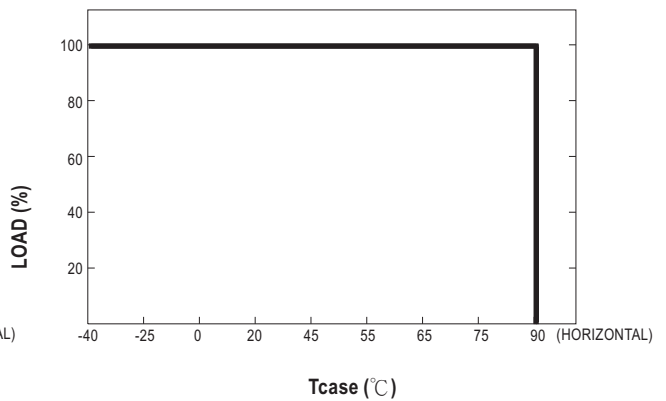
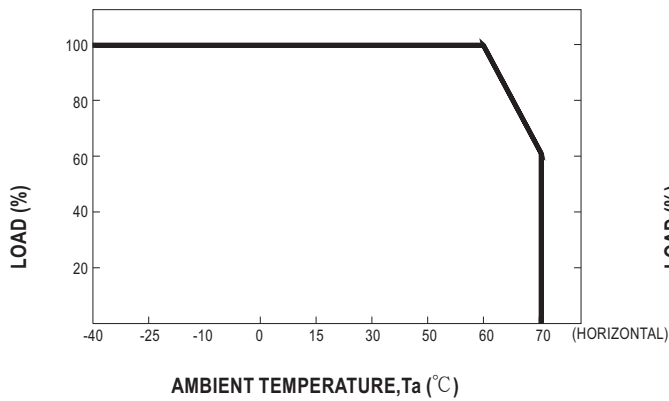
#### ◎ Applying additive resistance:



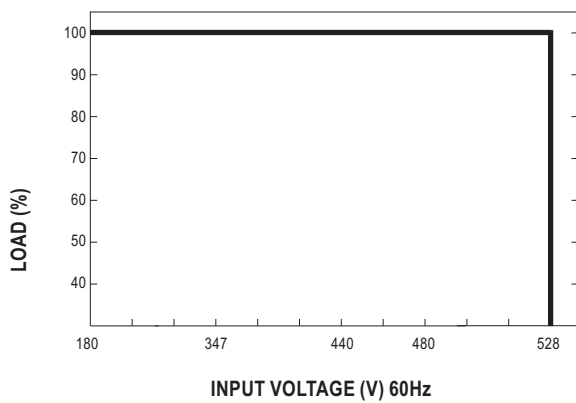
Note : 1. Min. dimming level is about 8% and the output current is not defined when 0% < I<sub>out</sub> < 8%.

2. The output current could drop down to 0% when dimming input is about 0k $\Omega$  or 0Vdc, or 10V PWM signal with 0% duty cycle.

