

SPECIFICATION



SS-320V Series LED Driver

Model: SS-320V-XX

Description: 320W LED DRIVER

Rev.: V01

Release Date: 2018-05-10

SHENZHEN SOSEN ELECTRONICS CO.,LTD

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Features

- Efficiency up to 94%
- Optional dimming function: 0-10V, PWM, Resistor, Timing
- Optional aux: 16V/0.35A, 12V/0.4A, 5V/0.45A
- IP67 rated; Suitable for Dry, Damp and Wet Locations
- Protections: SCP, OTP, OVP
- Metal case with full potted for hazardous scenarios
- Surge Protection: L/N-PE: 12kV, L-N 6kV
- 7 years warranty



Description

SS-320V series are constant current LED driver with universal input voltage 90-305Vac and high power factor. They are specifically designed for LED luminaries such as high bay, high mast and street lights with low standby power, high efficiency, compact housing and good thermal management, which greatly enhance the reliability and lifespan. Comprehensive protections, including Over Voltage Protection, Short Circuit Protection and Over Temperature Protection, ensure proper functioning.

Model List

Model	O/P Voltage	O/P Current	Max. O/P Power	O/P Current Tolerance	THD (Typ.)	PF (Typ.)	Efficiency (Typ.)
SS-320V-38*	24-38V	5.9-10A	320W	±5%	8%	0.98	93.5%
SS-320V-54*	32-54V	4.1-7.6A	320W	±5%	8%	0.98	94%

Note:

1. Default Tested at 230Vac, full load, Ta 25°C.
2. Optional B, T & H or space in the place of * means additional function.
Space is the base model without any optional function;
 - Suffix B for model with 3-in-1 dimming (0-10V, PWM, Resistor);
 - Suffix T for model with timing control;
 - Suffix H for model with 3-in-1 dimming with Aux.

Input Characteristics

Parameter	Min	Typ.	Max	Remarks
Rated AC input range	100 Vac		277 Vac	
AC input range	90 Vac		305 Vac	
Input frequency range	47Hz		63Hz	
Max input current			4.3A	90Vac, full load
Inrush current			80A	Cold start , 230Vac/50Hz , Twidth=650us measured at 50% Ipeak
No load power		0.5W	1W	277Vac/50Hz, no load
Power factor	0.96	0.98		230Vac/50Hz, full load
	0.9			100-277Vac/50Hz, 70-100% Load
THD		8%	10%	230Vac/50Hz, full load
			20%	100-277Vac/50Hz, 70-100% Load

Output Characteristics

Parameter	Min	Typ.	Max	Remarks	
Output voltage range	SS-320V-38*	24V		38V	Power derated @ 24-32Vdc, see Fig. 1
	SS-320V-54*	32V		54V	Power derated @ 32-42Vdc, see Fig. 1
Rated output voltage	SS-320V-38*	32V		38V	Po=Vo*Io=320W, full load, see Fig. 1
	SS-320V-54*	42V		54V	
Rated output current	SS-320V-38*	8.42A		10A	10A for 32V, 8.42A for 38V
	SS-320V-54*	5.92A		7.6A	7.6A for 42V, 5.92A for 54V
Current adjustable range	SS-320V-38*	5.9A		10A	Rated Io 70%-100% adjustable
	SS-320V-54*	4.1A		7.6A	
No load voltage	SS-320V-38*	38.5V	39.5V	40V	
	SS-320V-54*	54.5V	55.5V	56V	
Efficiency @230Vac	SS-320V-38*	92.0%	93.5%		Output 38V/8.42A, see Fig. 5
	SS-320V-54*	92.5%	94.0%		Output 54V/5.92A, see Fig. 5
Output current tolerance	-5%		+5%		
Output voltage ripple (PK-PK)		1%	2%	Full load	
Output current ripple (PK-PK)		5%	10%	Full load	
Start-up current overshoot			10%		
Start-up time		2.36S	3S	115Vac	
		1S	2S	230Vac	
Line Regulation	-1%		+1%	Full load	
Load Regulation	-2%		+2%		

