Driver LED à tension et courant constants 480W HLG-480H-24 **HLG-480H series**

User's Manual

(except for AB,Dx,D2-type) (for Blank/A-type) Type HL

SELV IP65 IP67

Features

- Sortie en mode tension et courant constants
- Boîtier métallique de classe I
- Fonction PFC active intégrée
- Indice IP67 / IP65 pour les installations intérieures ou extérieures
- Options de fonctionnement :
  - Sortie réglable par potentiomètre
  - Variation 3 en 1 (dim-to-off, conception isolée)
  - Variation plus intelligente.
  - Boîte de jonction.
- Durée de vie typique > 62000 heures
- Garantie de 7 ans

Applications

- Port à LED
- Éclairage de serre à LED
- Éclairage de statium à LED
- Éclairage à LED pour les minigroupes
- Type "HL" pour utilisation dans un emplacement dangereux (classé) de classe I, division 2.

Description

Driver LED à tension et courant constants 480W HLG-480H-24

Le HLG-480H-24 est un driver LED AC/DC de 480 W doté d'une sortie double modes : tension constante et courant constant . Le HLG-480H-24 fonctionne à partir de 90～305 VAC . Grâce à la haute efficacité jusqu 'à 94%, avec la conception sans ventilateur , il est capable de fonctionner pour une température de boîtier de -40℃ ~ +90℃ sous convection d'air libre. La conception du boîtier métallique et le niveau de protection IP67/IP65 permettent à ce driver LED de s'adapter aux applications intérieures et extérieures . Le HLG-480H-24 est équipé de diverses options de fonction , telles que les méthodologies de variation , de manière à fournir la flexibilité de conception optimale pour le système d'éclairage LED.

Model Encoding

HLG - 480H - 24 A

- A — Function options
- 24 — Rated output voltage (24V/30V/36V/42V/48V/54V)
- 480H — Rated wattage
- HLG — Series name

Type	IP Level	Function	Note
Blank	IP67	Io and Vo fixed	

SPECIFICATION

MODEL			HLG-480H-24
OUTPUT	DC VOLTAGE		24V
	CONSTANT CURRENT REGION Note.4		12 ~ 24V
	RATED CURRENT		20A
	RATED POWER		480W
	RIPPLE & NOISE (max.) Note.2		200mVp-p
	VOLTAGE ADJ. RANGE		Adjustable for A/AB-Type only (via built-in potentiometer)
			20.4 ~ 25.2V
	CURRENT ADJ. RANGE		Adjustable for A/AB-Type only (via built-in potentiometer)
			10 ~ 20A
	VOLTAGE TOLERANCE Note.3		±1.0%
	LINE REGULATION		±0.5%
	LOAD REGULATION		±0.5%
	SETUP, RISE TIME Note.6		500ms, 80ms 115VAC/230VAC
	HOLD UP TIME (Typ.)		16ms 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≧0.97/230VAC, PF≧0.95/277VAC @ full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)
	TOTAL HARMONIC DISTORTION		THD< 20% (@ load≧40% / 115VAC,230VAC,277VAC) (Please refer to "TOTAL HARMONIC DISTORTION (THD)" section)
	EFFICIENCY (Typ.)	230VAC	94%
		277VAC	94.5%
	AC CURRENT (Typ.)		5A / 115VAC 2.45A / 230VAC 2A / 277VAC
	INRUSH CURRENT(Typ.)		COLD START 35A(t_{width}=1800μs measured at 50% I_{peak}) at 230VAC; Per NEMA 410
	LEAKAGE CURRENT		<0.75mA / 277VAC
	MAX. NO. of PSUs on 16A CIRCUIT BREAKER		2unit(circuit breaker of type B) / 3units(circuit breaker of type C) at 230VAC
PROTECTION	OVER CURRENT		95 ~ 108%
			Constant current limiting, recovers automatically after fault condition is removed
	SHORT CIRCUIT		Constant current limiting, recovers automatically after fault condition is removed
	OVER VOLTAGE		27 ~ 33V
			Shut down output voltage, re-power on to recovery
	OVER TEMPERATURE		Shut down output voltage, re-power on to recovery
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 non-condensing
	TEMP. COEFFICIENT		±0.02%/℃ (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; ENEC BS EN/EN61347-1, BS EN/EN61347-2-13 independent, BS EN/EN62384; GB19510.14,GB19510.1;IP65 or IP67, EAC TP TC 004,AS/NZS IEC 61347.2.13:2013,AS/NZS 61347.1:2016;KC61347-1, KC61347-2-13(except for AB,Dx,D2-type), J61347-1(H29), J61347-2-13(H29)(for Blank/A-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℃/ 70% RH
	EMC EMISSION		Compliance to BS EN/EN55015, BS EN/EN61000-3-2 Class C (@ load≧50%) ; BS EN/EN61000-3-3;GB17743, GB17625.1, EAC TP TC 020;KC KN15,KN61547(except for AB,Dx,D2-type),J55015(H29)(for Blank/A-type)
	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;KC KN15,KN61547(except for AB,Dx,D2-type),J55015(H29)(for Blank/A-type)
OTHERS	MTBF		345.5K hrs min. Telcordia SR-332(Bellcore) ; 95.3K hrs min. MIL-HDBK-217F (25℃)
	DIMENSION		262*125*43.8mm (L*W*H)
	PACKING		2.8Kg;4pcs/12.2Kg/0.55CUFT

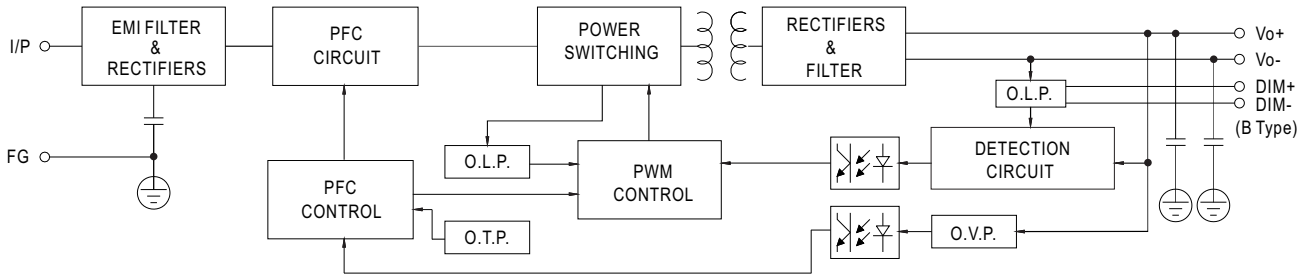
NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ 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 Tcase, particularly (tc) point (or TMP, per DLC), is about 75℃ or less.
10. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com
11. 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).
12. 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

