150W Constant Current Mode LED Driver HVGC-150 series

User's Manual

Features

- Wide input range 180 ~ 528VAC
- Constant Current mode output
- Metal housing with Class I design
- Built-in active PFC function
- IP67 / IP65 design 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
- Type "HL" for use in Class I , Division 2 hazardous (Classified) location.

Description

HVGC-150 series is a 150W LED AC/DC LED power supply featuring the constant current mode and high voltage output. HVGC-150 operates from 180~528VAC and offers models with different rated current ranging between 350mA and 1400mA. Thanks to the high efficiency up to 91%, with the fanless design, the entire series is able to operate for -40℃ ~ +80℃ 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. HVGC-150 is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system.

Model Encoding

HVGC - 150 - 1750 A

- A — Function options
- 1750 — Rated output current(350/500/700/1050/1400mA)
- 150 — Rated wattage
- HVGC — Series name

Type	IP Level	Function	Note
A	IP65	Io adjustable through built-in potentiometer.	In Stock
B	IP67	3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)	In Stock
AB	IP65	Io adjustable through built-in potentiometer & 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)	In Stock
D	IP67	Timer dimming function, contact MEAN WELL for details(safety pending).	By request

MEAN WELL

150W Constant Current Mode LED Driver

HVGC-150 series

SPECIFICATION

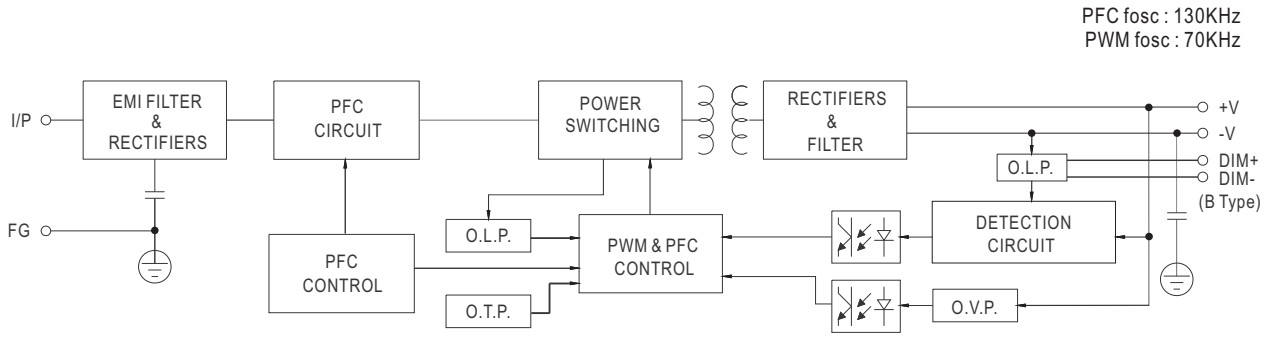
MODEL		HVGC-150-350□	HVGC-150-500□	HVGC-150-700□	HVGC-150-1050□	HVGC-150-1400□
OUTPUT	RATED CURRENT	350mA	500mA	700mA	1050mA	1400mA
	RATED POWER	149.8W	150W	150.5W	150.15W	149.8W
	CONSTANT CURRENT REGION Note.2	42 ~ 428V	30 ~ 300V	21 ~ 215V	15 ~ 143V	12 ~ 107V
	CURRENT ADJ. RANGE	Adjustable for A/AB-Type only (via built-in potentiometer)				
		210 ~ 350mA	300 ~ 500mA	420 ~ 700mA	630 ~ 1050mA	840 ~ 1400mA
	CURRENT RIPPLE Note.5	8.0% max. @rated current				
	CURRENT TOLERANCE	±5.0%				
	SET UP TIME Note.4	500ms / 230Vac 400ms / 347VAC,480VAC				
INPUT	VOLTAGE RANGE Note.3	180 ~ 528VAC 254VDC ~ 747VDC (Please refer to "STATIC CHARACTERISTIC" section)				
	FREQUENCY RANGE	47 ~ 63Hz				
	POWER FACTOR (Typ.)	PF≧0.98/230VAC, PF≧0.97/277VAC, PF≧0.95/347VAC, PF≧0.93/480VAC @full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)				
	TOTAL HARMONIC DISTORTION	THD< 20%(@ load≧50%/230VAC, 277VAC, 347VAC; @ load≧75%/480VAC) (Please refer to "TOTAL HARMONIC DISTORTION (THD)" section)				
	EFFICIENCY (Typ.)	91%	91%	91%	90%	90%
	AC CURRENT (Typ.)	0.5A / 347VAC 0.38A / 480VAC				
	INRUSH CURRENT (Typ.)	COLD START 35A(t_{width}=790μs measured at 50% I_{peak}) at 480VAC; Per NEMA 410				
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	4 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 480VAC				
	LEAKAGE CURRENT	<0.75mA / 480VAC				
PROTECTION	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed				
	OVER VOLTAGE	430 ~ 460V	316 ~ 346V	226 ~ 247V	151 ~ 165V	113 ~ 124V
		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 ~ +80℃ (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)				
	MAX. CASE TEMP.	Tcase=+80℃				
	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, TUV BS EN/EN61347-1, BS EN/EN61347-2-13, EAC TP TC 004, 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 BS EN/EN55015, BS EN/EN61000-3-2 Class C (@ load≧50%) ; BS EN/EN61000-3-3, FCC part 15 class B, EAC TP TC 020				
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN61547, light industry level (surge immunity Line-Earth 4KV, Line-Line 2KV), EAC TP TC 020				
OTHERS	MTBF	179.5K hrs min. MIL-HDBK-217F (25℃)				
	DIMENSION	245*68*38.8mm (L*W*H)				
	PACKING	1.24Kg; 12pcs/15.9Kg/0.78CUFT				

