



E-Star Power Development Co., Ltd. (E-STAR)
 1F., No.40, Juren Ln., Sec. 2, Sanmin Rd., Banciao Dist., New Taipei City
 22069, Taiwan (R.O.C.)
 Phone : 886-2-2957 5580 Fax : 886-2-2957 7473

320W LED Driver power supply < HLG-320H



■ Features

- 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
- Typical lifetime > 62000 hours
- 7 years warranty

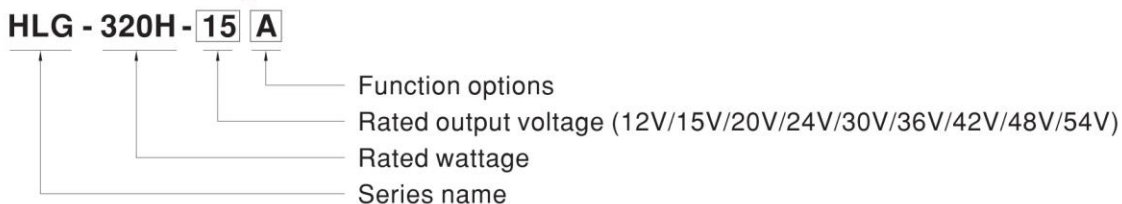
■ Applications

- 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

HLG-320H series is a 320W AC/DC LED driver featuring the dual mode constant voltage and constant current output. HLG-320H operates from 90 ~ 305VAC and offers models with different rated voltage ranging between 12V and 54V. Thanks to the high efficiency up to 94%, 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. HLG-320H 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 |
|-------|----------|--|------------|
| Blank | IP67 | Io and Vo fixed | In Stock |
| A | IP65 | Io and Vo adjustable through built-in potentiometer | In Stock |
| B | IP67 | 3 in 1 dimming function (1~10VDC, 10V PWM signal and resistance) | In Stock |
| C | ----- | Terminal block for I/O connection. Output voltage and constant current level can be adjusted through internal potentiometer. | By request |
| D | IP67 | Timer dimming function, contact MEAN WELL for details(safety pending). | By request |



