

## 100W Constant Power Mode LED Driver

**MODEL NO.: EMO-24V-4A-HW**



### FEATURES:

- Wide input range 100~304VAC (Class 1)
- Full power output at 70~100% constant power mode operation
- Metal case with IP67, suitable for outdoor application
- LVLE (H Type), Class 2 (24V) power unit
- Surge protection with 6KV/4KV (10KV/6KV optional)
- 3 in1 dimming function (Dim to off and isolation design)
- Protection functions: OVP/SCP/OCP/OTP
- Comply with UL Class P
- Lifetime >50,000 hrs. and 5 year warranty

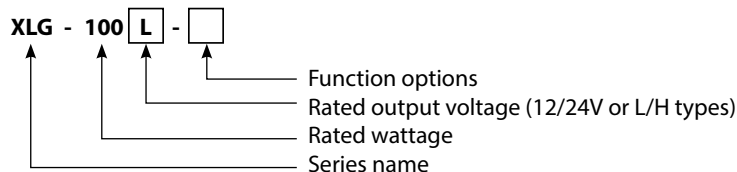
### APPLICATIONS:

- Skyscraper lighting
- Street lighting
- Floodlight lighting
- Stage lighting
- Fishing lighting
- Horticulture lighting
- Bay lighting
- DMX power supply
- Type HL for use in Class 1, Division 2

### DESCRIPTION:

100W LED AC/DC driver featuring the constant power mode. Operates from 100~305VAC and offers models with different rated current ranging between 700mA and 8000mA. Thanks to the high efficiency up to 92%, 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 ingress protection level allows this series to fit both indoor and outdoor applications. Moreover, the innovative environment-adaptive capability allows this series to reliably light on the LEDs for all kinds of application environments in almost any spots that may install LED luminaires in the world. Complies with the latest version of IEC61347/GB19510.1 and UL8750 international safety regulations. The output and dimming circuit are also completely in accordance with the new regulations with isolation to ensure the safety of both user and luminaire system during installation.

### MODEL ENCODING:



TYPE	FUNCTION
Blank	Io and Vo fixed. (For harsh environment)
A	Io adjustable via built-in potentiometer
AB	Io adjustable via built-in potentiometer + 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)

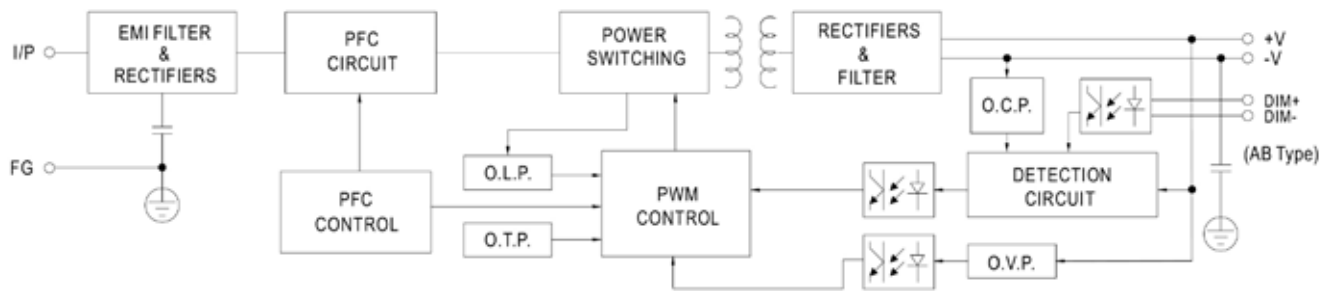
Note: 12V and 24V models without the AB type

