MEAN WELL

160W Constant Power Mode LED Driver

XBG-160 series

User's Manual



AC input with fixed cable



AC input with connector

SELV IP67 (Note 8) IS 15885(Part 2/Sec13) R-41027766

Features

- Full power output at 70~100% constant power mode operation
- Wide input range 90 ~ 305VAC with active PFC function
- Metal housing design with IP67
- Function options: output adjustable via potentiometer; 3 in 1 dimming (dim-to-off and Isolation design)
- Typical lifetime>50000 hours and 5 years warranty
- AC input cable with connector for flexible application

Applications

- LED bay lighting
- LED stage lighting
- LED spot lighting
- Explosion-proof lighting
- Type HL LED driver for class Ⅰ division 2

Description

XBG-160 series is a 160W AC/DC LED driver featuring the constant power mode. XBG-160 operates from 90~305VAC and offers with different rated current ranging between 2850mA and 4100mA. Thanks to the high efficiency up to 93%, with the fanless design, the entire series is able to operate for -40℃~+90℃ 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. XBG-160 series comply with the latest version of IEC61347/GB7000.1-2015 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 users and luminaire system during installation.

Model Encoding

XBG - 160 - □ - □

- AC-cable option: { C:AC input with connector; □:AC input with fixed cable
- Function options
- Rated wattage
- Series name

Type	IP Level	Function	Note
A	IP67	constant power adjustable via built-in potentiometer	In Stock
AB	IP67	constant power adjustable via built-in potentiometer + 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)	In Stock

SPECIFICATION

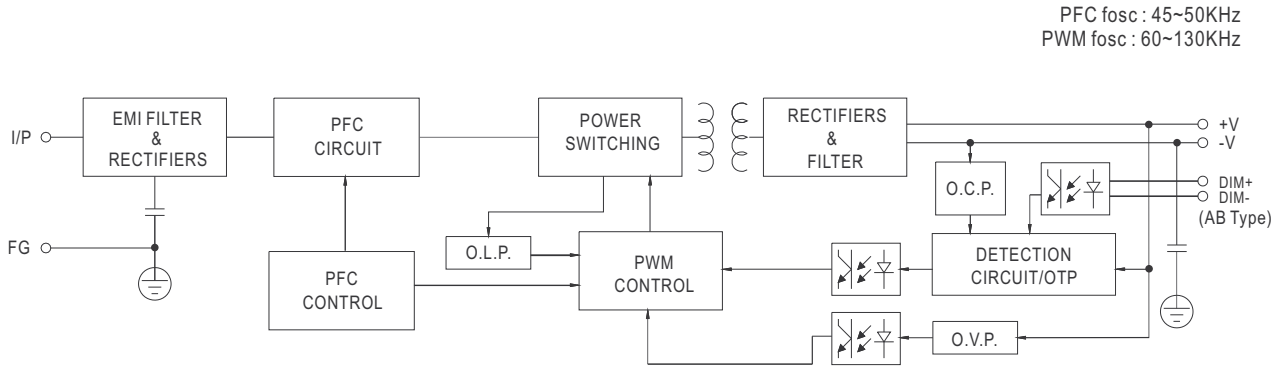
MODEL		XBG-160-□-□		
OUTPUT	DEFAULT CURRENT	3300mA		
	RATED POWER	159.9W		
	CONSTANT CURRENT REGION	34 ~ 56V		
	FULL POWER CURRENT RANGE	2850~4100mA		
	OPEN CIRCUIT VOLTAGE (max.)	60V		
	CURRENT ADJ. RANGE	1425~4100mA		
	CURRENT RIPPLE	5.0% max. @rated current		
	CURRENT TOLERANCE	±5%		
	SET UP TIME Note.4	500ms/230VAC, 2000ms/115VAC		
INPUT	VOLTAGE RANGE Note.2	90 ~ 305VAC 127 ~ 431VDC (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 at full load (Please refer to "Power Factor Characteristic" section)		
	TOTAL HARMONIC DISTORTION	THD< 10% (@ load≧60% at 115VAC/230VAC ,@load≧75% at 277VAC) Please refer to "TOTAL HARMONIC DISTORTION (THD)" section		
	EFFICIENCY (Typ.)	93%		
	AC CURRENT (Typ.)	2.0A / 115VAC 0.8A / 230VAC 0.7A / 277VAC		
	INRUSH CURRENT(Typ.)	COLD START 50A(twidth=620μs measured at 50% Ipeak) at 230VAC; Per NEMA 410		
	MAX. NO. of PSUs on 16A CIRCUIT BREAKER	4 unit(circuit breaker of type B) / 7 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 A-Type Standby power consumption<0.5W for AB-Type		
PROTECTION	OVER CURRENT	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	61 ~ 78V		
		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	±0.03%/℃ (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; ENEC BS EN/EN61347-1, BS EN/EN61347-2-13 independent, BS EN/EN62384; IS15885(Part2/Sec13);GB19510.1,GB19510.14;IP67;EAC TP TC 004 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	**Parameter**	**Standard**	**Test Level/Note**
		Conducted	BS EN/EN55015(CISPR15)	-----
		Radiated	BS EN/EN55015(CISPR15)	-----
		Harmonic Current	BS EN/EN61000-3-2	Class C @load≥50%
		Voltage Flicker	BS EN/EN61000-3-3	-----
	EMC IMMUNITY	BS EN/EN55024 , BS EN/EN61204-3, BS EN/EN61000-6-2		
		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
		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	1100K hrs min. Telcordia SR-332(Bellcore) ; 280K hrs min. MIL-HDBK-217F (25℃)		
	LIFETIME Note.5	50000 hrs min.		
	DIMENSION	φ 151.5mm *60mm(D*H)		
	PACKING	1.25Kg; 8pcs/11.5Kg/0.93CUFT		