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SPECIFICATION

| MODEL | HLG-320H-12 | HLG-320H-15 | HLG-320H-20 | HLG-320H-24 | HLG-320H-30 | HLG-320H-36 | HLG-320H-42 | HLG-320H-48 | HLG-320H-54 | |
|-------------------------|---|--|--------------------|----------------|---------------|----------------|-------------|-------------|-------------|--------------|
| OUTPUT | DC VOLTAGE | 12V | 15V | 20V | 24V | 30V | 36V | 42V | 48V | 54V |
| | CONSTANT CURRENT REGION Note.4 | 6 ~ 12V | 7.5 ~ 15V | 10 ~ 20V | 12 ~ 24V | 15 ~ 30V | 18 ~ 36V | 21 ~ 42V | 24 ~ 48V | 27 ~ 54V |
| | RATED CURRENT | 22A | 19A | 15A | 13.34A | 10.7A | 8.9A | 7.65A | 6.7A | 5.95A |
| | RATED POWER | 264W | 285W | 300W | 320.16W | 321W | 320.4W | 321.3W | 321.6W | 321.3W |
| | RIPPLE & NOISE (max.) Note.2 | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 250mVp-p | 250mVp-p | 250mVp-p | 350mVp-p |
| | VOLTAGE ADJ. RANGE | Adjustable for A/C-Type only (via built-in potentiometer) | | | | | | | | |
| | | 10.8 ~ 13.5V | 13.5 ~ 17V | 17 ~ 22V | 21 ~ 26V | 26 ~ 32V | 32 ~ 39V | 38 ~ 45V | 43 ~ 52V | 49 ~ 58V |
| | CURRENT ADJ. RANGE | Adjustable for A/C-Type only (via built-in potentiometer) | | | | | | | | |
| | | 11 ~ 22A | 9.5 ~ 19A | 7.5 ~ 15A | 6.67 ~ 13.34A | 5.35 ~ 10.7A | 4.45 ~ 8.9A | 3.8 ~ 7.65A | 3.35 ~ 6.7A | 2.97 ~ 5.95A |
| | VOLTAGE TOLERANCE Note.3 | ± 3.0% | ± 2.0% | ± 1.5% | ± 1.0% | ± 1.0% | ± 1.0% | ± 1.0% | ± 1.0% | ± 1.0% |
| | LINE REGULATION | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% |
| LOAD REGULATION | ± 2.0% | ± 1.5% | ± 1.0% | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% | |
| SETUP, RISE TIME Note.6 | 2500ms, 80ms/115VAC | | 500ms, 80ms/230VAC | | | | | | | |
| HOLD UP TIME (Typ.) | 15ms / 115VAC, 230VAC | | | | | | | | | |
| INPUT | VOLTAGE RANGE Note.5 | 90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section) | | | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | | | |
| | POWER FACTOR (Typ.) | PF ≥ 0.98/115VAC, PF ≥ 0.95/230VAC, PF ≥ 0.94/277VAC @ full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section) | | | | | | | | |
| | TOTAL HARMONIC DISTORTION | THD < 20% (@ load ≥ 50% / 115VAC, 230VAC; @ load ≥ 75% / 277VAC) (Please refer to "TOTAL HARMONIC DISTORTION (THD)" section) | | | | | | | | |
| | EFFICIENCY (Typ.) (230Vac) | 91% | 92.5% | 93.5% | 94% | 94% | 94.5% | 95% | 95% | 95% |
| | EFFICIENCY (Typ.) (277Vac) | 91.5% | 93% | 94% | 94.5% | 94.5% | 95% | 95% | 95% | 95% |
| | AC CURRENT (Typ.) | 3.5A / 115VAC | | 1.65A / 230VAC | | 1.45A / 277VAC | | | | |
| | INRUSH CURRENT(Typ.) | COLD START 70A(twidth=1010μs measured at 50% Ipeak) at 230VAC; Per NEMA 410 | | | | | | | | |
| | MAX. No. of PSUs on 16A CIRCUIT BREAKER | 1 unit (circuit breaker of type B) / 2 units (circuit breaker of type C) at 230VAC | | | | | | | | |
| LEAKAGE CURRENT | <0.75mA / 277VAC | | | | | | | | | |
| PROTECTION | OVER CURRENT Note.4 | 95 ~ 108% Constant current limiting, recovers automatically after fault condition is removed | | | | | | | | |
| | SHORT CIRCUIT | Hiccup mode, recovers automatically after fault condition is removed | | | | | | | | |
| | OVER VOLTAGE | 14 ~ 17V | 17.5 ~ 21V | 22.5 ~ 27V | 27 ~ 33V | 33 ~ 37V | 40 ~ 46V | 46.5 ~ 53V | 53.5 ~ 60V | 59 ~ 65V |
| | OVER TEMPERATURE | Shut down and latch off o/p voltage, re-power on to recover | | | | | | | | |
| ENVIRONMENT | WORKING TEMP. | Tcase= -40 ~ +90°C (Please refer to "OUTPUT LOAD vs TEMPERATURE" section) | | | | | | | | |
| | MAX. CASE TEMP. | Tcase= +90°C | | | | | | | | |
| | WORKING HUMIDITY | 20 ~ 95% RH non-condensing | | | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +80°C, 10 ~ 95% RH | | | | | | | | |
| | TEMP. COEFFICIENT | ± 0.03%/°C (0 ~ 50°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; TUV EN61347-1, EN61347-2-13 independent; GB19510.1, GB19510.14; IP65 or IP67 (except for HLG-320H C-type); J61347-1, J61347-2-13 (except for HLG-320H C-type) approved | | | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC | | | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH | | | | | | | | |
| | EMC EMISSION | Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (@ load ≥ 50%) ; EN61000-3-3, EN61000-3-3, GB17743 and GB17625.1 | | | | | | | | |
| OTHERS | EMC IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge immunity Line-Earth 4KV, Line-Line 2KV) | | | | | | | | |
| | MTBF | 157.1K hrs min. MIL-HDBK-217F (25°C) | | | | | | | | |
| | DIMENSION | 252*90*43.8mm (L*W*H) | | | | | | | | |
| NOTE | PACKING | 1.88Kg; 8pcs/16Kg/0.92CUFT | | | | | | | | |
| | | <ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. Tolerance : includes set up tolerance, line regulation and load regulation. Please refer to "DRIVING METHODS OF LED MODULE". De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details. 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. 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. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED driver can only be used behind a switch without permanently connected to the mains. This series meets the typical life expectancy of >62,000 hours of operation when Tcase, particularly (Tc) point (or TMP, per DLC), is about 75°C or less. | | | | | | | | |