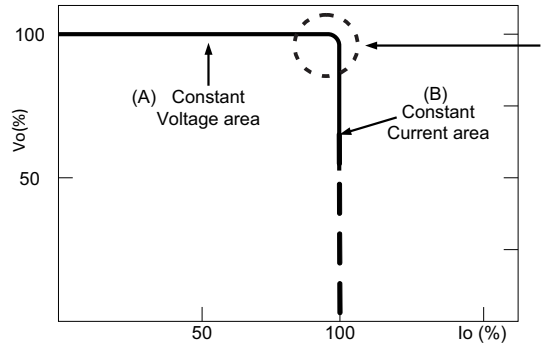
■ BLOCK DIAGRAM

PFC fosc : 45KHz
PWM fosc : 55KHz



■ 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.



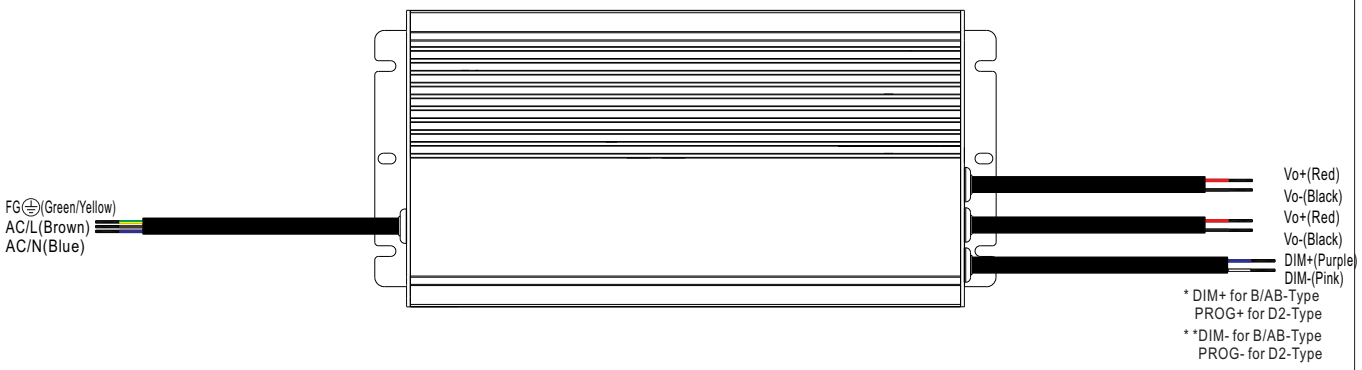
Typical output current normalized by rated current (%)

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

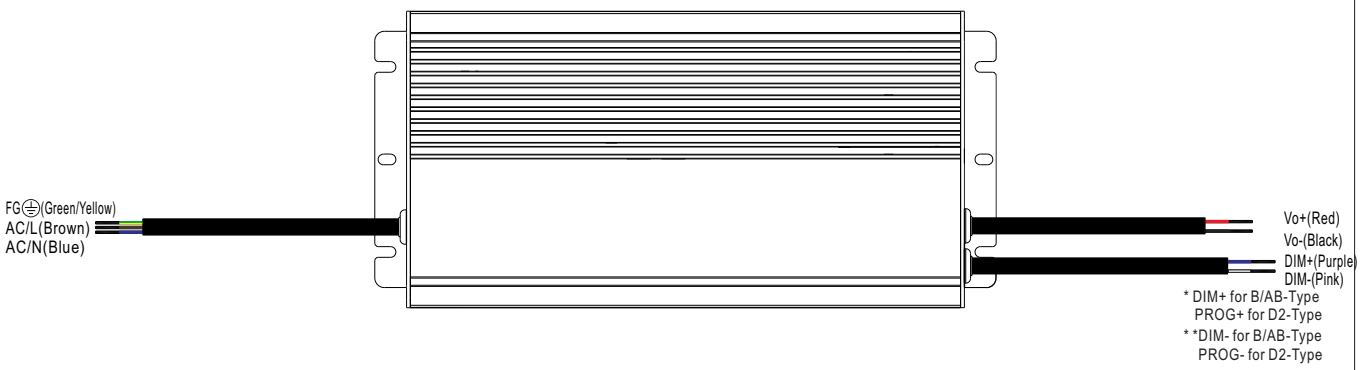
Should there be any compatibility issues, please contact MEAN WELL.

■ DIMMING OPERATION

For 24V,30V,36V,42V



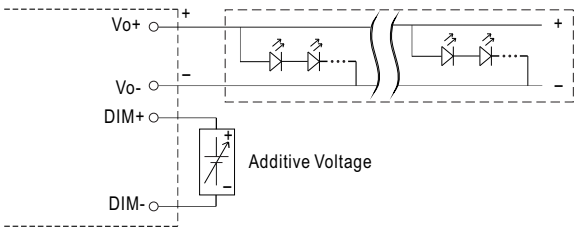
For 48V,54V



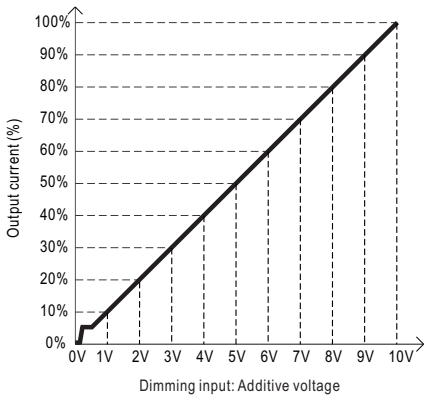
※ 3 in 1 dimming function (for B/AB-Type)

- 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.)