NOTE

1. All parameters NOT specially mentioned are measured at 347VAC input, rated current and 25℃ of ambient temperature.
2. Please refer to "DRIVING METHODS OF LED MODULE".
3. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.
4. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.
5. Current ripple is measured between 50%~100% of maximum voltage under rated power delivery.
6. 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.
7. 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.
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.
9. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com.
10. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).
11. For any application note and IP water proof function installation caution, please refer our user manual before using.
    https://www.meanwell.com/Upload/PDF/LED_EN.pdf

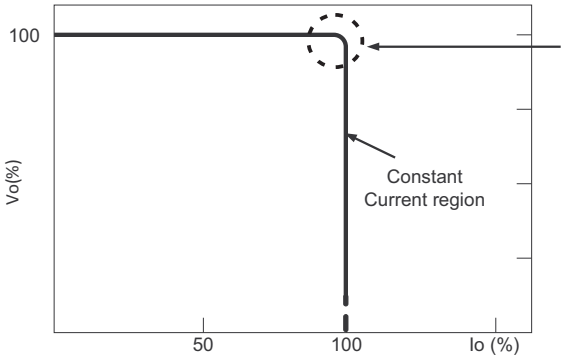
※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

■ Block Diagram



■ DRIVING METHODS OF LED MODULE

※ This series works in constant current mode to directly 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.

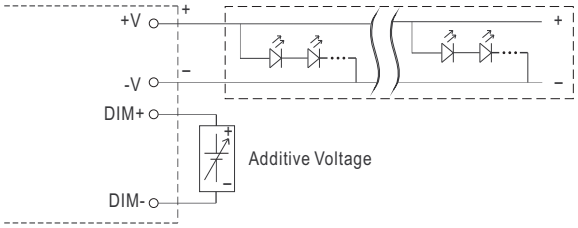
Should there be any compatibility issues, please contact MEAN WELL.

■ DIMMING OPERATION

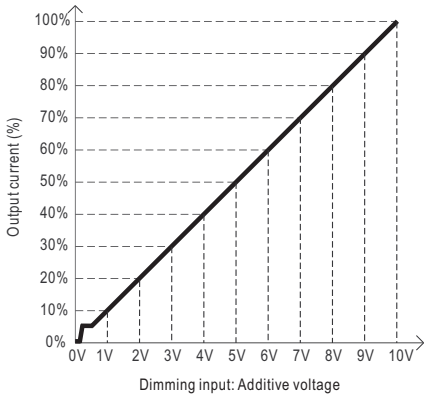
※ 3 in 1 dimming function (for B/AB-Type)

- 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: 100μA (typ.)

