



## ■ Features

- Wide input range 180 ~ 528VAC
- Constant Voltage + Constant Current mode output
- Metal housing with Class I design
- Built-in active PFC function
- Class 2 power unit
- 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>50000 hours
- 5 years warranty

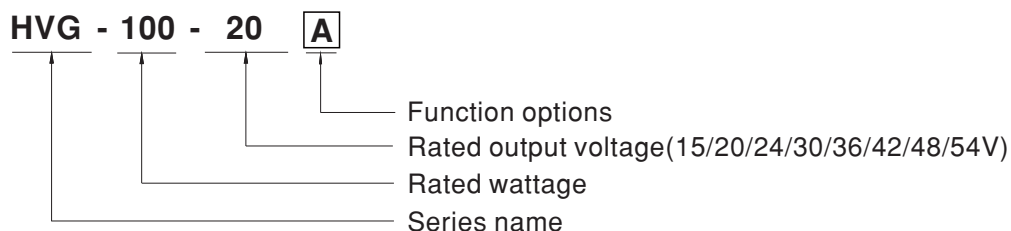
## ■ Applications

- 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



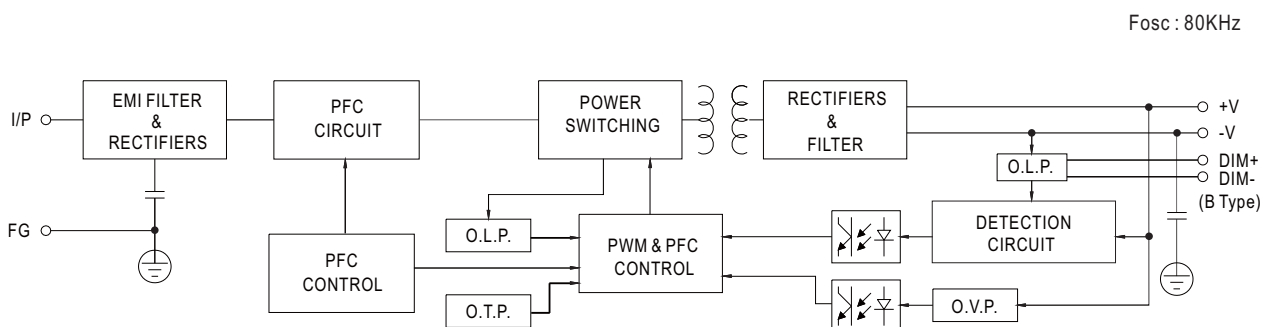
| Type | IP Level | Function                                                         | Note       |
|------|----------|------------------------------------------------------------------|------------|
| A    | IP65     | Io and Vo adjustable through built-in potentiometer.             | In Stock   |
| 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