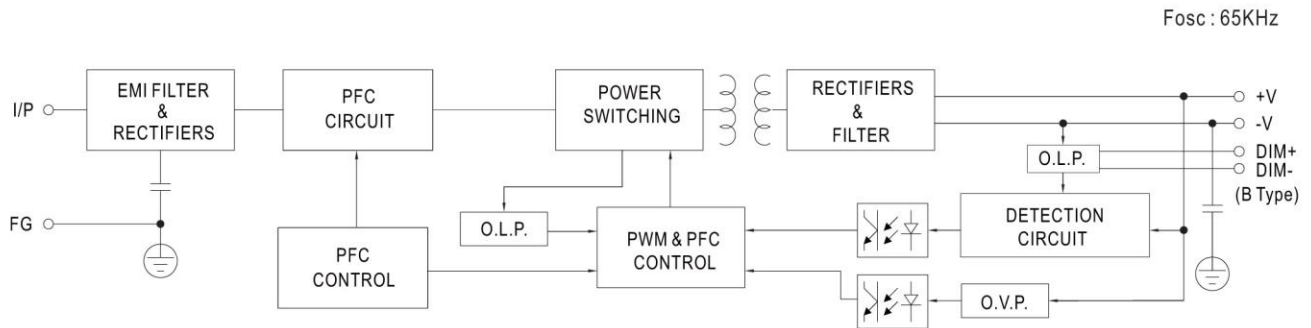
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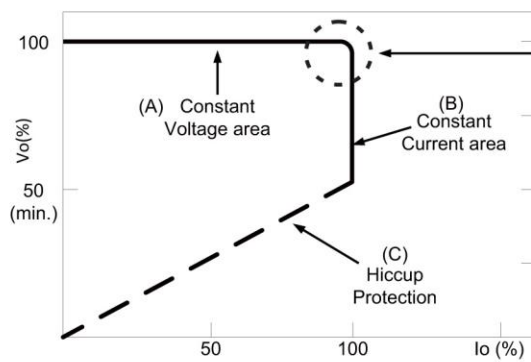
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BLOCK DIAGRAM



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.

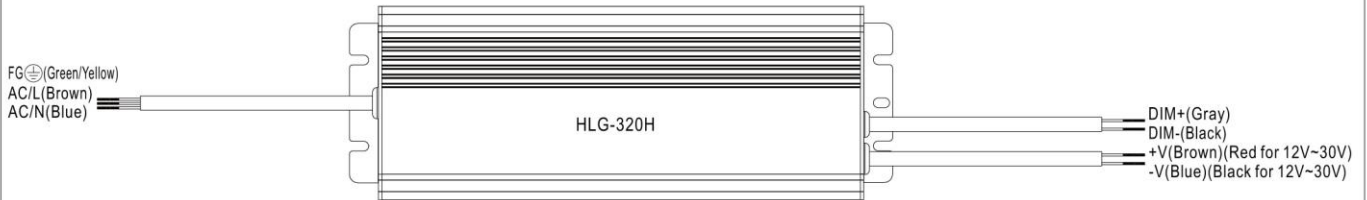


Typical output current normalized by rated current (%)

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

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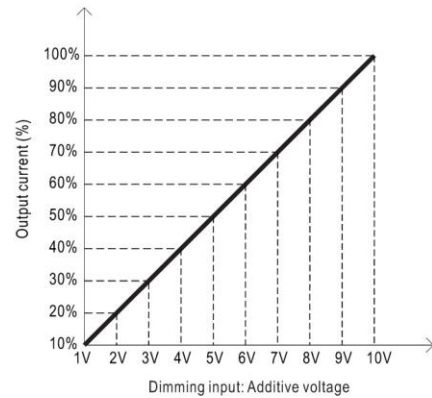
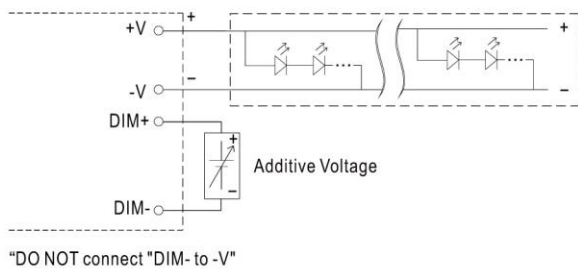
■ DIMMING OPERATION



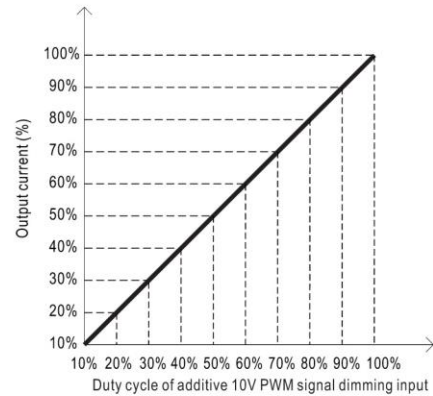
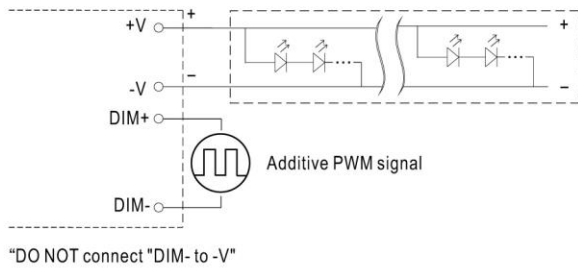
※ **3 in 1 dimming function (for B-Type)**

- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 1 ~ 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: 100μA (typ.)

