160W Single Output Switching Power Supply — HBG-160 series

Features :

- MEAN WELL patented housing design (Patent No.: CN201220314551)
- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- High efficiency up to 93.5%
- 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℃ 40000hrs

SELV IP65 IP67

HBG-160-60 [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-160-24 ☐	HBG-160-36 ☐	HBG-160-48 ☐	HBG-160-60 ☐
OUTPUT	DC VOLTAGE	24V	36V	48V	60V
	CONSTANT CURRENT REGION Note.4	14.4 ~ 24V	21.6 ~ 36V	28.8 ~ 48V	36 ~ 60V
	RATED CURRENT	6.5A	4.4A	3.3A	2.6A
	RATED POWER	156W	158.4W	158.4W	156W
	RIPPLE & NOISE (max.) Note.2	200mVp-p	300mVp-p	300mVp-p	300mVp-p
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer A type only			
		3.9 ~ 6.5A	2.6 ~ 4.4A	1.98 ~ 3.3A	1.6 ~ 2.6A
	VOLTAGE TOLERANCE Note.3	±2.0%			
	LINE REGULATION	±0.5%			
	LOAD REGULATION	±1.0%			
	SETUP, RISE TIME Note.6	2500ms, 200ms / 115VAC at full load 500ms, 200ms / 230VAC at full load			
	HOLD UP TIME (Typ.)	12ms at full load 115VAC/230VAC			
INPUT	VOLTAGE RANGE Note.5	90 ~ 305VAC 127 ~ 431VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load (Please refer to "Power Factor Characteristic" curve)			
	TOTAL HARMONIC DISTORTION	THD< 20% when output loading≧60% at 115VAC/230VAC input and output loading≧75% at 277VAC input			
	EFFICIENCY (Typ.)	92%	92%	93%	93.5%
	AC CURRENT (Typ.)	1.7A / 115VAC 0.78A / 230VAC 0.7A / 277VAC			
	INRUSH CURRENT (Typ.)	COLD START 65A(twidth=425μs measured at 50% Ipeak) at 230VAC			
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	4 units (circuit breaker of type B) / 7 units (circuit breaker of type C) at 230VAC			
	LEAKAGE CURRENT	<0.75mA / 277VAC			
PROTECTION	OVER CURRENT Note.4	95 ~ 108%			
		Protection type : Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	28 ~ 34V	41 ~ 47V	54 ~ 62V	65 ~ 75V
		Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery			
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down			
ENVIRONMENT	WORKING TEMP.	-40 ~ +60℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 95% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	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 approved, design refer to EN60950			
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 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	252.3Khrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	Refer to mechanical specification			
	PACKING	1.53Kg; 8pcs/13.8Kg/1.61CUFT			

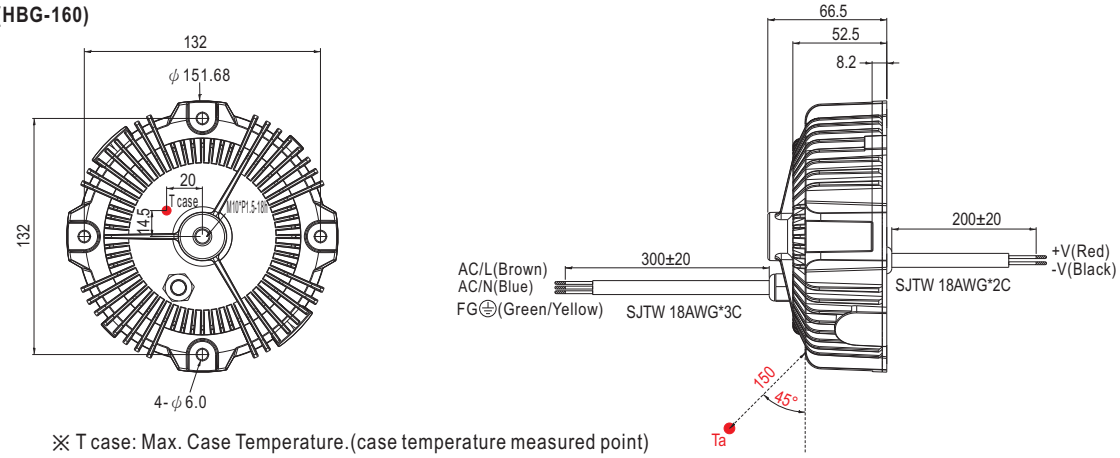
NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load 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. 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.
5. Derating may be needed under low input voltages. Please check the static characteristics for more details.
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.
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.
8. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can only be used behind a switch without permanently connected to the mains.

