105~150W Constant Current Mode LED Driver ELG-150-C series

User's Manual
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IS 15885(Part 2/Sec 13)
R-41027766
(for 700A,1050A,700DA only)

(for DA-Type only) (for ELG-150-C1400/1750/2100) (for ELG-150-C1400/1750/2100) SELV IP65 IP67 Type HL (except for BE-Type)

Features

- Constant Current mode output
- Metal housing design with functional Ground
- Built-in active PFC function
- No load / Standby power consumption <0.5W
- IP67 / IP65 rating for indoor or outdoor installations
- Function options: output adjustable via potentiometer; 3 in 1 dimming (dim-to-off); Smart timer dimming; DALI
- Typical lifetime>50000 hours
- 5 years warranty

Applications

- LED street lighting
- LED harbor lighting
- LED bay lighting
- LED greenhouse lighting
- LED flood lighting
- Type "HL" for use in Class I, Division 2 hazardous (Classified) location.

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

ELG-150-C series is a 150W LED AC/DC driver featuring the constant current mode and high voltage output. ELG-150-C operates from 100~360VAC and offers models with different rated current ranging between 500mA and 2100mA. Thanks to the high efficiency up to 92%, with the fanless design, the entire series is able to operate for -40℃~+85℃ 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. ELG-150-C is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system.

Model Encoding

ELG - 150 - C700 A - □

- Input wiring type { Blank:2-wire input for standard model / 3Y:3-wire input for standard model
- Function options
- Rated output current (500/700/1050/1400/1750/2100mA)
- Rated wattage
- Series name

Type	IP Level	Function	Note
Blank	IP67	Io fixed.	In Stock
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
DA	IP67	DALI control technology.	In Stock

SPECIFICATION

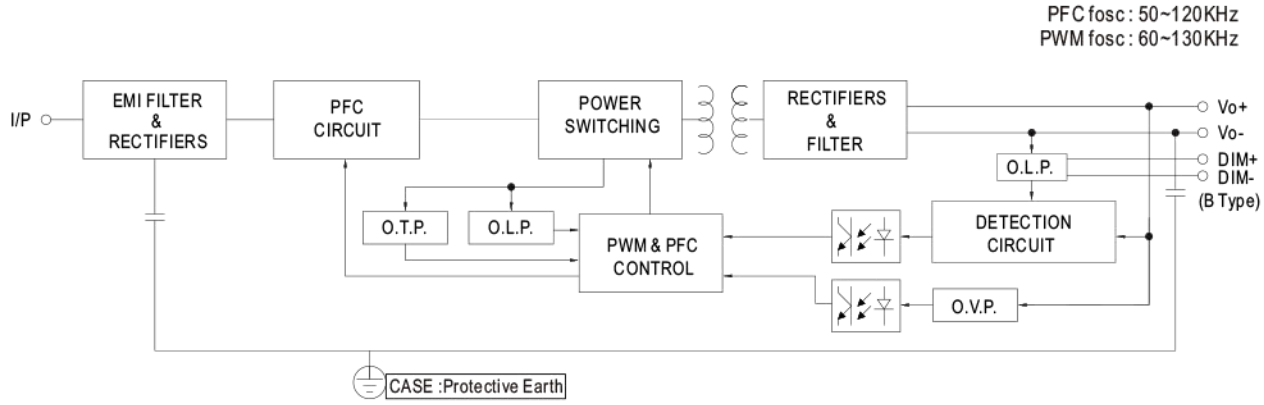
MODEL		ELG-150-C500 ☐	ELG-150-C700 ☐	ELG-150-C1050 ☐	ELG-150-C1400 ☐	ELG-150-C1750 ☐	ELG-150-C2100 ☐
OUTPUT	RATED CURRENT	500mA	700mA	1050mA	1400mA	1750mA	2100mA
	RATED POWER	100VAC ~ 180VAC					
		105W	105W	105W	105W	105W	105W
		200VAC ~ 305VAC					
		150W	149.8W	150.15W	149.8W	150.5W	151.2W
	CONSTANT CURRENT REGION Note.2	150 ~ 300V	107 ~ 214V	72 ~ 143V	54 ~ 107V	43 ~ 86V	36 ~ 72V
	OPEN CIRCUIT VOLTAGE(max.)	315V	225V	151V	115V	94V	80V
	CURRENT ADJ. RANGE	Adjustable for A/AB-Type only (via built-in potentiometer)					
		250 ~ 500mA	350 ~ 700mA	525 ~ 1050mA	700 ~ 1400mA	875 ~ 1750mA	1050 ~ 2100mA
	CURRENT RIPPLE	5.0% max. @rated current					
	CURRENT TOLERANCE	±5.0%					
	SET UP TIME Note.4	1600ms/115VAC 500ms/230VAC					
INPUT	VOLTAGE RANGE Note.3	100 ~ 305VAC 142 ~ 431VDC continue,320VAC for 24Hrs; 360VAC for 1Hr (Please refer to "STATIC CHARACTERISTIC" section)					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF≧0.97/115VAC, PF≧0.95/230VAC, PF≧0.92/277VAC@full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)					
	TOTAL HARMONIC DISTORTION	THD< 20%(@load≧50%/115VC; @load≧60%/230VAC; @load≧75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION(THD)" section)					
	EFFICIENCY (Typ.)	92%	92%	92%	91%	91%	91%
	AC CURRENT (Typ.)	1.7A / 115VAC 0.9A / 230VAC 0.7A/277VAC					
	INRUSH CURRENT(Typ.)	COLD START 65A(twidth=485μs measured at 50% Ipeak)/230VAC; Per NEMA 410					
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	3 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 230VAC					
	LEAKAGE CURRENT	<0.75mA / 277VAC					
	NO LOAD / STANDBY POWER CONSUMPTION	No load power consumption <0.5W for Blank / A-Type Standby power consumption <0.5W for B / AB / DA-Type					
PROTECTION	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	320 ~ 360V	230 ~ 265V	155 ~ 180V	128 ~ 150V	96 ~ 106V	82 ~ 92V
		Shut down o/p voltage, re-power on to recover					
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover					
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. 250.13-12;BS EN/EN/AS/NZS 61347-1,BS EN/EN/AS/NZS 61347-2-13 independent, BS EN/EN62384; GB/T19510.1,GB/T19510.213,EAC TP TC 004,BIS IS15885(for 700A, 1050A,700DA only), IP65 or IP67; KC61347-1,KC61347-2-13 approved					
	DALI STANDARDS	Compliance to IEC62386-101,102,(207 by request) for DA Type only					
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2.0KVAC 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≧60%) ; BS EN/EN61000-3-3; GB/T 17743, GB17625.1;EAC TP TC 020; KC KN15, KN61547					
	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 6KV, Line-Line 4KV), EAC TP TC 020; KC KN15, KN61547					
OTHERS	MTBF	3102.4K hrs min. Telcordia SR-332 (Bellcore) ;308.5K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	219*63*35.5 mm (L*W*H)					
	PACKING	0.95Kg; 16pcs / 16.0kg / 0.77CUFT					