**SPECIFICATIONS:**

MODEL NO.		EMO-24V-4A-HW
<b>OUTPUT</b>	DC Voltage	24V
	Constant Current Region Note.2	16.8 ~ 24V
	Rated Current (Default)	4A
	Rated Power	96W
	Ripple & Noise (Max.) Note.3	240mVp-p
	Current Adj. Range	Adjustable for A-Type only (via the built-in potentiometer)
		2~4A
	Voltage Tolerance Note.4	±2.0%
	Line Regulation	±0.5%
	Load Regulation	±1%
	Setup, Rise Time Note.6	500ms, 100ms/230VAC, 1200ms, 100ms/115VAC
	Hold Up Time (Typ.)	12ms/ 230VAC 12ms/ 115VAC
<b>INPUT</b>	Voltage Range	100 ~ 305VAC 142 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)
	Frequency Range	47 ~ 63Hz
	Power Factor	PF≥0.97/115VAC, PF≥0.95/230VAC, PF≥0.92/277VAC@full load
	Total Harmonic Distortion	THD< 10%(@load≥50%/115VAC,230VAC; @load≥75%/277VAC)
	Efficiency (Typ.)	92%
	AC Current	1.1A / 115VAC 0.5A / 230VAC 0.42A/277VAC
	Inrush Current (Typ.)	COLD START 50A(twidth=300μs measured at 50% Ipeak) at 230VAC; Per NEMA 410
	Max. No. of PSUs On 16A Circuit Breaker	8 units (circuit breaker of type B) /14 units (circuit breaker of type C) at 230VAC
	Leakage Current	<0.75mA / 277VAC
	No Load Power Consumption	No load power consumption <0.5W (for standard version)
<b>PROTECTION</b>	Over Current	95 ~ 108% Hiccup mode or Constant current limiting, recovers automatically after fault condition is removed.
	Short Circuit	Hiccup mode or Constant current limiting, recovers automatically after fault condition is removed.
	Over Voltage	27 ~ 34V
		Shut down output voltage, re-power on to recover.
	Input Over Voltage Note.7	320 ~ 390VAC (Shut down output voltage when the input voltage exceeds protection voltage, recovers automatically after fault condition is removed). Can survive input voltage stress of 440Vac for 48 hours.
<b>ENVIRONMENT</b>	Over Temperature	Shut down output voltage, re-power on to recover.
	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 ~ 60°C)
	Vibration	10 ~ 500Hz, 5G 12min./1 cycle, period for 72min. each along X, Y, Z axes

SAFETY & EMC	Safety Standards Note.7	UL8750(type“HL”), UL879, CSA C22.2 No. 250.13-12; ENEC BS EN/EN61347-1, BS EN/EN61347-2-13 independent, BS EN/EN62384; GB19510.1,GB19510.14;EAC TP TC 004;J61347-1(H29), J61347-2-13(H29),KC61347-1,KC61347-2-13, IS15885(Part2/Sec13)(for XLG-100I type only);NOM-058-SCFI-2017(except for Blank type); 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°C/ 70% RH		
	EMC Emission	Parameter	Standard	Test Level/Note
		Conducted	BS EN/EN55015(CISPR15), GB/T17743	-----
		Radiated	BS EN/EN55015(CISPR15), GB/T17743	-----
		Harmonic Current	BS EN/EN61000-3-2, GB/T17625.1	Class C @load≥50%
		Voltage Flicker	BS EN/EN61000-3-3	-----
	EMC Immunity	BS EN/EN61547		
		Parameter	Standard	Test Level/Note
		ESD	BS EN/EN61000-4-2	Level 3, 8KV air ; Level 2, 4KV contact
		Radiated	BS EN/EN61000-4-3	Level 3
		EFT/Burst	BS EN/EN61000-4-4	Level 3
		Surge	BS EN/EN61000-4-5	4KV/Line-Line 6KV/Line-Earth(6K/10K option)
		Conducted	BS EN/EN61000-4-6	Level 3
		Magnetic Field	BS EN/EN61000-4-8	Level 4
		Voltage Dips and Interruptions	BS EN/EN61000-4-11	>95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods
OTHERS	MTBF	2782.6K hrs min. Telcordia SR-332 (Bellcore); 276.4Khrs min. MIL-HDBK-217F (25°C)		
	Dimension	140x63x32mm (LxWxH)		
	Packing	0.58Kg;24pcs /15Kg /0.85CUFT		
NOTES	1. All parameters NOT specially mentioned sre measured at 230VAC input, rated current and 25°C of ambient temperature. 2. Please refer to“DRIVING METHODS OF LED MODULE” 3. Ripple & noise are measured at 20MHz of bandwidth by using a 12”twisted pair-wire terminated with a 0.1 uf & 47 uf parallel capacitor. 4. Tolerance: includes set up tolerance, line regulation and load regulation. 5. Derating 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. Input voltage only for XLG-100 I Series, and I Series without UL/CSA certificate. 8. 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. 9. 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 (6500 ft). 10. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly@ point (or TMP, per DLC), is about 80°C or less. 11. To fulfill requirements of the latest ErP regualtion for lighting fixtures, this LED driver can only be use behind a switch without being permanently connected to the mains.			

