SOSEN

SPECIFICATIONS

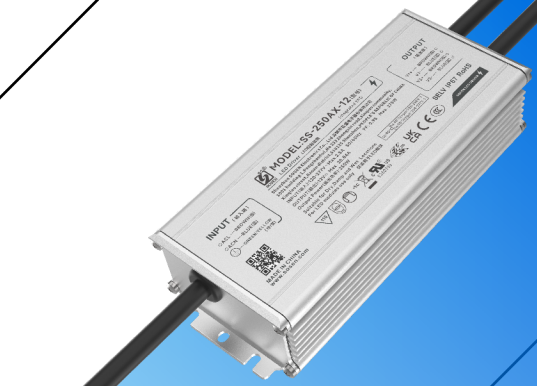
SS-250AX-XX
CV DRIVER

Model: SS-250AX-XX

Power: 250W

Rev.: V01

Release date: 2025-12-22



SS-250AX-XX Series LED DRIVER

Features

- Wide input voltage 100-305Vac (class I)
- Constant voltage function
- Efficiency up to 94.5%
- 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 E360758

Description

The SS-250AX-XX series is a 250W 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 luminare manufatures. 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-250AX-12	100-305Vac	250W	12V	0-20.84A	10%	0.95	93.5%	90°C
SS-250AX-24	100-305Vac	250W	24V	0-10.42A	10%	0.95	94.5%	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	Reference derating curves
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			2.5A	120Vac, full load
Max Input Power			275W	120Vac, full load
Max Inrush Current(120Vac)			60A	Cold Start
Max Inrush Current(220Vac)			100A	Cold Start
Max Inrush Current(277Vac)			150A	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		8%	10%	220Vac/50Hz, full load
			20%	120-277Vac, 70-100% load

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Output Characteristics(SS-250AX-12)

Parameter	Min.	Typ.	Max.	Remark
DC Output Voltage	11.64V		12.36V	
Rated O/P Current	0A		20.84A	
No Load Voltage			12.36V	
Efficiency @120Vac	90.0%	91.0%		O/P 12V/20.84
Efficiency @220Vac	92.0%	93.0%		O/P 12V/20.84
Efficiency @277Vac	93.0%	93.5%		O/P 12V/20.84
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	-3%		+3%	
Start-up Time			0.75S	120Vac,Full load
			0.5S	220Vac/277Vac,Full load
Line Regulation	-3%		+3%	Full load
Load Regulation	-3%		+3%	
Temperature Coefficient		0.03%/°C		Tc:0°C~90°C
OTP	90°C	93°C	96°C	Drop current when OTP, and it can be automatically recover when the over temperature is removed
Over Current Protection				Constant current limiting. Auto recovery after removal of abnormal load conditions
Over Voltage Protection				Auto recovery after removal of abnormal conditions
Short Circuit Protection				Hiccup mode, auto recovery when the faut condition is removed

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Output Characteristics(SS-250AX-24)

Parameter	Min.	Typ.	Max.	Remark
DC Output Voltage	23.52V		24.48V	
Rated O/P Current	0A		10.42A	
No Load Voltage			24.48V	
Efficiency @120Vac	90.0%	92.0%		O/P 24V/10.48A
Efficiency @220Vac	93.0%	94.0%		O/P 24V/10.48A
Efficiency @277Vac	94.0%	94.5%		O/P 24V/10.48A
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	Drop current when OTP, and it can be automatically recover when the over temperature is removed
Over Current Protection				Constant current limiting. Auto recovery after removal of abnormal load conditions
Over Voltage Protection				Auto recovery after removal of abnormal conditions
Short Circuit Protection				Hiccup mode, auto recovery when the faut condition is removed

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Other Characteristics

Parameter	Min.	Typ.	Max.	Remark
Lifetime(Tc≤75°C)	50,000 hours			80% Load
MTBF	201,200 hours			220Vac,full load, Ta=25°C (MIL-HDBK-217F)
IP	IP67			Suitable for dry, humid,rainy environments
Tc	90°C			
Warranty	5 years			Tc:75°C
Net Weight	790g			
Dimension	165mm*66mm*37mm			L x W x H
	6.5Inch*2.6Inch*1.46Inch			

NOTE:
1.All the parameters above are tested Ta 25°C 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℃	25℃	+90℃	Output Power Vs. Ring Temp. Input Voltage
Storage Temperature	-40℃	25℃	+90℃	
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

