MEAN WELL

300W Constant Power Mode LED Driver

HBGC-300 series

User's Manual

(for H/M Type) SELV (H,M Type only) IP67 (CCC optional) Type HL

Features

- Wide input range 90 ~ 305VAC
- Full power at 60~100% max current (Constant Power)
- Built-in active PFC function
- Circular metal housing design with IP67
- Function options: output adjustable via potentiometer; 3 in 1 dimming (Dim to off and Isolation) ; DALI-2 dimming
- Typical lifetime>50000 hours
- 5 years warranty

Applications

- Bay lighting
- Stage lighting
- Flood lighting
- Stadium lighting
- Type HL for use in class I ,Division 2

GTIN CODE

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

Description

HBGC-300 series is a 300W LED AC/DC driver featuring the constant power mode and high voltage output. HBGC-300 operates from 90~305VAC and offers models with different rated current ranging between 1300mA and 8670mA. Thanks to the high efficiency up to 94.5%, 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 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. HBGC-300 is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system.

Model Encoding

HBGC - 300 - L - A

- A: Function options(A/AB/ADA)
- L: Rated output current(1400/2800/5600mA)
- 300: Rated wattage
- HBGC: Series name

Type	IP Level	Function	Note
A	IP67	output constant power adjustable via built-in potentiometer	In Stock
AB	IP67	output constant power adjustable via built-in potentiometer + 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)	In Stock
ADA	IP67	DALI-2 control technology with Io Adjustable via build-in Potentiometer	In Stock

SPECIFICATION

MODEL		HBGC-300-L-□	HBGC-300-M-□	HBGC-300-H-□
OUTPUT	DEFAULT CURRENT	1400mA	2800mA	5600mA
	RATED POWER	301.6W	301.6W	301.6W
	CONSTANT CURRENT REGION	116 ~232V	58 ~ 116V	29 ~ 58V
	FULL POWER CURRENT RANGE	1300~2170mA	2600~4330mA	5200~8670mA
	OPEN CIRCUIT VOLTAGE (max.)	240V	120V	62V
	CURRENT ADJ. RANGE	650~2170mA	1300~4330mA	2600~8670mA
	CURRENT RIPPLE	5.0% max. @rated current		
	CURRENT TOLERANCE	±5%		
	SET UP TIME	500ms/230VAC, 500ms/115VAC		
INPUT	VOLTAGE RANGE Note.2	90 ~ 305VAC 127VDC ~ 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≧50% at 115VAC/230VAC ,@load≧75% at 277VAC) Please refer to "TOTAL HARMONIC DISTORTION (THD)" section		
	EFFICIENCY (Typ.)	94.5%	93.5%	92.5%
	AC CURRENT (Typ.)	3A / 115VAC 1.6A / 230VAC 1.3A / 277VAC		
	INRUSH CURRENT(Typ.)	COLD START 45A(twidth=1300μs measured at 50% Ipeak) at 230VAC; Per NEMA 410		
	MAX. NO. of PSUs on 16A CIRCUIT BREAKER	2 unit(circuit breaker of type B) / 4 units(circuit breaker of type C) at 230VAC		
	LEAKAGE CURRENT	<0.75mA / 277VAC		
	NO LOAD / STANDBY POWER CONSUMPTION	Standby power consumption <0.5W for AB / ADA-Type Blank/A-Type please refer to Note. 5		
PROTECTION	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed		
	OVER VOLTAGE	241 ~ 275V	121 ~ 145V	61 ~ 78V
		Shut down output voltage, re-power on to recovery		
	OVER TEMPERATURE	Tcase>80℃ ±5℃,derate power automatically by 6%/℃ max.		
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 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; EAC TP TC 004;GB19510.1 , GB19510.14; IP67 approved		
	DALI STANDARDS	Compliance to IEC62386-101,102,207 for ADA Type only		
	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,GB/T 17743, GB17625.1, 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 6KV, Line-Line 4KV), EAC TP TC 020		
OTHERS	MTBF	1772.9K hrs min. Telcordia SR-332 (Bellcore) ;175.4K hrs min. MIL-HDBK-217F (25℃)		
	LIFETIME Note.4	50000 hrs min.		
	DIMENSION	φ191.5mm *69mm		
	PACKING	2.2Kg;8pcs/19.8Kg/2.09CUFT		