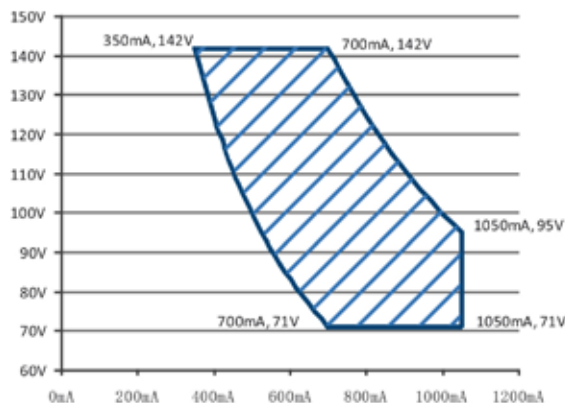
## BLOCK DIAGRAM



## DRIVING METHODS OF LED MODULE

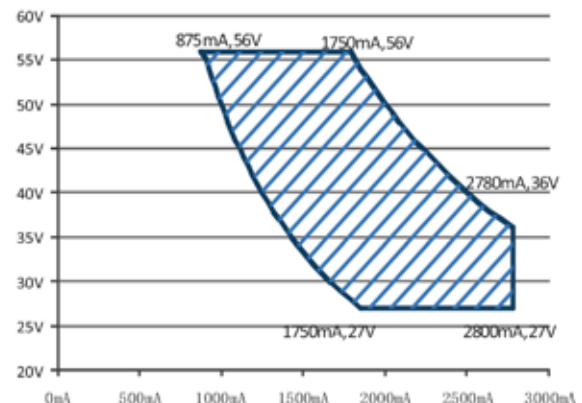
IV Operating Area

XLG-100-L



Recommend Performance Region

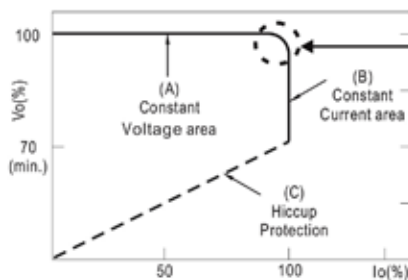
XLG-100-H



Recommend Performance Region

### XLG-100-12, 24

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.



In the constant current depends on the configuration. Should there be any at the output of the driver region, the highest voltage of the end systems. compatibility issues, please please contact MEAN WELL.

Typical output current normalized by rated current (%)

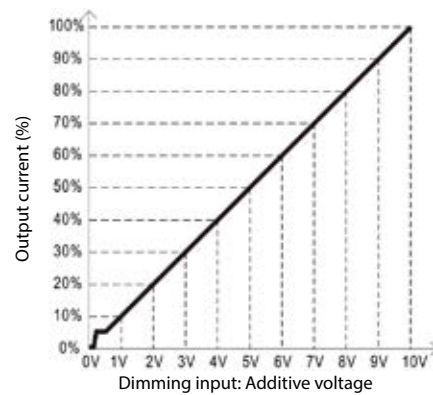
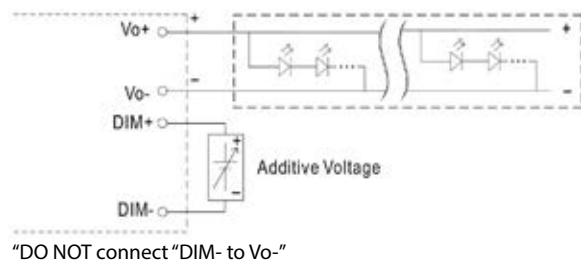
## DIMMING OPERATION