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.
2. Please refer to "DRIVING METHODS OF LED MODULE". For DA-Type, Constant Current region is 60%~100% of maximum voltage under rated power delivery.
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 driver may lead to increase of the set up time.
5. 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. (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
6. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly (tc) point (or TMP, per DLC), is about 75℃ or less.
7. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com.
8. 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).
9. 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
10. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can only be used behind a switch without permanently connected to the mains.
11. For A/AB type need to consider build in using to comply with Type HL application.

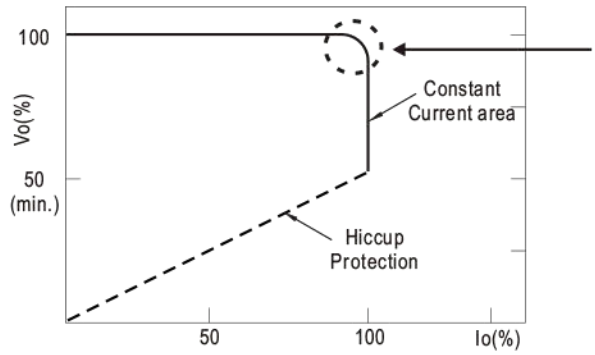
※ Product Liability Disclaimer：For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

■ 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.

◎ This characteristic applies to Blank/A/B/AB-Type,
For DA-Type, the Constant Current area is 60%~100% Vo.

■ DIMMING OPERATION

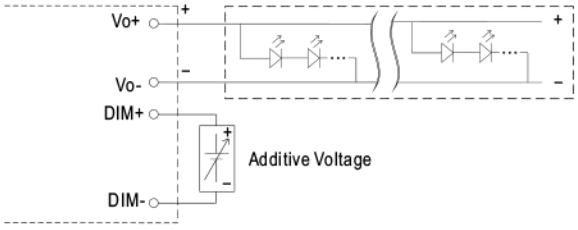


* DIM+ for B/AB-Type
DA+ for DA-Type
* *DIM- for B/AB-Type
DA- for DA-Type

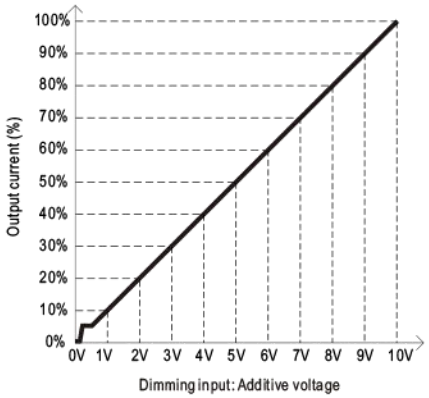
※ 3 in 1 dimming function (for B/AB-Type)

- 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.)

