



## ■ 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

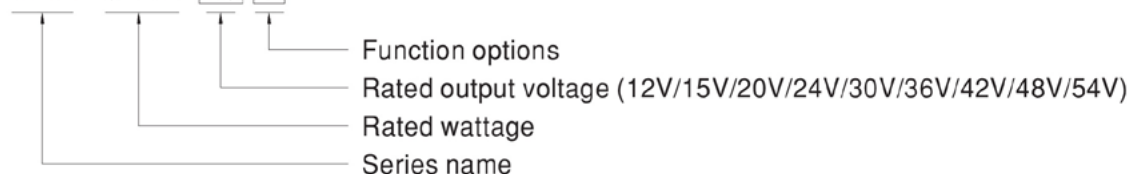
- LED street lighting
- LED high-bay lighting
- Parking space lighting
- LED fishing lamp
- LED greenhouse lighting
- Type "HL" for use in Class I , Division 2  
hazardous (Classified) location.

## ■ 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

**HLG - 320H - 15 A**

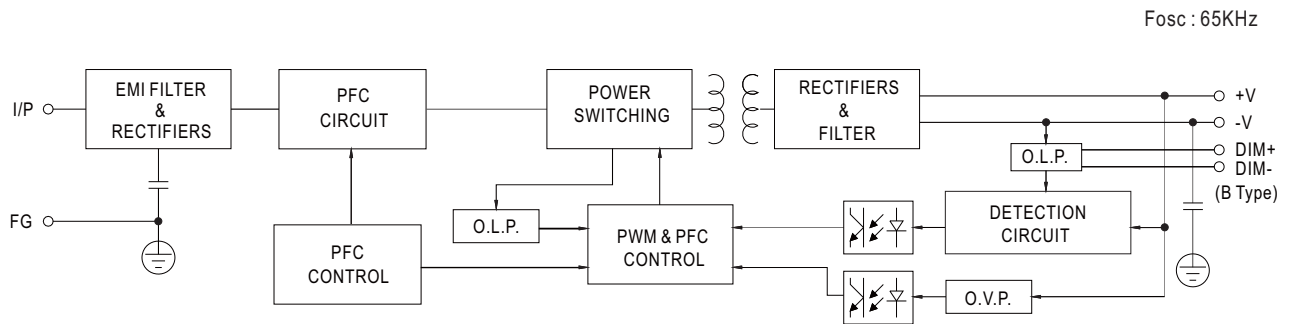


Type	IP Level	Function	Note
Blank	IP67	Io and Vo fixed	In Stock
A	IP65	Io and Vo adjustable through built-in potentiometer	In Stock
B	IP67	3 in 1 dimming function (1~10VDC, 10V PWM signal and resistance)	In Stock
AB	IP65	Io adjustable through built-in potentiometer & 3 in 1 dimming function (1~10Vdc, 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,	By request