■ Mechanical Specification

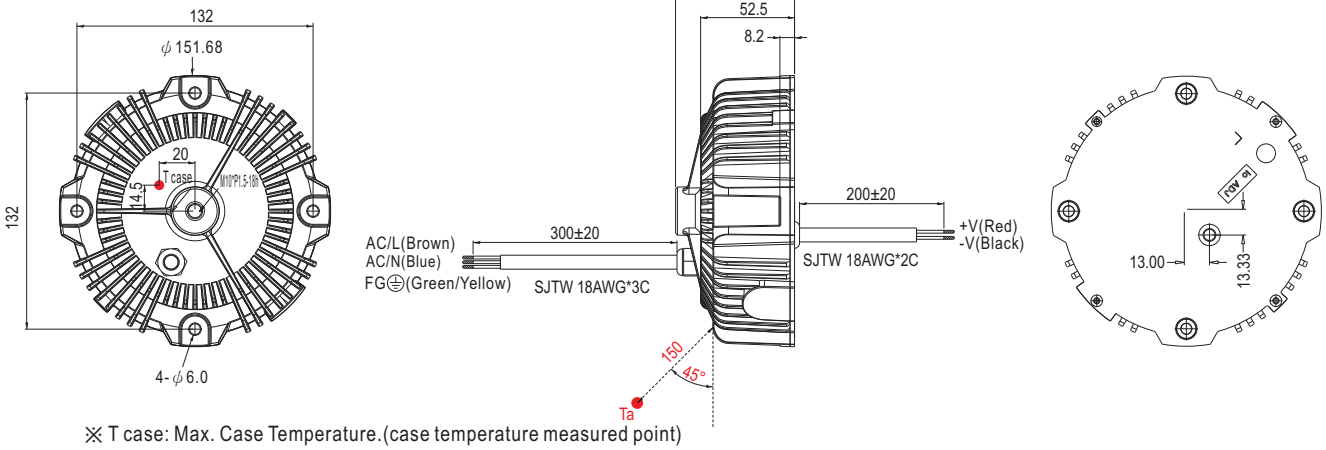
Case No.211 Unit:mm

Blank:(HBG-160)



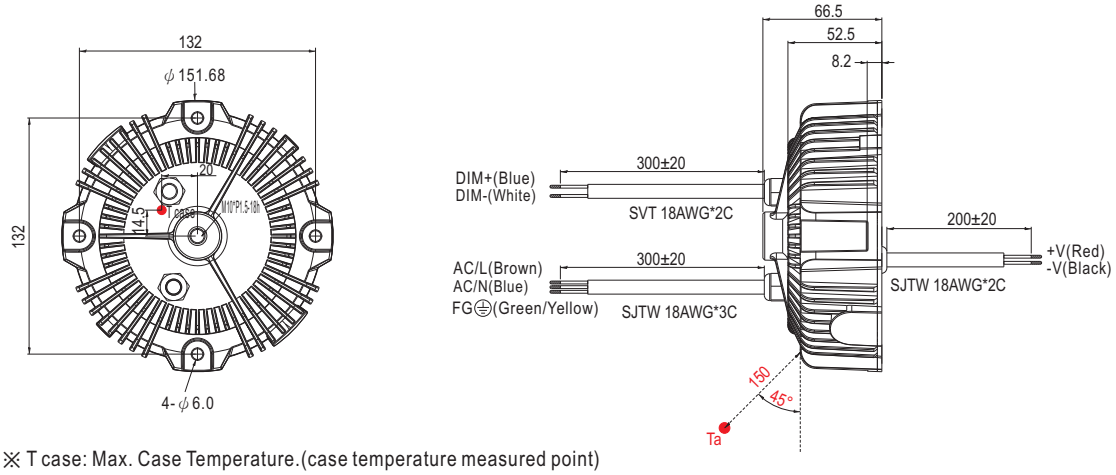
※ T case: Max. Case Temperature.(case temperature measured point)
※ Ta: Ambient Temperature measured point
※ IP67 rated. Cable for I/O connection.