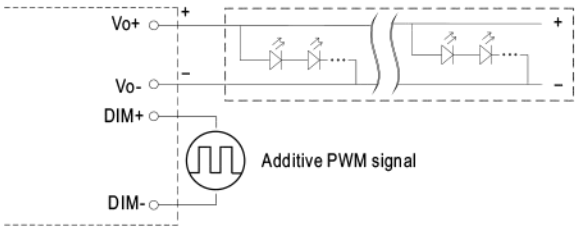
◎ Applying additive 0 ~ 10VDC



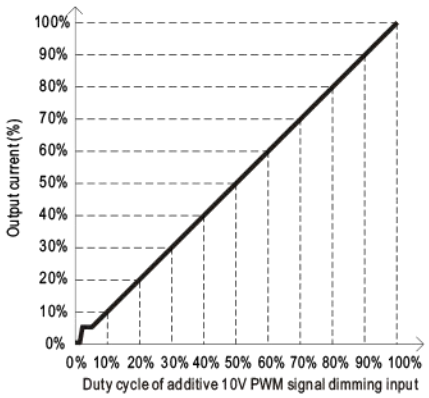
"DO NOT connect "DIM- to Vo-"



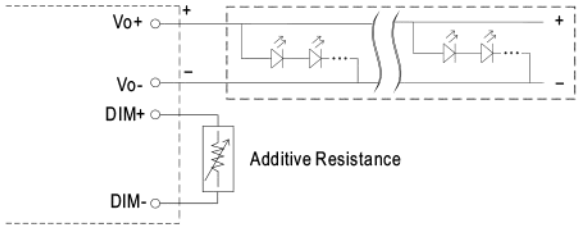
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



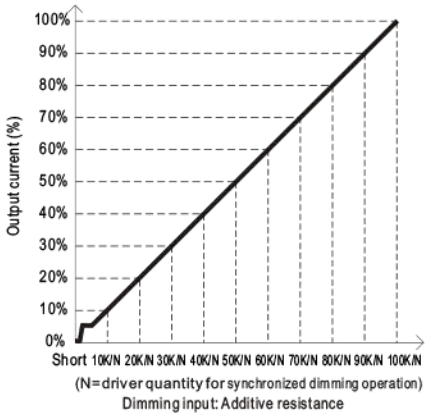
"DO NOT connect "DIM- to Vo-"



◎ Applying additive resistance:



"DO NOT connect "DIM- to Vo-"

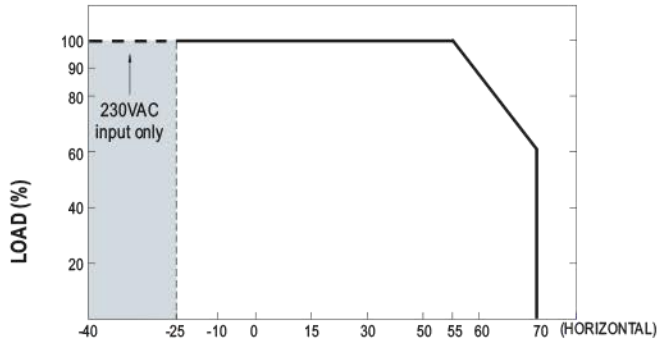


Note : 1. Min. dimming level is about 8% and the output current is not defined when 0%< Iout<8%.
2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.

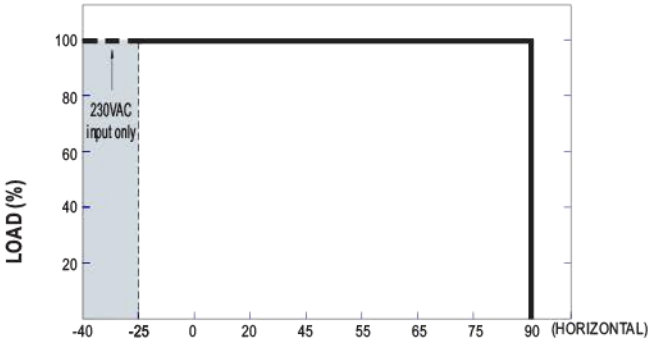
※ DALI Interface (primary side; for DA-Type)

- Apply DALI signal between DA+ and DA-.
- DALI protocol comprises 16 groups and 64 addresses.
- First step is fixed at 8% of output.