## SPECIFICATION

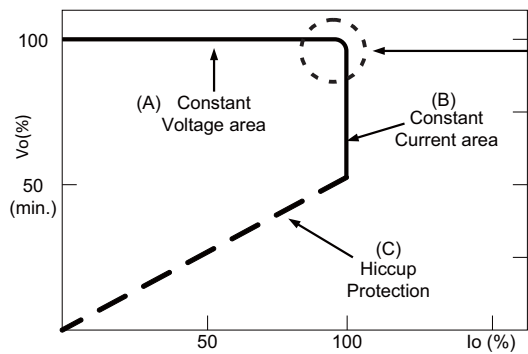
MODEL		HLG-320H-12	HLG-320H-15	HLG-320H-20	HLG-320H-24	HLG-320H-30	HLG-320H-36	HLG-320H-42	HLG-320H-48	HLG-320H-54
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	CONSTANT CURRENT REGION <small>Note.4</small>	6 ~ 12V	7.5 ~ 15V	10 ~ 20V	12 ~ 24V	15 ~ 30V	18 ~ 36V	21 ~ 42V	24 ~ 48V	27 ~ 54V
	RATED CURRENT	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.) <small>Note.2</small>	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/AB/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 <small>Note.3</small>	± 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%
INPUT	SETUP, RISE TIME <small>Note.6</small>	2500ms, 80ms/115VAC   500ms, 80ms/230VAC								
	HOLD UP TIME (Typ.)	15ms / 115VAC, 230VAC								
	VOLTAGE RANGE <small>Note.5</small>	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(t <sub>width</sub> =1010μs measured at 50% I <sub>peak</sub> ) at 230VAC; Per NEMA 410								
PROTECTION	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								
	OVER CURRENT <small>Note.4</small>	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 Shut down and latch off o/p voltage, re-power on to recover								
ENVIRONMENT	OVER TEMPERATURE	Shut down and latch off o/p voltage, re-power on to recover								
	WORKING TEMP.	T <sub>case</sub> = -40 ~ +90°C (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)								
	MAX. CASE TEMP.	T <sub>case</sub> = +90°C								
	WORKING HUMIDITY	20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH								
SAFETY & EMC	TEMP. COEFFICIENT	± 0.03%/°C (0 ~ 50°C)								
	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; EN/AS/NZS 61347-1, EN/AS/NZS 61347-2-13, EN62384 independent; GB19510.1, GB19510.14; IP65 or IP67 (except for HLG-320H C-type); J61347-1, J61347-2-13 (except for B, AB, C and D-type), EAC TP TC 004; KC61347-1, KC61347-2-13(except for AB, 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								
OTHERS	EMC EMISSION	Compliance to EN55015, EN55032 (CISPR32) Class B, EN61000-3-2 Class C (@ load ≥ 50%); EN61000-3-3, EN61000-3-3, GB17743 and GB17625.1, EAC TP TC 020								
	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), EAC TP TC 020								
	MTBF	157.1K hrs min.   MIL-HDBK-217F (25°C)								
NOTE	DIMENSION	252*90*43.8mm (L*W*H)								
	PACKING	1.88Kg; 8pcs/16Kg/0.92CUFT								
NOTE		1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Please refer to "DRIVING METHODS OF LED MODULE". 5. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details. 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. 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. 8. 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. 9. This series meets the typical life expectancy of >62,000 hours of operation when T <sub>case</sub> , particularly (T <sub>c</sub> ) point (or TMP, per DLC), is about 75°C or less. 10. Please refer to the warranty statement 11. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft). 12. For any application note and IP water proof function installation caution, please refer our user manual before using.								

## ■ BLOCK DIAGRAM



## ■ DRIVING METHODS OF LED MODULE

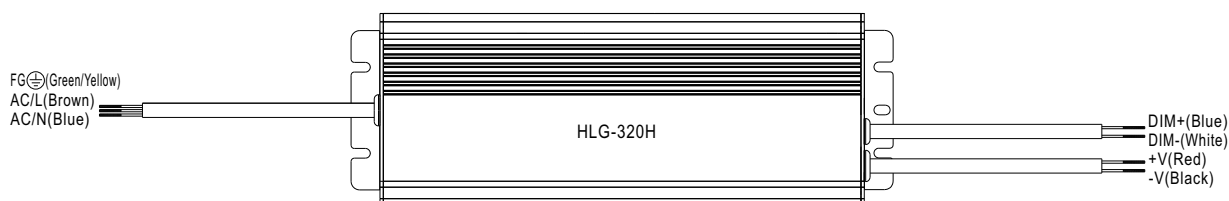
※ This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to drive the LEDs.



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.