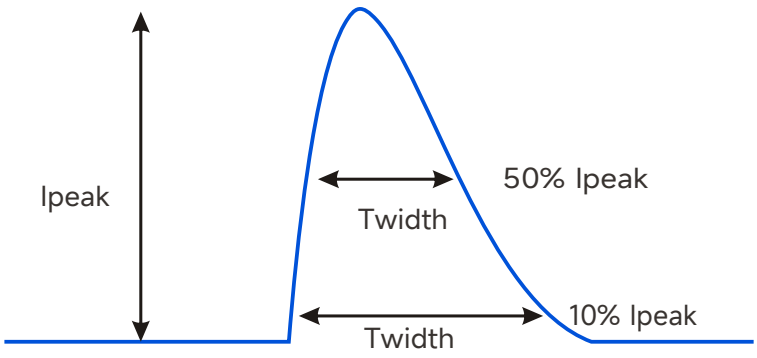
Safety Test Items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	TUV Insulation Requirements	CCCInsulation Requirements	
Input-O/P	2U+1000Vac	4U+2000Vac	4U+2000Vac	
Input-Case	2U+1000Vac	2U+1000Vac	2U+1000Vac	
Insulation Resistance	≥10MΩ			Input-O/P,Test voltage:500Vdc
Ground Resistance	≤0.1Ω			25A/1min
Leakage Current	≤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	60A	800uS	400uS
220Vac	100A	700uS	350uS
277Vac	150A	600uS	300uS

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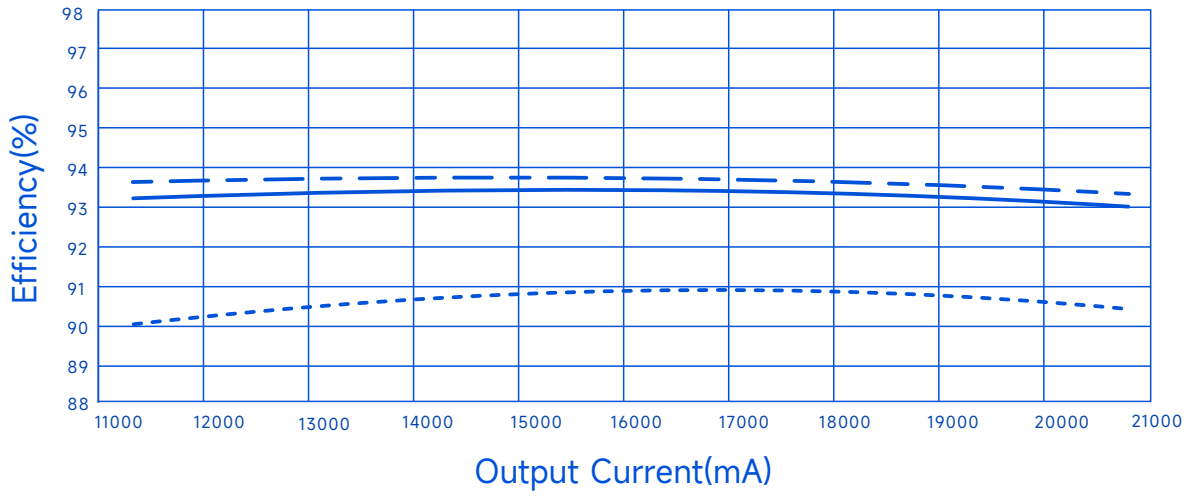
Performance Curves