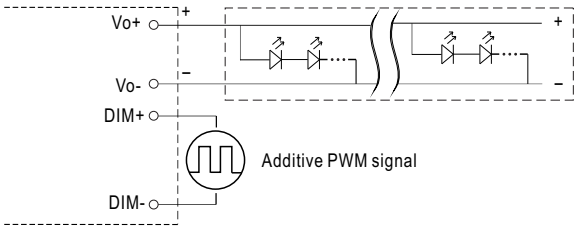
◎ Applying additive 0 ~ 10VDC



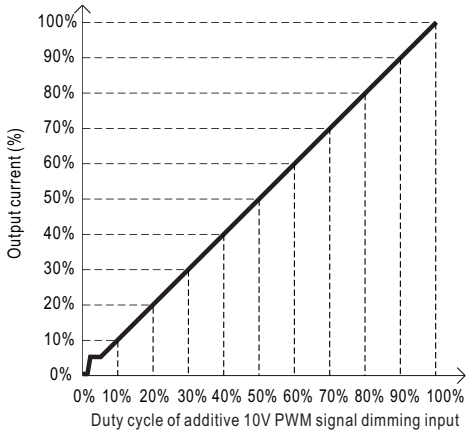
"DO NOT connect "DIM- to Vo-"



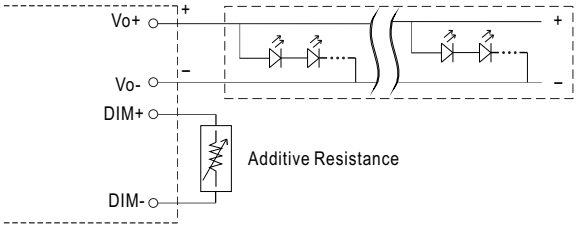
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



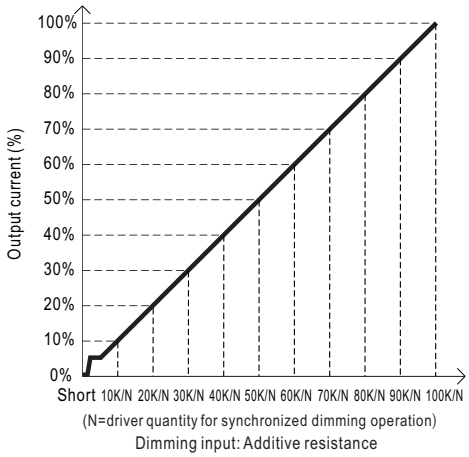
"DO NOT connect "DIM- to Vo+"



◎ Applying additive resistance:



"DO NOT connect "DIM- to Vo-"

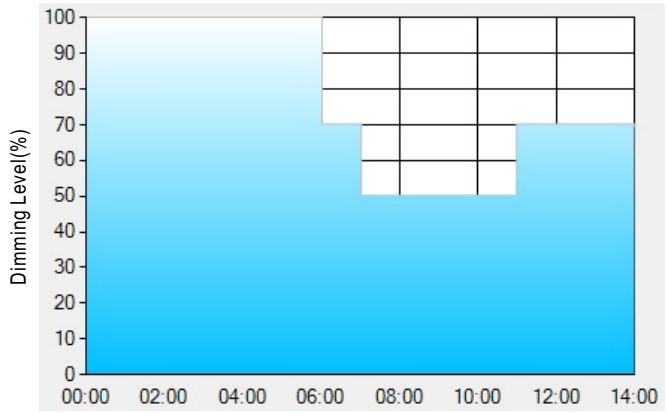


Note : 1. Min. dimming level is about 6% and the output current is not defined when 0%< Iout<6%.
2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.

※ **Smart timer dimming function (for Dxx-Type by User definition)**

MEAN WELL Smart timer dimming primarily provides the adaptive proportion dimming profile for the output constant current level to perform up to 14 consecutive hours. 3 dimming profiles hereunder are defined accounting for the most frequently seen applications. If other options may be needed, please contact MEAN WELL for details.

Ex : ◎ D01-Type: the profile recommended for residential lighting



Set up for D01-Type in Smart timer dimming software program:

	T1	T2	T3	T4
TIME**	06:00	07:00	11:00	---
LEVEL**	100%	70%	50%	70%

**: TIME matches Operating Time in the diagram whereas LEVEL matches Dimming Level.

Example: If a residential lighting application adopts D01-Type, when turning on the power supply at 6:00pm, for instance:

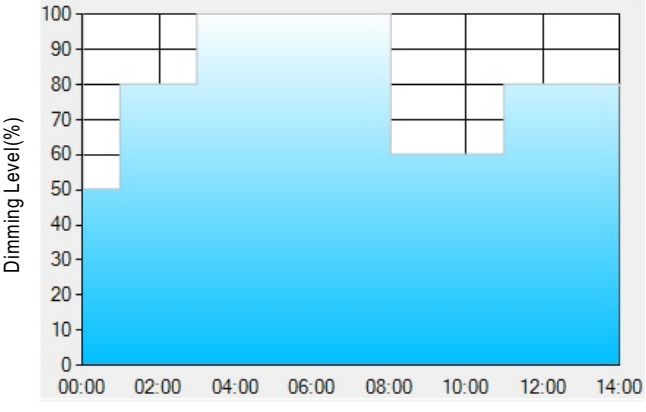
[1] The power supply will switch to the constant current level at 100% starting from 6:00pm.

[2] The power supply will switch to the constant current level at 70% in turn, starting from 0:00am, which is 06:00 after the power supply turns on.

[3] The power supply will switch to the constant current level at 50% in turn, starting from 1:00am, which is 07:00 after the power supply turns on.

[4] The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on. The constant current level remains till 8:00am, which is 14:00 after the power supply turns on.

Ex: ◎ D02-Type: the profile recommended for street lighting



Set up for D02-Type in Smart timer dimming software program:

	T1	T2	T3	T4	T5
TIME**	01:00	03:00	8:00	11:00	---
LEVEL**	50%	80%	100%	60%	80%

**: TIME matches Operating Time in the diagram whereas LEVEL matches Dimming Level.

Example: If a street lighting application adopts D02-Type, when turning on the power supply at 5:00pm, for instance:

[1] The power supply will switch to the constant current level at 50% starting from 5:00pm.

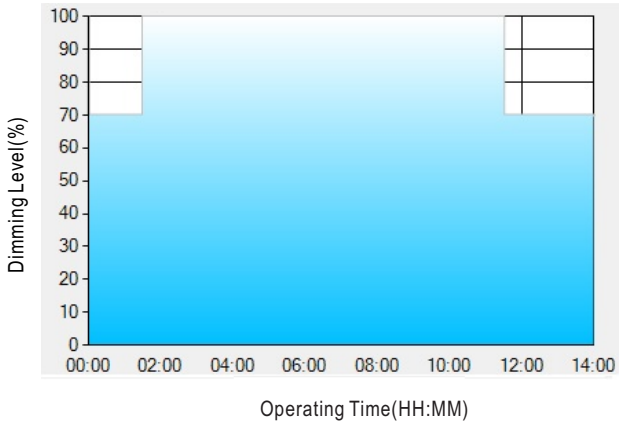
[2] The power supply will switch to the constant current level at 80% in turn, starting from 6:00pm, which is 01:00 after the power supply turns on.