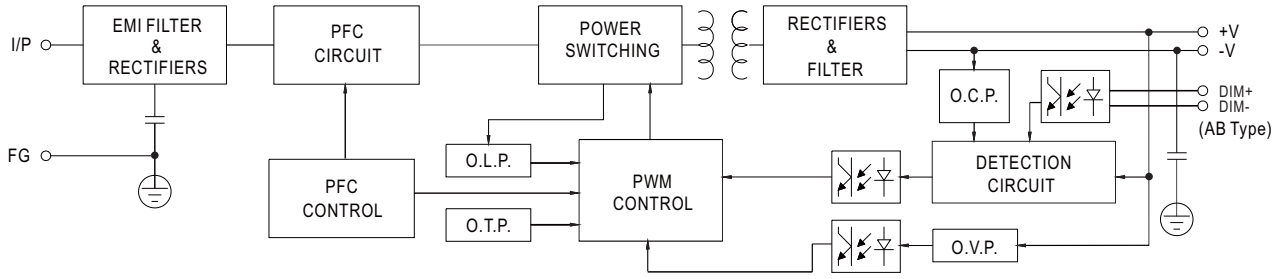
NOTE

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. (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
4. 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.
5. 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.
6. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com
7. 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).
8. 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
9. For A/AB/ADA type need to consider build in using or filling the Io adjusting hole with the potting compound to comply with Type HL application.

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

■ BLOCK DIAGRAM

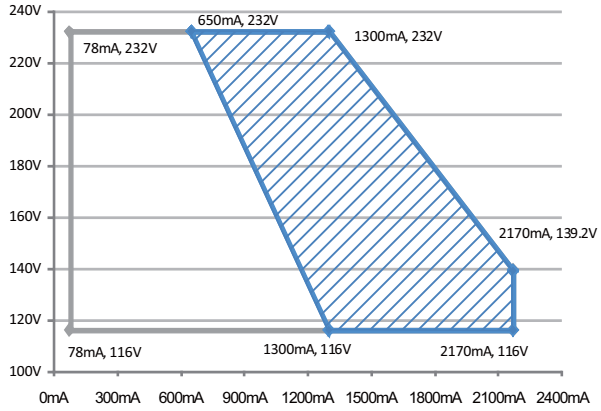
PFC fosc : 45~50KHz
PWM fosc : 60~130KHz



■ DRIVING METHODS OF LED MODULE

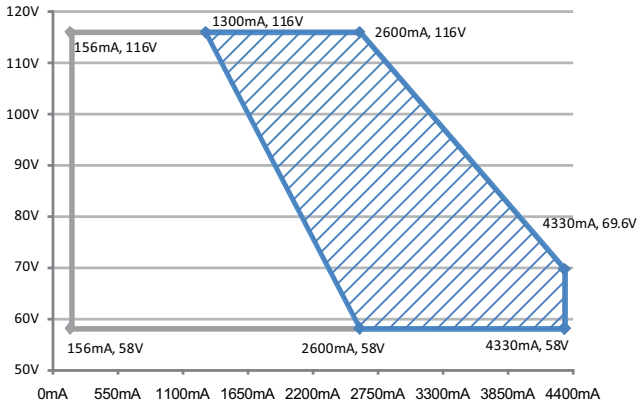
※ I-V Operating Area

◎ **HBGC-300-L**



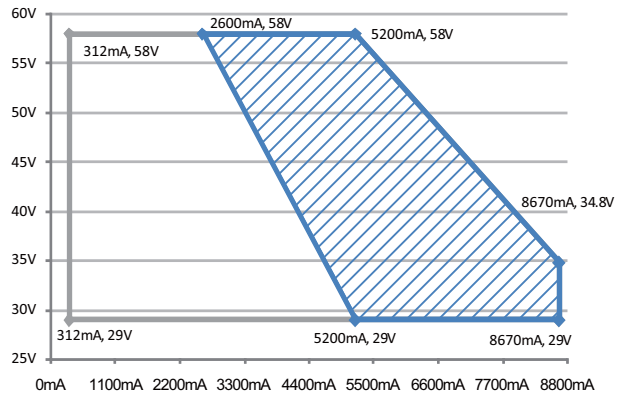
High Performance Region Operational Region