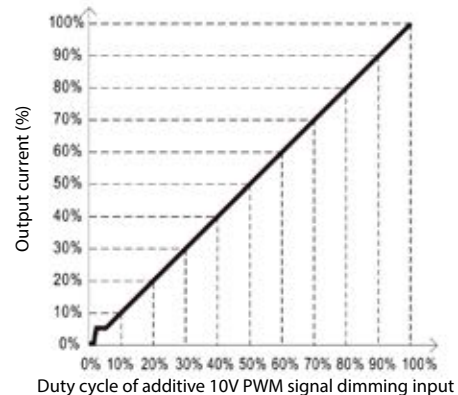
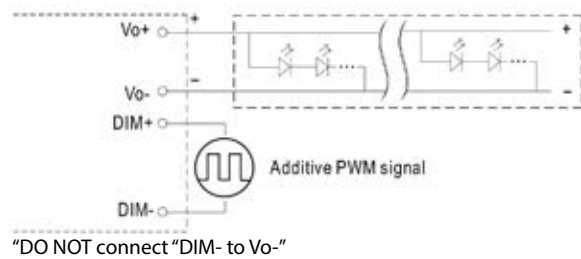
### 3 in 1 dimming function (for AB-Type)

- 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: 100 $\mu$ A (typ.)

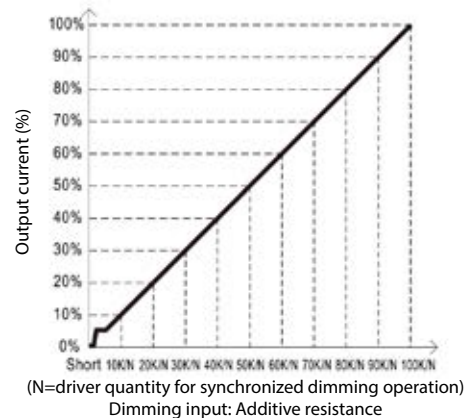
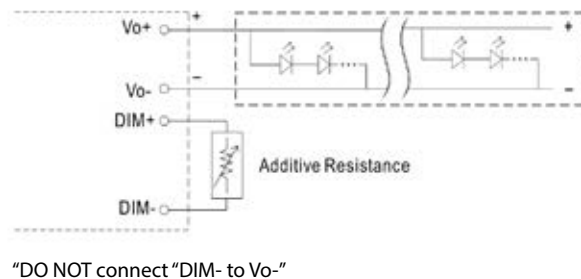
Applying additive 0 ~ 10VDC:



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



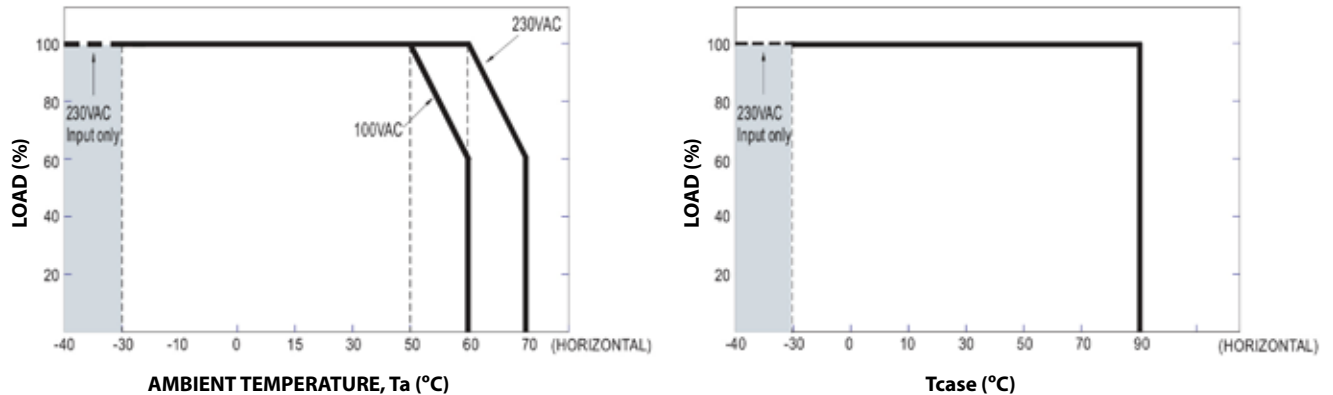
Applying additive resistance:



Note: 1. Min. dimming level is about 8% and the output current is not defined when  $0\% < I_{out} < 8\%$ .