Other Characteristics

Parameter		Min	Typ.	Max	Remarks
Aux Levels (Optional)	5V	4.9V	5V	5.1V	Aux level optional; Aux should share same ground as DIM-.
	5V	0mA		450mA	
	12V	11.76V	12V	12.24V	
	12V	0mA		400mA	
	16V	15.68V	16V	16.32V	
	16V	0mA		350mA	
0-10V Dimming (Optional)	Dim Vmax	0V		14V	3 in 1 Dimming; 0-5V Dimming Optional; Negative Logic DimOptional
	Dim Range	10%Iomax		100%Ioset	
	Voltage	1V		10V	
	OFF	0.3V	0.5V	0.7V	Dim-off value
	ON	0.5V	0.7V	0.9V	
PWM Dimming (Optional)	High	5V		10V	
	Low	-0.3V		-0.6V	
	Frequency	200Hz		2KHz	
	PWM Duty	1%		99%	
Resistor Dimming (Optional)	Resistance	10K ohm		100K ohm	
	Dimming	10%Iomax		100%Ioset	
Timing Curve (Optional)	IC Control	By programming			Typically 3-4 sections
	Timing	5H/6H/7H/8H per section			Default Mode: 24Hour/Circle with 50% load
Protection	OTP	90°C	100°C	110°C	Tc, Self-recovery
	Short Circuit Protection	Driver will not damaged with short-circuit power <10W			Hiccup mode
Life time			55,000hrs		230Vac, full load, Tc 75°C, See Fig. 6
MTBF			200,000hrs		230Vac, full load, Ta= 25°C, (MIL-HDBK-217F)
Temperature Coefficient		-0.03%/°C		+0.03%/°C	Tc : 0°C~90°C
Tc				90°C	
Warranty			7 years		Tc : 75°C
Net Weight			2200g		
Dimension		252mm*90mm*45mm			L x W x H

NOTE: All the parameters above are tested Ta 25°C, unless specified.

Environmental Requirements

Parameter	Min	Typ.	Max	Remarks
Operating Temperature	-40°C	25°C	+60°C	See Fig. 2
Storage Temperature	-40°C	25°C	+85°C	
Operation Humidity	10%RH		90%RH	
Storage Humidity	5%RH		95%RH	
Altitude	-65m		4,000m	
Cooling Method	Air Cooling			

Safety and EMI/EMS Standards

Certification	Standard	Status	Remark
UL/CUL	UL8750	✓	
TUV	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013 EN62493:2015	✓	
SAA	AS/NZS61347.2.13	✓	
CCC	GB 19510.14-2009	✓	
CE	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013	✓	

Item	Standard	Remark	
Insulation strength	Input-output	3200Vac/5mA Max/60s	Reinforced insulation
	Primary-Earth	1600Vac/5mA Max/60s	Basic insulation
	Sec.- Earth	1000Vac/5mA Max/60s	Function insulation
Insulation resistance	Input-output	≥10 MΩ	Testing Voltage: 500Vdc
Ground resistor		≤0.1Ω	25A/1min
Leakage current		≤0.75mA	277Vac
Item	Criterion	Remark	
Conduction Emission		EN55015:2013+A1:2015	
Radiation Emission		EN55015:2013+A1:2015	
Harmonic Current Emissions		IEC/EN 61000-3-2	Class C
Surge		IEC/EN61000-4-5	Difference mode 6kV, Common mode 12kV Criterion B

NOTE: SOSEN warrants the LED Driver itself complies with EMC standard. However, LED Driver's EMC should be re-checked when integrated into lighting systems due to unexpected interference as component.