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.
2. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.
3. 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.
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. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly tc point (or TMP, per DLC), is about 70℃ or less.
6. To fulfill requirements of the latest ErP regulation for lighting fixture, this LED drive can only be used behind a switch without permanently connected to the mains.
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. Products sourced from the Americas regions may not have the PSE/CCC/BIS/KC logo. Please contact your MEAN WELL sales for more information.
10. 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

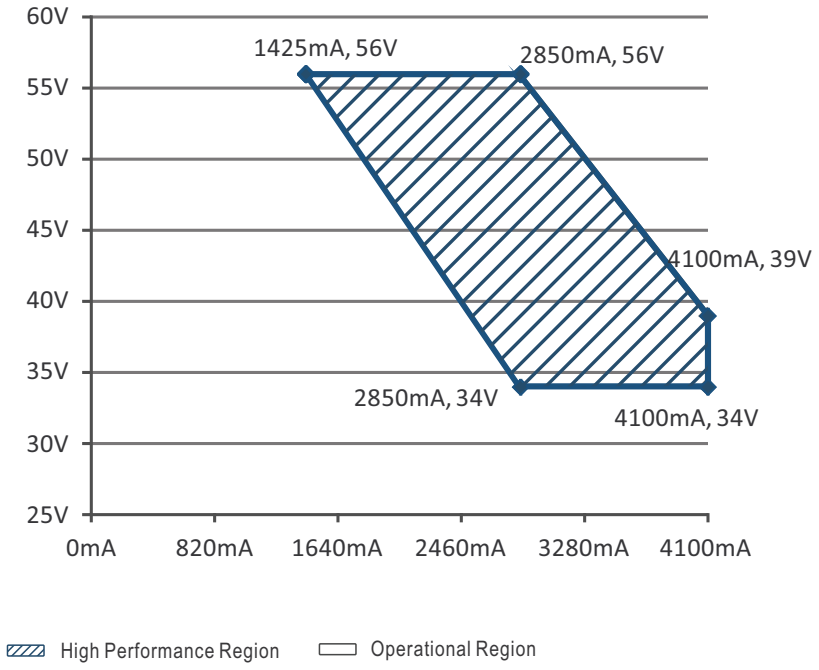
■ BLOCK DIAGRAM



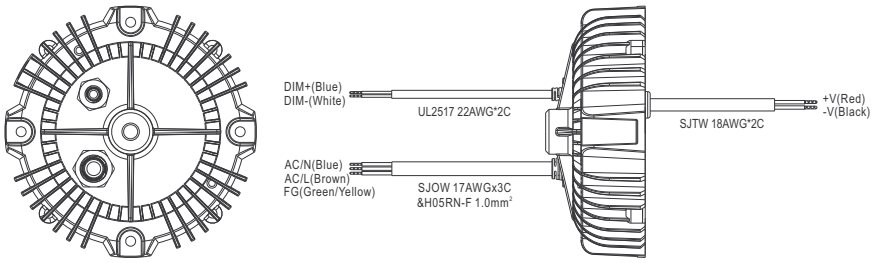
■ DRIVING METHODS OF LED MODULE

※ I-V Operating Area

◎ **XBG-160**



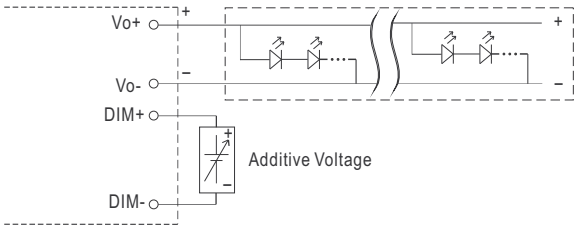
■ DIMMING OPERATION



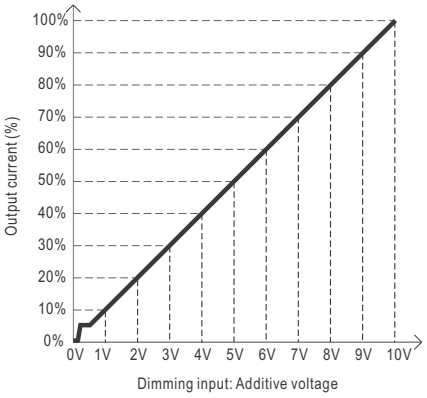
※ 3 in 1 dimming function (for AB-Type)

- 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: 100μA (typ.)

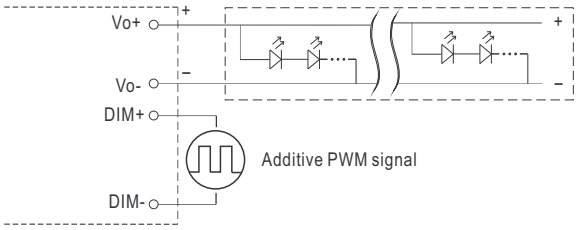
◎ Applying additive 0 ~ 10VDC



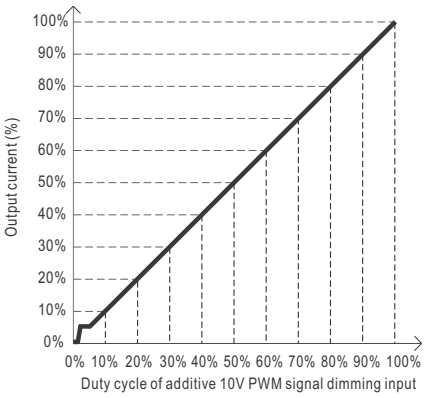
"DO NOT connect "DIM- to Vo-"



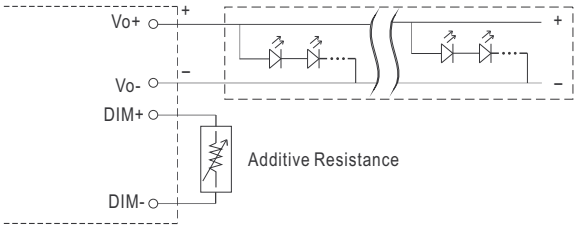
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



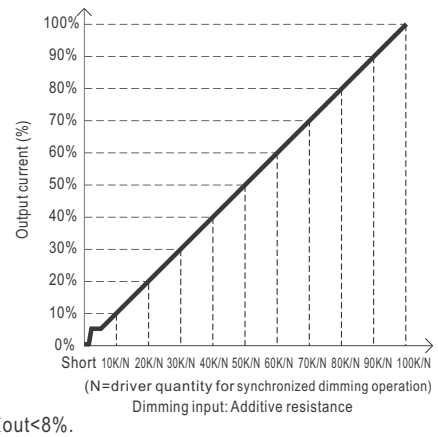
"DO NOT connect "DIM- to Vo-"



