



### ■ Features :

- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- High efficiency up to 91.5%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- OCP point adjustable through internal potentiometer
- IP67 / IP65 design for indoor or outdoor installations
- Suitable for dry / damp / wet locations
- 5 years warranty, Tc70°C 40000hrs



HBG-100-60  A Blank : IP67 rated. Cable for I/O connection.

A : IP65 rated. Output constant current level can be adjusted through internal potentiometer.

B : IP67 rated. output constant current lever can be adjusted through output cable with 1-10V,PWM signal and Resistance

E(option) : IP67 rated. Can be fixed by steel support.

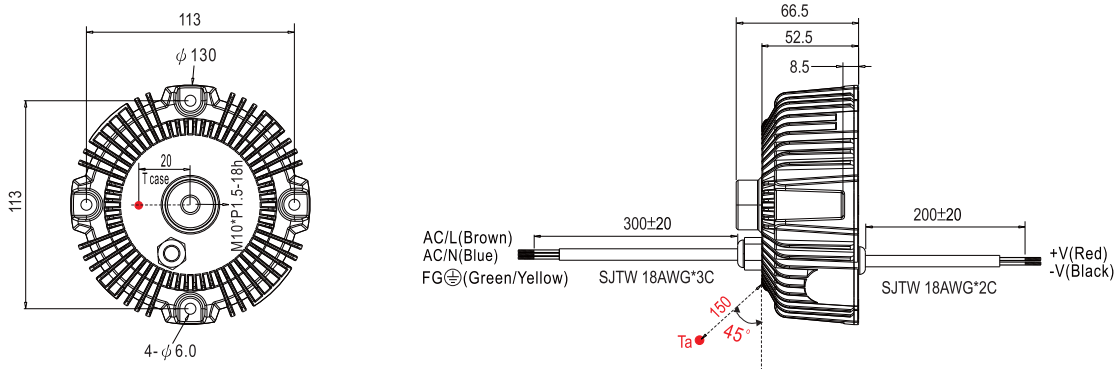
## SPECIFICATION

MODEL	HBG-100-24 <input type="checkbox"/>	HBG-100-36 <input type="checkbox"/>	HBG-100-48 <input type="checkbox"/>	HBG-100-60 <input type="checkbox"/>	
OUTPUT	DC VOLTAGE	24V	36V	48V	60V
	CONSTANT CURRENT REGION <small>Note.4</small>	14.4 ~ 24V	21.6 ~ 36V	28.8 ~ 48V	36 ~ 60V
	RATED CURRENT	4A	2.7A	2A	1.6A
	RATED POWER	96W	97.2W	96W	96W
	RIPPLE & NOISE (max.) <small>Note.2</small>	200mVp-p	300mVp-p	300mVp-p	300mVp-p
	CURRENT ADJ. RANGE <small>Note.4</small>	Can be adjusted by internal potentiometer A type only			
		2.4 ~ 4A	1.62 ~ 2.7A	1.2 ~ 2A	1.0 ~ 1.6A
	VOLTAGE TOLERANCE <small>Note.3</small>	±2.0%			
	LINE REGULATION	±0.5%			
	LOAD REGULATION	±1.0%			
INPUT	SETUP, RISE TIME <small>Note.6</small>	2000ms, 80ms / 115VAC at full load		1000ms, 80ms / 230VAC at full load	
	HOLD UP TIME (Typ.)	12ms at full load		115VAC/230VAC	
	VOLTAGE RANGE <small>Note.5</small>	90 ~ 305VAC		127 ~ 431VDC	
	FREQUENCY RANGE	47 ~ 63Hz			
	POWER FACTOR (Typ.)	PF>0.96/115VAC, PF>0.96/230VAC, PF>0.94/277VAC at full load (Please refer to "Power Factor Characteristic" curve)			
	EFFICIENCY (Typ.)	90.5%	91%	91%	91.5%
	AC CURRENT (Typ.)	1.1A / 115VAC	0.5A / 230VAC	0.45A / 277VAC	
	MAX.LED DRIVE NUMBER ON MCB C TYPE 16A	21units@230VAC			
PROTECTION	INRUSH CURRENT (Typ.)	COLD START 60A(twidth=415µs measured at 50% Ipeak) at 230VAC			
	LEAKAGE CURRENT	<0.75mA / 277VAC			
	OVER CURRENT <small>Note.4</small>	95 ~ 108%			
	OVER VOLTAGE	28 ~ 35V	41 ~ 49V	54 ~ 63V	65 ~ 75V
ENVIRONMENT	Protection type : Constant current limiting				
	Protection type : Shut down o/p voltage re-power on to recovery				
	OVER TEMPERATURE	95°C ±10°C (RTH2)			
	Protection type : Shut down o/p voltage, re-power on to recovery				
	WORKING TEMP.	-40 ~ +60°C (Refer to "Derating Curve")			
WORKING HUMIDITY	20 ~ 95% RH non-condensing				
STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH				
TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)				
VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes				
SAFETY & EMC	SAFETY STANDARDS	UL8750, CSA C22.2 No.250.13-12, EN61347-1, EN61347-2-13, EN62384 approved			
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2.0KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH			
	EMC EMISSION	Compliance to EN55015, EN61000-3-2 Class C (≥60% load) ; EN61000-3-3			
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level (surge 4KV), criteria A			
OTHERS	MTBF	300Khrs min. MIL-HDBK-217F (25°C)			
	DIMENSION	Refer to mechanical specification			
	PACKING	1.1Kg; 12pcs/15.2Kg/1.43CUFT			
NOTE	<ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf &amp; 47µf parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>4. Constant current operation region is within 60% ~ 100% rated output voltage, and the output power must be more than 60% rated output power. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.</li> <li>5. Derating may be needed under low input voltages. Please check the static characteristics for more details.</li> <li>6. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.</li> <li>7. The power supply 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.</li> <li>8. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.</li> </ol>				

