



SPECIFICATIONS

SS-50AX-XX CV DRIVER

Model: SS-50AX-XX

Power: 50W

Rev.: V00

Release date: 2025-09-04



SS-50AX-XX Series LED DRIVER

Features

- Wide input voltage 100-305Vac (class I)
- Constant voltage function
- Class 2
- Efficiency up to 88%
- Surge protection: CM: 10kV, DM: 6kV
- Full metal housing, IP67
- No-load power consumption<0.5W
- Type HL, suitable for hazardous locations
- Protections: SCP/OTP/OVP/OCP
- Warranty: 5 years

CB CE Ip67     Class 2

Description

The SS-50AX-XX series is a 50W outdoor constant voltage LED driver power supply featuring all-metal housing with IP67 protection, it operates reliably in extreme temperatures from -40°C to 90°C (Tc) through natural heat dissipation. Its ultra-compact size simplifies installation, and the wide input voltage range offers design flexibility for luminaire manufactures. It is created for lighting applications including landscape lighting, sinage,etc.

Applications:
Outdoor landscape lighting,signage,LED strips.

Model List

Model	AC Input Range	Max. Pout	Vout	Iout Range	THD (Typ.)	PF (Typ.)	Eff. (Typ.)	Max.Tc
SS-50AX-12	100-305Vac	50W	12V	0-4.17A	6.5%	0.95	85.5%	90°C
SS-50AX-24	100-305Vac	50W	24V	0-2.083A	6.5%	0.95	88.0%	90°C

Note:

1.Default tested:at 220Vac,Full load, Ta 25°C.

2.The performance of the LED Driver can be guaranteed within the full power range.

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Input Characteristics

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	120Vac		277Vac	
AC Input Range	100Vac		305Vac	
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			0.55A	120Vac, full load
Max Input Power			60W	120Vac, full load
Max Inrush Current(120Vac)			35A	Cold Start
Max Inrush Current(220Vac)			50A	Cold Start
Max Inrush Current(277Vac)			60A	Cold Start
No-load Power Consumption			0.5W	220Vac/50Hz
Power Factor	0.95	0.97		220Vac/50Hz, full load
	0.90			120-277Vac, 70-100% load
THD		3%	6%	220Vac/50Hz, full load
			20%	120-277Vac, 50-100% load

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Output Characteristics(SS-50AX-12)

Parameter	Min.	Typ.	Max.	Remark
DC Output Voltage	11.6V		12.4V	
Rated O/P Current	0A		4.17A	
No Load Voltage			12.4V	
Efficiency @120Vac	82.0%	84.0%		O/P 12V/4.17A
Efficiency @220Vac	83.5%	85.5%		O/P 12V/4.17A
Efficiency @277Vac	84.4%	86.4%		O/P 12V/4.17A
Ripple Noise (PK-PK)	-3%		+3%	Full load (Ripple and noise measurement method: Use a twisted pair of cable with 0.1uF and 10uF capacitors in parallel at the terminals.(Measured at 20 MHZ bandwidth).
Starting Voltage Overshoot			10%	
Current Accuracy	-2%		+2%	
Start-up Time			0.75S	120Vac,Full load
			0.5S	220Vac/277Vac,Full load
Line Regulation	-2%		+2%	Full load
Load Regulation	-2%		+2%	
Temperature Coefficient		0.03%/°C		Tc:0°C~90°C
OTP	90°C	93°C	96°C	Over-temperature dropout voltage mode 10V±10%. Automatic recovery when abnormal conditions are removed
Over Current Protection				Automatic recovery after removal of abnormal load conditions
Over Voltage Protection				It will lock the machine, and after the abnormal condition is lifted, the Need to power off and restart
Short Circuit Protection				Hiccup mode, auto recovery when the fault condition is removed

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Output Characteristics(SS-50AX-24)