A type:(HBG-160-_A)



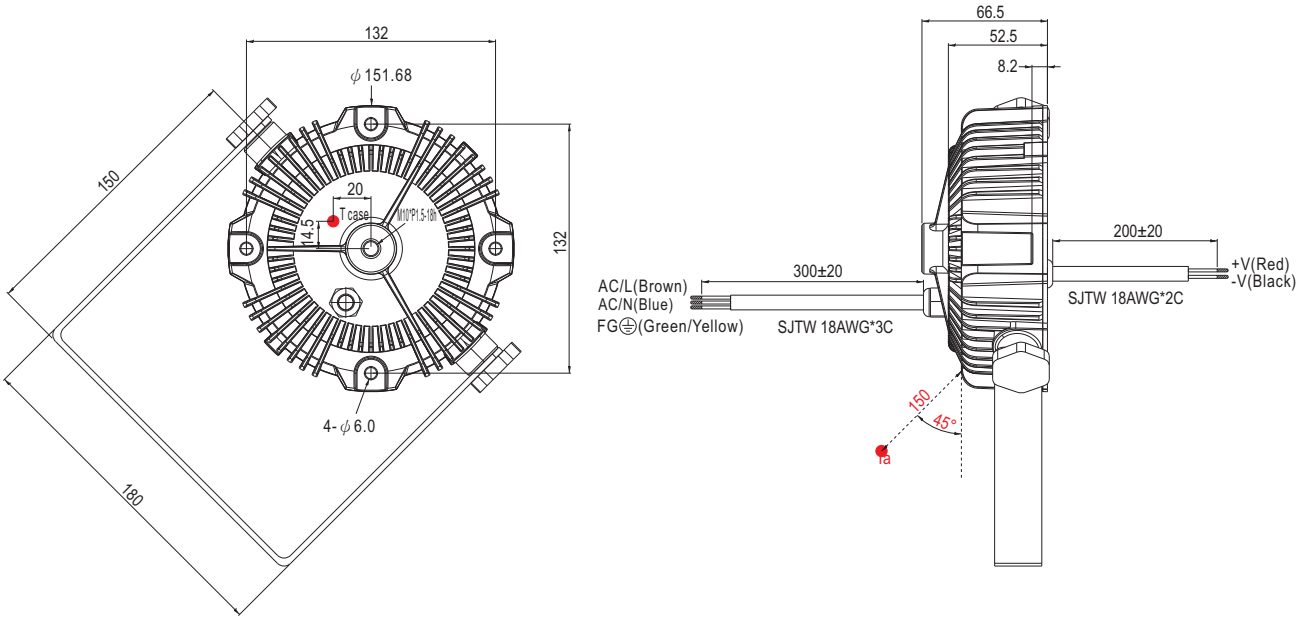
※ T case: Max. Case Temperature.(case temperature measured point)
※ Ta: Ambient Temperature measured point
※ IP65 rated. Output constant current level can be adjusted through internal potentiometer.

B type:(HBG-160-_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

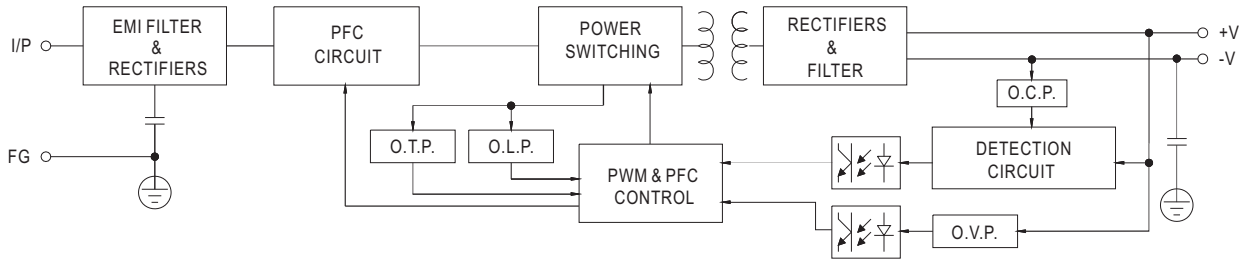
E type(option):(HBG-160-_E)