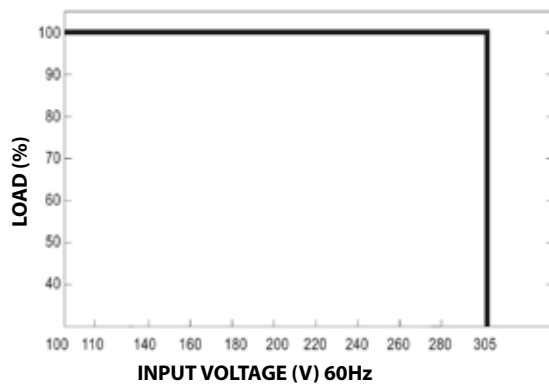
2. The output current could drop down to 0% when dimming input is about 0k $\Omega$  or 0Vdc, or 10V PWM signal with 0% duty cycle

## OUTPUT LOAD vs TEMPERATURE



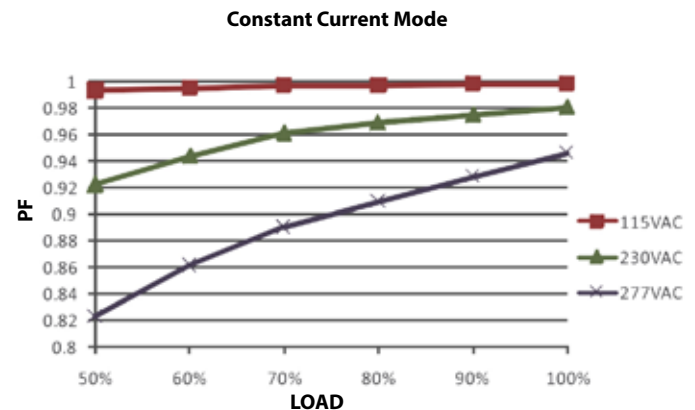
If XLG-100 operates in Constant Current mode with the rated current the maximum workable Ta is 60 (Typ. 230VAC) or 50 (Typ. 100VAC)  
Below 110VAC@ -30 may retry to 2nd setup