### ■ OUTPUT LOAD vs TEMPERATURE

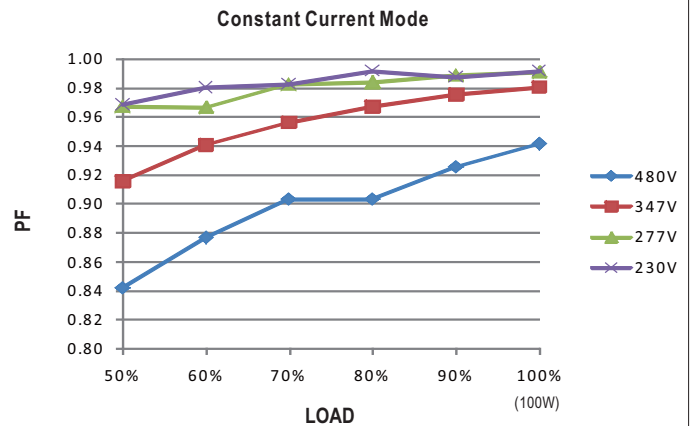


### ■ STATIC CHARACTERISTIC



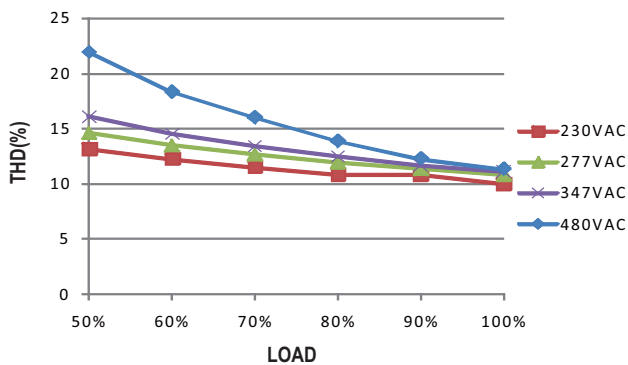
### ■ POWER FACTOR (PF) CHARACTERISTIC

※  $T_{case}$  at 80°C



### ■ TOTAL HARMONIC DISTORTION (THD)

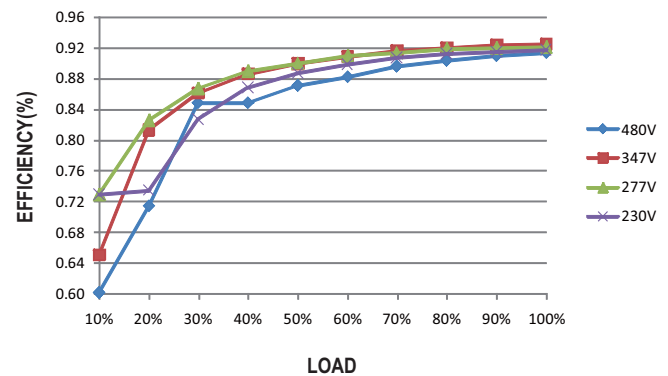
※ 48V Model,  $T_{case}$  at 80°C



### ■ EFFICIENCY vs LOAD

HVG-100 series possess superior working efficiency that up to 91% can be reached in field applications.