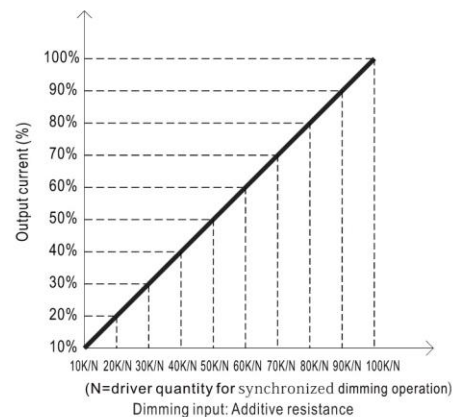
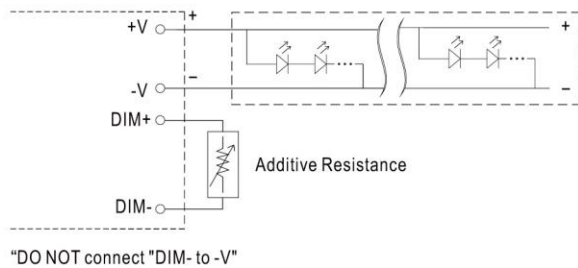
◎ Applying additive 1 ~ 10VDC



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



◎ Applying additive resistance:





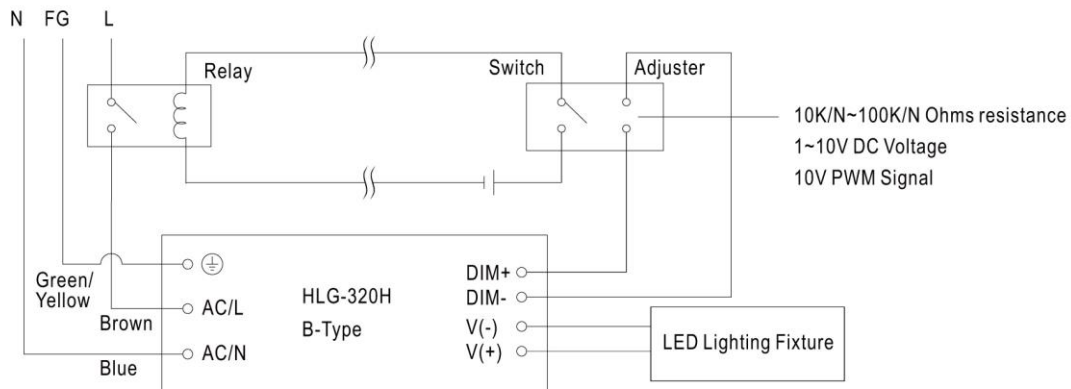
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Note: In the case of turning the lighting fixture down to 0% brightness, please refer to the configuration as follow, or please contact MEAN WELL for other options.

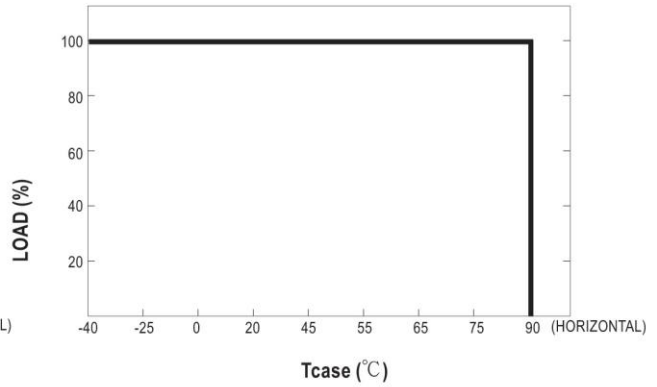
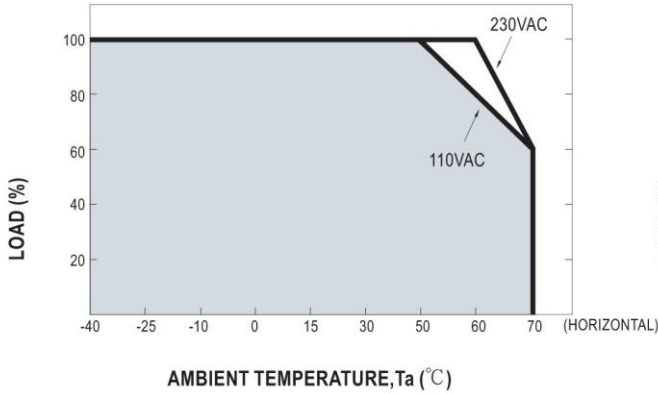


Using a switch and relay can turn ON/OFF the lighting fixture.