**Mechanical Specification**

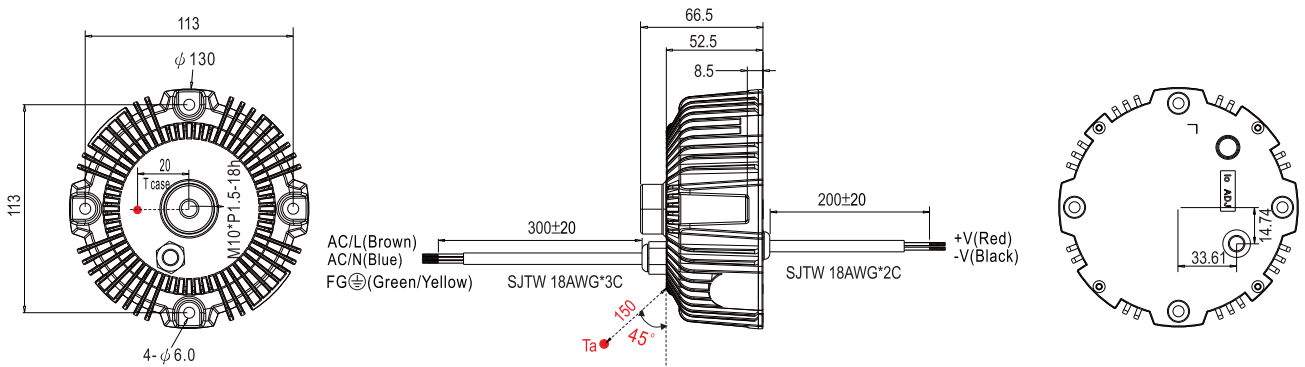
CASE NO.:217 Unit:mm

**Blank:(HBG-100)**



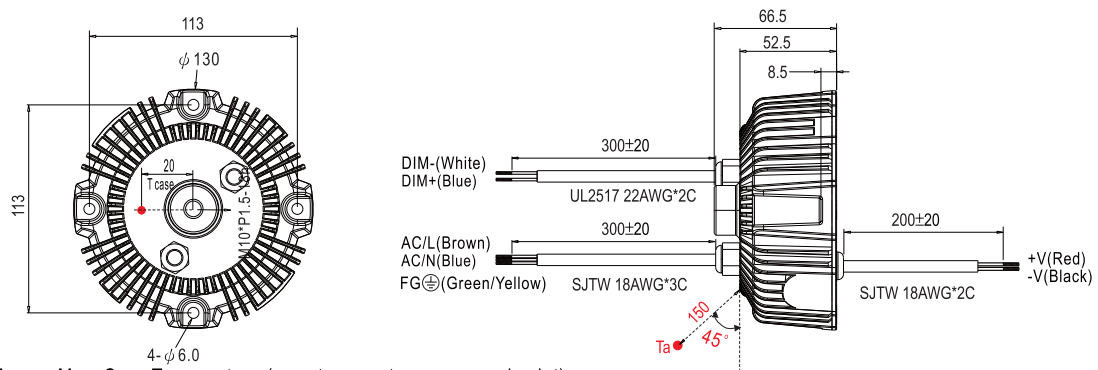
- ※ T case: Max. Case Temperature.(case temperature measured point)
- ※ Ta: Ambient Temperature measured point
- ※ IP67 rated. Cable for I/O connection.