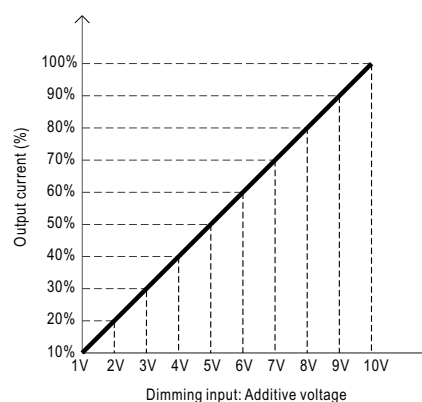
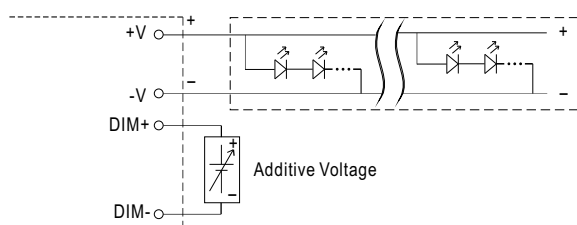
## ■ DIMMING OPERATION



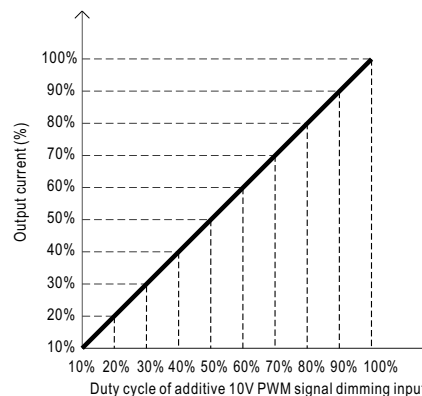
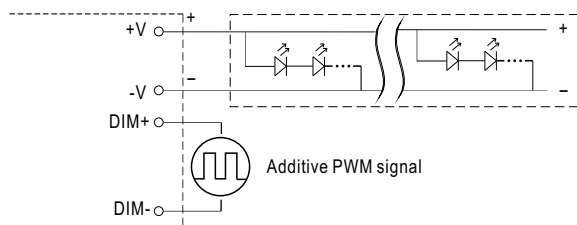
### ※ 3 in 1 dimming function (for B/AB-Type)

- 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.)

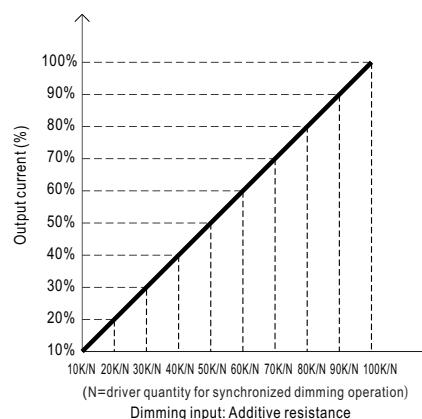
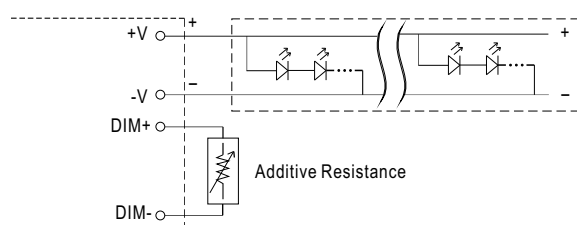
#### ◎ Applying additive 1 ~ 10VDC



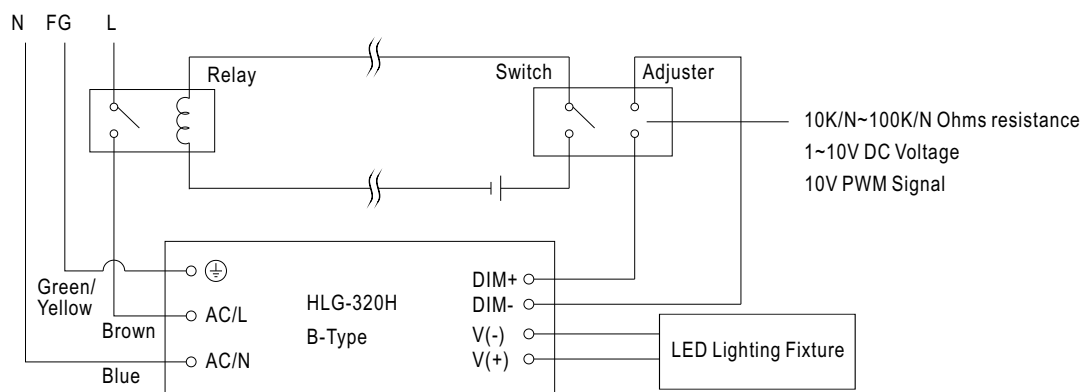
#### ◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