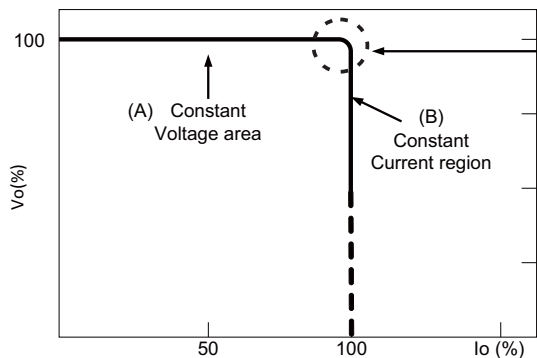
| MODEL                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 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%        |
| SETUP, RISE TIME <small>Note.6</small> | 500ms, 80ms /230VAC, 347VAC, 480VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                      |             |            |             |              |              |            |              |
| HOLD UP TIME (Typ.)                    | 30ms/347VAC, 480VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                      |             |            |             |              |              |            |              |
| INPUT                                  | 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% Ipeak) 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                                                                                  |             |            |             |              |              |            |              |
|                                        | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <0.75mA / 480VAC                                                                                                                                                     |             |            |             |              |              |            |              |
| PROTECTION                             | 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     |
|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Shut down o/p voltage with auto-recovery or re-power on to recovery                                                                                                  |             |            |             |              |              |            |              |
|                                        | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Shut down o/p voltage, recovers automatically after temperature goes down                                                                                            |             |            |             |              |              |            |              |
| ENVIRONMENT                            | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Tcase=-40 ~ +90℃ (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)                                                                                              |             |            |             |              |              |            |              |
|                                        | MAX. CASE TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Tcase=+90℃                                                                                                                                                           |             |            |             |              |              |            |              |
|                                        | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 20 ~ 95% RH non-condensing                                                                                                                                           |             |            |             |              |              |            |              |
|                                        | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -40 ~ +80℃, 10 ~ 95% RH                                                                                                                                              |             |            |             |              |              |            |              |
|                                        | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±0.03%/℃ (0 ~ 60℃)                                                                                                                                                   |             |            |             |              |              |            |              |
|                                        | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes                                                                                              |             |            |             |              |              |            |              |
| SAFETY & EMC                           | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | UL8750(type"HL"), CSA C22.2 No. 250.0-08, 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℃ / 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                                 |             |            |             |              |              |            |              |
|                                        | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level (surge immunity Line-Earth 4KV, Line-Line 2KV)                                                 |             |            |             |              |              |            |              |
| OTHERS                                 | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 174.9K hrs min.    MIL-HDBK-217F (25℃)                                                                                                                               |             |            |             |              |              |            |              |
|                                        | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 236*68*38.8mm (L*W*H)                                                                                                                                                |             |            |             |              |              |            |              |
|                                        | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1.18Kg; 12pcs/15.2Kg/0.74CUFT                                                                                                                                        |             |            |             |              |              |            |              |
| NOTE                                   | 1. All parameters NOT specially mentioned are measured at 347VAC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. Please refer to "DRIVING METHODS OF LED MODULE".<br>5. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.<br>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.<br>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.<br>8. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly (Tc) point (or TMP, per DLC), is about 80℃ or less.<br>9. Please refer to the warranty statement on MEAN WELL's website at <a href="http://www.meanwell.com">http://www.meanwell.com</a> |                                                                                                                                                                      |             |            |             |              |              |            |              |

## ■ 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.

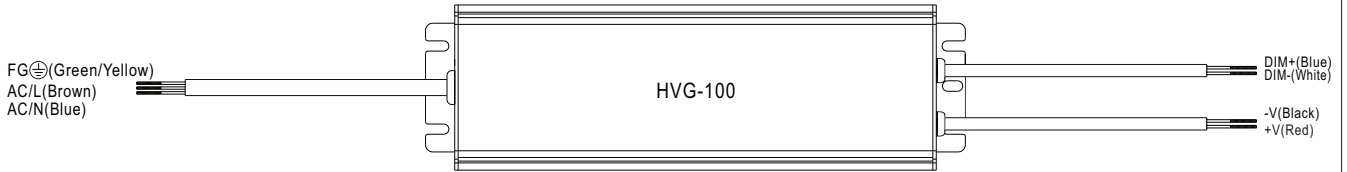


Typical output current normalized by rated current (%)

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.

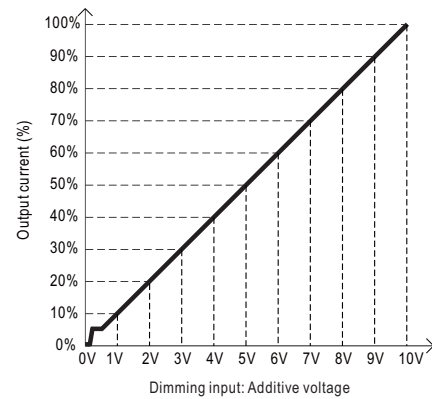
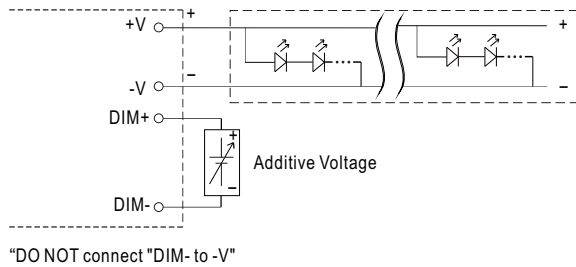
## DIMMING OPERATION