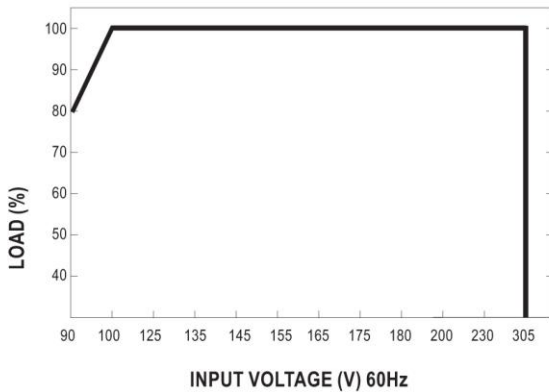


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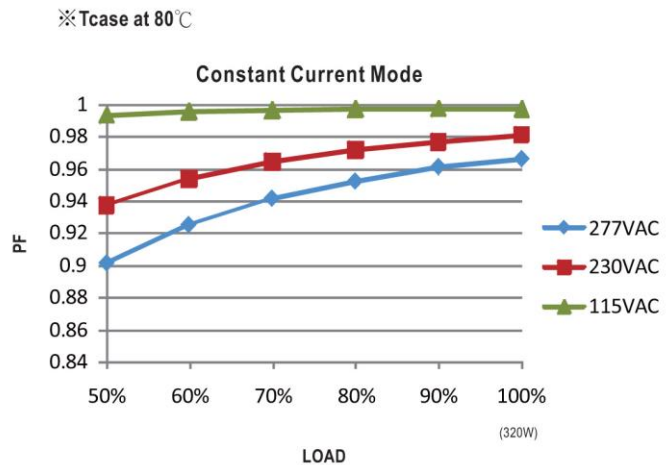
OUTPUT LOAD vs TEMPERATURE



STATIC CHARACTERISTICS



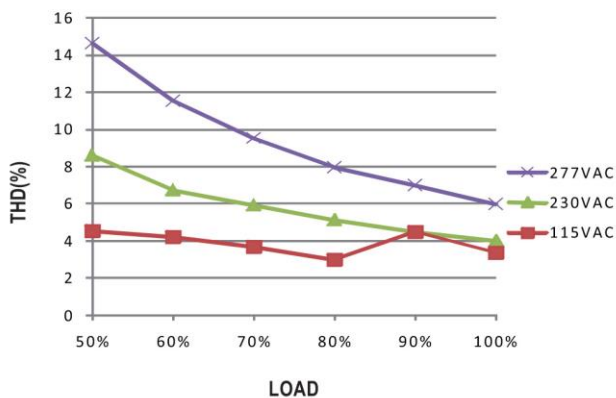
POWER FACTOR(PF) CHARACTERISTIC



※ De-rating is needed under low input voltage.

TOTAL HARMONIC DISTORTION (THD)

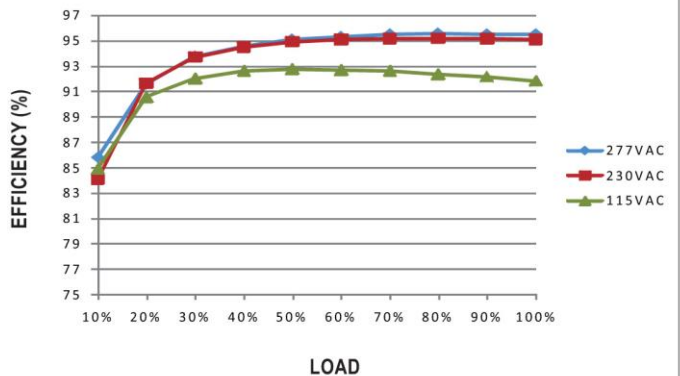
※ 48V Model, Tcase at 80°C



EFFICIENCY vs LOAD

HLG-320H series possess superior working efficiency that up to 95% can be reached in field applications.