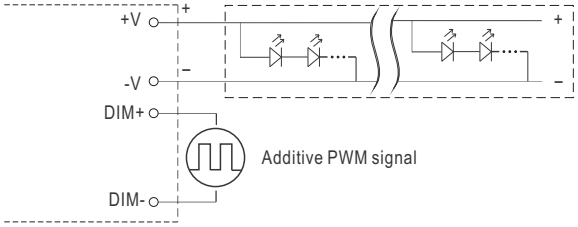
◎ Applying additive 0 ~ 10VDC



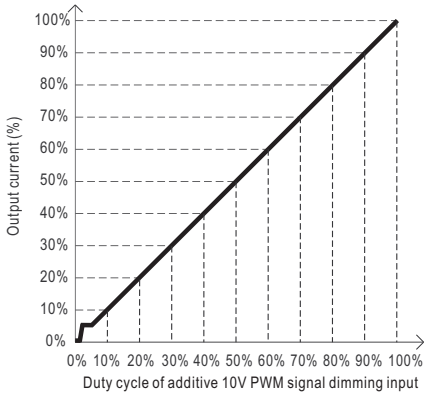
"DO NOT connect "DIM- to -V"



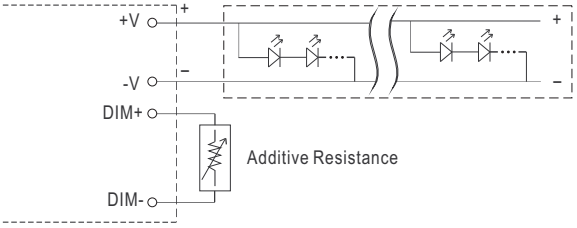
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



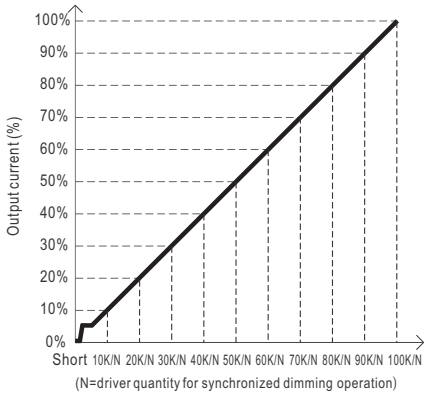
"DO NOT connect "DIM- to -V"



◎ Applying additive resistance:

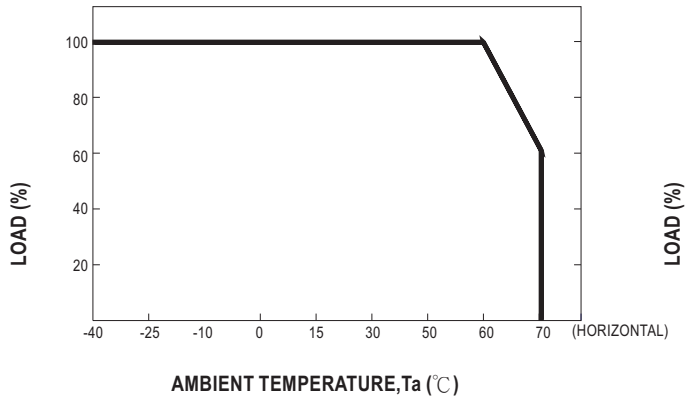


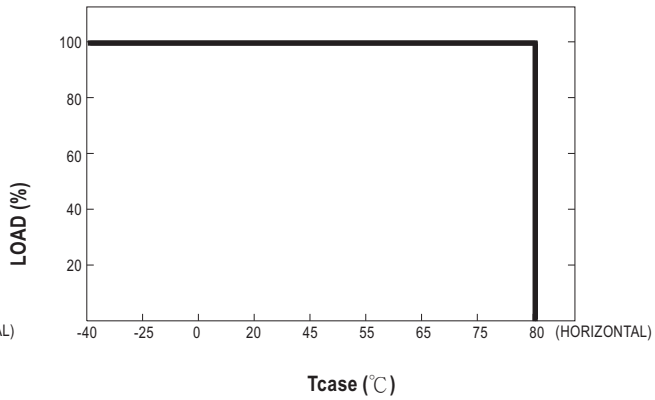
"DO NOT connect "DIM- to -V"