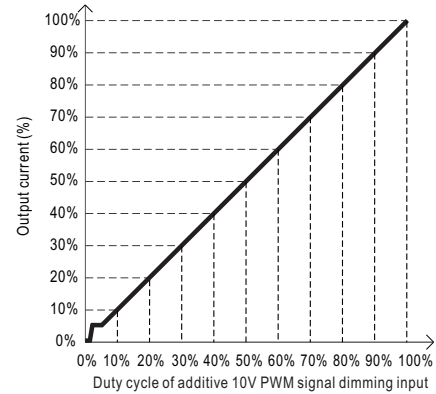
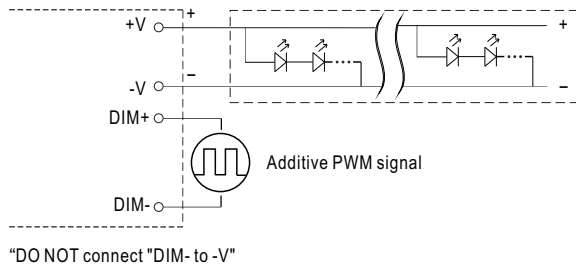
### ※ 3 in 1 dimming function (for B-Type)

- 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.)

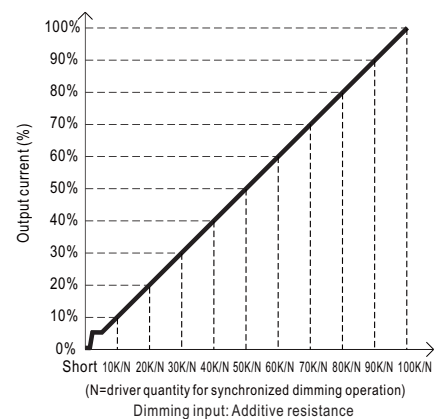
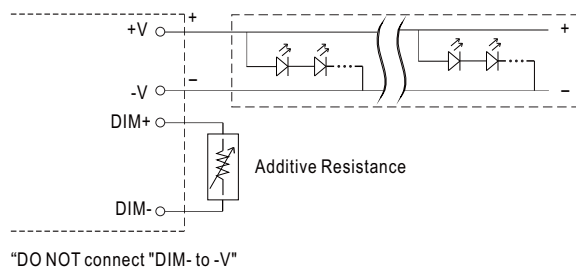
#### ◎ Applying additive 0 ~ 10VDC



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



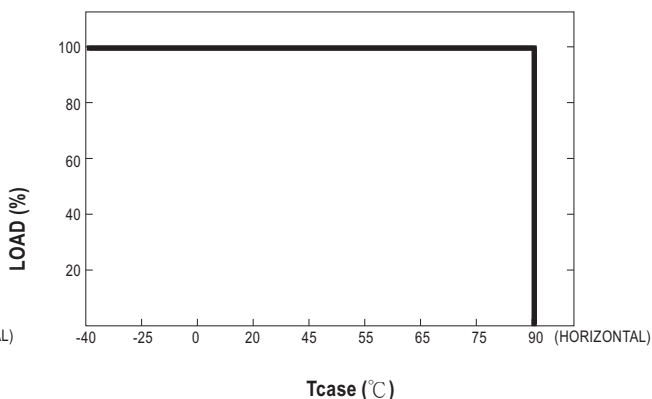
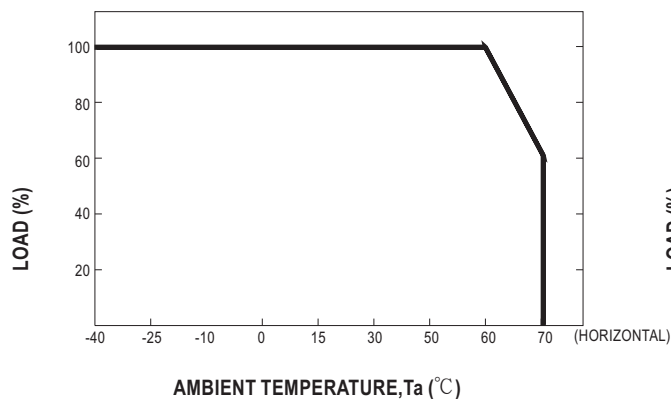
#### ◎ Applying additive resistance:



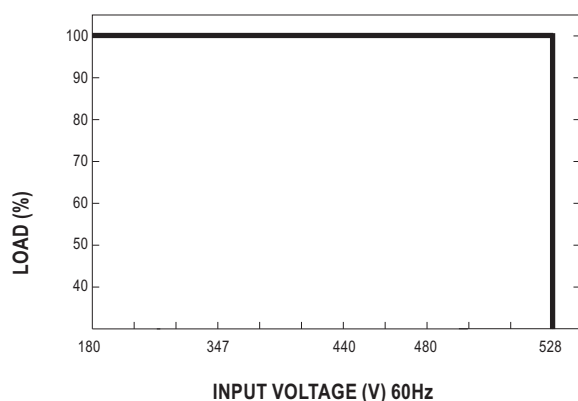
Note : 1. Min. dimming level is about 8% and the output current is not defined when 0% < I<sub>out</sub> < 8%.

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

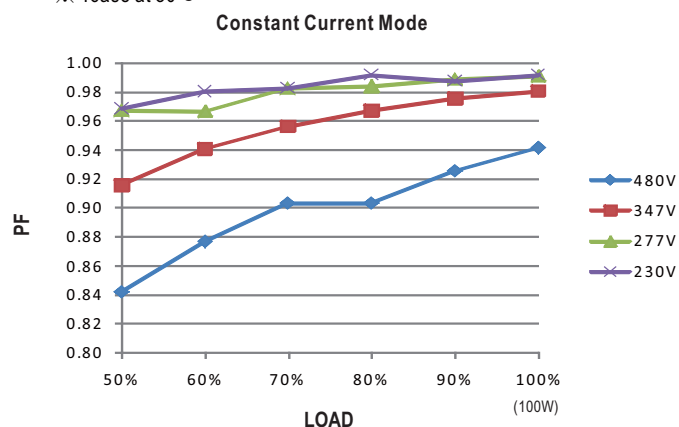


### ■ STATIC CHARACTERISTIC



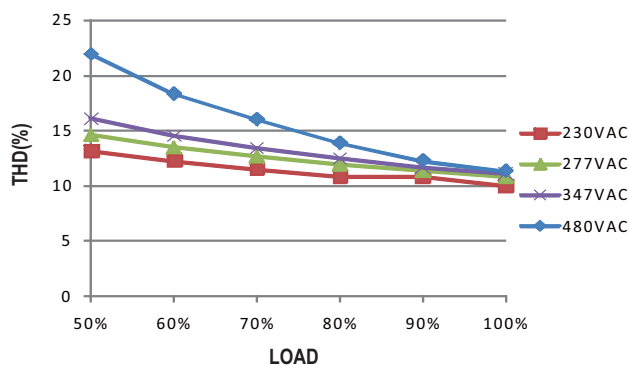
### ■ POWER FACTOR (PF) CHARACTERISTIC

※  $T_{case}$  at 80°C