※ 48V Model, Tcase at 80°C

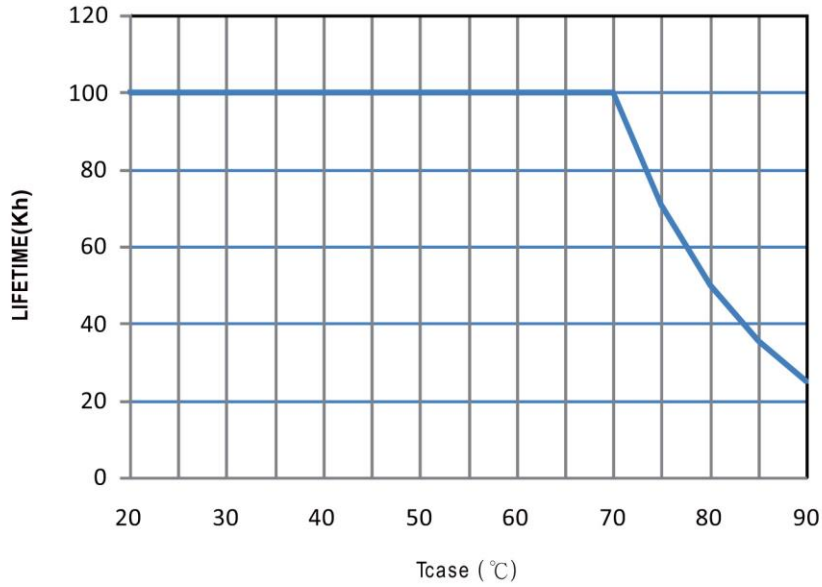




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■ LIFETIME





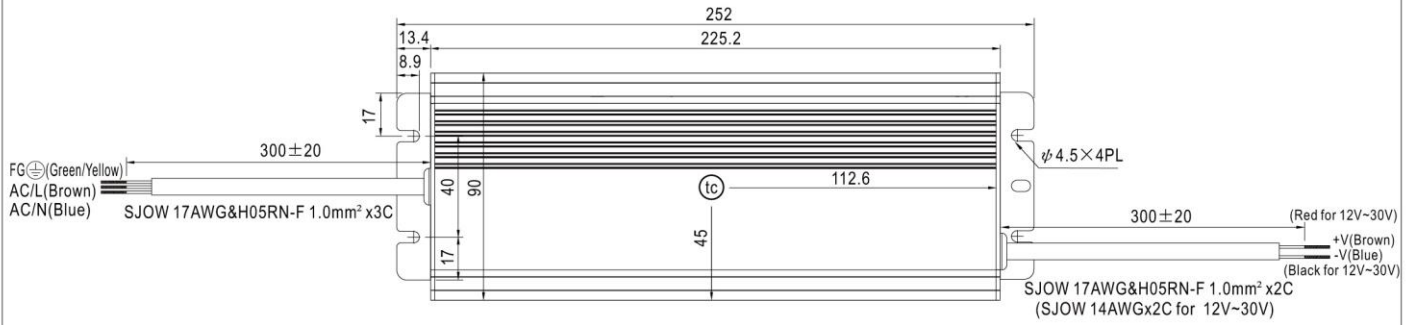
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MECHANICAL SPECIFICATION