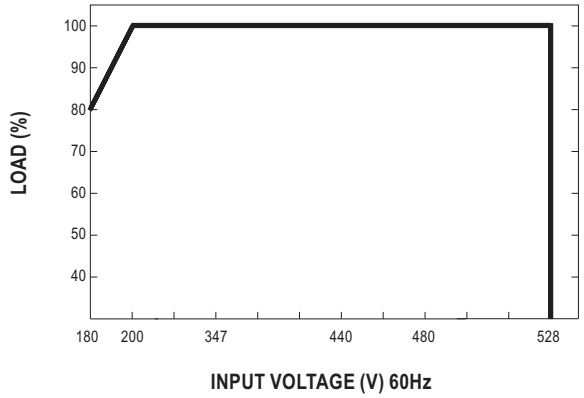
Note : 1. Min. dimming level is about 6% and the output current is not defined when 0%< Iout<6%.
2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.

■ OUTPUT LOAD vs TEMPERATURE(Note.9)





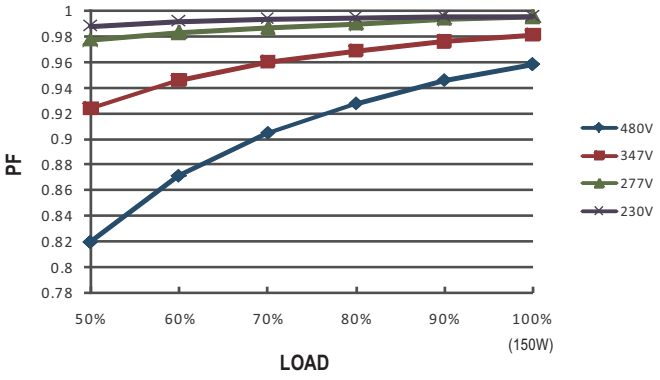
■ STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

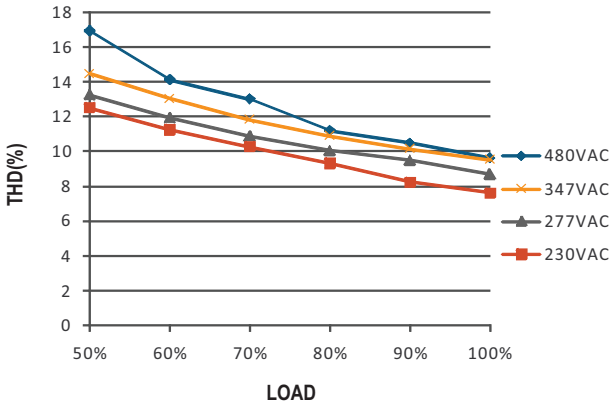
■ POWER FACTOR (PF) CHARACTERISTIC

※ Tcase at 70℃



■ TOTAL HARMONIC DISTORTION (THD)