## STATIC CHARACTERISTIC



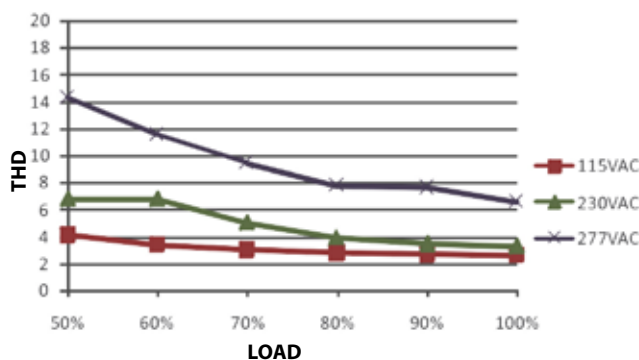
## POWER FACTOR (PF) CHARACTERISTIC

Tcase at 75°C



## TOTAL HARMONIC DISTORTION (THD)

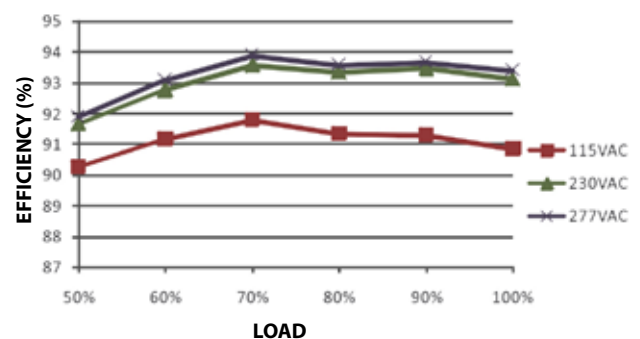
XLG-100-L Model, Tcase at 75°C



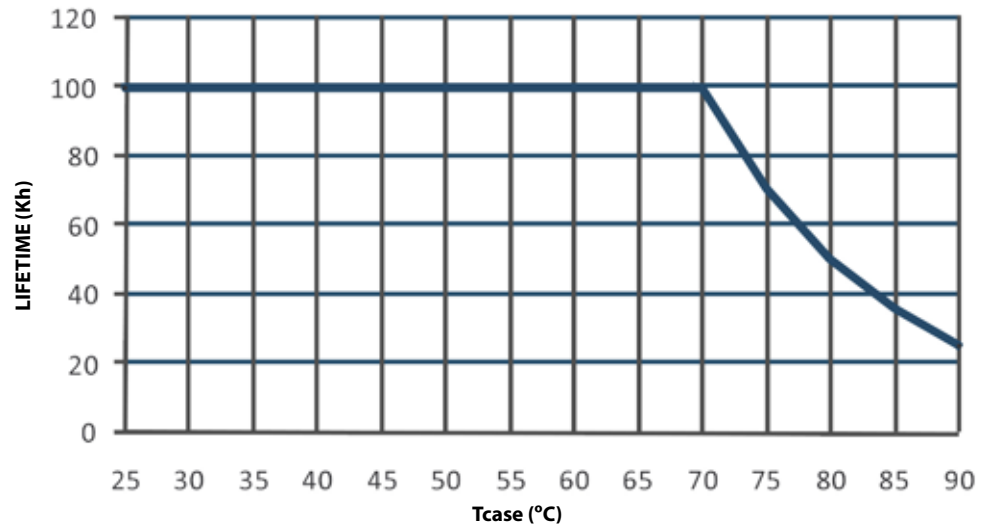
## EFFICIENCY vs LOAD

XLG-100 series possess superior working efficiency that up to 92.5% can be reached in field applications.