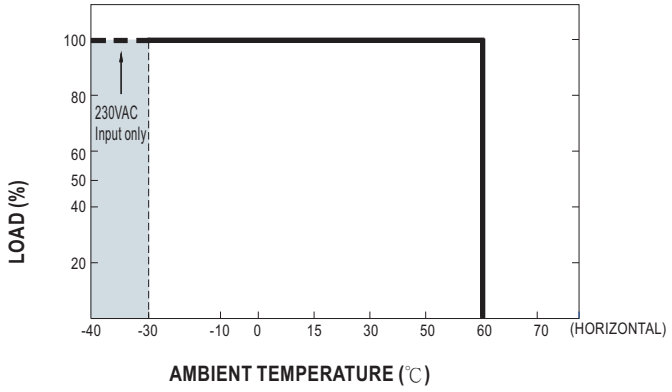
※ T case: Max. Case Temperature.(case temperature measured point)
※ Ta: Ambient Temperature measured point
※ IP67 rated. Can be fixed by steel support.

■ Block Diagram

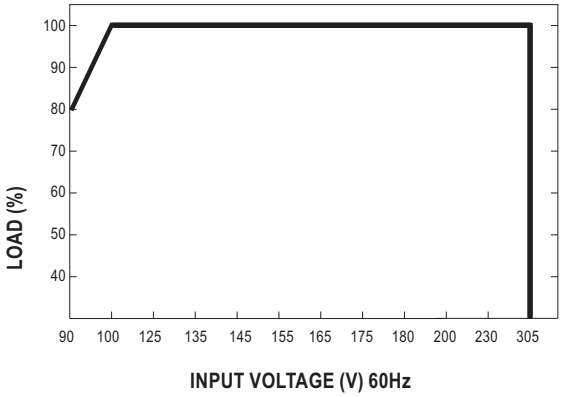
fosc : 100KHz



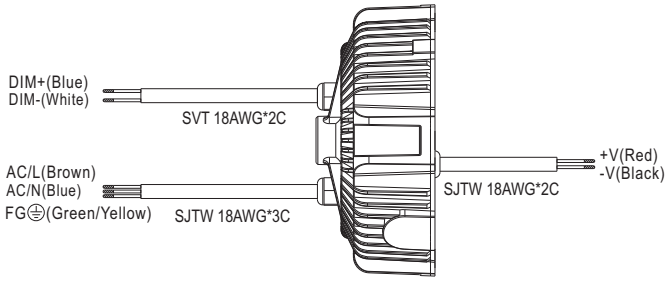
■ Derating Curve



■ Static Characteristics



■ 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)

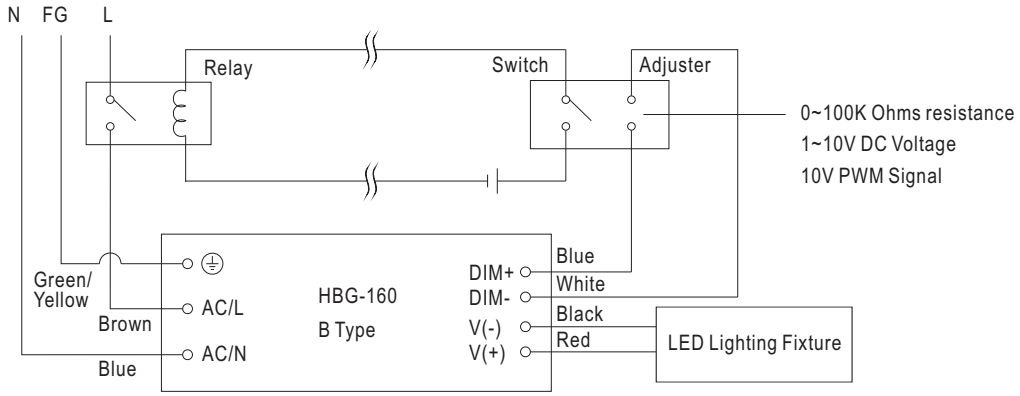
Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

※ 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.