[3] The power supply will switch to the constant current level at 100% in turn, starting from 8:00pm, which is 03:00 after the power supply turns on.

[4] The power supply will switch to the constant current level at 60% in turn, starting from 1:00am, which is 08:00 after the power supply turns on.

[5] The power supply will switch to the constant current level at 80% in turn, starting from 4:00am, which is 11:00 after the power supply turns on. The constant current level remains till 6:30am, which is 14:00 after the power supply turns on.

Ex: ◎ D03-Type: the profile recommended for tunnel lighting

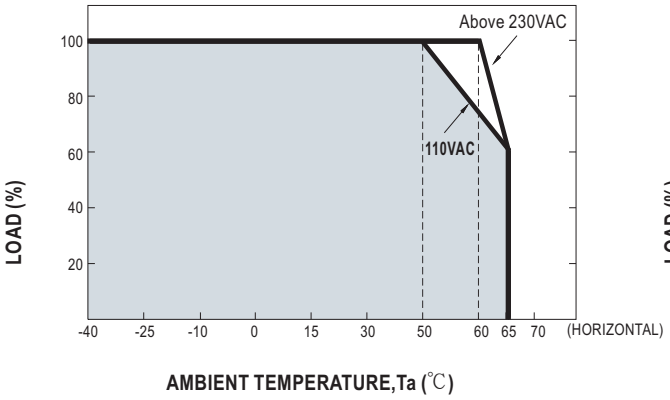


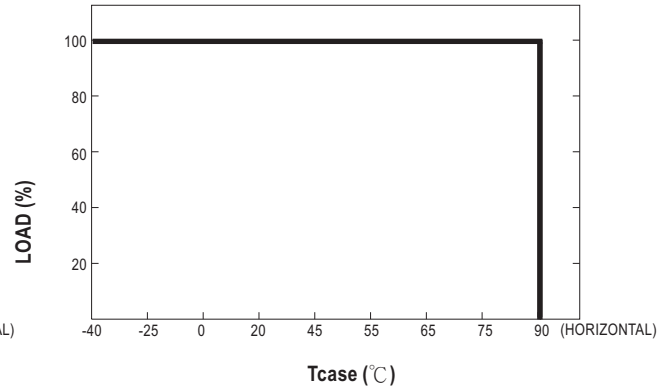
Set up for D03-Type in Smart timer dimming software program:

	T1	T2	T3
TIME**	01:30	11:00	---
LEVEL**	70%	100%	70%

**: TIME matches Operating Time in the diagram whereas LEVEL matches Dimming Level.
Example: If a tunnel lighting application adopts D03-Type, when turning on the power supply at 4:30pm, for instance:
[1] The power supply will switch to the constant current level at 70% starting from 4:30pm.
[2] The power supply will switch to the constant current level at 100% in turn, starting from 6:00pm, which is 01:30 after the power supply turns on.
[3] The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on.
The constant current level remains till 6:30am, which is 14:00 after the power supply turns on.

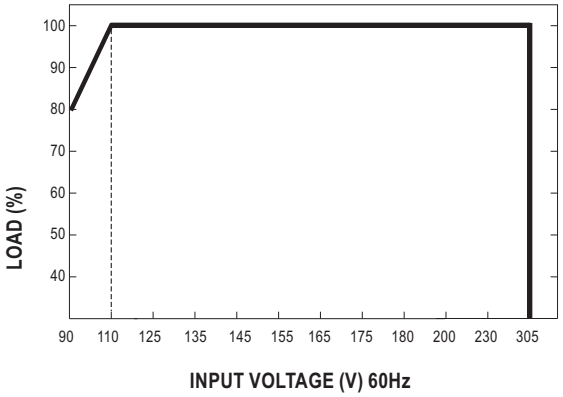
■ OUTPUT LOAD vs TEMPERATURE(Note.10)





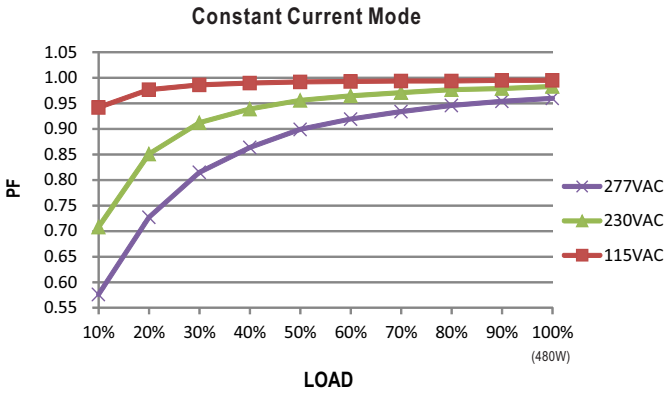
◎ If HLG-480H operates in constant current mode with the rated current, the maximum workable Ta is 60℃.(Typ. 230VAC)

■ STATIC CHARACTERISTICS



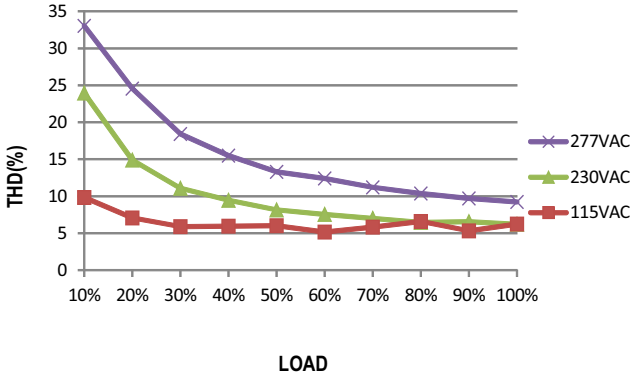
■ POWER FACTOR(PF) CHARACTERISTIC

※Tcase at 75℃



■ TOTAL HARMONIC DISTORTION (THD)