#### ◎ Applying additive resistance:

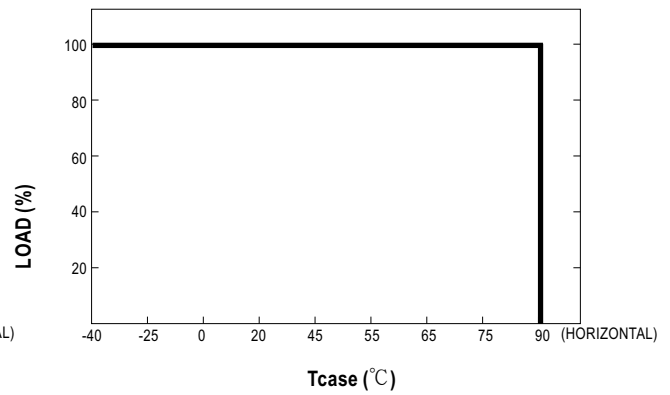
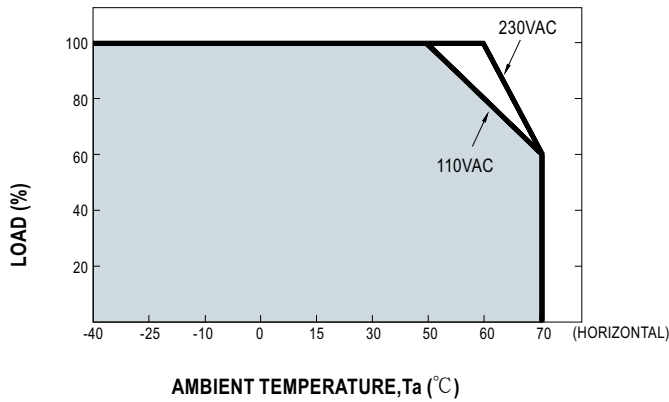


Note: In the case of turning the lighting fixture down to 0% brightness, please refer to the configuration as follow

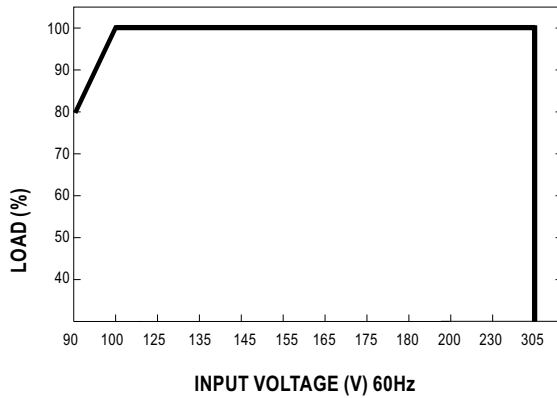


Using a switch and relay can turn ON/OFF the lighting fixture.