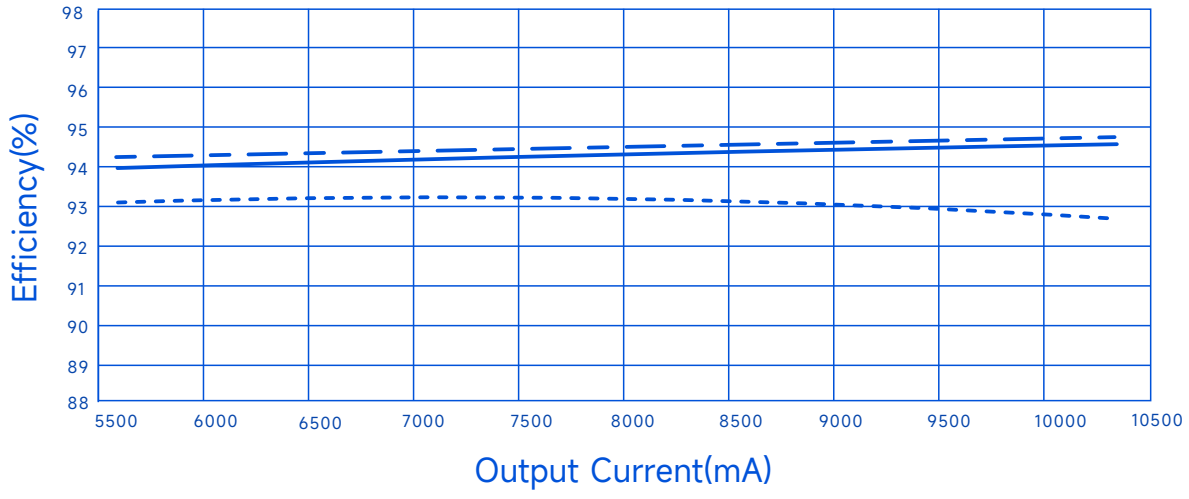
Efficiency Vs. Output Current

SS-250AX-12



Vin=120Vac Vin=220Vac Vin=277Vac

SS-250AX-24



Vin=120Vac Vin=220Vac Vin=277Vac

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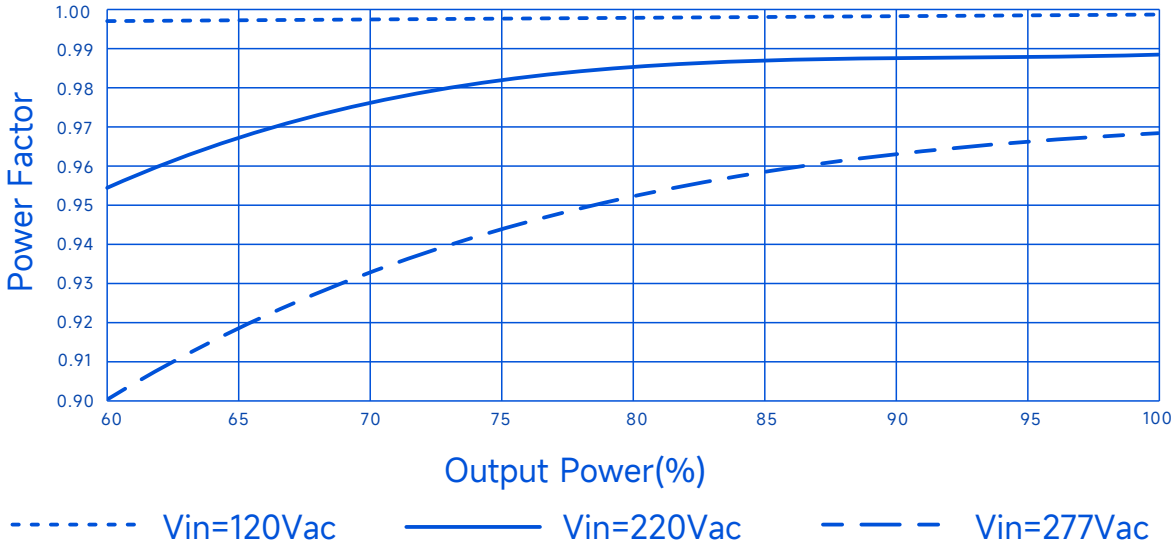
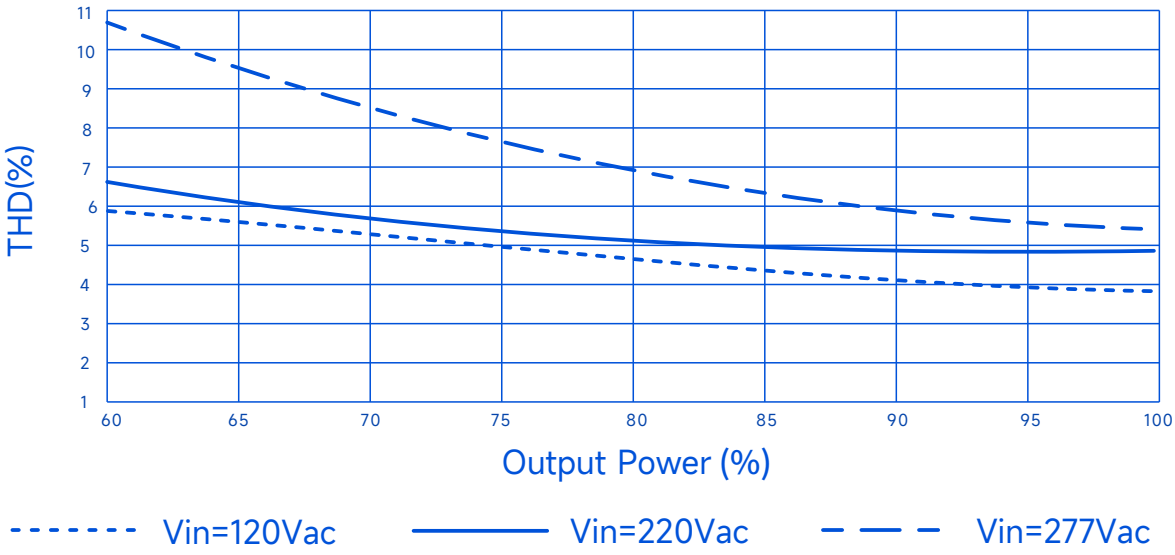
Performance Curves