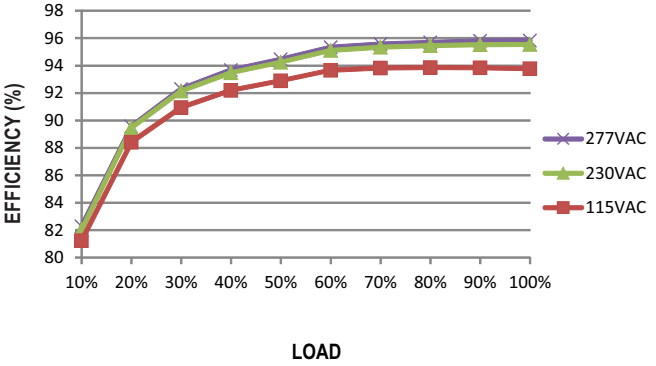
※ 42V Model, Tcase at 75℃



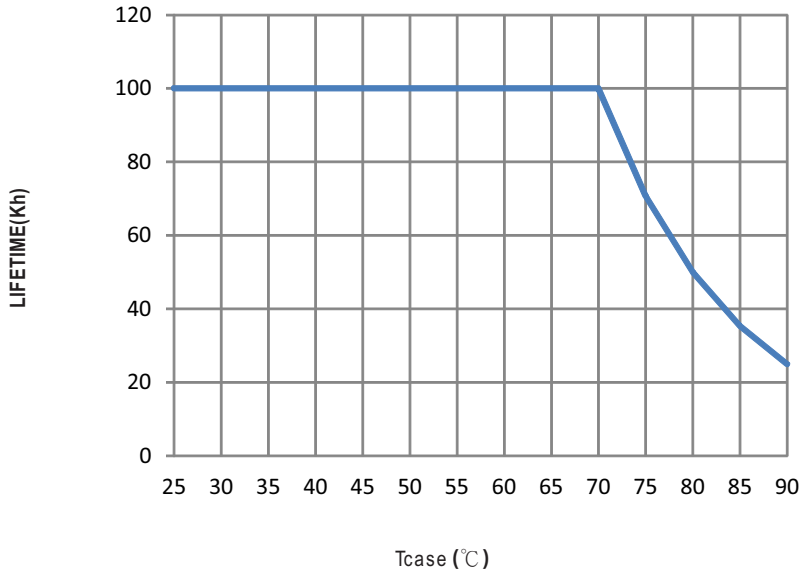
■ EFFICIENCY vs LOAD

HLG-480H series possess superior working efficiency that up to 95.5% can be reached in field applications.

※ 42V Model, Tcase at 75℃



■ LIFE TIME

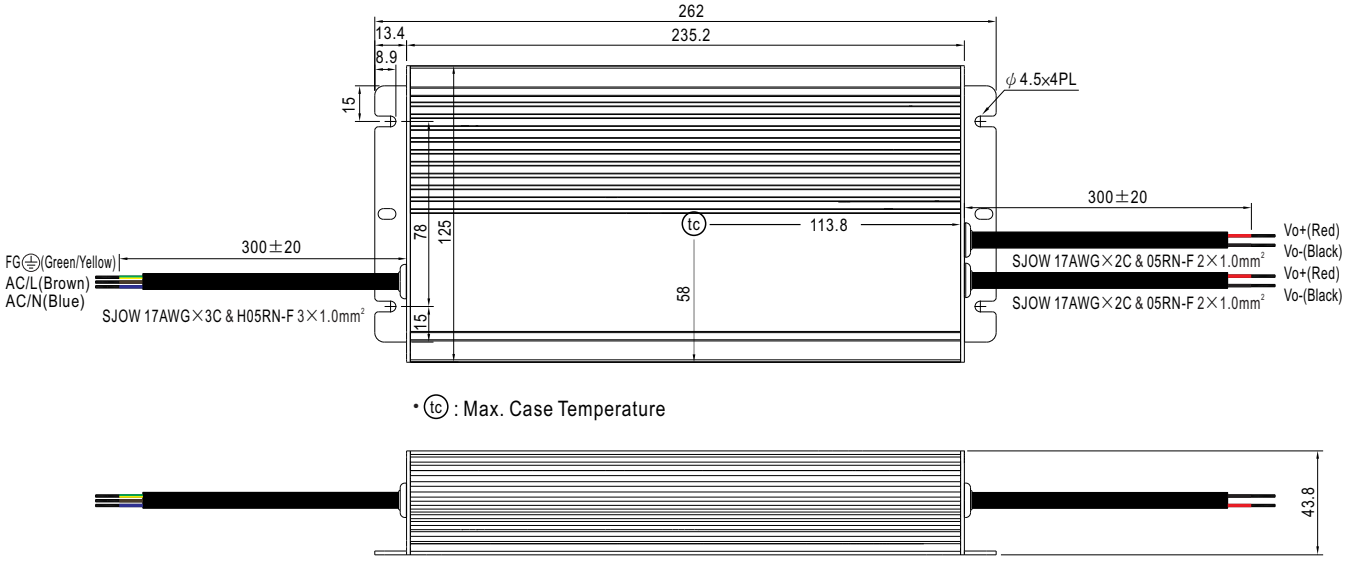

LIFETIME(Kh)
120
100
80
60
40
20
0
25 30 35 40 45 50 55 60 65 70 75 80 85 90
Tcase (℃)