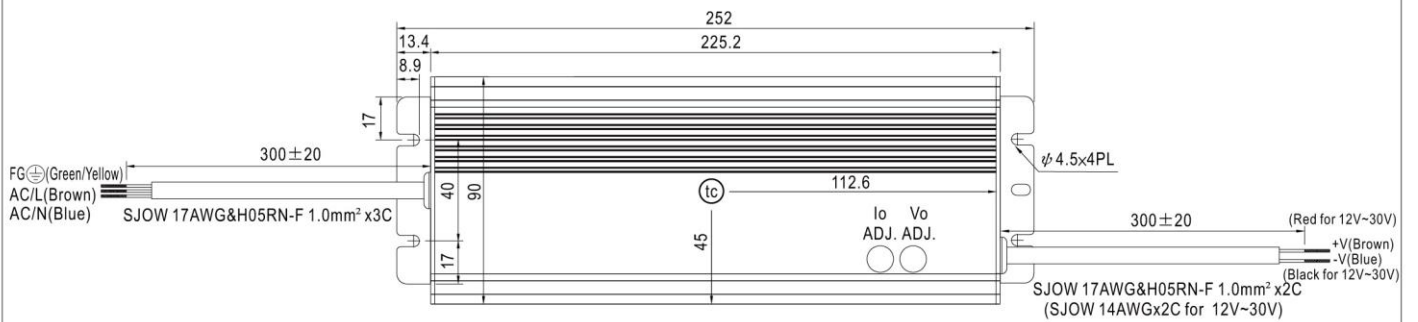
Case No.202A Unit:mm

※Blank/D-Type



• (tc) : Max. Case Temperature

※A-Type

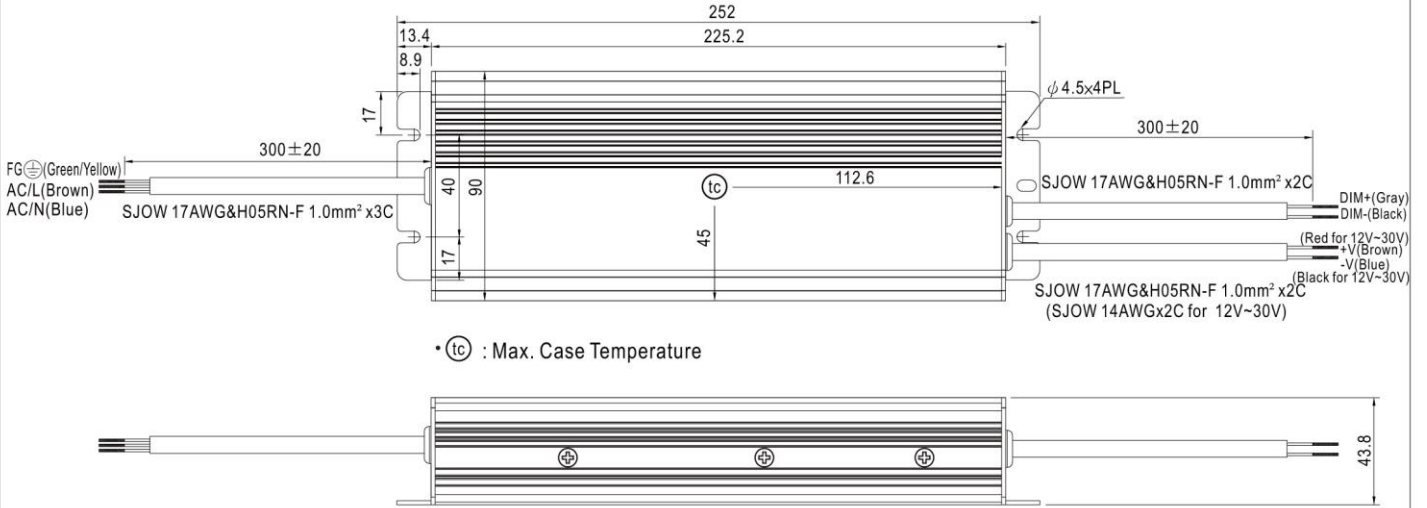


• (tc) : Max. Case Temperature

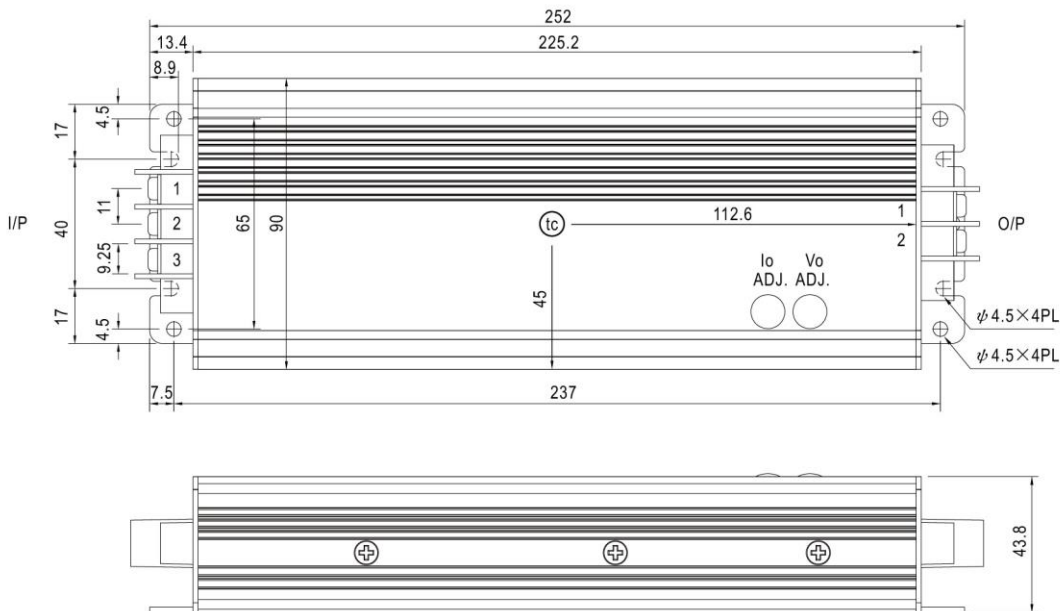


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※B-Type



※C-Type



AC Input Terminal Pin No. Assignment

| Pin No. | Assignment |
|---------|------------|
| 1 | FG \perp |
| 2 | AC/L |
| 3 | AC/N |

DC Output Terminal Pin No. Assignment

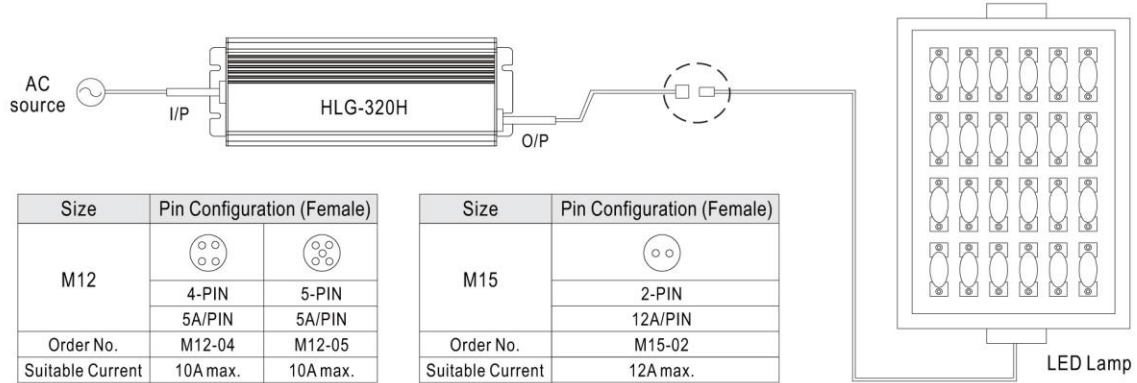
| Pin No. | Assignment |
|---------|------------|
| 1 | +V |
| 2 | -V |