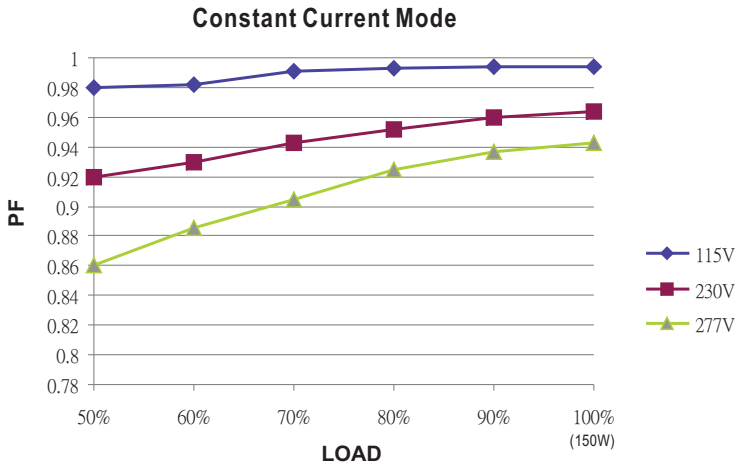


Using a switch and relay can turn ON/OFF the lighting fixture.

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-.

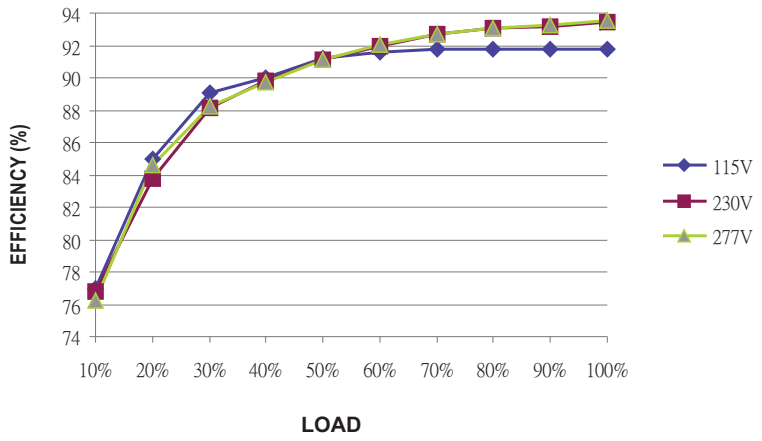
2.The LED lighting fixture can be turned ON/OFF by the switch.

■ Power Factor Characteristic



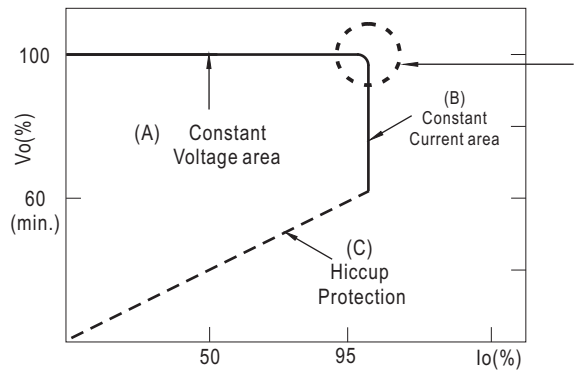
■ EFFICIENCY vs LOAD(48V Model)

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



■ DRIVING METHODS OF LED MODULE

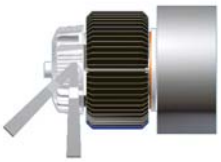
There are two major kinds of LED drive method "direct drive" and "with LED driver".
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.
Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B).



Typical LED power supply I-V curve

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.

■ INSTALLATIONS

				
Hanger	Chain	Spot Light	High Bay Light	Stage Light

Caution

Please inspect the appearance of the product for completeness if the package is damaged. There should not be any cracks.

Please do not drop or bump the product.

All screws including the suspension screw should be paired with a spring washer and locked tight.

The entire luminaire, including the power supply should be limited to less than 10Kg.

The luminaire should be cautiously protected throughout packaging and transportation to avoid damage due to shock.

Please thoroughly perform the cautionary notes above to prevent the possibility of the luminaire falling and injuring personnel.

Стандарт Электрон Связь

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