■ MECHANICAL SPECIFICATION

Case No. 251 Unit:mm

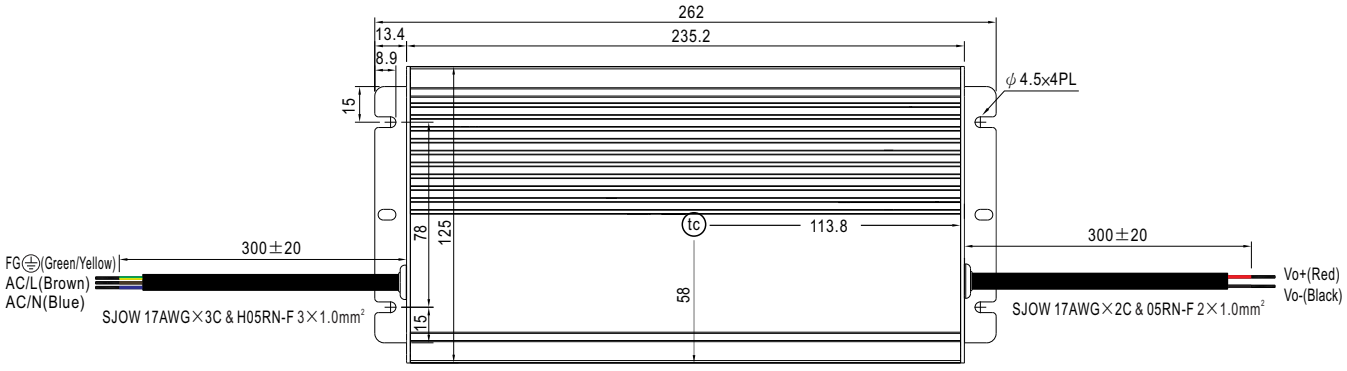
※**Blank-Type**

For 24V,30V,36V,42V

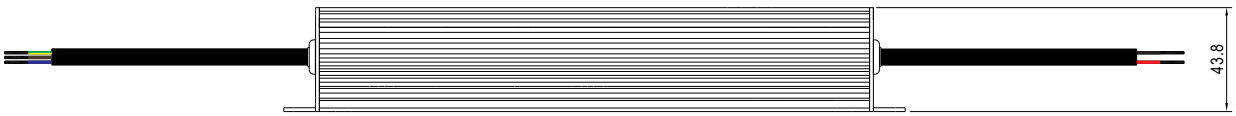


• tc : Max. Case Temperature

For 48V,54V

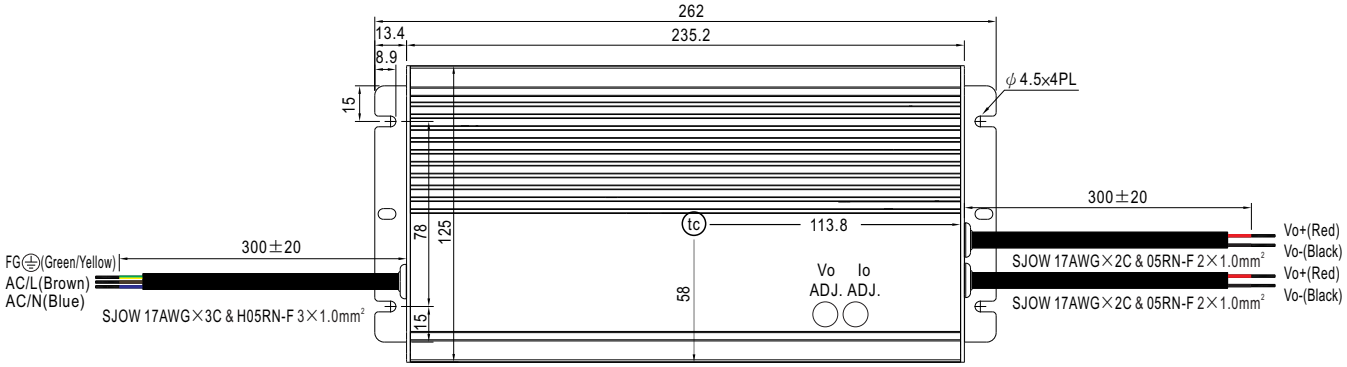


• tc : Max. Case Temperature

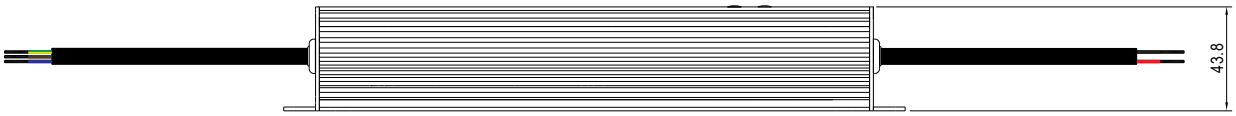


※**A-Type**

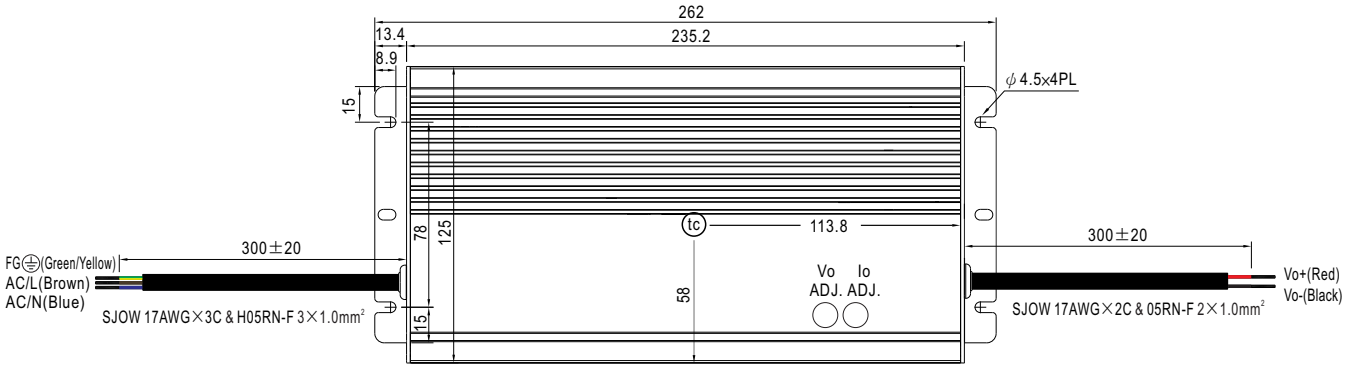