※ 48V Model,  $T_{case}$  at 80°C

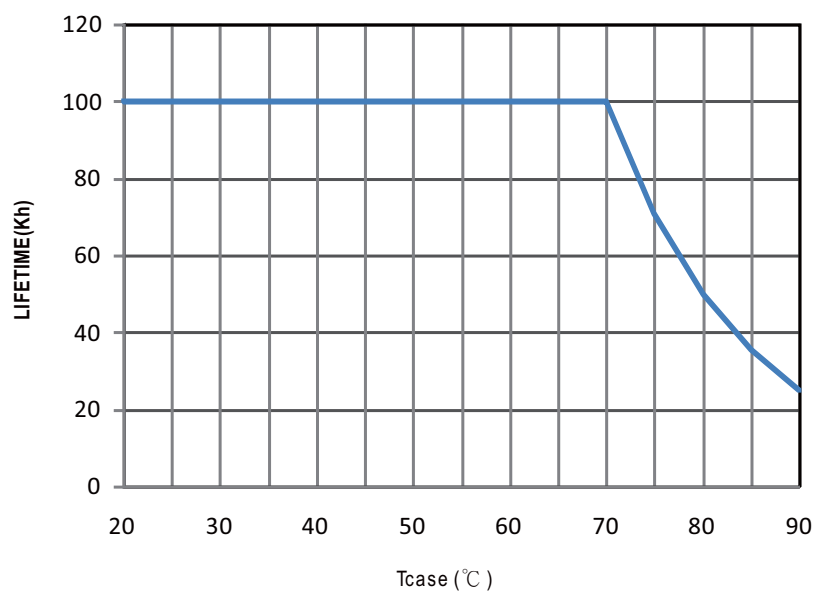




100W Constant Voltage + Constant Current LED Driver

**HVG-100** series

■ LIFE TIME

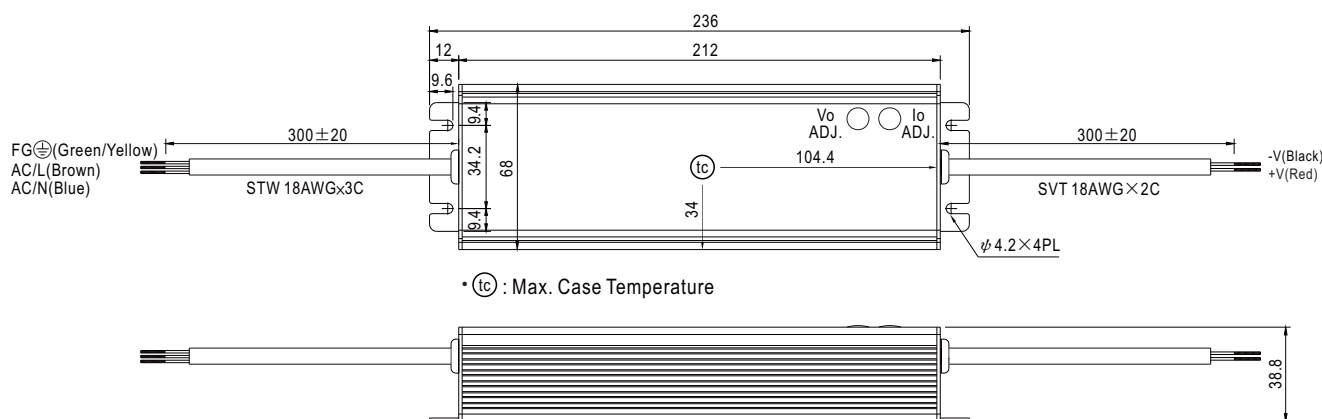


## MECHANICAL SPECIFICATION

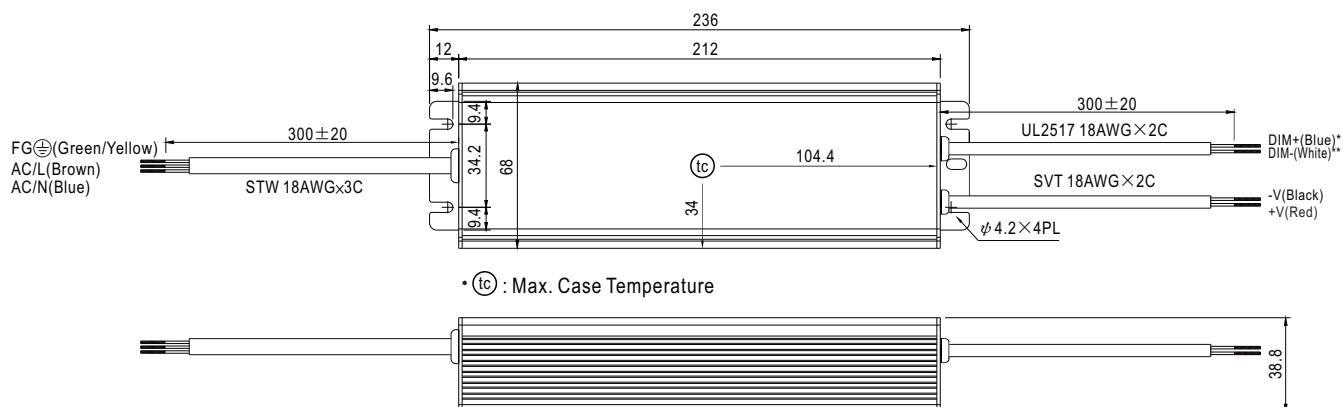
Case No. 994

Unit:mm

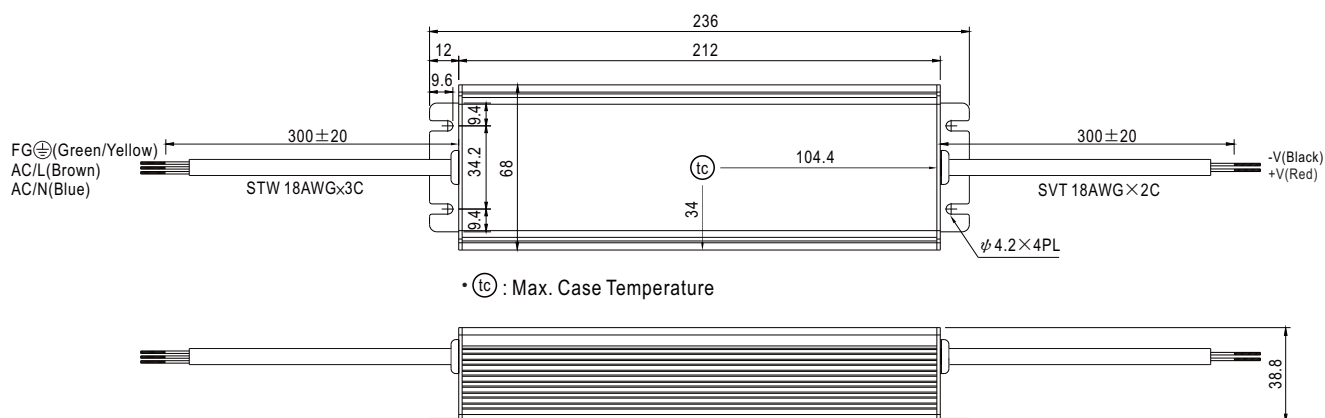