Parameter	Min.	Typ.	Max.	Remark
DC Output Voltage	23.5V		24.5V	
Rated O/P Current	0A		2.083A	
No Load Voltage			24.5V	
Efficiency @120Vac	84.5%	86.5%		O/P 24V/2.083A
Efficiency @220Vac	86.0%	88.0%		O/P 24V/2.083A
Efficiency @277Vac	88.0%	89.0%		O/P 24V/2.083A
Ripple Noise (PK-PK)	-3%		+3%	Full load (Ripple and noise measurement method: Use a twisted pair of cable with 0.1uF and 10uF capacitors in parallel at the terminals.(Measured at 20 MHZ bandwidth).
Starting Voltage Overshoot			10%	
Current Accuracy	-2%		+2%	
Start-up Time			0.75S	120Vac,Full load
			0.5S	220Vac/277Vac,Full load
Line Regulation	-2%		+2%	Full load
Load Regulation	-2%		+2%	
Temperature Coefficient		0.03%/°C		Tc:0°C~90°C
OTP	90°C	93°C	96°C	Over-temperature dropout voltage mode 20V±10%. Automatic recovery when abnormal conditions are removed
Over Current Protection				Automatic recovery after removal of abnormal load conditions
Over Voltage Protection				It will lock the machine, and after the abnormal condition is lifted, the Need to power off and restart
Short Circuit Protection				Hiccup mode, auto recovery when the fault condition is removed

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Other Characteristics

Parameter	Min.	Typ.	Max.	Remark
Lifetime(Tc≤75℃)	50,000 hours			80% Load
MTBF	201,200 hours			220Vac,full load, Ta=25℃ (MIL-HDBK-217F)
IP	IP67			Suitable for dry, humid,rainy environments
Tc	90℃			
Warranty	5 years			Tc:75℃
Net Weight	413g			
Dimension	105mm*66mm*31.5mm			L x W x H
	4.13Inch*2.6Inch*1.24Inch			

NOTE:
1.All the parameters above are tested Ta 25℃ and LED load, unless specified.
2.If you need to use this product with capacitive loads, we recommend that the load specifications be within 1000uF.

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Environmental Requirements

Parameter	Min.	Typ.	Max.	Remark
Operating Temperature(Tcase)	-40°C	25°C	+90°C	Output Power Vs. Ring Temp. Input Voltage
Storage Temperature	-40°C	25°C	+90°C	
Operation Humidity	10%RH		90%RH	
Storage Humidity	5%RH		95%RH	
Altitude	-65m		4000m	

Safety and EMI/EMS Standards

Certification	Standard	Status	Remark
UL	UL8750	✓	
CUL	CSA/CSA C22.2 No.250.13	✓	
ENEC	EN 61347-1 EN 61347-2-13 EN IEC 62384	✓	
RCM	AS/NZS61347.2.13		
CCC	GB/T 19510.1 GB/T 19510.213	✓	
CE	EN 61347-1 EN 61347-2-13 EN 62493	✓	
	EN 301 489-1 EN 301 489-3 EN 300 330 EN 62479/EN 50663/EN 50665/EN 50364		

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Safety and EMI/EMS Standards

EMI/EMS	Criterion	Status	Remark
Conduction Emission	EN IEC 55015	✓	
	GB/T 17743	✓	
	FCC Part 15 Subpart B;ANSI C63.4	✓	120Vac:Class B 277Vac:Class A
Radiation Emission	EN IEC 55015	✓	
	GB/T 17743	✓	
	FCC Part 15 Subpart B;ANSI C63.4	✓	120Vac:Class B 277Vac:Class A
Harmonic Current Emissions	EN IEC 61000-3-2	✓	ClassC
	GB 17625.1	✓	ClassC
Surge	IEC/EN61000-4-5	✓	DM: 6kV,CM: 10kV,Criterion B
	ANSI/C82.77-5	✓	DM: 6kV,CM: 6kV,Criterion B
Ring Wave	IEC/EN 61000-4-12	✓	DM: 6kV,CM: 6kV,Criterion B
	ANSI/C82.77-5	✓	DM: 6kV,CM: 6kV,Criterion B

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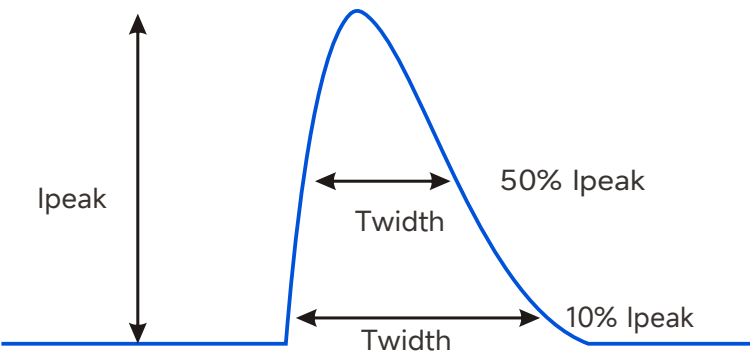
Safety Test Items