◎ **HBGC-300-M**



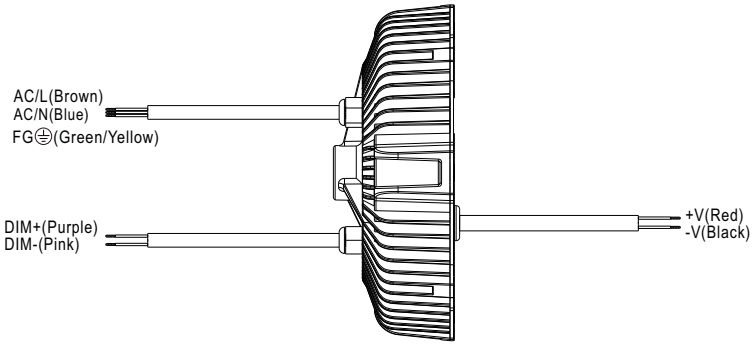
High Performance Region Operational Region

◎ **HBGC-300-H**



High Performance Region Operational Region

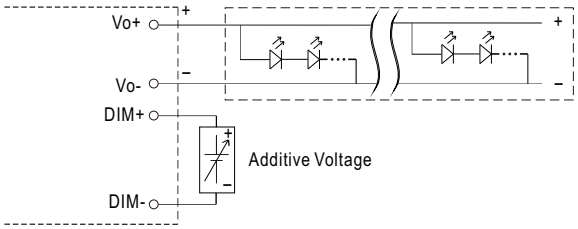
■ DIMMING OPERATION



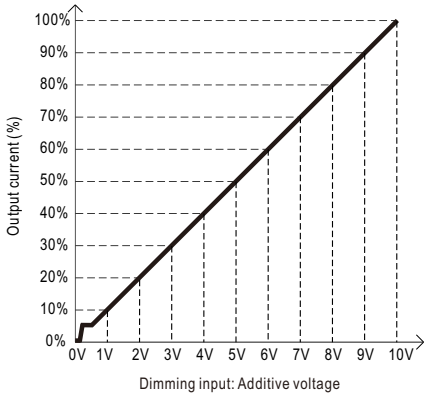
※ 3 in 1 dimming function (for AB-Type)

- 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.)

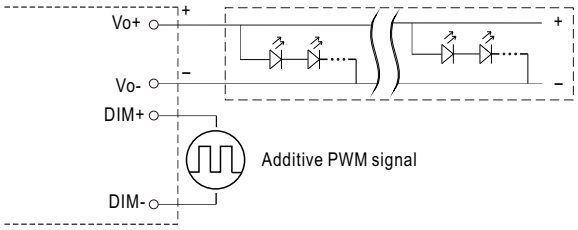
◎ Applying additive 0 ~ 10VDC



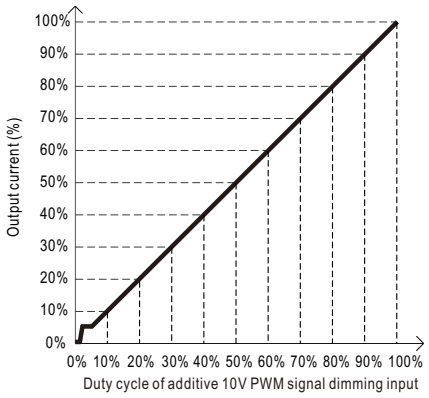
"DO NOT connect "DIM- to Vo-"



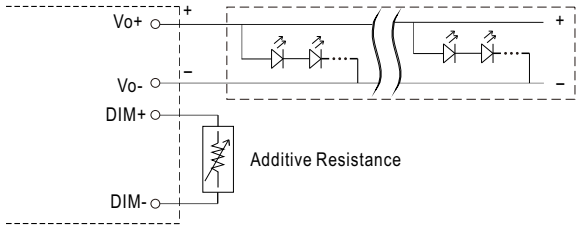
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