Performance Curves

Fig. 1 O/P Voltage VS Output Current

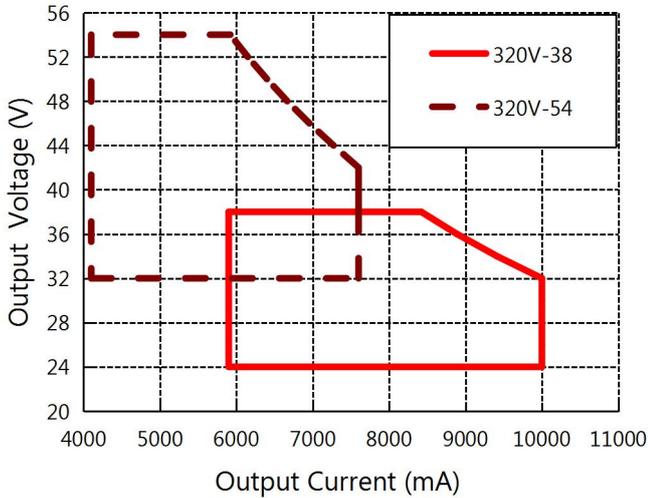


Fig. 2 O/P Power VS Ambient Temperature

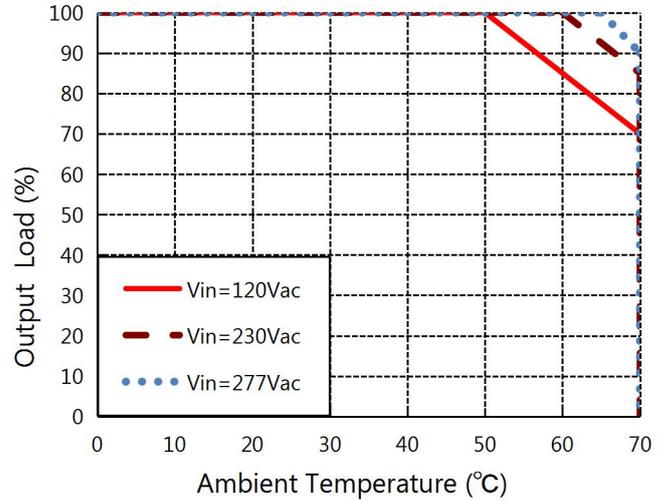


Fig. 3 Power Factor VS Output Power

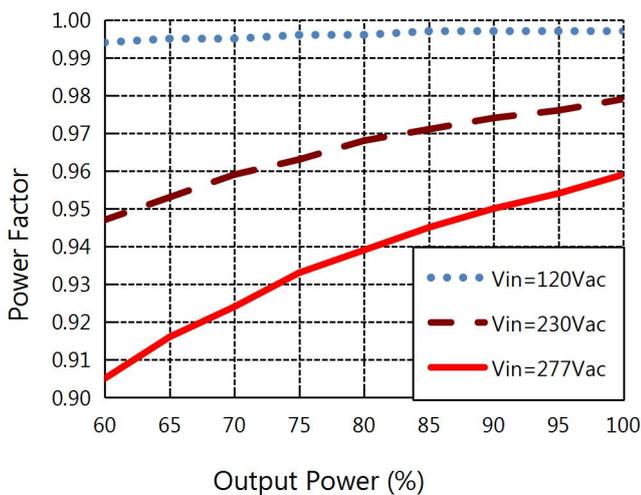


Fig. 4 THD VS Output Power

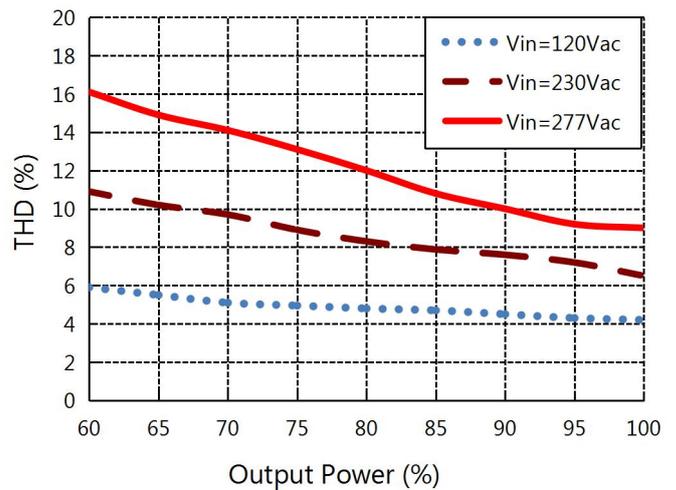


Fig. 5 Efficiency VS Output Power