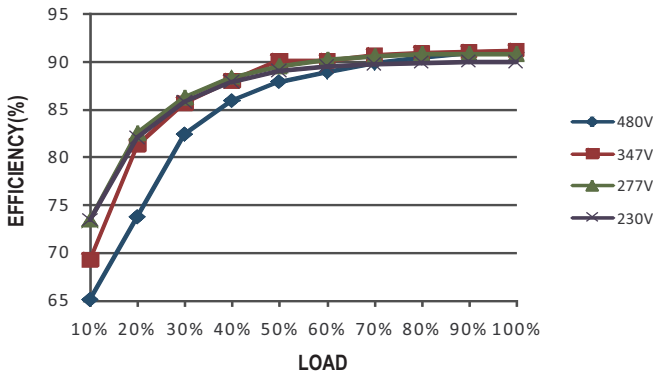
※ 350mA Model, Tcase at 70℃



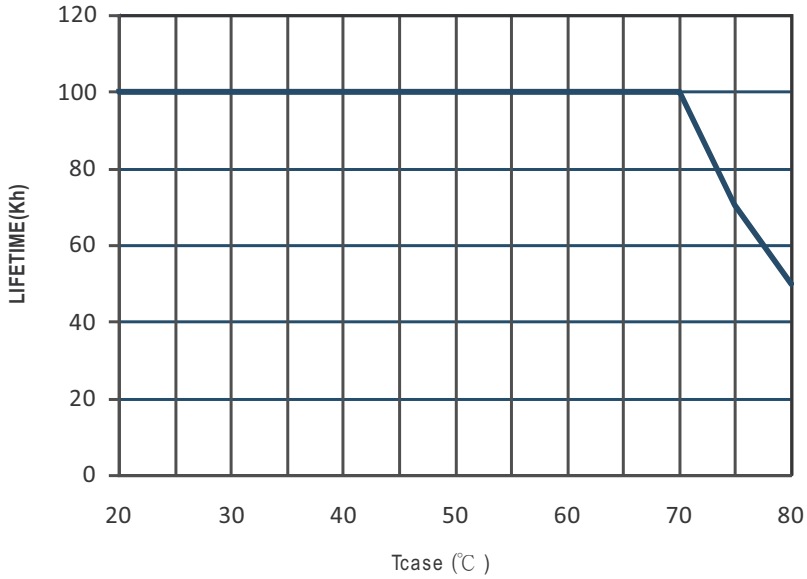
■ EFFICIENCY vs LOAD

HVGC-150 series possess superior working efficiency that up to 91% can be reached in field applications.