◎ Applying additive resistance:

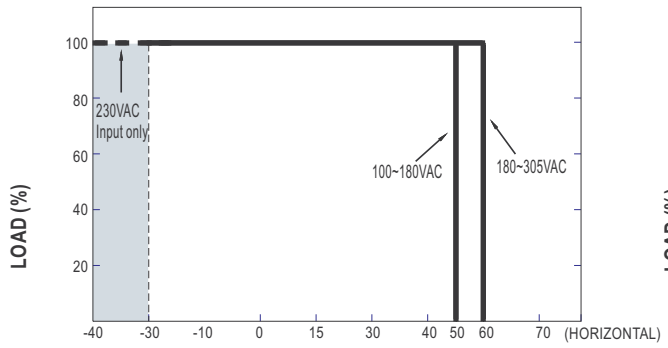


"DO NOT connect "DIM- to Vo-"

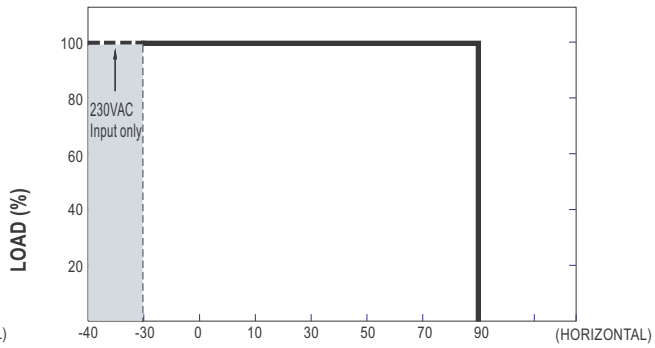


Note : 1. Min. dimming level is about 8% and the output current is not defined when 0%< Iout<8%.
2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.

■ OUTPUT LOAD vs TEMPERATURE

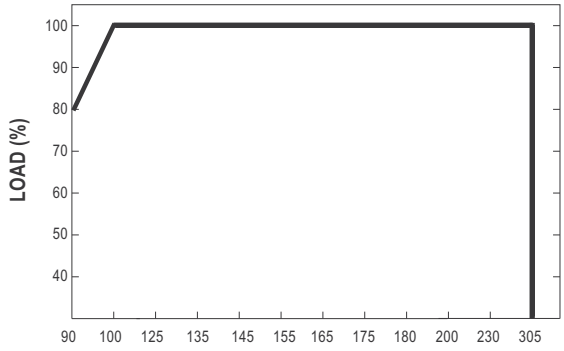


AMBIENT TEMPERATURE,Ta (℃)



Tcase (℃)

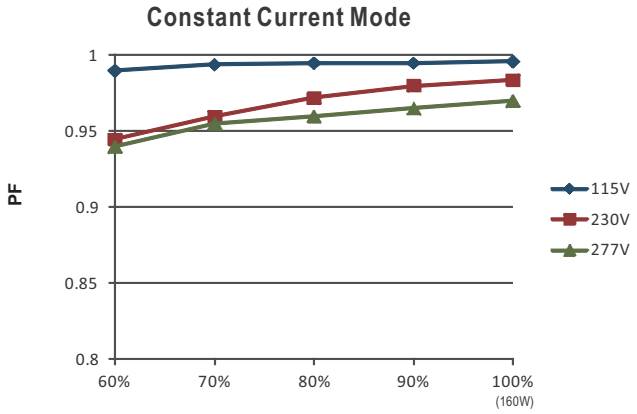
■ STATIC CHARACTERISTIC



INPUT VOLTAGE (V) 60Hz

■ POWER FACTOR (PF) CHARACTERISTIC

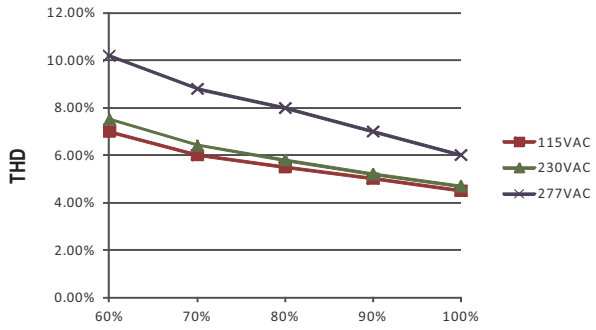
※ Tcase at 65℃



LOAD

■ TOTAL HARMONIC DISTORTION (THD)