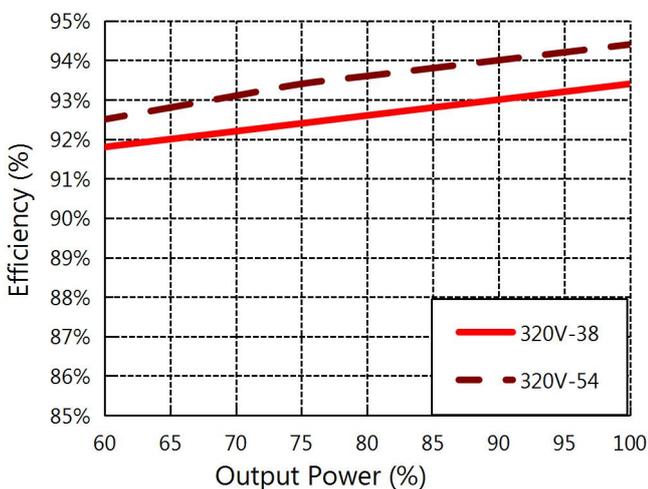


Fig. 6 Lifespan VS Case Temperature

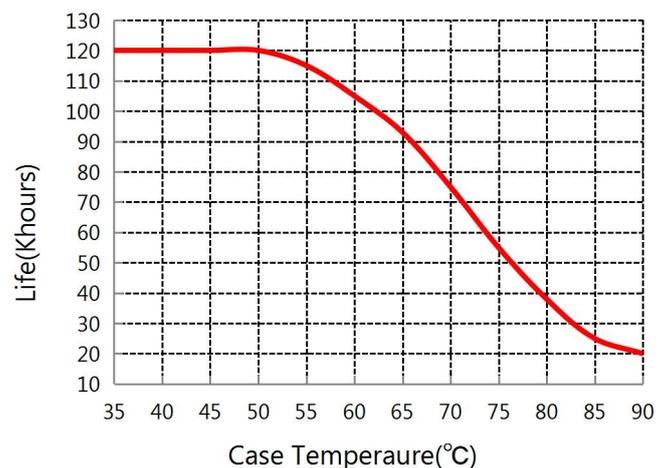
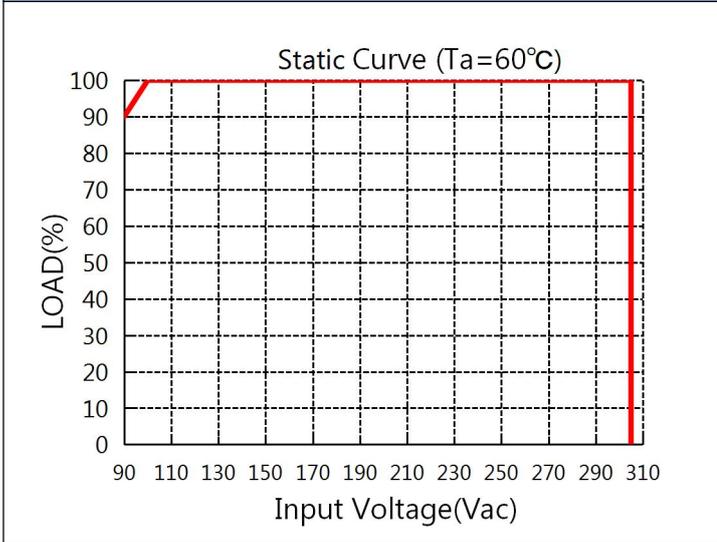
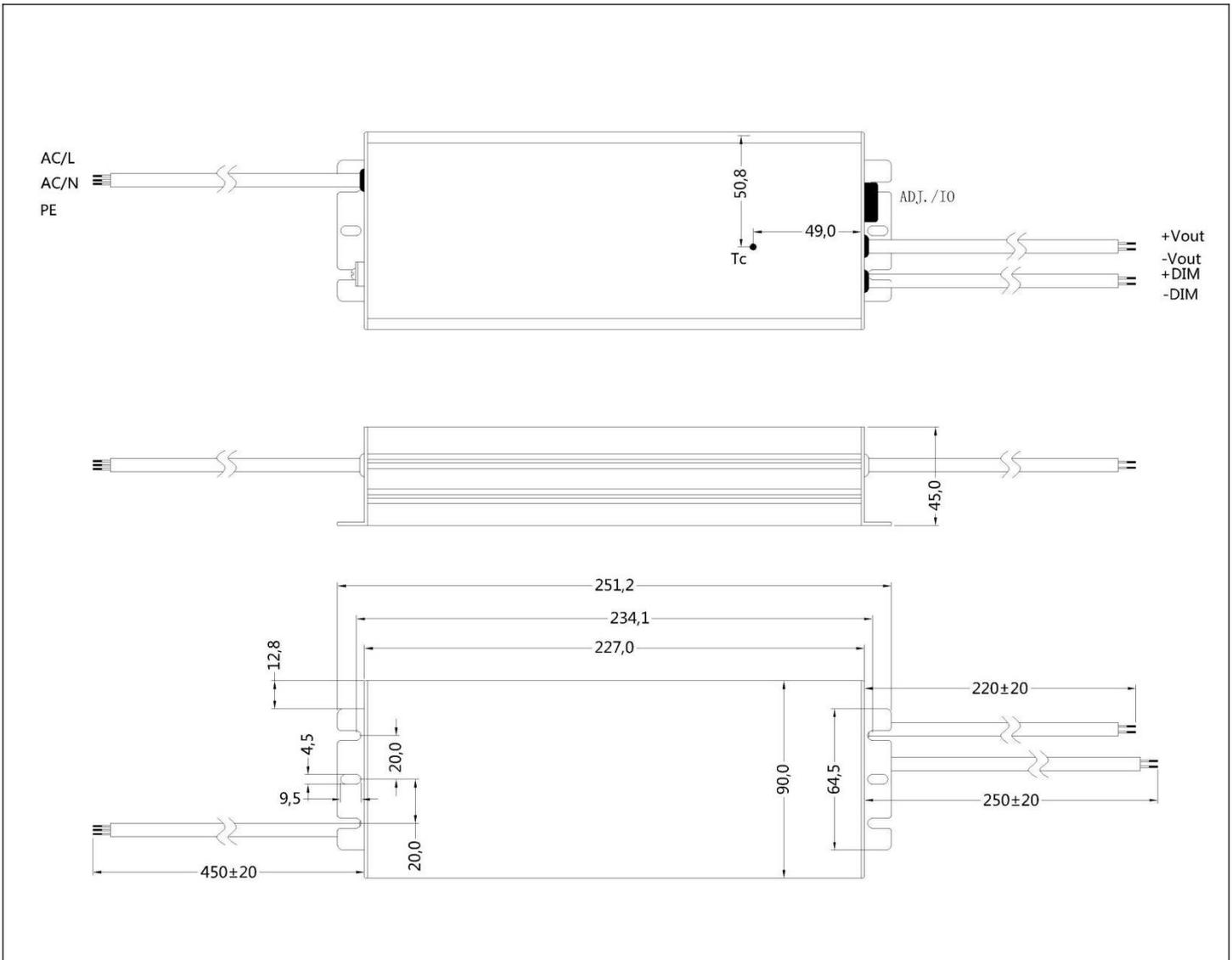


Fig. 7 Output Power VS Input Voltage



Mechanical Characteristics (Unit: mm)



NOTE:

Input Wire	UL model: UL SJTW #18AWG 3*0.824 mm ² , O.D: 7.8mm, GREEN: PE, BLACK: L, WHITE: N Euro model: VDE H05RN-F 3*1.0 mm ² , O.D: 7.4mm, BROWN: L, BLUE: N, YELLOW/GREEN: PE
Output Wire	UL model: UL SJTW #14AWG 2*2.08mm ² , O.D: 9.0mm, RED: V+, BLACK: V- Euro model: VDE H05RR-F 2*1.5mm ² , O.D: 8.7mm, BROWN:V+, BLUE: V-
Suffix B DIM	SJTW #18AWG 2*0.824 mm ² , O.D: 7.6mm, PURPLE: DIM+, GRAY: DIM-
Suffix H AUX+DIM	STYLE 2733 #22AWG O.D: 6.0mm, PURPLE: DIM+, GRAY: DIM-, RED: VCC