※ 350mA Model, Tcase at 70℃



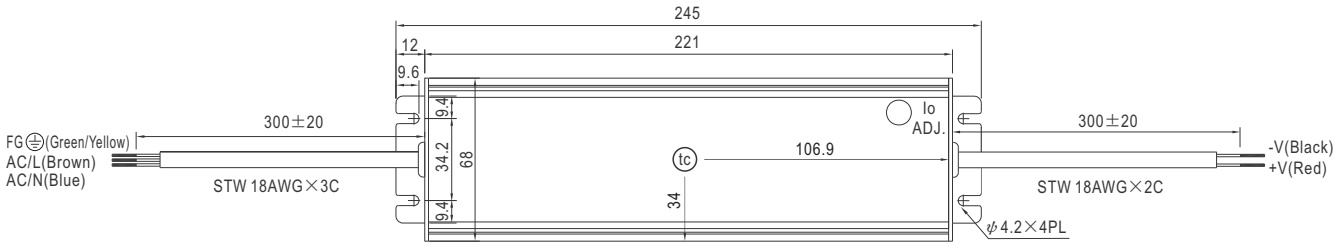
LIFE TIME



■ MECHANICAL SPECIFICATION

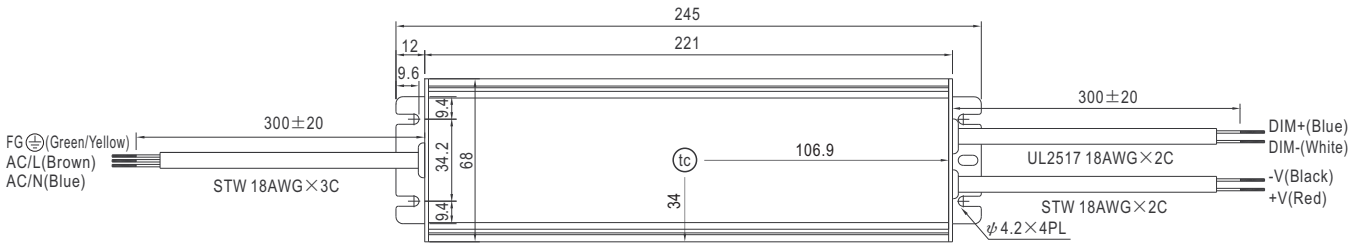
Case No. 994 Unit:mm

※ A-Type



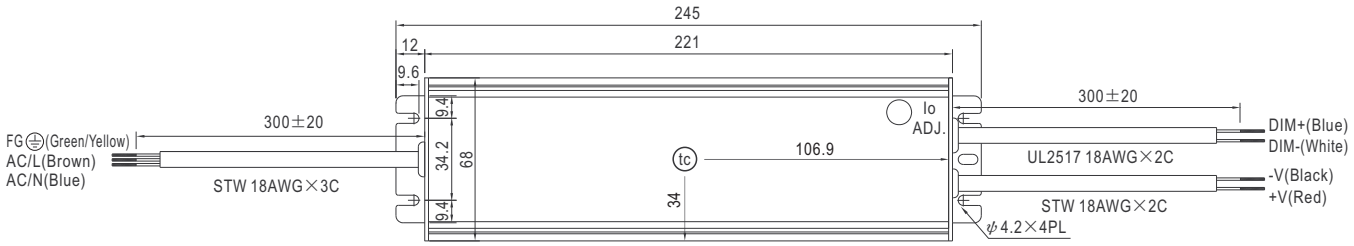
• tc : Max. Case Temperature

※ B-Type



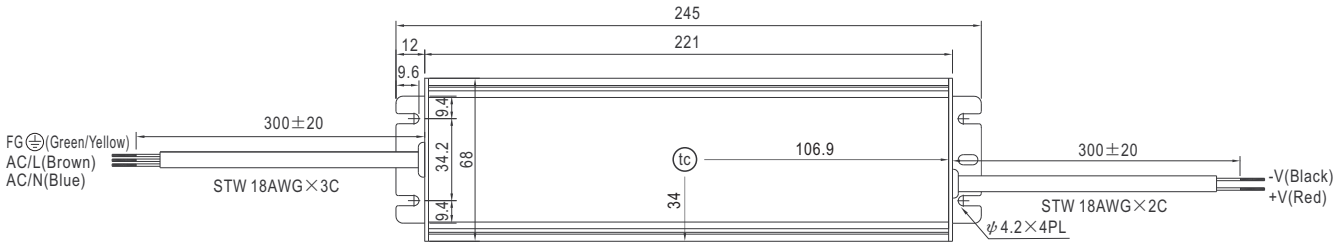
• tc : Max. Case Temperature

※ AB-Type



• tc : Max. Case Temperature

※ D-Type

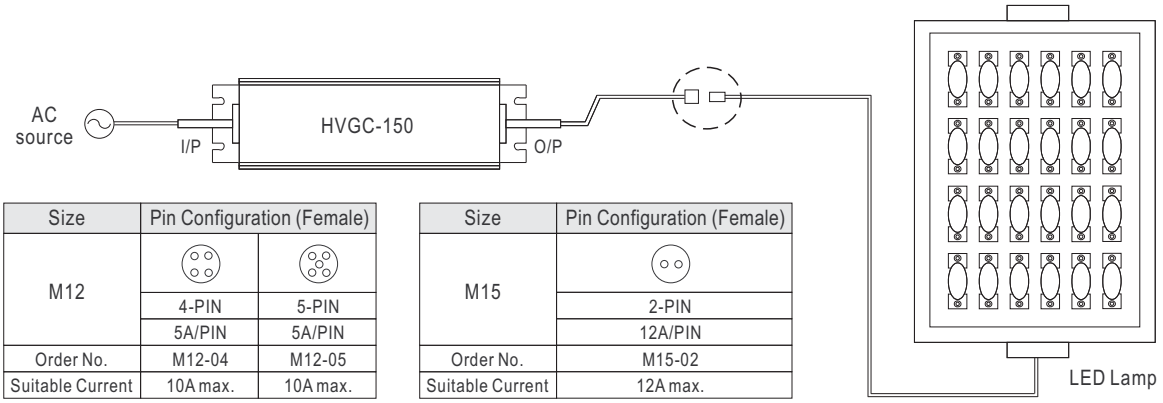


• tc : Max. Case Temperature

■ WATERPROOF CONNECTION

※ **Waterproof connector**

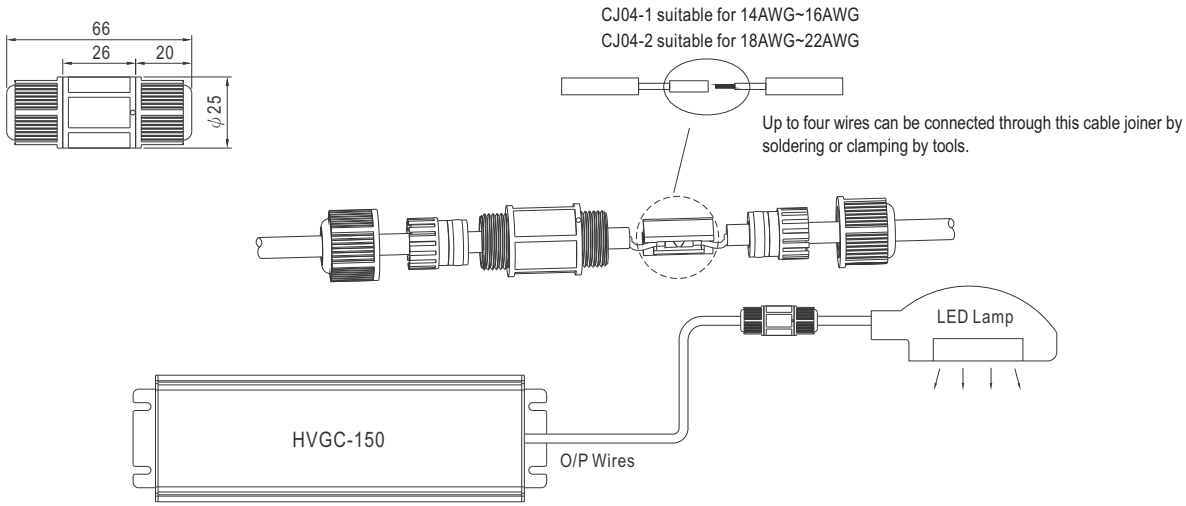