■ OUTPUT LOAD vs TEMPERATURE(Note.7)

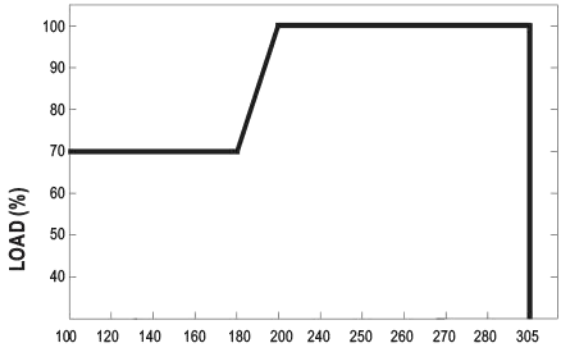


AMBIENT TEMPERATURE,Ta (℃)



Tcase (℃)

■ STATIC CHARACTERISTIC

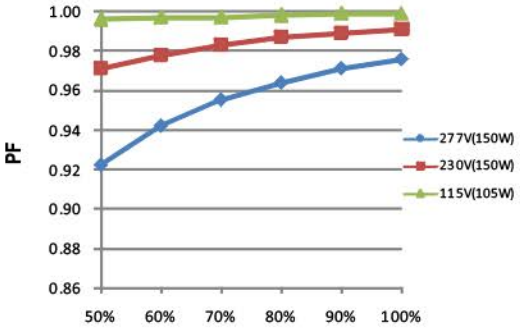


INPUT VOLTAGE (V) 60Hz

※ De-rating is needed under low input voltage.

■ POWER FACTOR (PF) CHARACTERISTIC

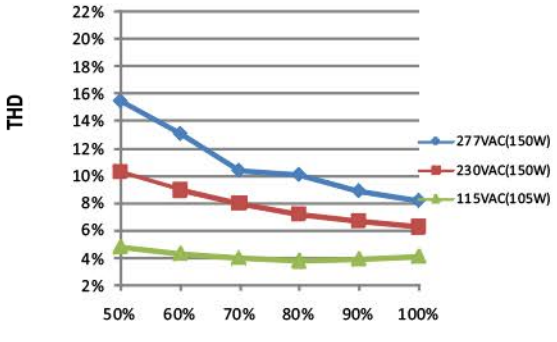
※ Tcase at 75℃



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■ TOTAL HARMONIC DISTORTION (THD)

※ 500mA Model, Tcase at 75℃

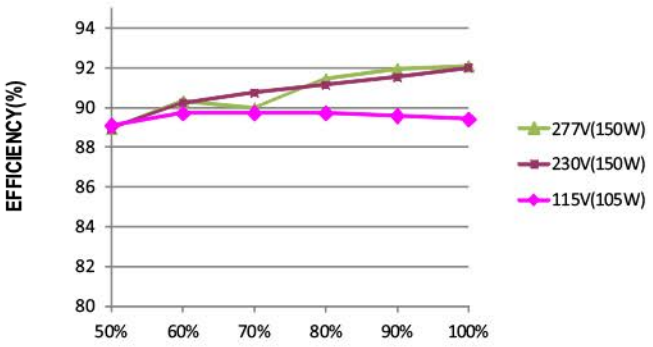


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■ EFFICIENCY vs LOAD

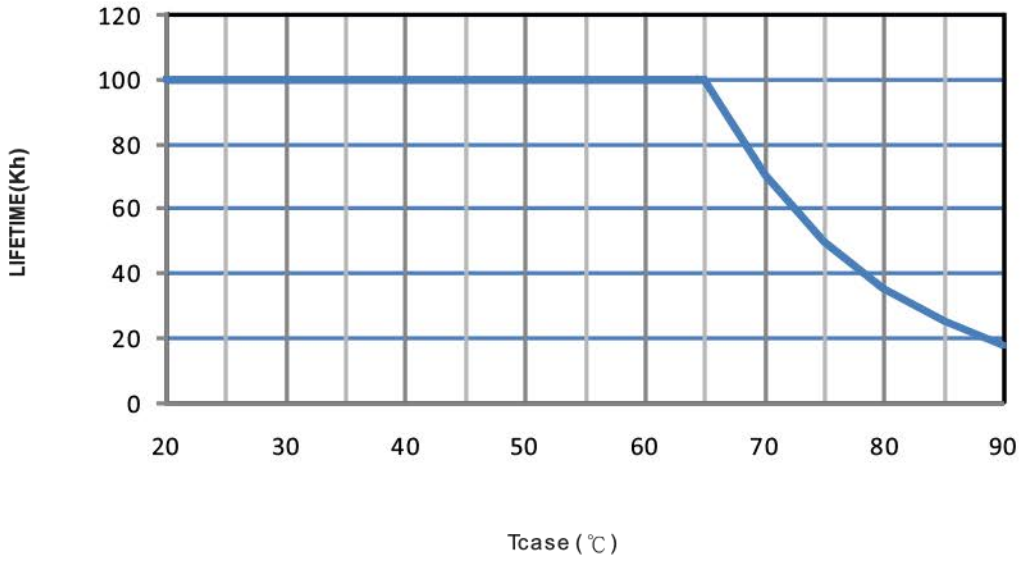
ELG-150-C series possess superior working efficiency that up to 92% can be reached in field applications.