For 24V,30V,36V,42V



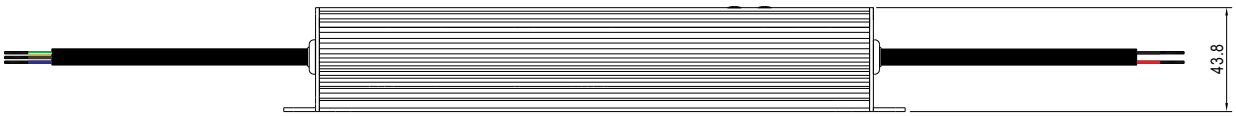
• tc : Max. Case Temperature



For 48V,54V

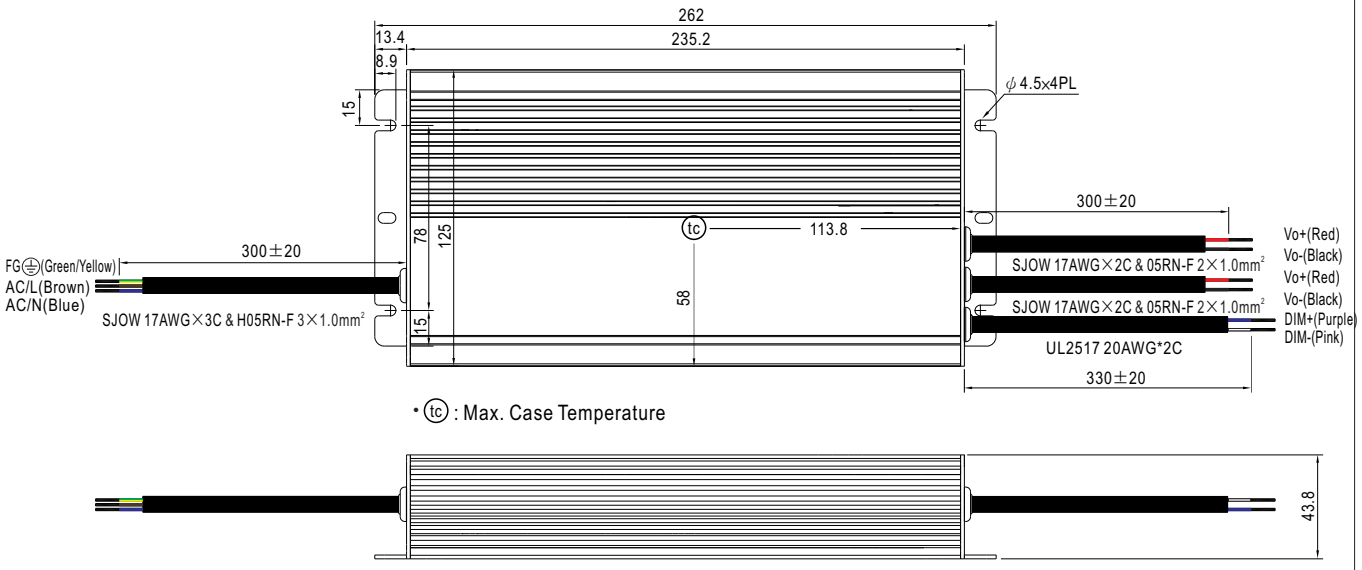


• tc : Max. Case Temperature



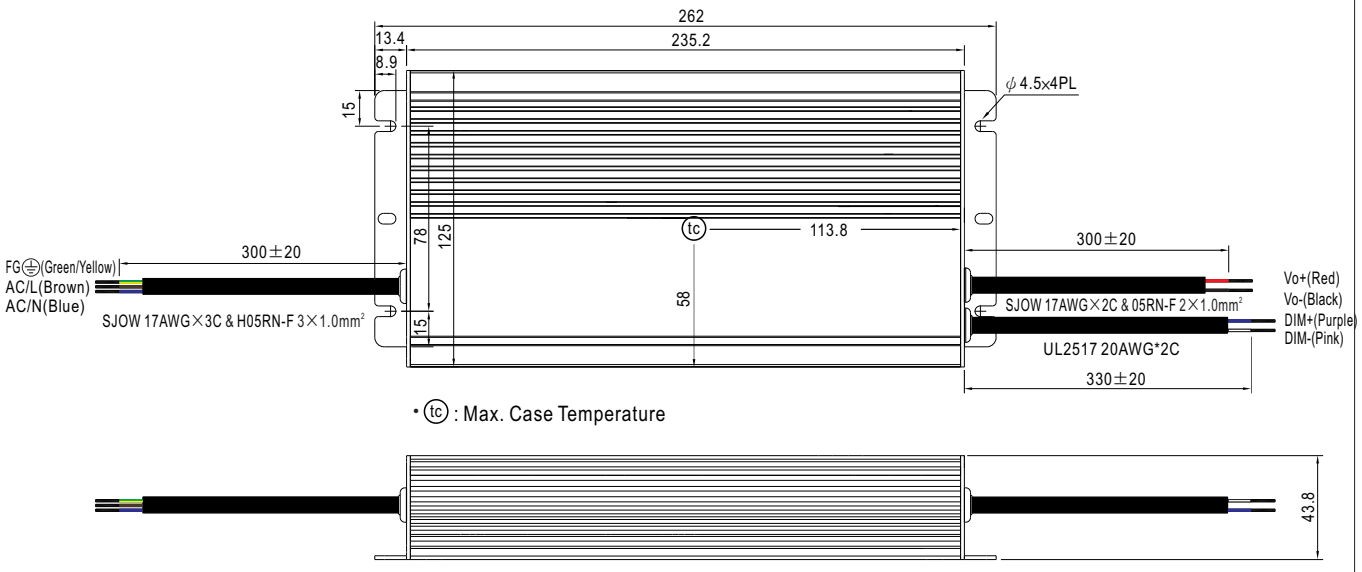
※**B/D2-Type**

For 24V,30V,36V,42V



• tc : Max. Case Temperature

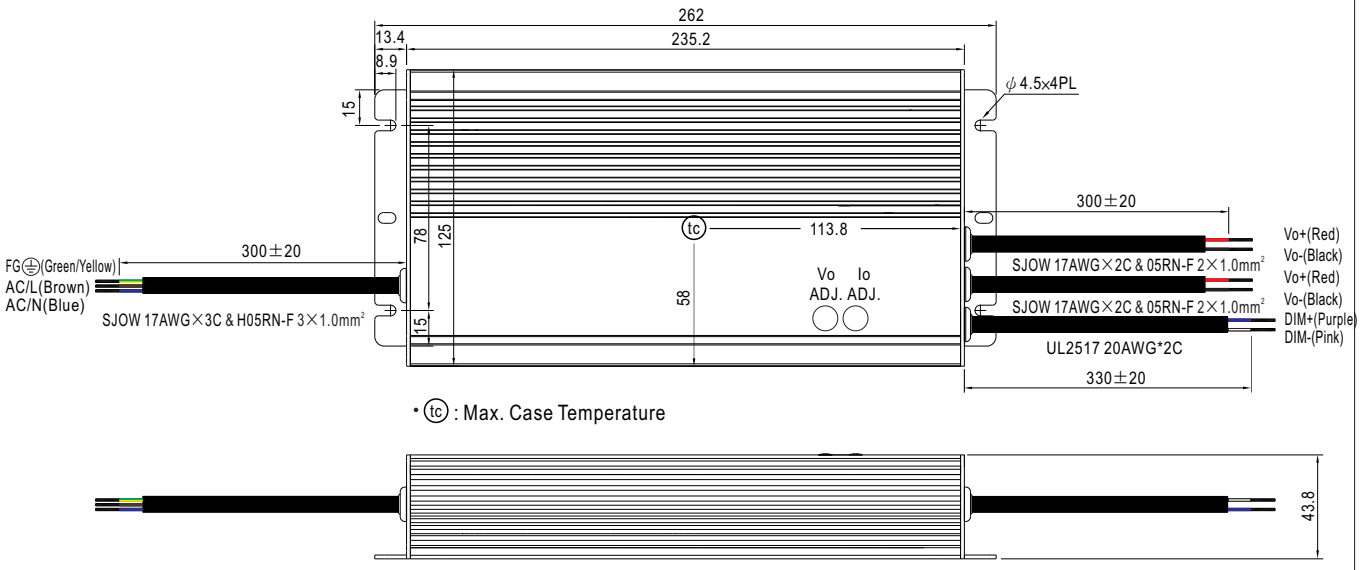
For 48V,54V



• tc : Max. Case Temperature