Safety Test Items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	TUV Insulation Requirements	CCCInsulation Requirements	
Input-O/P	2U+1000Vac	4U+2000Vac	4U+2000Vac	
Input-Case	2U+1000Vac	2U+1000Vac	2U+1000Vac	
Insulation Resistance	$\geq 10M\Omega$			Input-O/P,Test voltage:500Vdc
Ground Resistance	$\leq 0.1\Omega$			25A/1min
Leakage Current	$\leq 0.75mA$			277Vac

- NOTE:
1. 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 of components.
 - 2.Please short (ACL and ACN), (V+ and V-)when Hi-pot test.

Performance Curves

Input Inrush Current

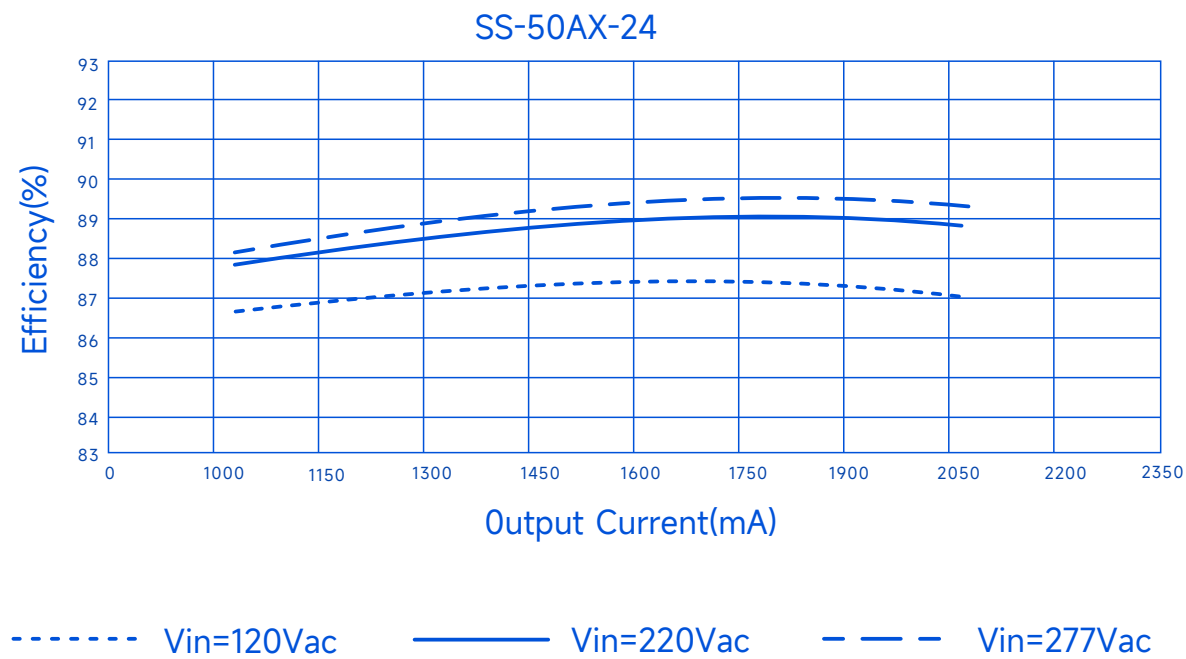
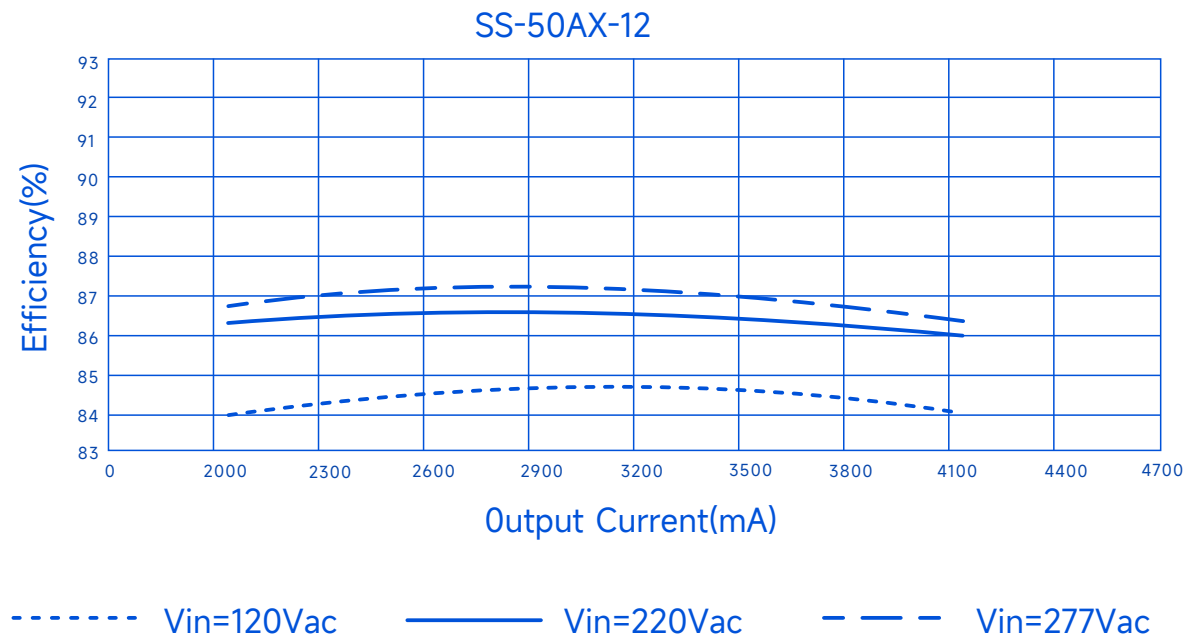


Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
120Vac	35A	1000uS	400uS
220Vac	50A	1000uS	400uS
277Vac	60A	1000uS	400uS

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Performance Curves

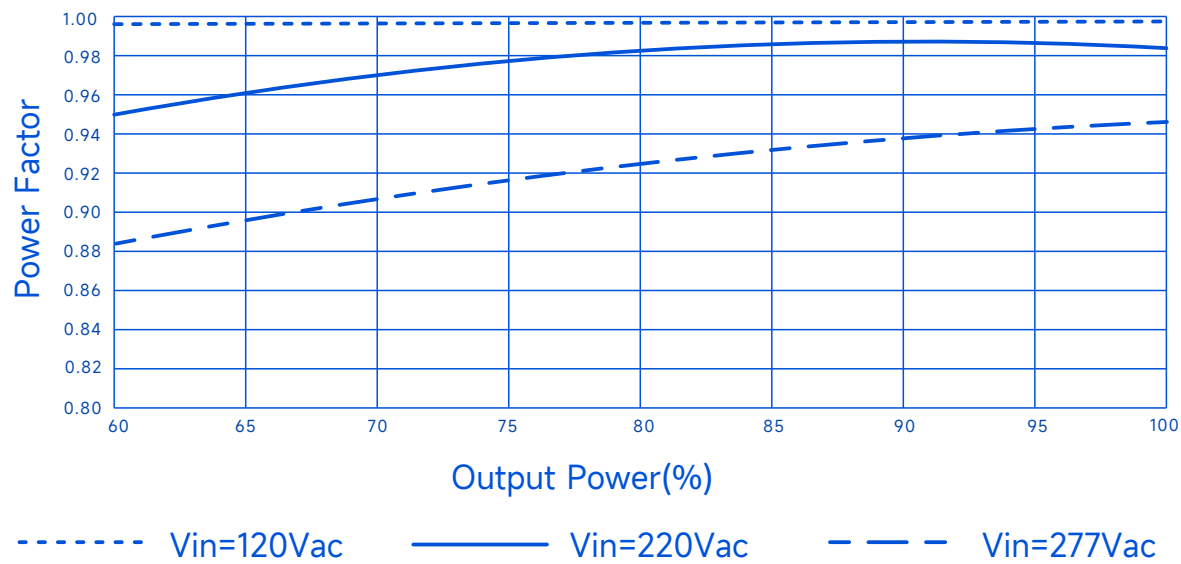
Efficiency Vs. Output Current



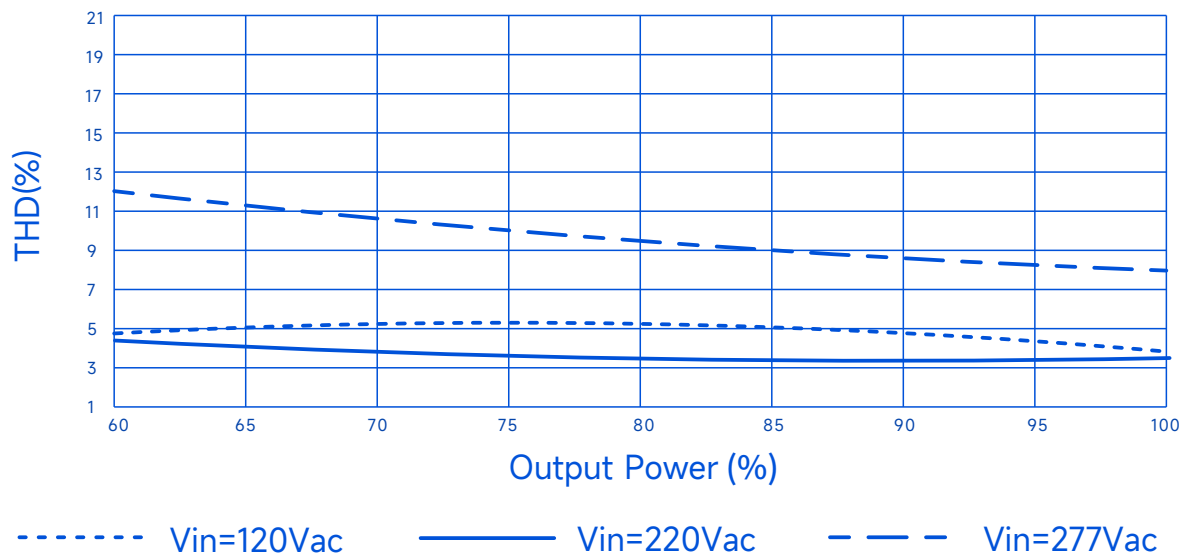