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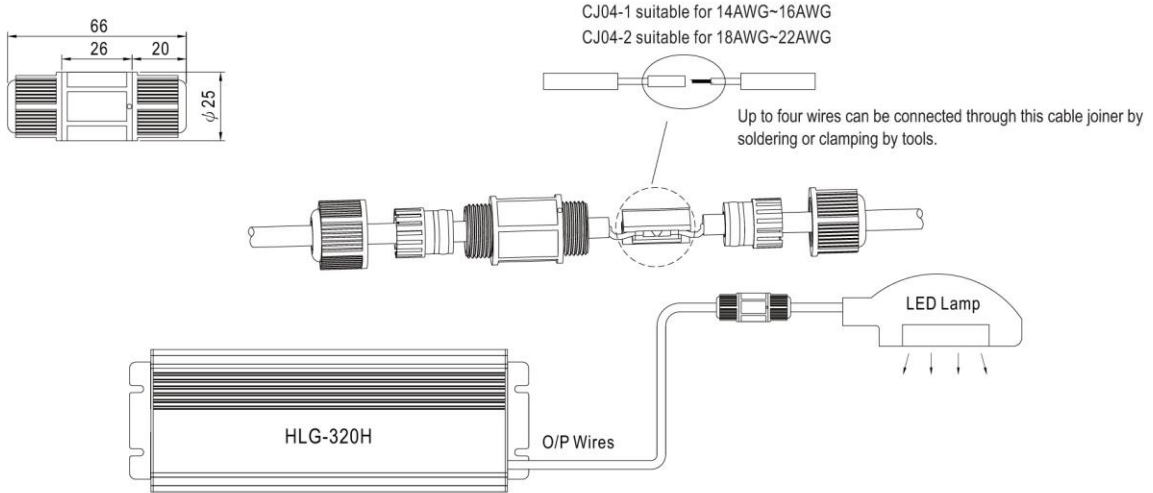
WATERPROOF CONNECTION

※ Waterproof connector

Waterproof connector can be assembled on the output cable of HLG-320H to operate in dry/wet/damp or outdoor environment.

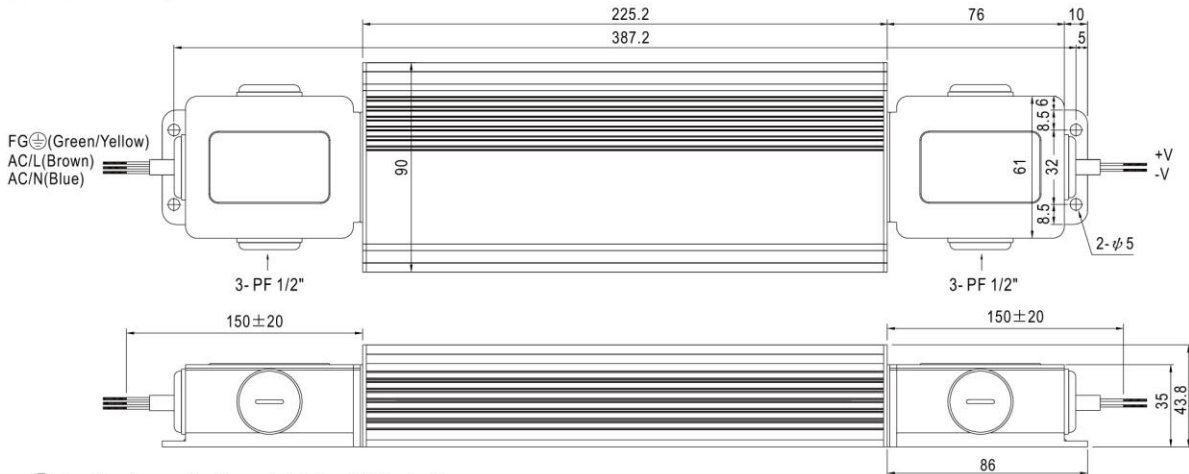


※ Cable Joiner



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

※ Junction Box Option



◎ Junction box option is available for A/ Blank - Type.