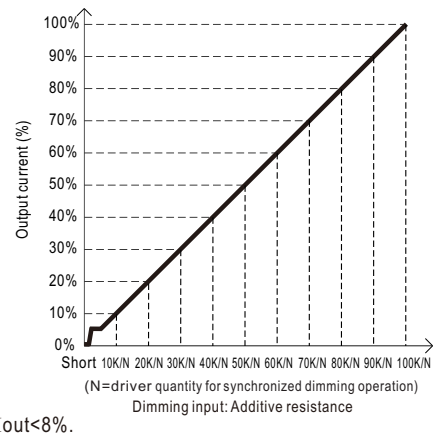
"DO NOT connect "DIM- to Vo-"



◎ Applying additive resistance:

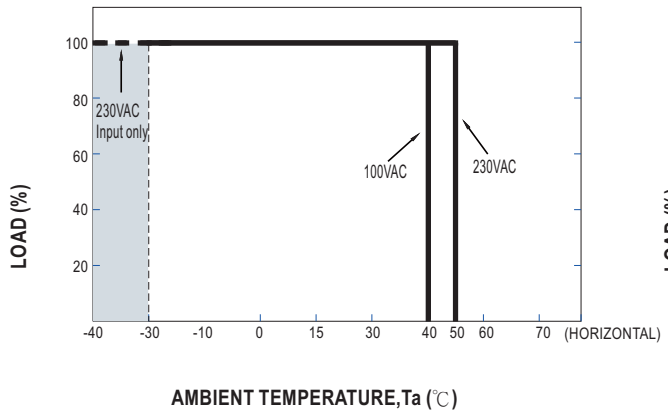


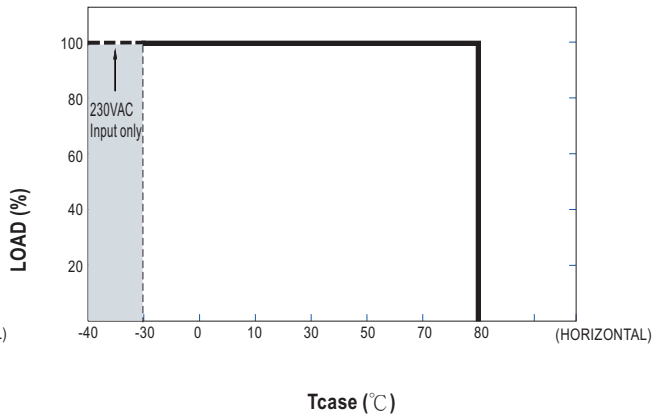
"DO NOT connect "DIM- to Vo-"



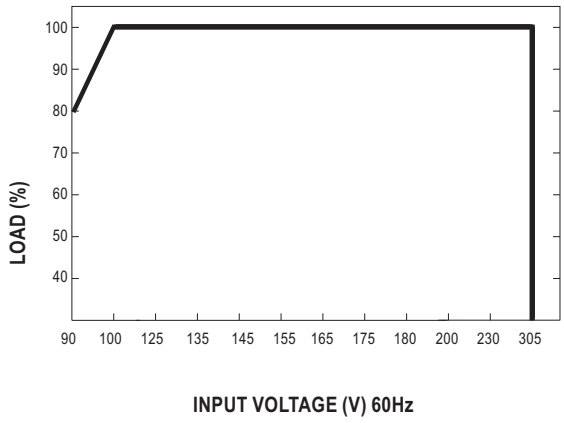
Note : 1. Min. dimming level is about 8% and the output current is not defined when 0%< Iout<8%.
2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.