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Performance Curves

Power Factor Vs. Output Power



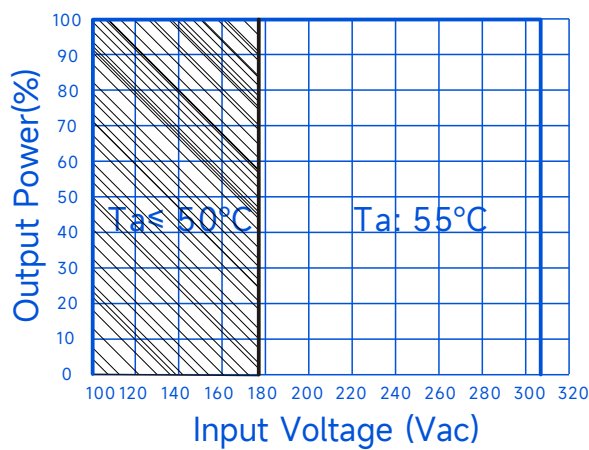
THD Vs. Output Power



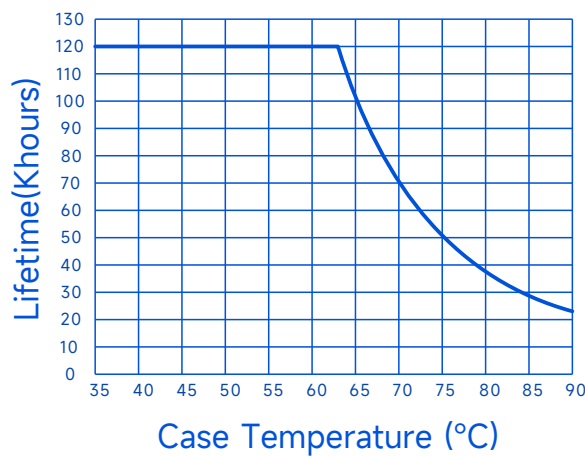
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Performance Curves