※ 2850mA Model, Tcase at 65℃

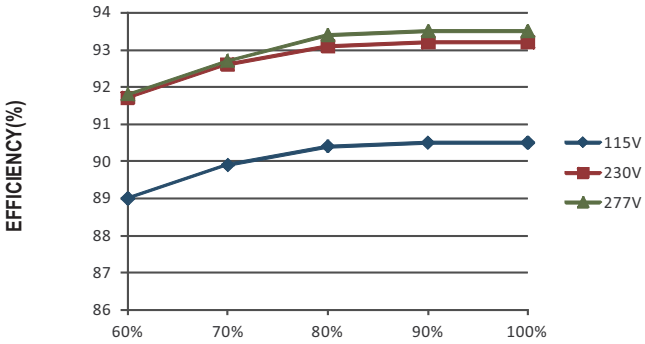


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■ EFFICIENCY vs LOAD

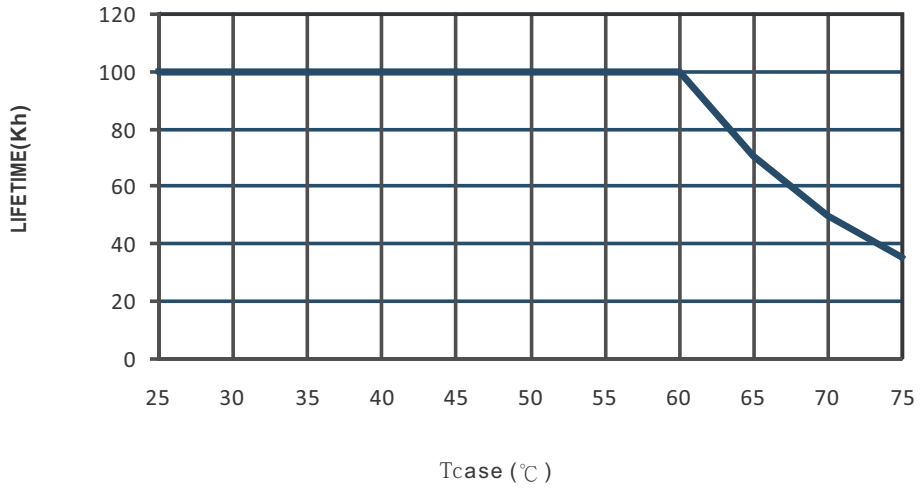
XBG-160 series possess superior working efficiency that up to 93% can be reached in field applications.