※ 500mA Model, Tcase at 75℃



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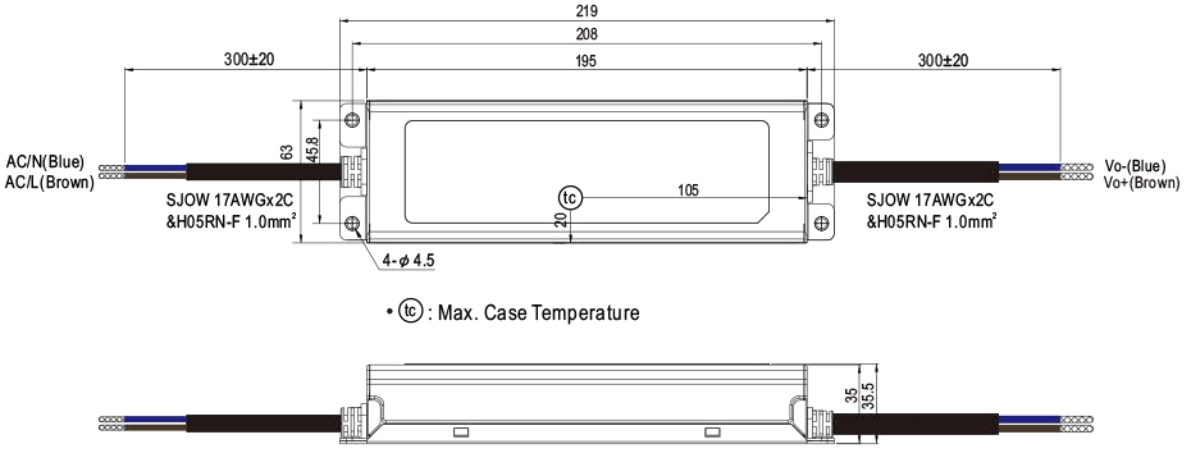
■ LIFE TIME