Output Power Vs. Ring Temp.
Input Voltage

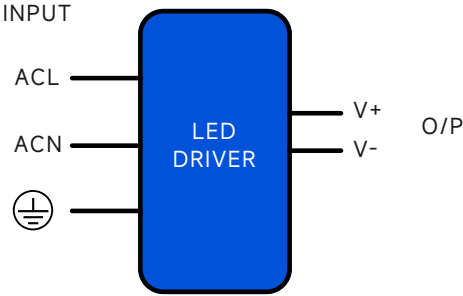


Lifetime Vs. Case Temperature



SS-50AX-XX Series LED DRIVER

Mechanical Characteristic



AC Input Cable(Exposed Length 300±10mm):

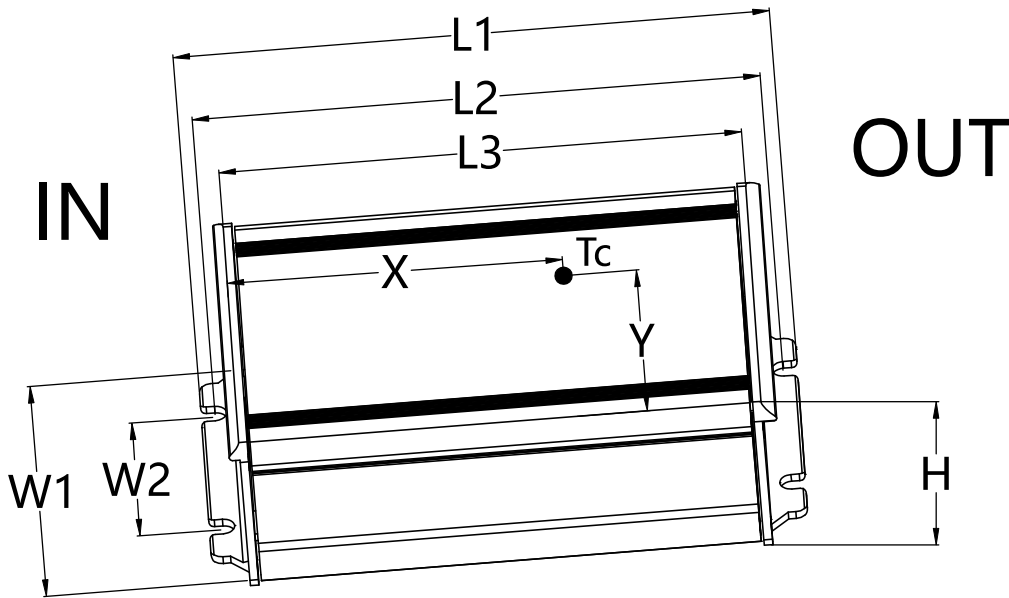
Global model: SJOW, 3*17AWG, O.D: 7.2mm, Brown: L, Blue: N, Yellow/Green: ⊕

DC O/P Cable(Exposed Length 300±10mm):

Global model: SJOW, 2*17AWG, O.D: 7.0mm, Brown: V+ Blue: V-

Name Description	Standard Code	mm(In.)
Overall Length	L1	105(4.13)
Mounting Hole Length	L2	100.1(3.94)
Case Length	L3	92(3.62)
Case Width	W1	66(2.59)
Mounting Hole Width	W2	32(1.26)
Case Height	H	31.5(1.24)
TC Point Position	X	65(2.55)
TC Point Position	Y	42(1.65)

Note
1,Please follow the "LED Driver User Manual" obtained from SOSEN's official website for assembly.
2,AC Input Cable,DC O/P Cable:Peeled length of cable:43±5mm,
Tinned length of wire:10±2mm



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Assembly Tips

The output current of constant voltage products is relatively large, please use the output connector and wire with a current of 12A or more to prevent the wire from heating.

Package

- Outside carton dimension: L×W×H =495mm×385mm×162mm(19.49Inch×15.16Inch×6.38Inch);
- 28PCS/Carton;
- Net weight/Piece0.413kg;Gross weight/Carton: 13.31kg;
- Please refer to the product name, model number, manufacturer identification, QC PASS, manufacturing date on the package.

Transportation

Packaging is designed suitable for transportation by trucks, vessels and flights. The products should be avoided direct sunlight and rain, loaded/unloaded with caution.

Storage

The product storage meets the standard of the GB 3873—83.
Products should be rechecked if stored for over 1 year before assembly.

RoHS

Products comply with RoHS Directive (2011/65/EU) and amendment 2015/863/EU.

Revision History

Version	Description of Update	Updated Date	Remark
V00	Original Release	2025/09/04	