**A type:(HBG-100- \_A)**



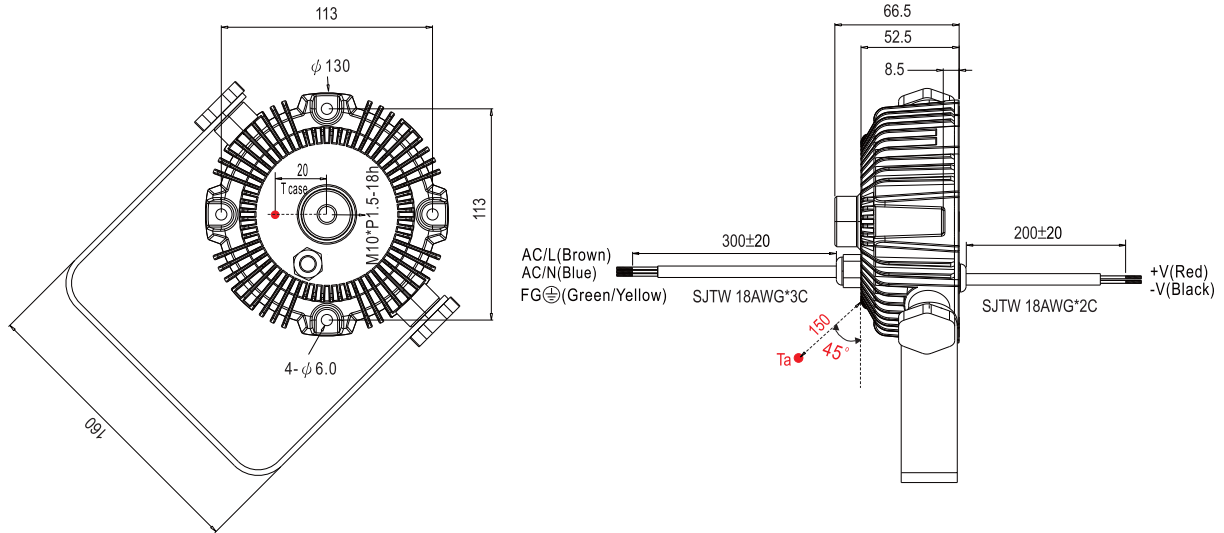
- ※ T case: Max. Case Temperature.(case temperature measured point)
- ※ Ta: Ambient Temperature measured point
- ※ IP65 rated. Output constant current level can be adjusted through internal potentiometer.

**B type:(HBG-100- \_B)**



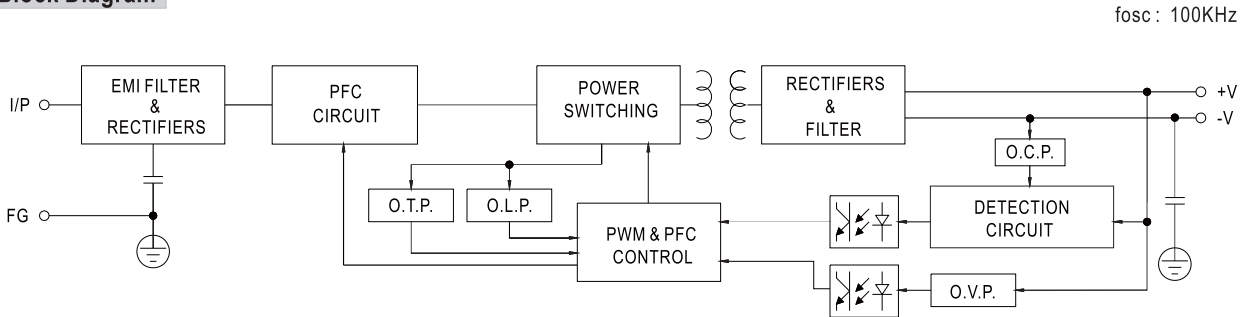
- ※ T case: Max. Case Temperature.(case temperature measured point)
- ※ Ta: Ambient Temperature measured point
- ※ IP67 rated. output constant current lever can be adjusted through output cable with 1-10V,PWM signal and Resistance