Waterproof connector can be assembled on the output cable of HVGC-150 to operate in dry/wet/damp or outdoor environment.



Size	Pin Configuration (Female)	
M12		
	4-PIN	5-PIN
	5A/PIN	5A/PIN
Order No.	M12-04	M12-05
Suitable Current	10A max.	10A max.

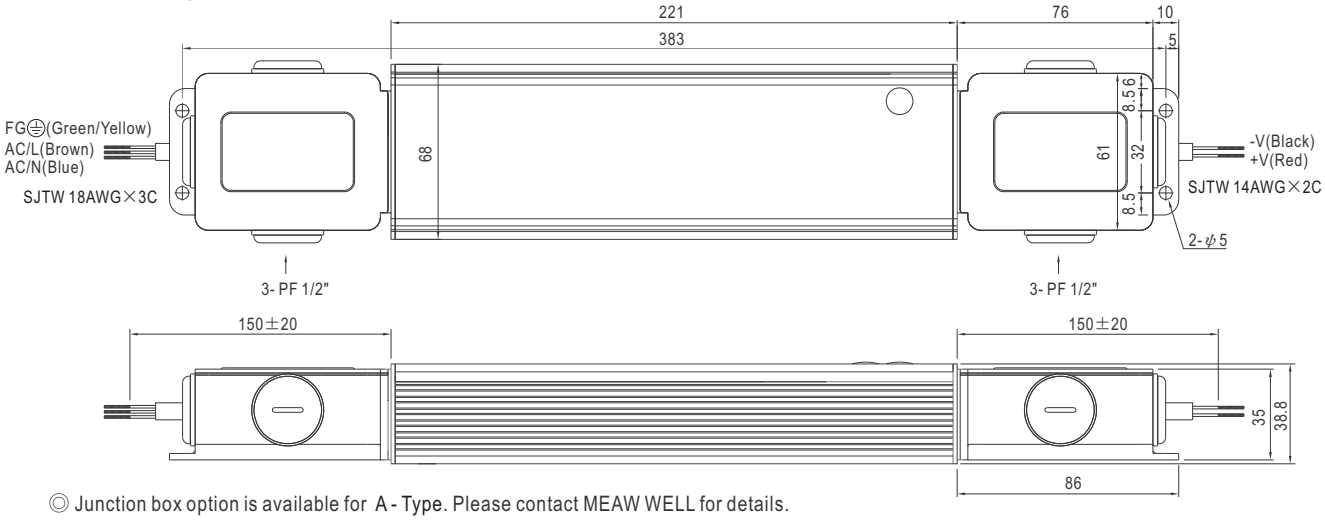
Size	Pin Configuration (Female)
M15	
	2-PIN
	12A/PIN
Order No.	M15-02
Suitable Current	12A max.

※ **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 - Type. Please contact MEAW WELL for details.

■ INSTALLATION MANUAL

Please refer to : http://www.meanwell.com/manual.html