■ **OUTPUT LOAD vs TEMPERATURE(Note.10)**



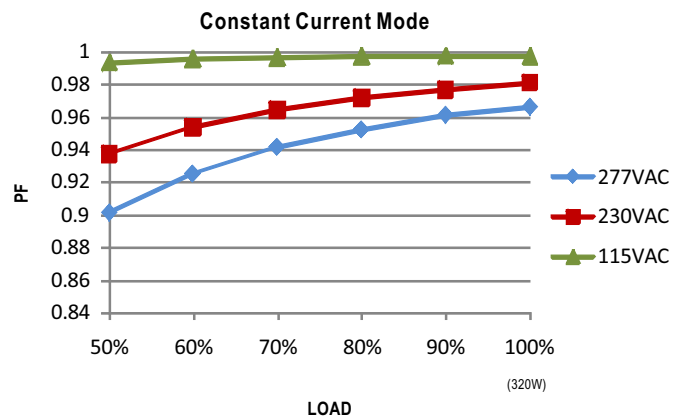
■ **STATIC CHARACTERISTICS**



※ De-rating is needed under low input voltage.

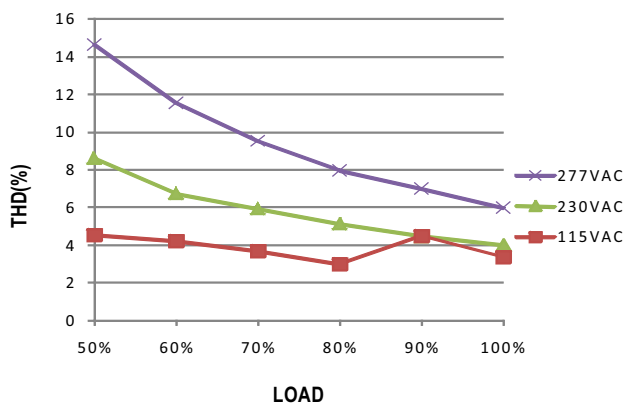
■ **POWER FACTOR(PF) CHARACTERISTIC**

※ Tcase at 80°C



■ **TOTAL HARMONIC DISTORTION (THD)**

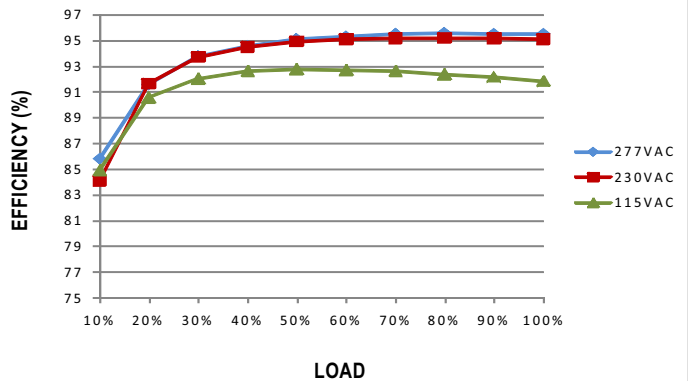
※ 48V Model, Tcase at 80°C