**E type(option):(HBG-100\_E)**

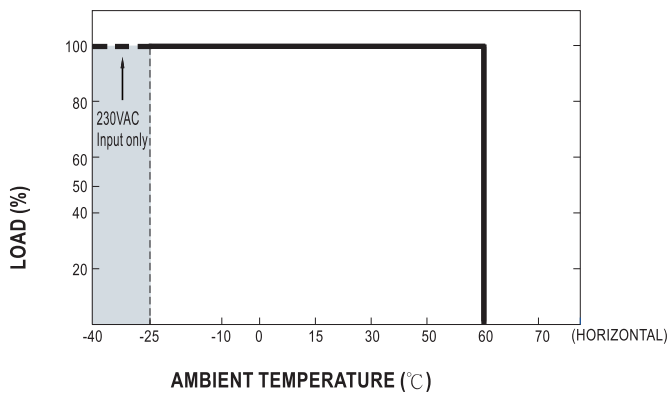


- ※ T case: Max. Case Temperature. (case temperature measured point)
- ※ Ta: Ambient Temperature measured point
- ※ IP67 rated. output constant current lever can be adjusted through output cable with 1-10V, PWM signal and Resistance

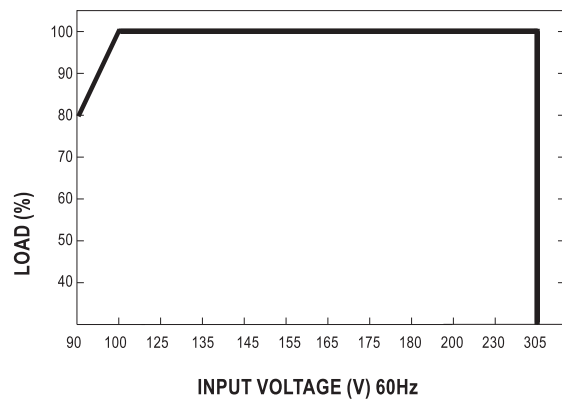
**Block Diagram**



**Derating Curve**

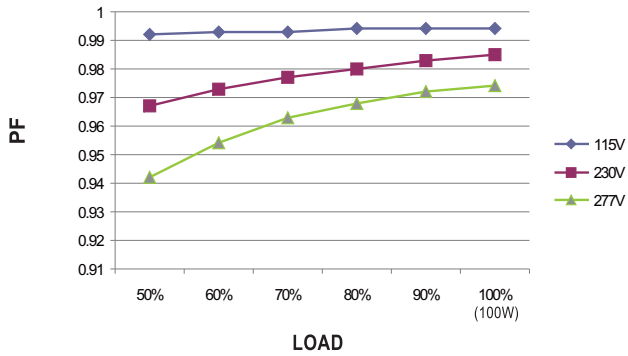


**Static Characteristics**



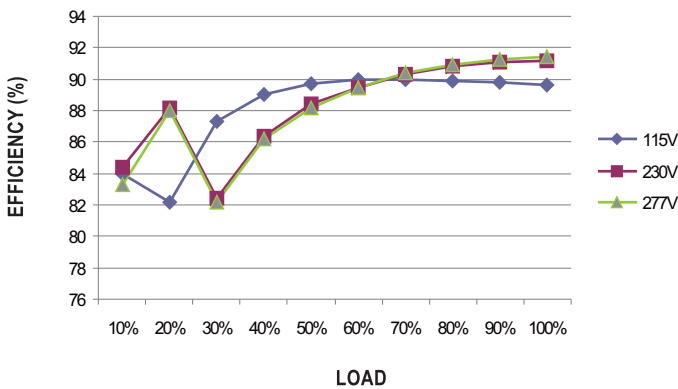
### Power Factor Characteristic

Constant Current Mode



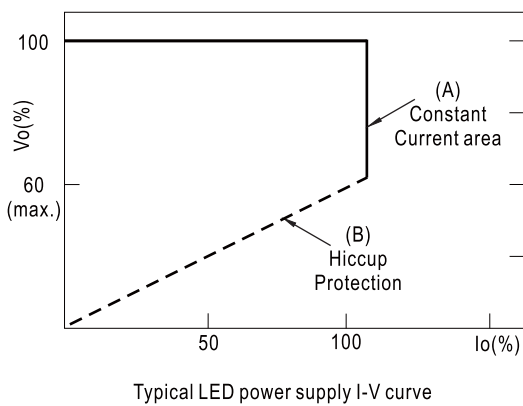
### EFFICIENCY vs LOAD (48V Model)

HBG-100 series possess superior working efficiency that up to 91% can be reached in field applications.

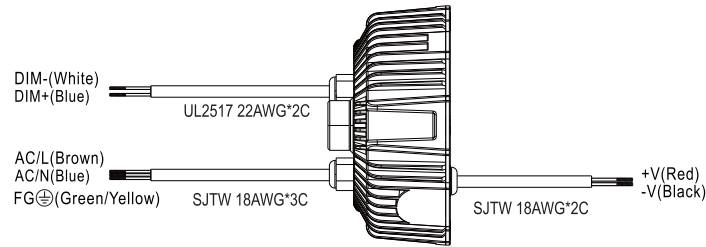


### DRIVING METHODS OF LED MODULE

This LED power supply is suggested to work in constant current mode area (CC) to drive the LEDs.



**■ DIMMING OPERATION(for B type only)**



※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 1 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

※ Please DO NOT connect "DIM-" to "-V".

※ Reference resistance value for output current adjustment (Typical)