### ■ TOTAL HARMONIC DISTORTION (THD)

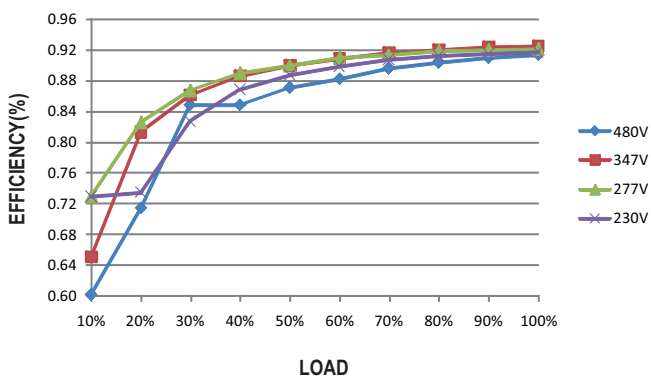
※ 48V Model,  $T_{case}$  at 80°C



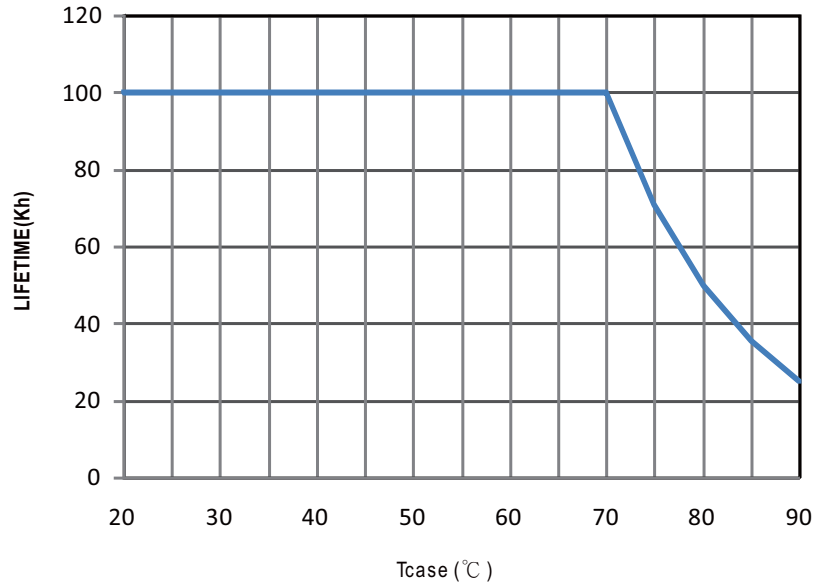
### ■ EFFICIENCY vs LOAD

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

※ 48V Model,  $T_{case}$  at 80°C



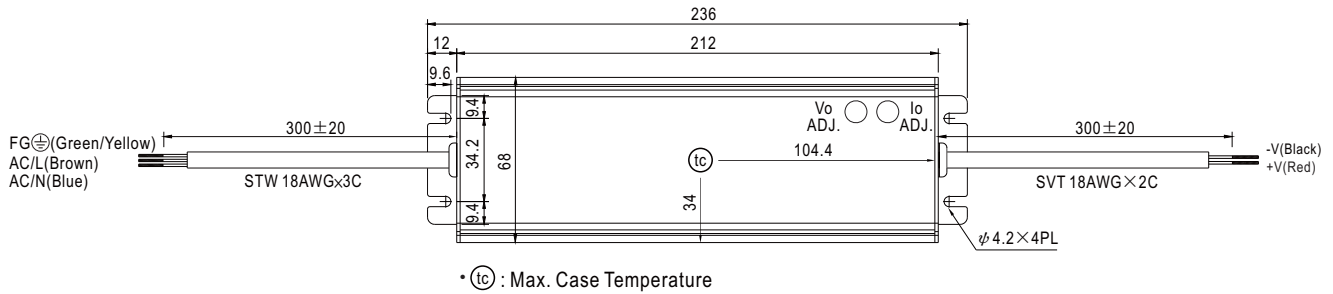
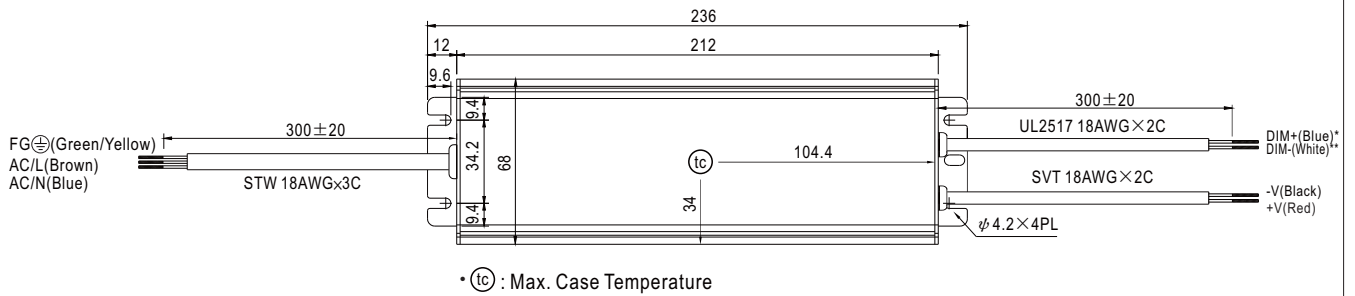
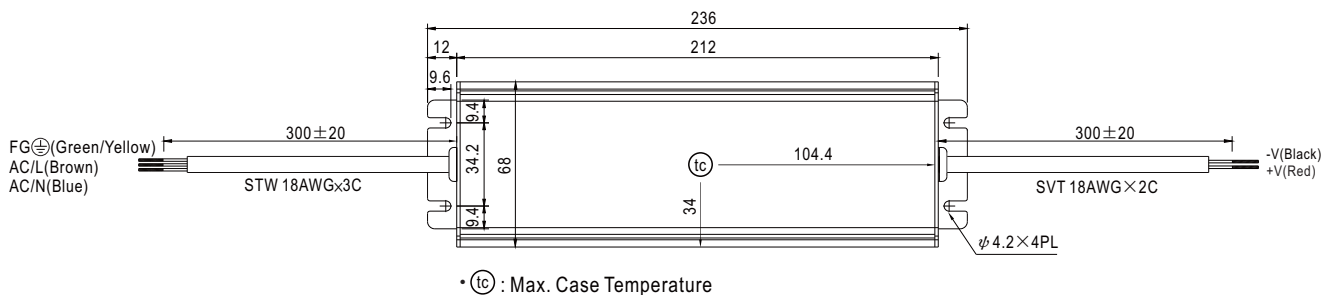
■ LIFE TIME