※ **A-Type**



※ B-Type



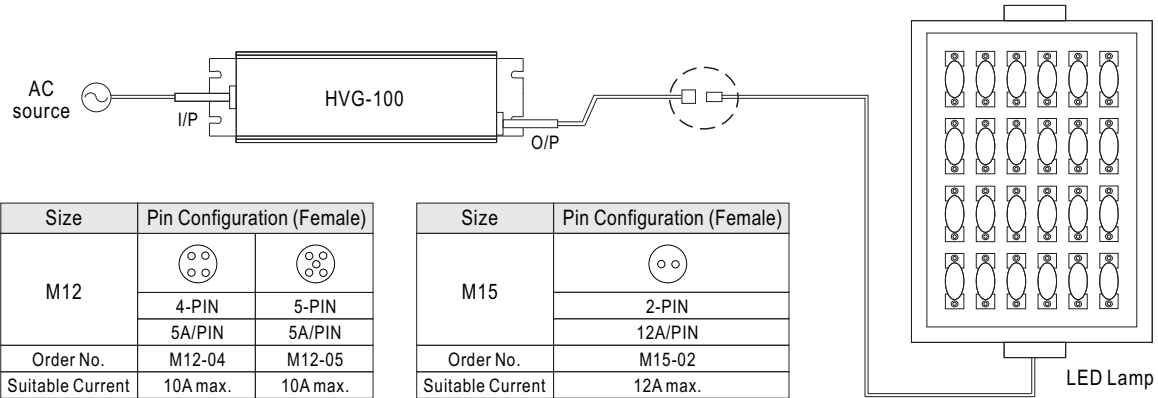
※ D-Type



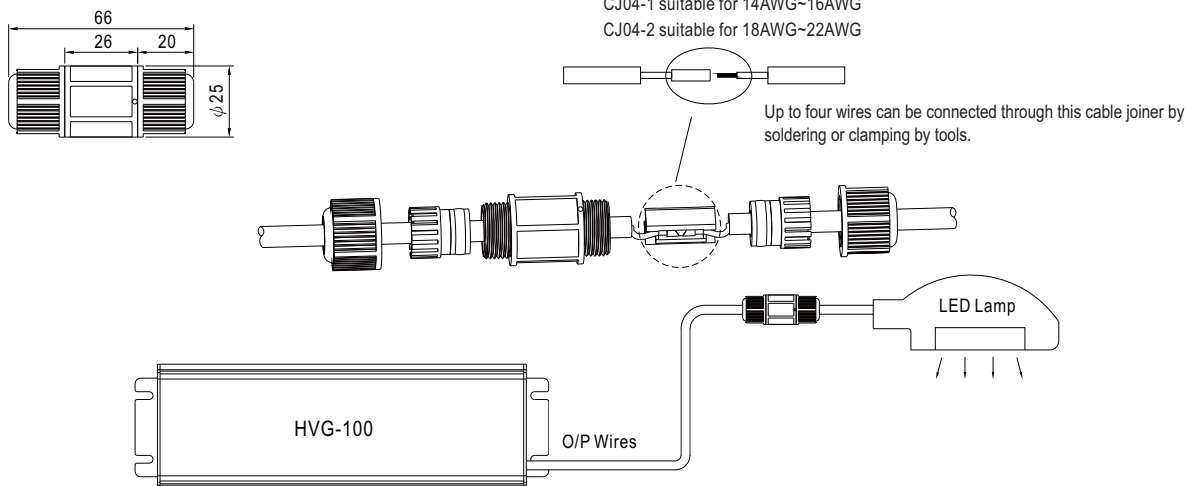
## ■ WATERPROOF CONNECTION

### ※ Waterproof connector

Waterproof connector can be assembled on the output cable of HVG-100 to operate in dry/wet/damp or outdoor environment.

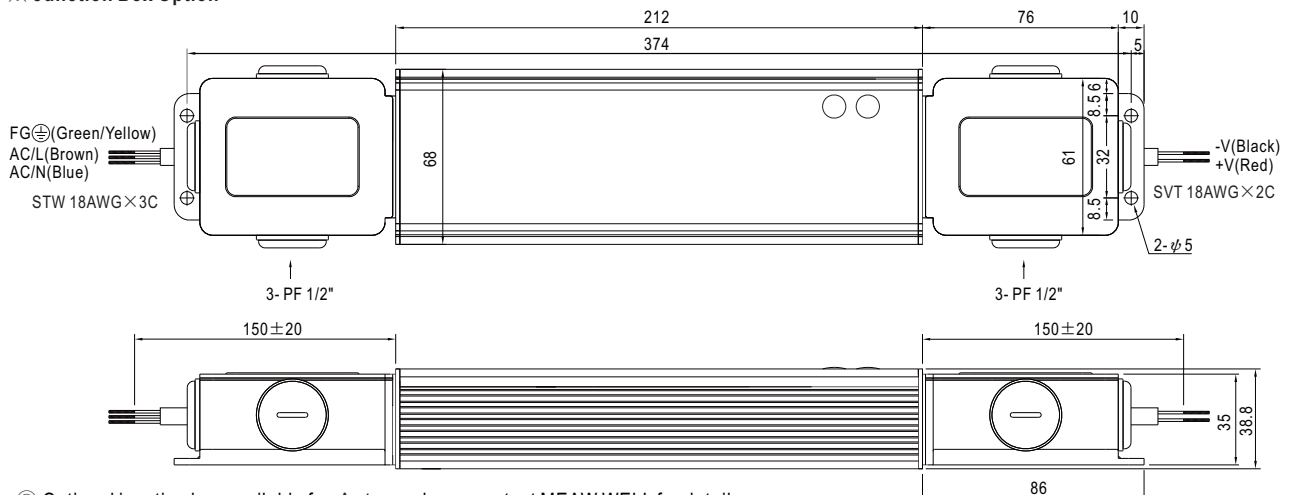


### ※ Cable Joiner



◎ CJ04 cable joiner can be purchased independently for user's own assembly.  
MEAN WELL order No. : CJ04-1, CJ04-2.

### ※ Junction Box Option



◎ Optional junction box available for A - type, please contact MEAN WELL for details.

## ■ INSTALLATION MANUAL

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