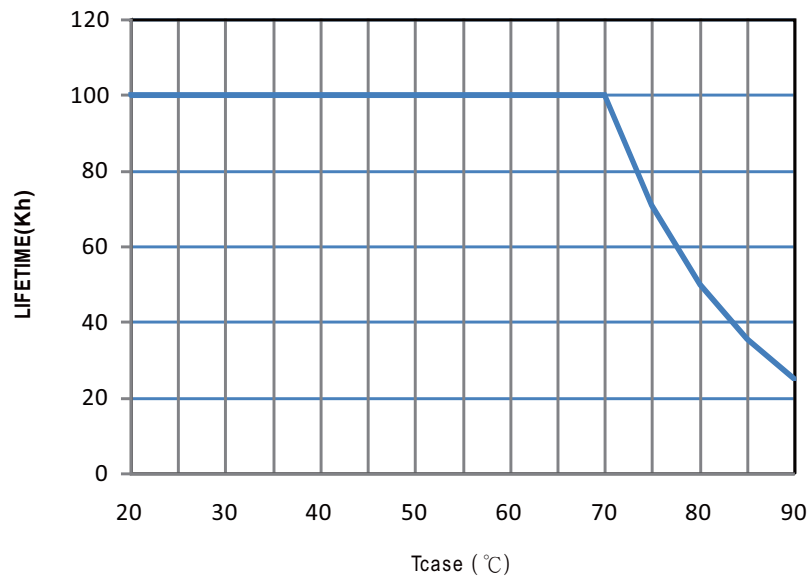
■ **EFFICIENCY vs LOAD**

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

※ 48V Model, Tcase at 80°C



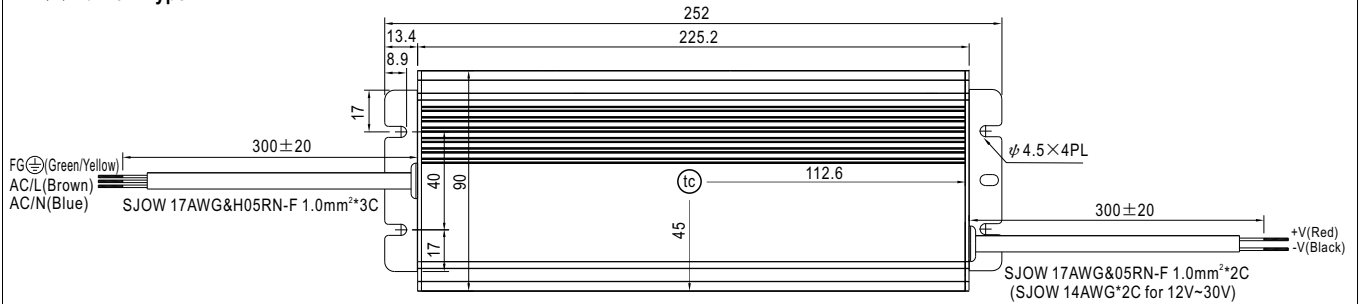
■ LIFE TIME



**MECHANICAL SPECIFICATION**

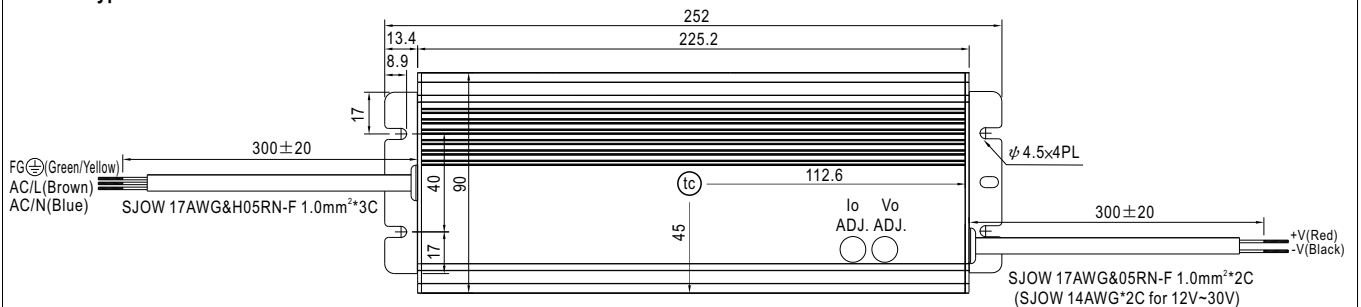
Case No.202A Unit:mm

※Blank/D-Type



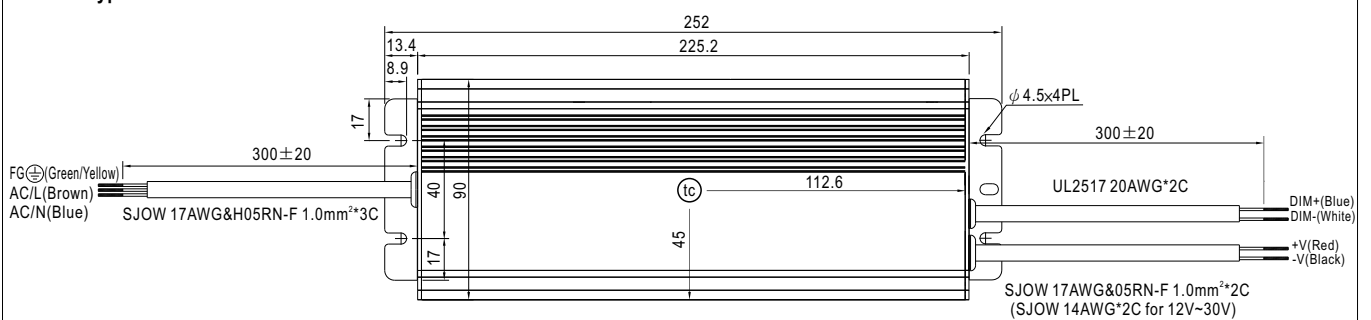
• tc : Max. Case Temperature

※A-Type