■ OUTPUT LOAD vs TEMPERATURE



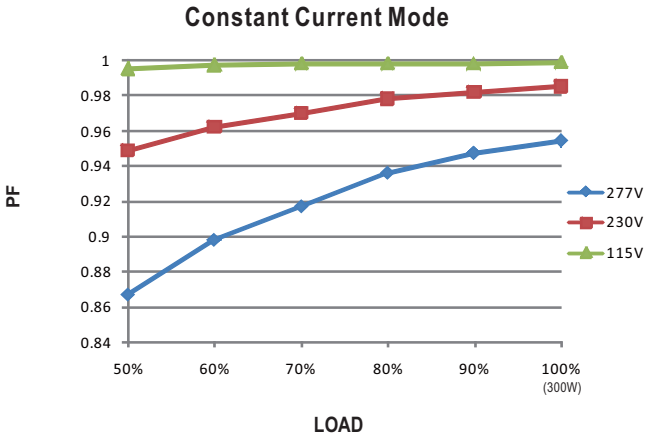


■ STATIC CHARACTERISTIC



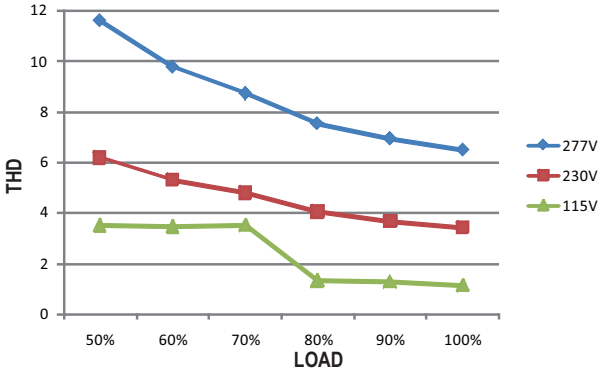
■ POWER FACTOR (PF) CHARACTERISTIC

※ Tcase at 65℃



■ TOTAL HARMONIC DISTORTION (THD)

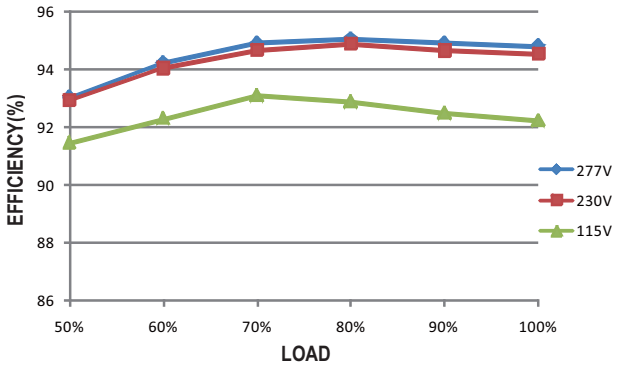
※ HBGC-300-L Model, Tcase at 65℃



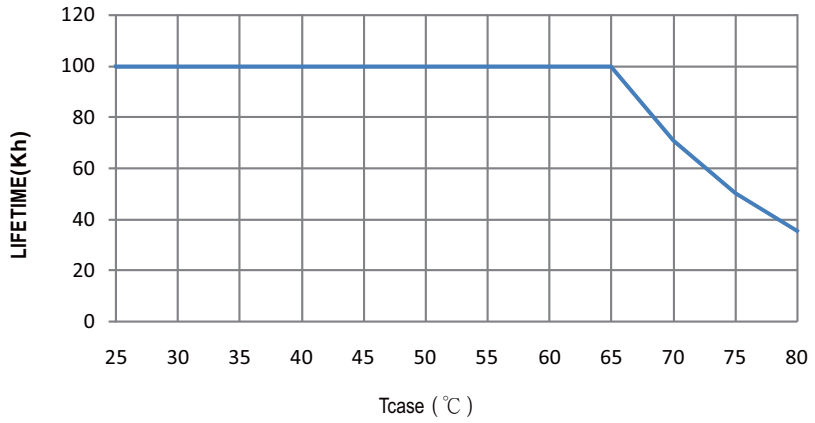
■ EFFICIENCY vs LOAD

HBGC-300 series possess superior working efficiency that up to 94.5% can be reached in field applications.