※ 2850mA Model, Tcase at 65℃



LOAD

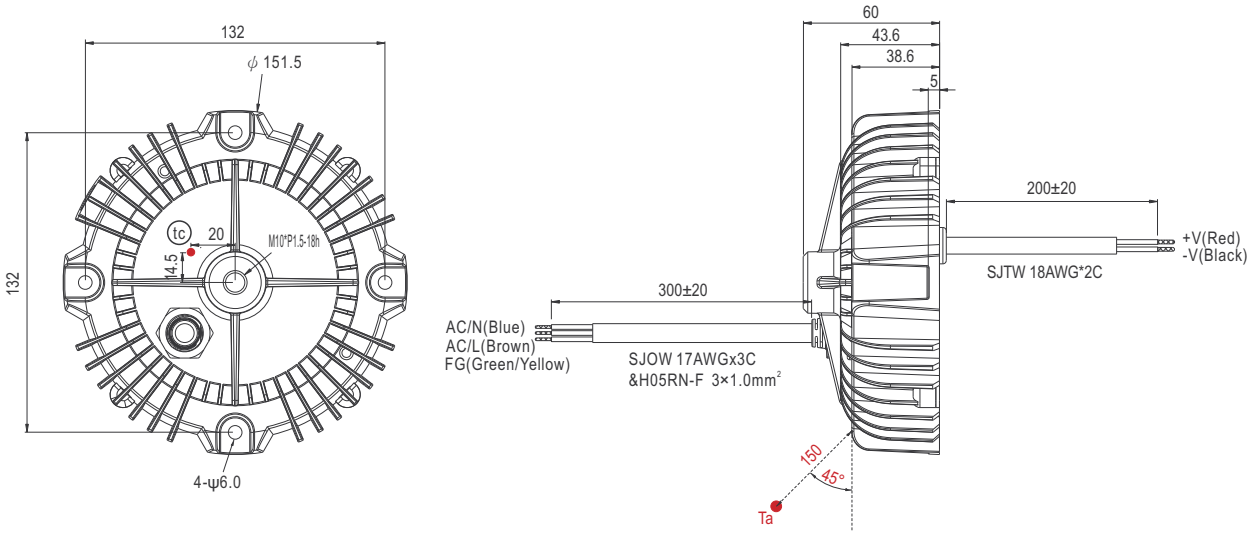
■ LIFE TIME


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

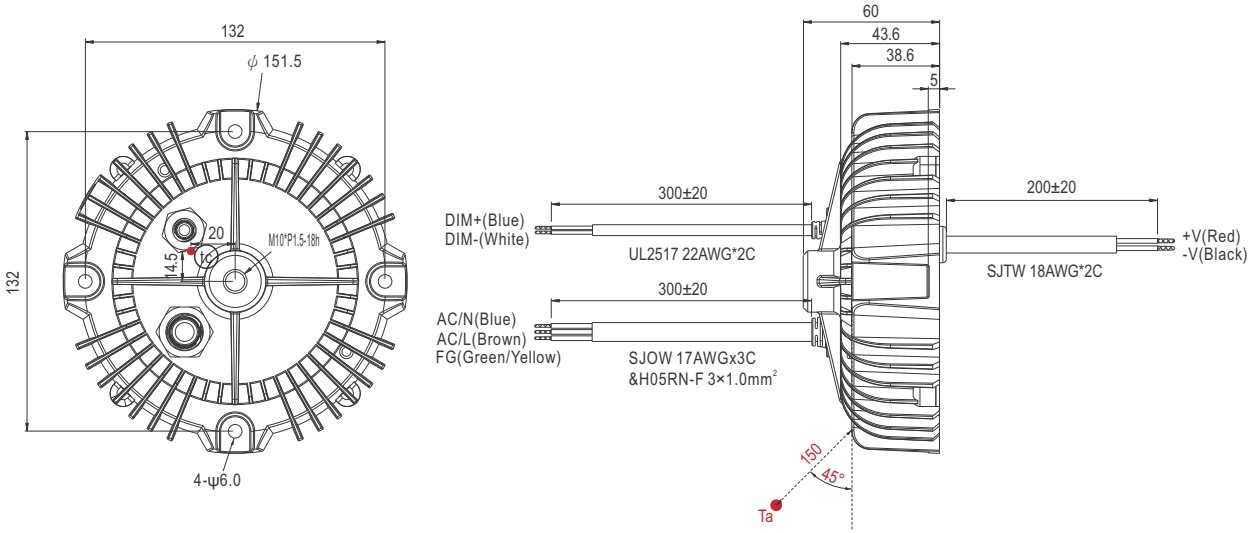
■ MECHANICAL SPECIFICATION

Case No.271 Unit:mm

※ A-Type(AC input with fixed cable)