• tc : Max. Case Temperature

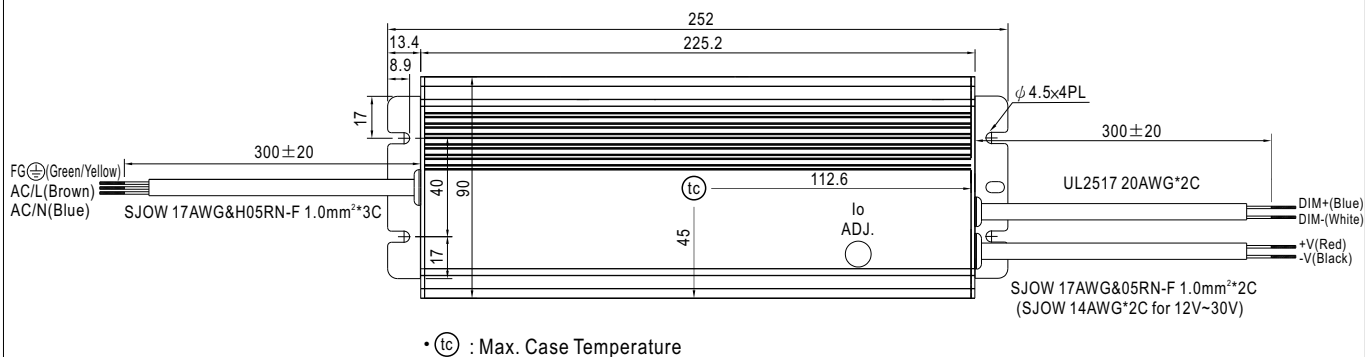
※B-Type



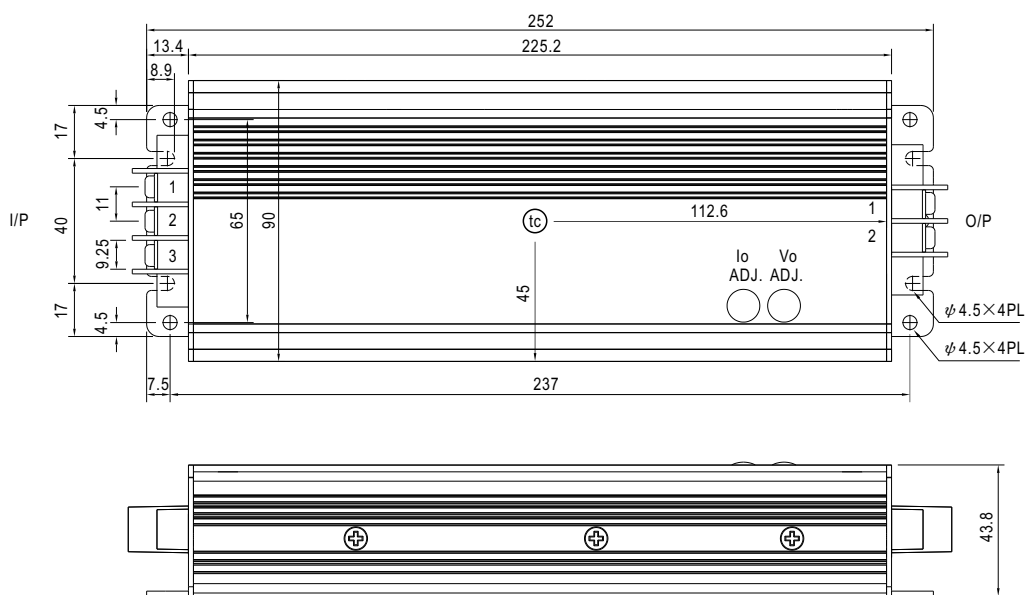
• tc : Max. Case Temperature



※AB-Type



※C-Type



AC Input Terminal Pin No. Assignment

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

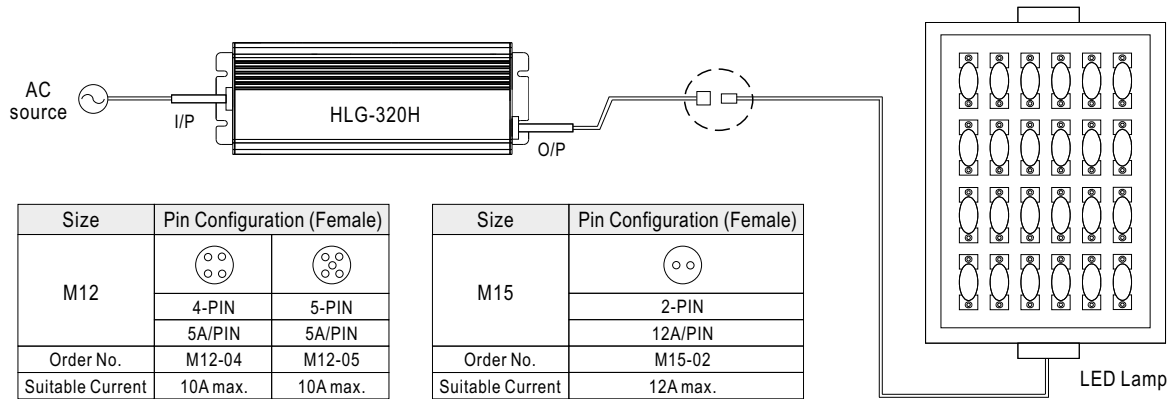
DC Output Terminal Pin No. Assignment

Pin No.	Assignment
1	+V
2	-V