Dimming Diagram



- Output current could be adjusted by connecting 0-10V or PWM signal between DIM+ and DIM-
- DO **NOT** connect DIM- and V- to avoid abnormal output

0-10V Dimming(Typ.), See Fig. 8

Voltage Range	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Rated current percentage	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%-108%

10V PWM frequency range (Typ.): 200Hz-2KHz, See Fig. 9

PWM duty	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Rated current percentage	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%-108%

Resistor (Typ.), N represents the number of power supplies

Resistor	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
	/N										
Rated current percentage	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%-108%

Fig. 8 0-10V Dimming Curve

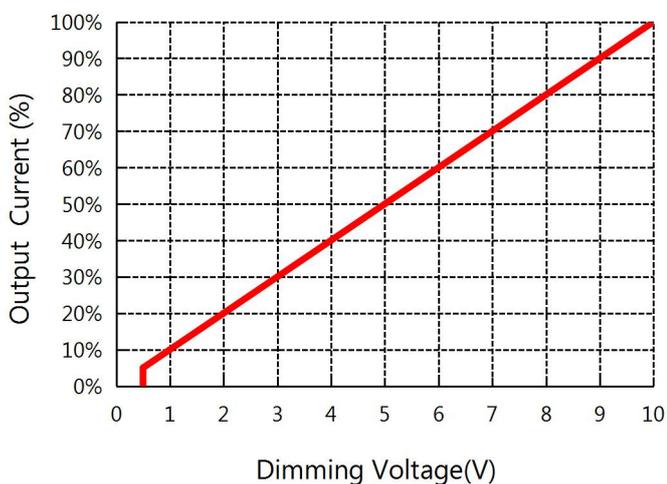
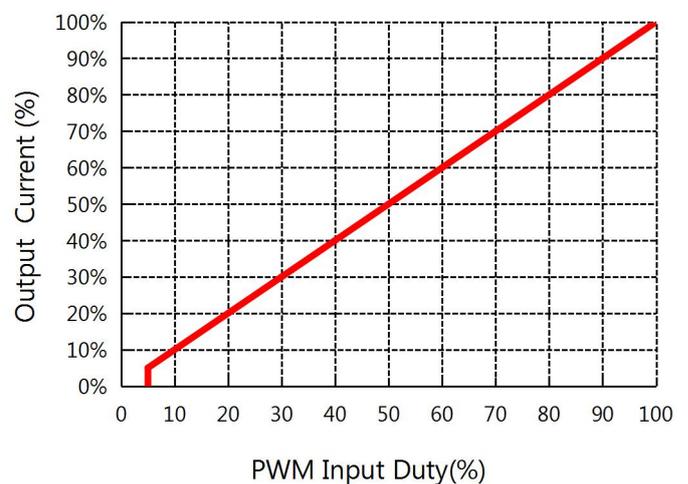


Fig. 9 PWM Dimming Curve



Installation Tips

1. Highly recommended to seal the adjustable hole with silicon glue (#704 preferred) after adjusting the driver's output current. Torsion with proper strength to avoid permanent damage to the potentiometer inside.
2. Remove the out screw for Hi-pot test, and fasten it back and connect to the metal case appropriately after test to maintain the 12kV/6kV surge protection per IEC 50598-1-10.2, refer to below:
3. Dimming leads should be capped if not in use to avoid dimming circuit damage caused by external signals.



Package, Transportation & Storage

1. Package

- Outside carton dimension: L×W×H =493mm×385mm×116mm;
- 7PCS/Carton;
- Net weight/PC: 2.2kg;
- Gross weight/Carton: 16kg.

2. Transportation

Packaging is designed suitable for transportation by trucks, vessels and flights. The products should be shielded from direct sunshine, loaded/unloaded with caution.

3. Storage

The product storage meets the standard of the GB 3873—83.

Products should be rechecked if stock for over 1 year before installation.