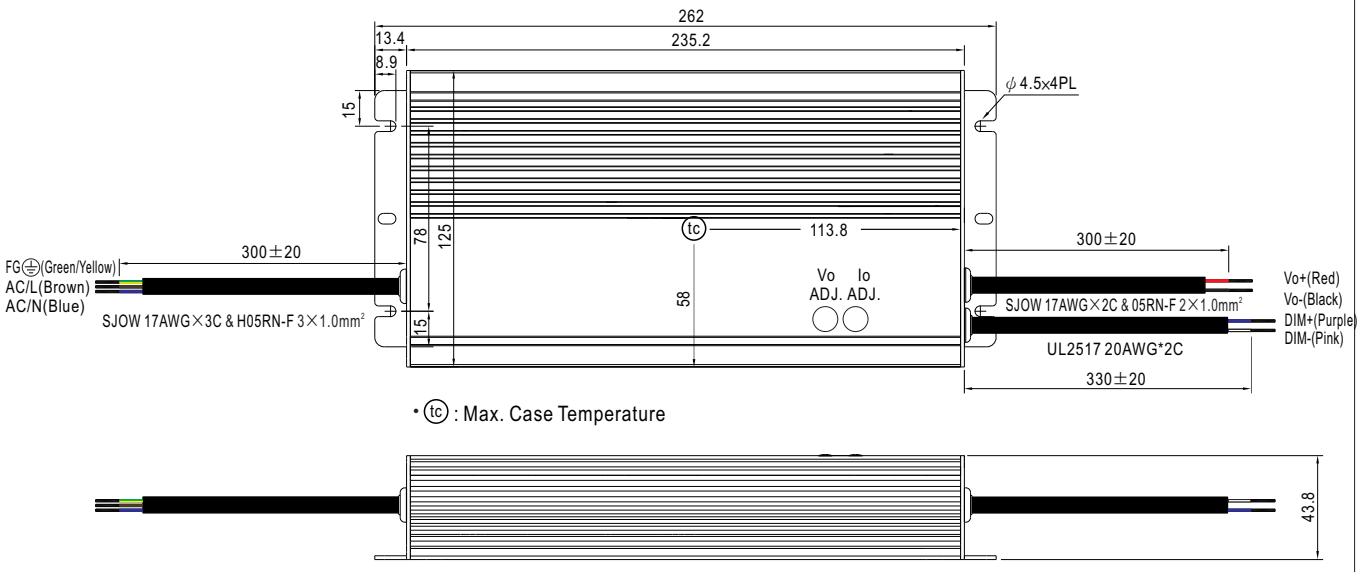
※**AB-Type**

For 24V,30V,36V,42V



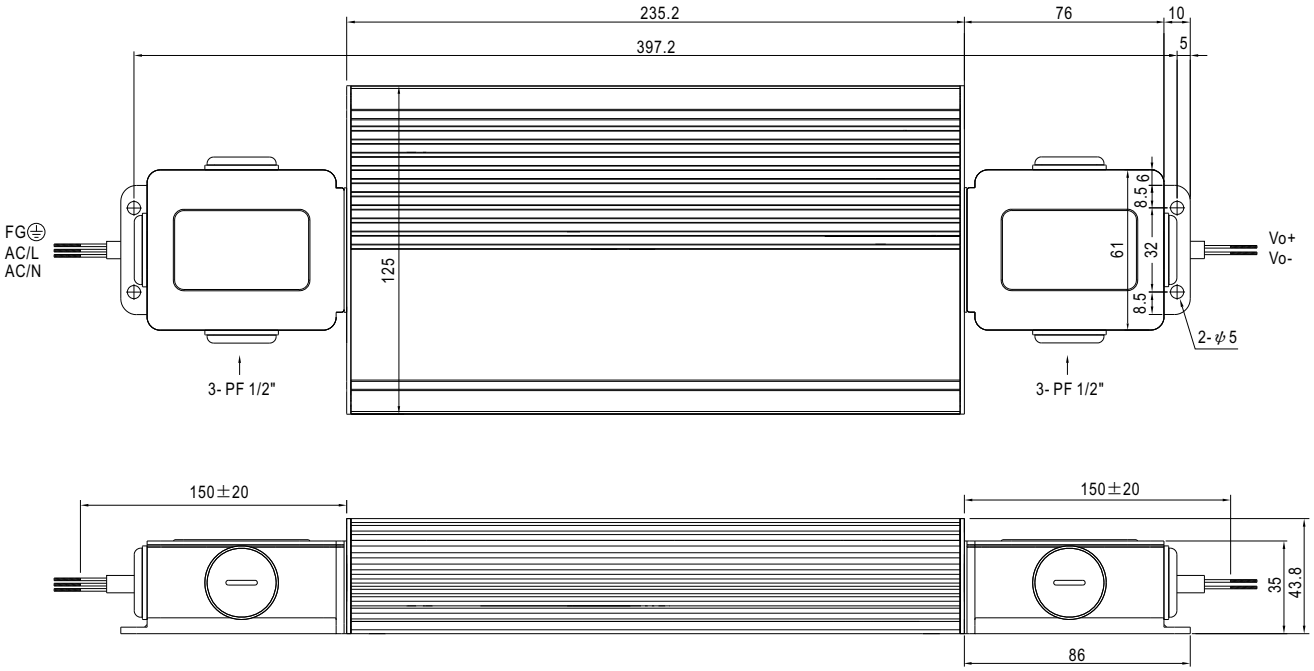
• tc : Max. Case Temperature

For 48V,54V



• tc : Max. Case Temperature

※ **Junction Box Option**



◎ Junction box option is available for all types. Please contact MEAW WELL for details.

■ INSTALLATION MANUAL

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