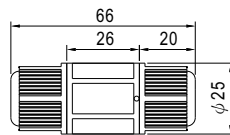
## ■ WATERPROOF CONNECTION

### ※ Waterproof connector

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



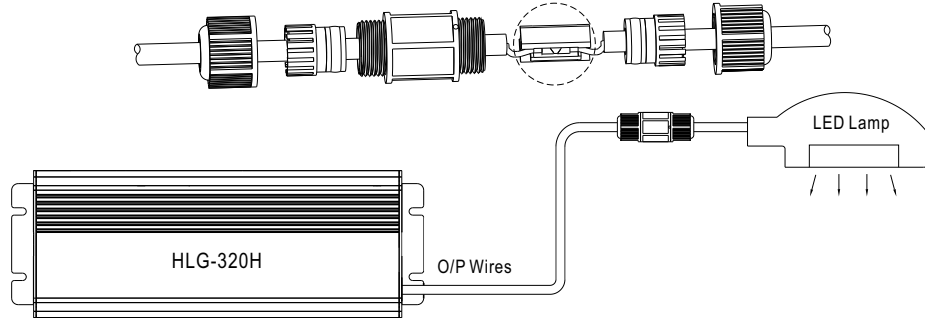
### ※ Cable Joiner



CJ04-1 suitable for 14AWG~16AWG  
CJ04-2 suitable for 18AWG~22AWG



Up to four wires can be connected through this cable joiner by soldering or clamping by tools.



### ※ Junction Box Option