■ MECHANICAL SPECIFICATION

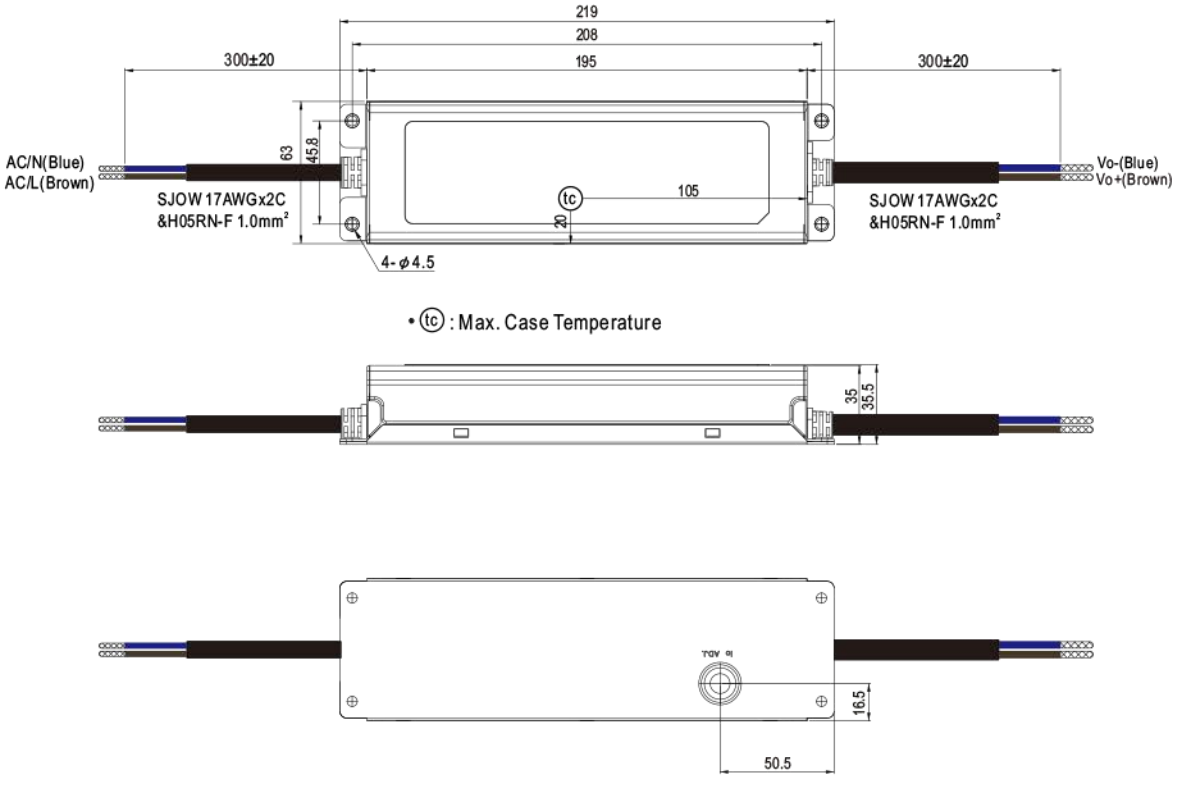
※ **Blank-Type**

CASE NO.: 237A Unit:mm Tolerance:±1



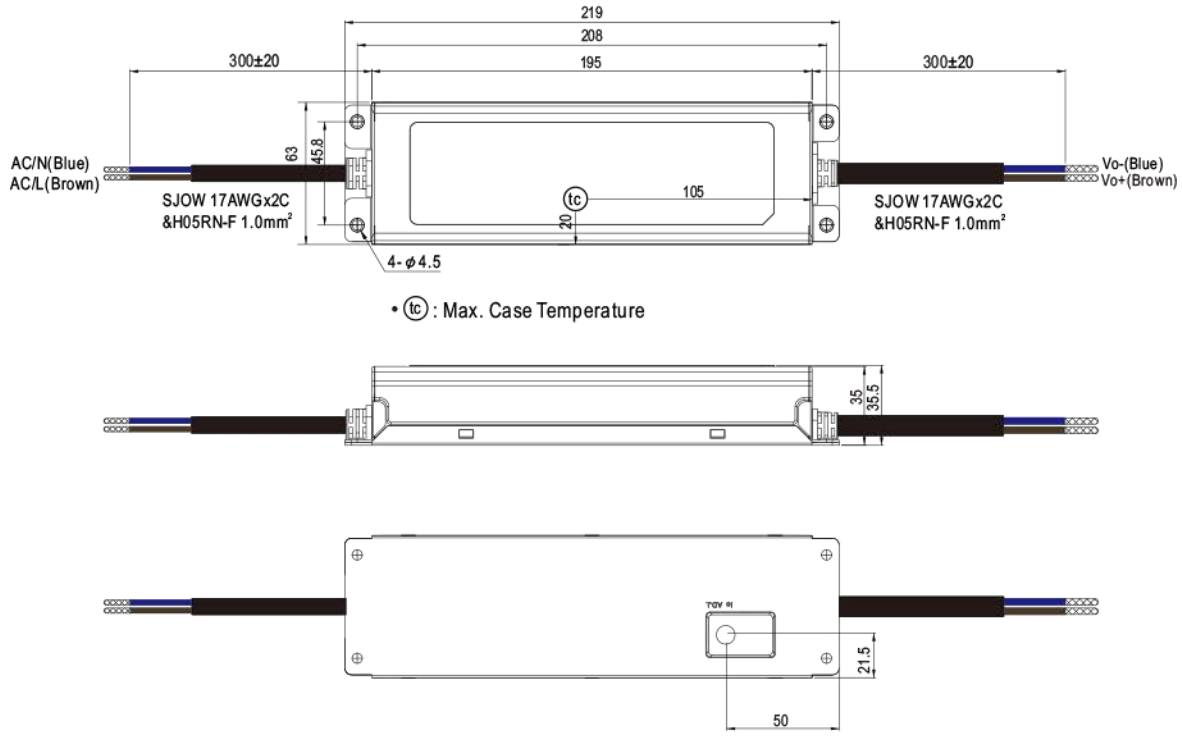
• ⓣc : Max. Case Temperature

※ **A-Type(except for 1750mA, 2100mA models)**



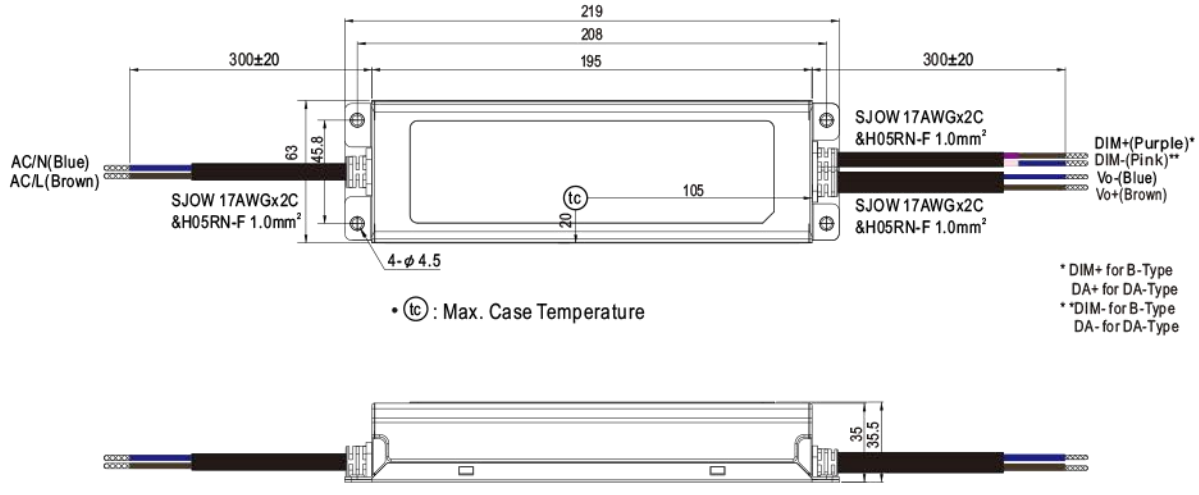
• ⓣc : Max. Case Temperature

※ **A-Type(for 1750mA, 2100mA models)**