**MECHANICAL SPECIFICATION**

Case No. 994

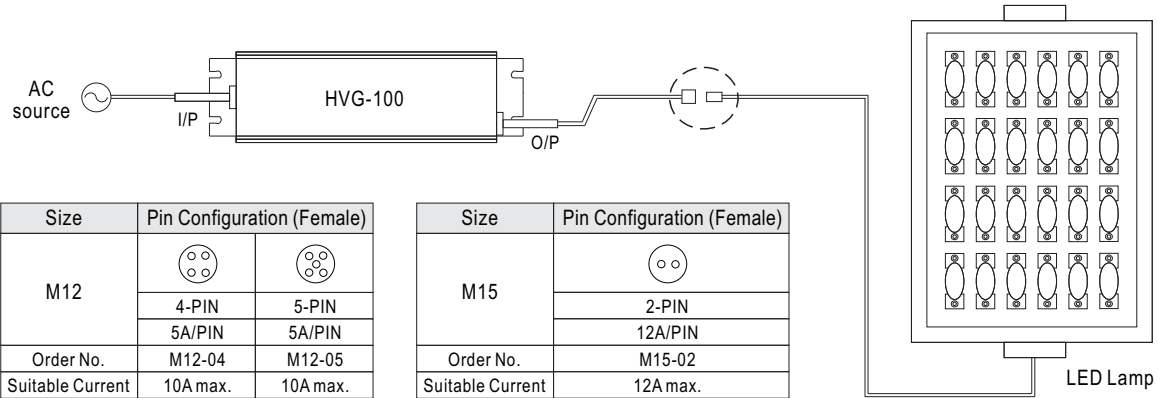
Unit:mm

**※ A-Type**

**※ B-Type**

**※ D-Type**


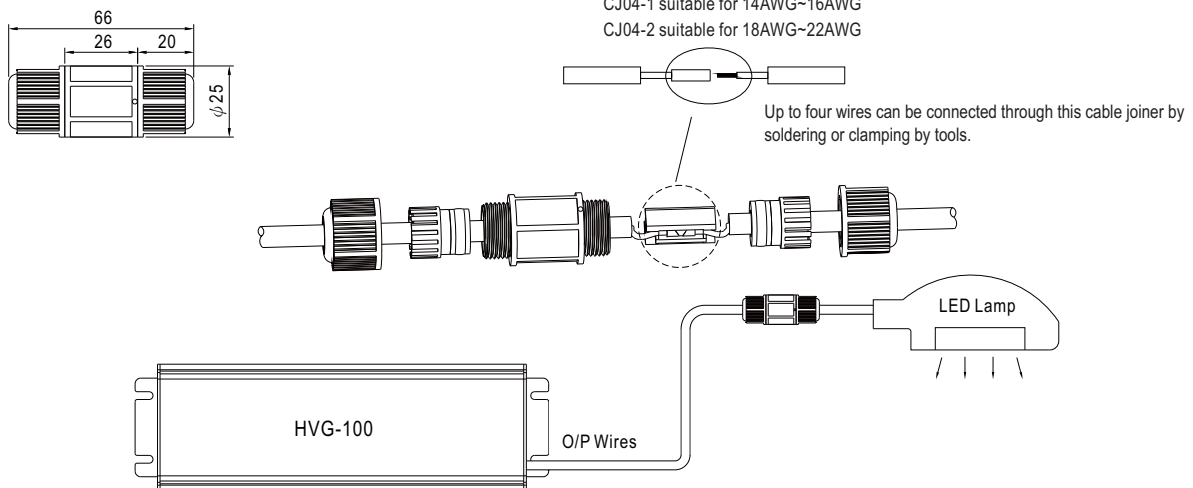
## ■ WATERPROOF CONNECTION

### ※ Waterproof connector

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

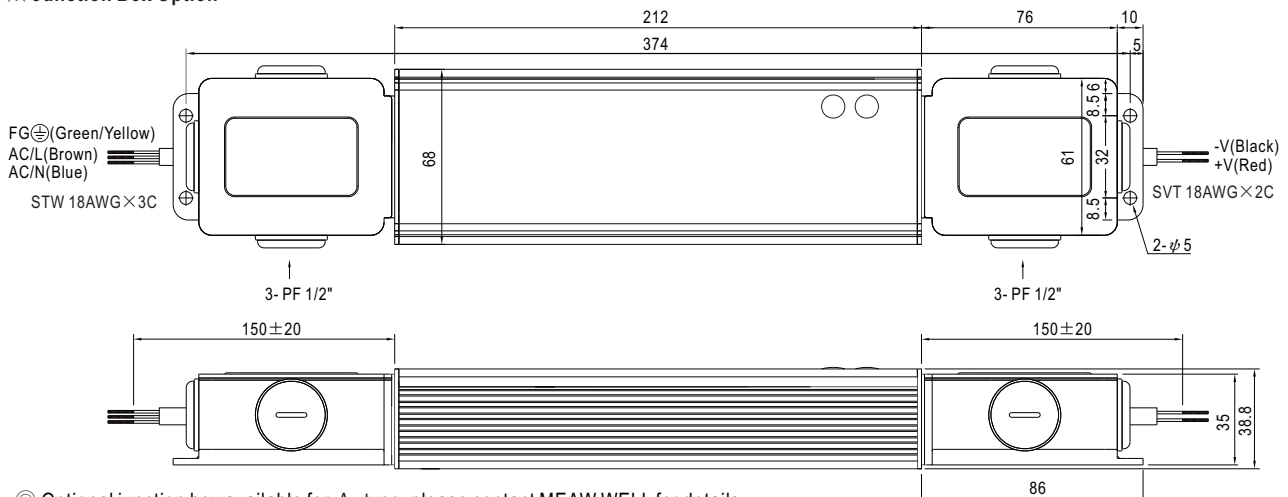


### ※ Cable Joiner



◎ 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/manual.html>