Resistance value	Single driver	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
	Multiple drivers (N=driver quantity for synchronized dimming operation)	10KΩ/N	20KΩ/N	30KΩ/N	40KΩ/N	50KΩ/N	60KΩ/N	70KΩ/N	80KΩ/N	90KΩ/N	100KΩ/N	-----
Percentage of rated current		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

※ 1 ~ 10V dimming function for output current adjustment (Typical)

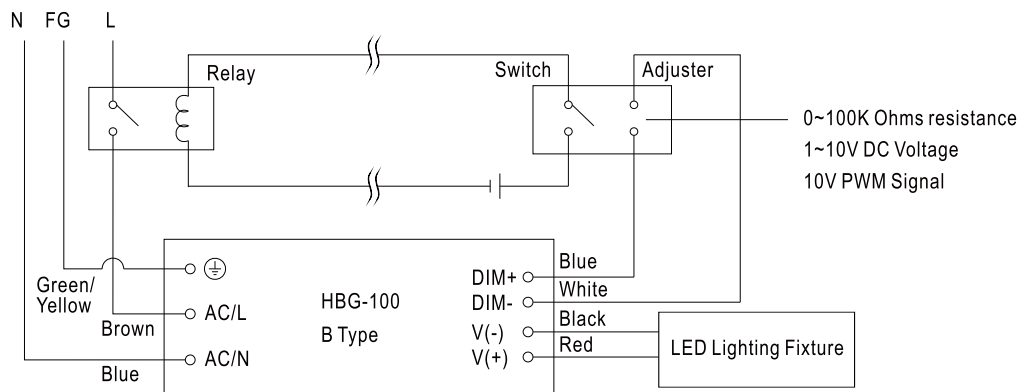
Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

※ 10V PWM signal for output current adjustment (Typical): Frequency range :100Hz ~ 3KHz

Duty value	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

※ Using the built-in dimming function on B-type model can't turn the lighting fixture totally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.




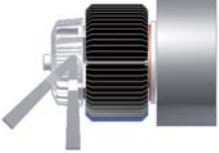
※ Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.



Using a switch and relay can turn ON/OFF the lighting fixture.

1. Output constant current level can be adjusted through output cable by connecting a resistance or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.
2. The LED lighting fixture can be turned ON/OFF by the switch.

■ INSTALLATIONS

				
Hanger	Chain	Spot Light	High Bay Light	Stage Light