• tc : Max. Case Temperature

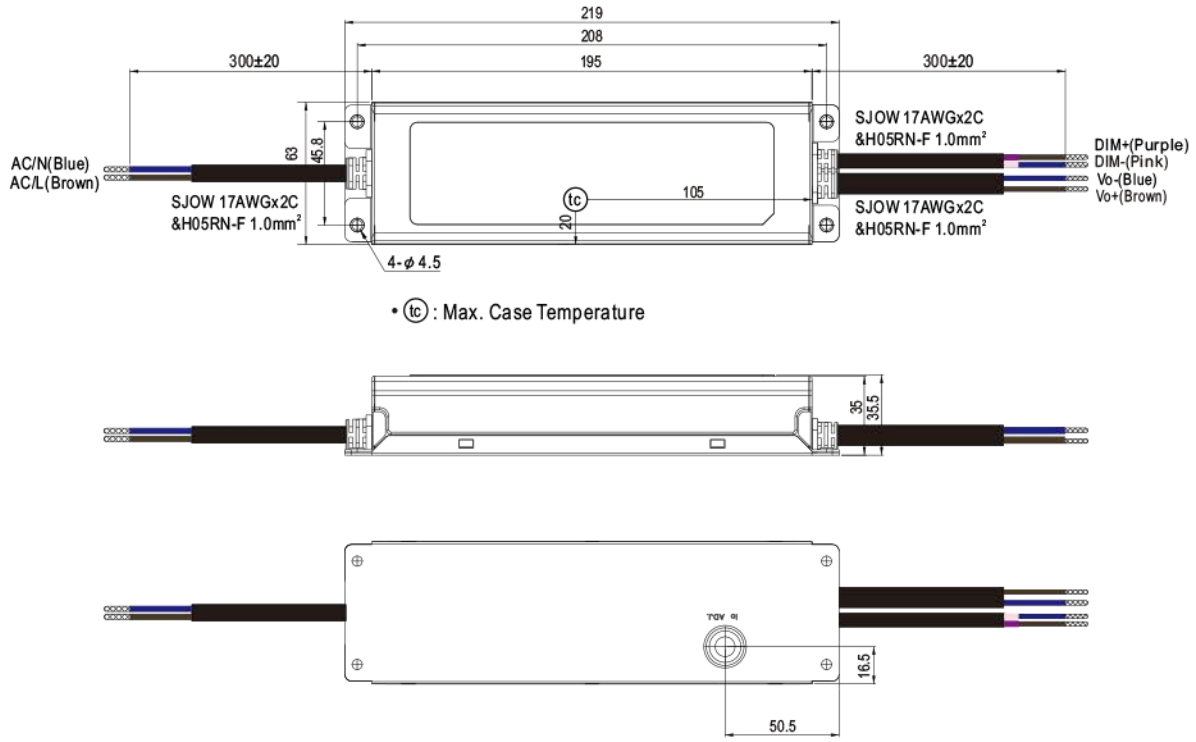
※ **B/DA-Type**



• tc : Max. Case Temperature

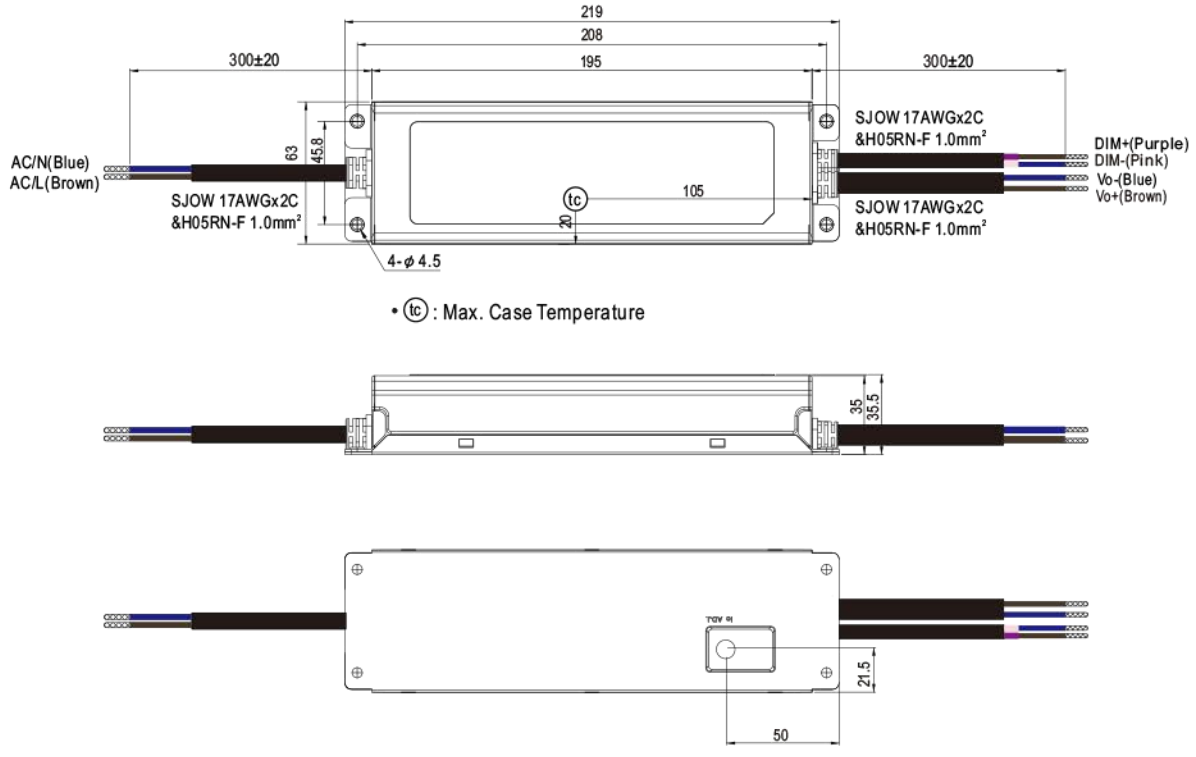
* DIM+ for B-Type
DA+ for DA-Type
* *DIM- for B-Type
DA- for DA-Type

※ AB-Type(except for 1750mA, 2100mA models)



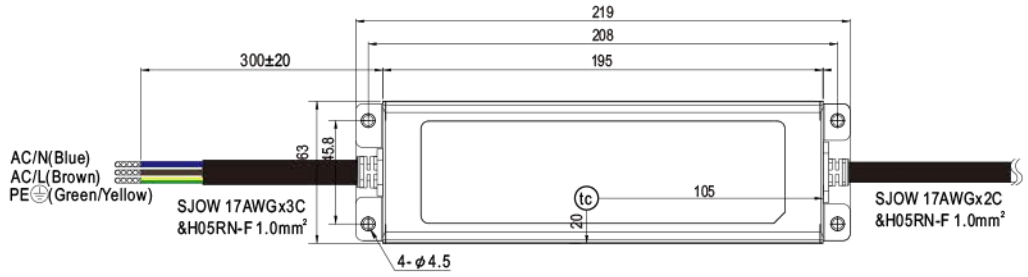
• (tc) : Max. Case Temperature

※ AB-Type(for 1750mA, 2100mA models)



• (tc) : Max. Case Temperature

※ **3Y Model (3-wire input)**



• ⓣⓒ : Max. Case Temperature

◎ Note1: Please connect the case to PE for the complete EMC deliverance and safety use.
◎ Note2: Please contact MEAN WELL for input wiring option with PE.

■ Recommend Mounting Direction