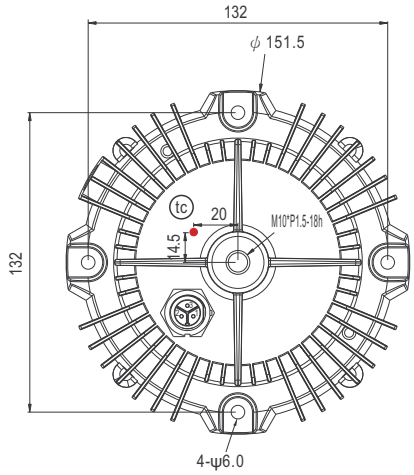


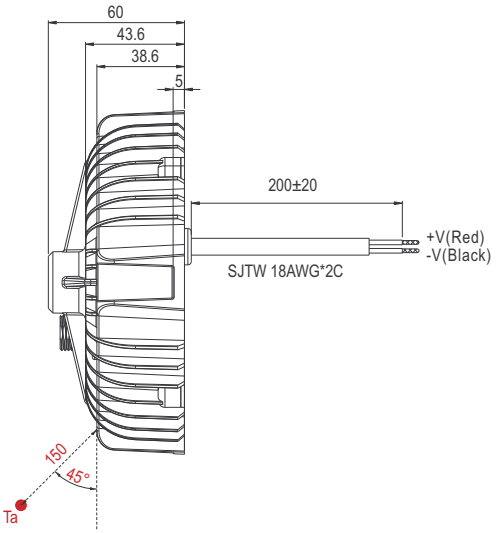
※ AB-Type



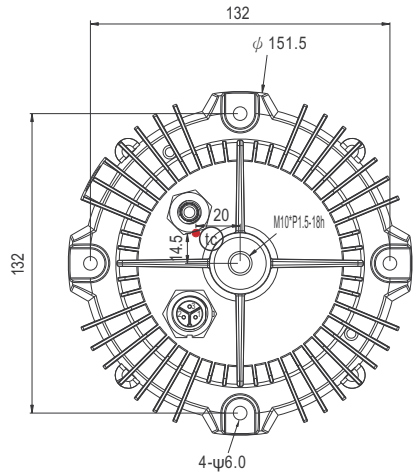
- ⓣc : Max. Case Temperature.(case temperature measured point)
- Ta : Ambient Temperature measured point

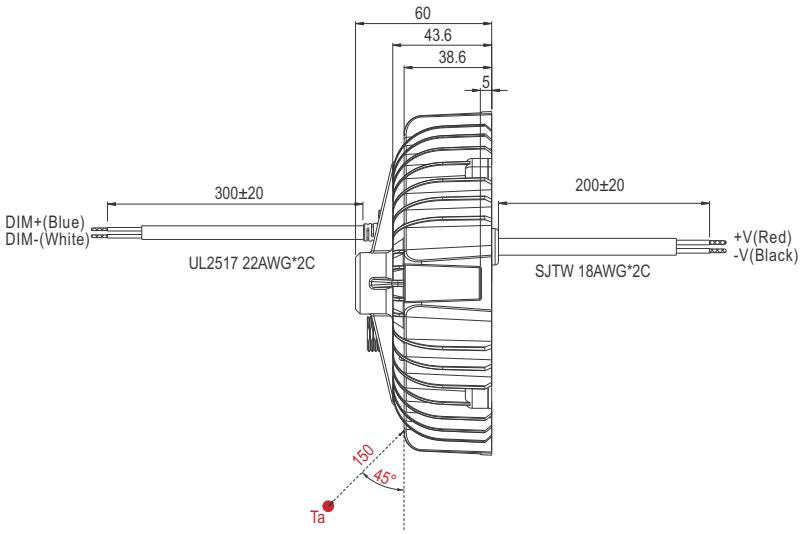
※ A-C-Type(AC input with connector)





※ AB-C-Type





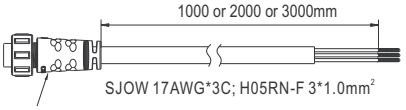
Terminal Pin No. Assignment(CHOGORI 22003515-01)

Pin No.	Assignment	Drawing
1	AC/L	
2	AC/N	
3	FG ⏚	

- (tc) : Max. Case Temperature.(case temperature measured point)
- Ta : Ambient Temperature measured point

AC input cable is optional, needs extra charge

Item	Order Code	Note
100cm	F61-XBG-AC-CABLE-100	In Stock
200cm	F61-XBG-AC-CABLE-200	By Request
300cm	F61-XBG-AC-CABLE-300	By Request



CHOGORI 22003213-01

■ INSTALLATION MANUAL

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