XLG-100-L Model, Tcase at 75°C



## LIFETIME

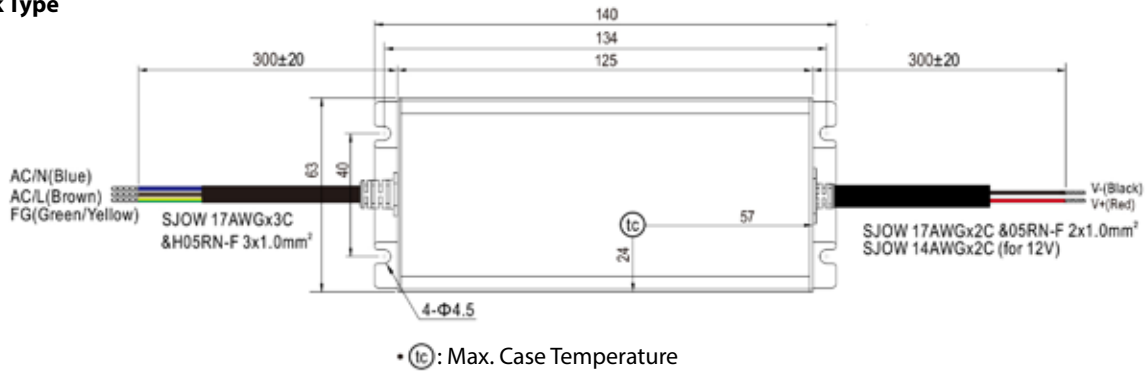


## MECHANICAL SPECIFICATION

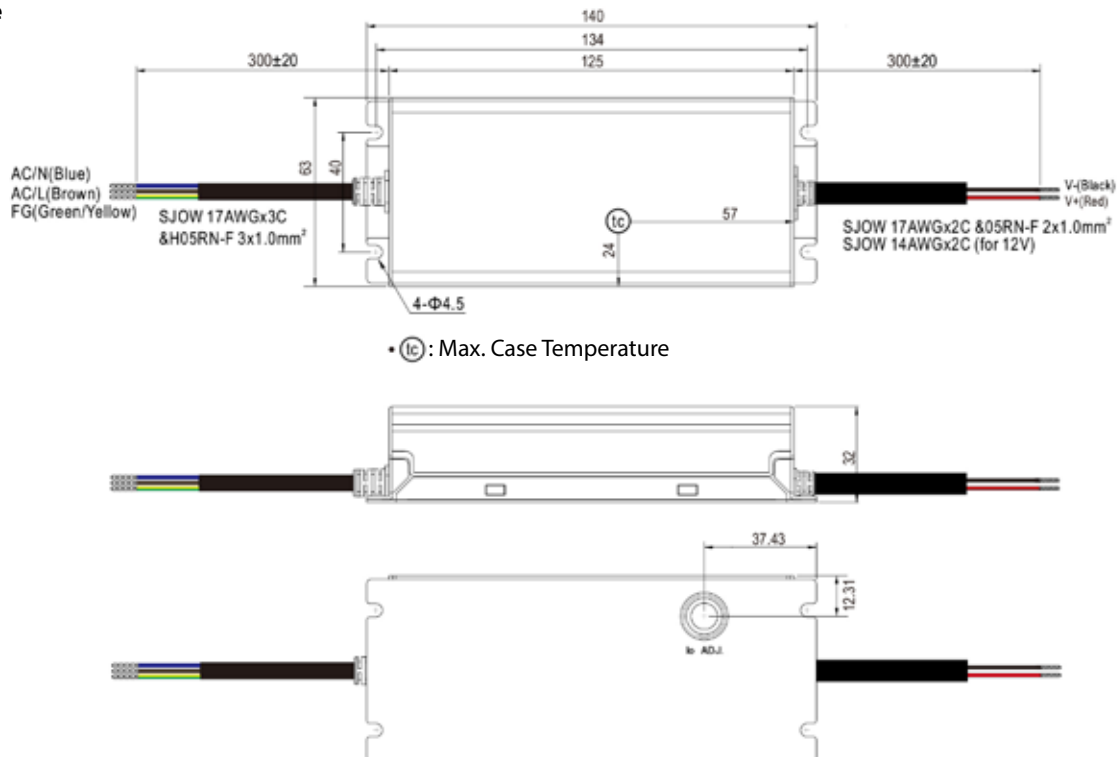
Case No.:275B

Unit:mm

### Blank Type

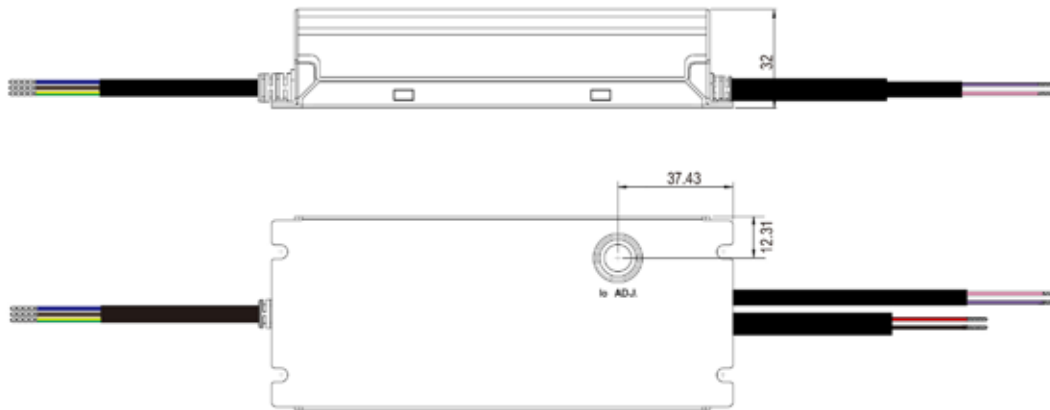
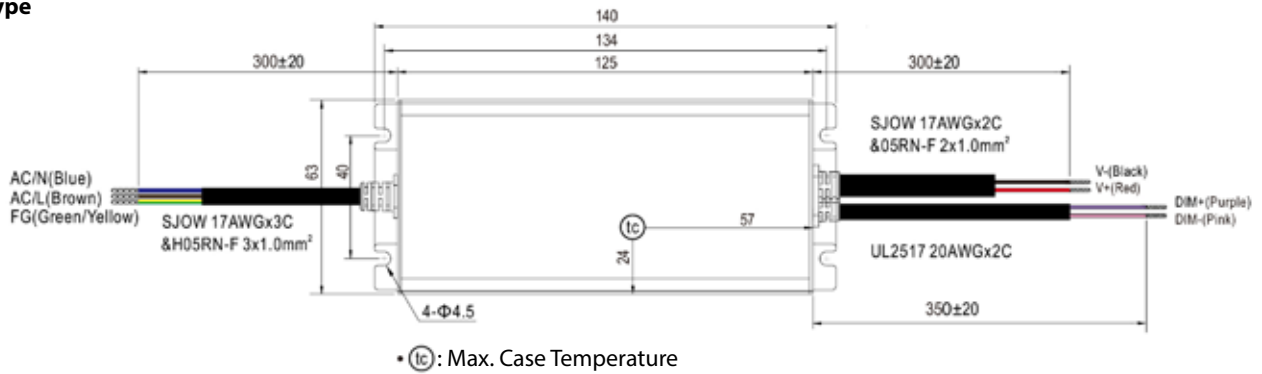


### A-Type





### AB-Type



### RECOMMENDED MOUNTING DIRECTION