※ HBGC-300-L Model, Tcase at 65℃



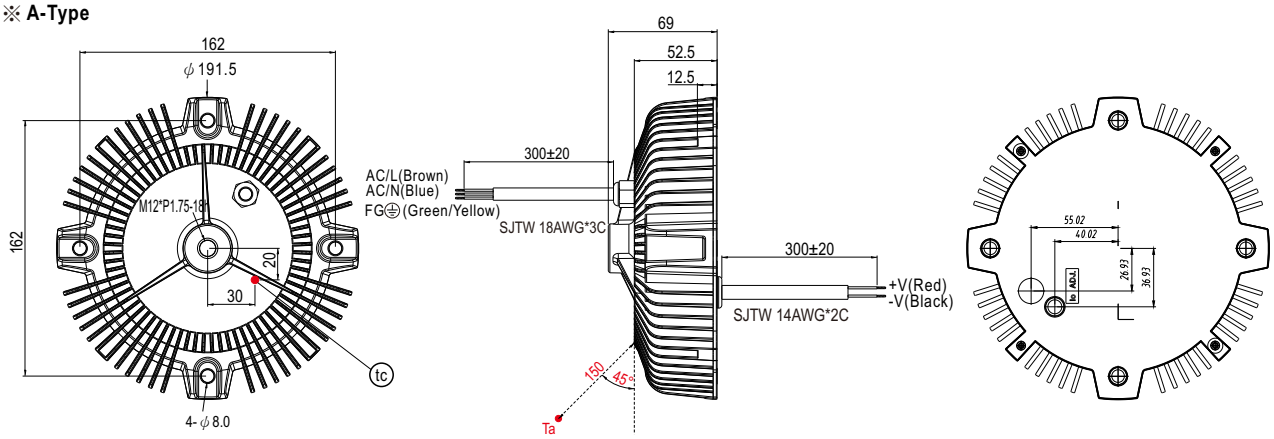
■ LIFE TIME


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

■ MECHANICAL SPECIFICATION

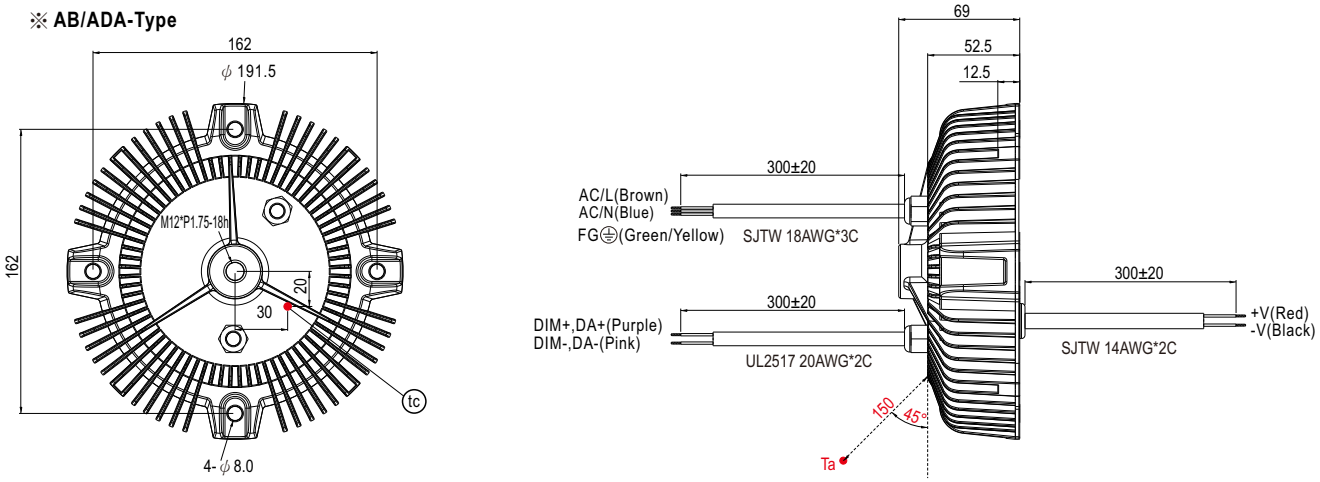
Case No.213 Unit:mm Tolerance:±1

※ A-Type



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

※ AB/ADA-Type



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

■ INSTALLATION MANUAL

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