Power Factor Vs. Output Power



THD Vs. Output Power



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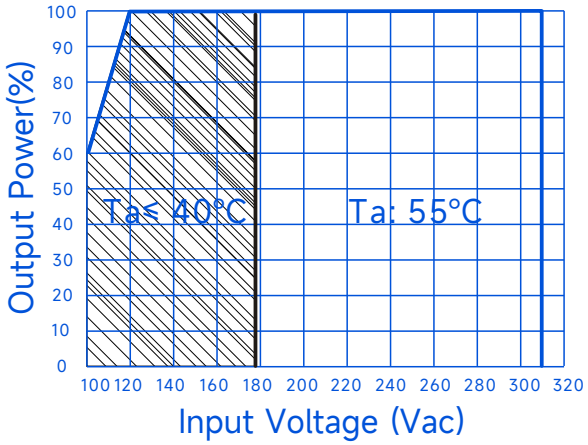
Performance Curves

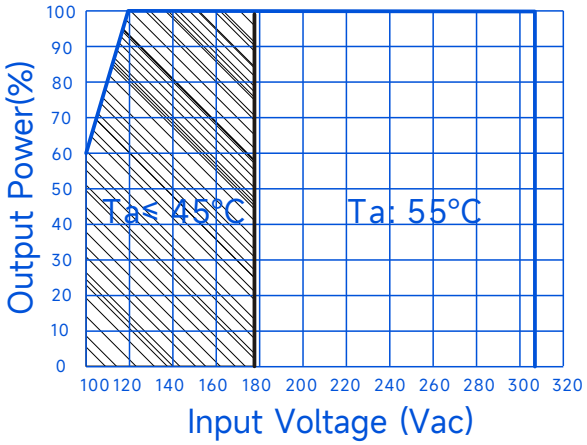
SS-250AX-12

Output Power Vs. Ring Temp.
Input Voltage

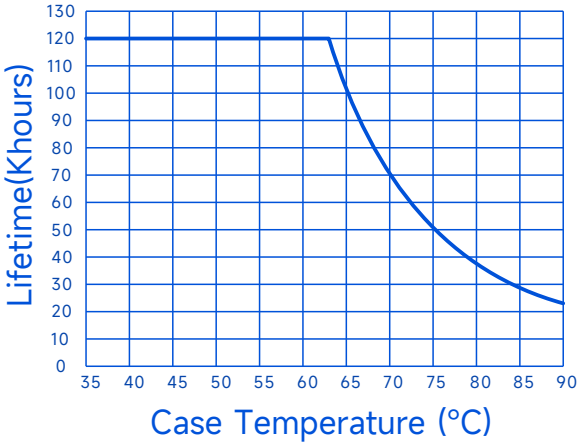


SS-250AX-24

Output Power Vs. Ring Temp.
Input Voltage



Lifetime Vs. Case Temperature



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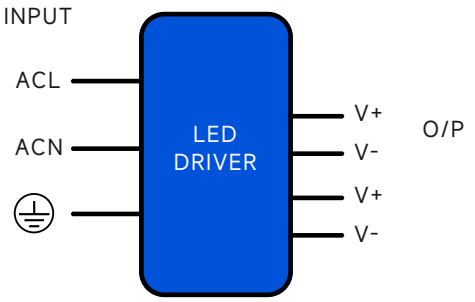
SS-250AX-XX Series LED DRIVER

Mechanical Characteristic(SS-250AX-12)



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

Global model: SJOW, 3*17AWG, O.D: 8.0mm, Brown: L, Blue: N, Yellow/Green: ⏚

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

Global model: SJOW, 2*14AWG, O.D: 7.7mm, Brown: V+ Blue: V-

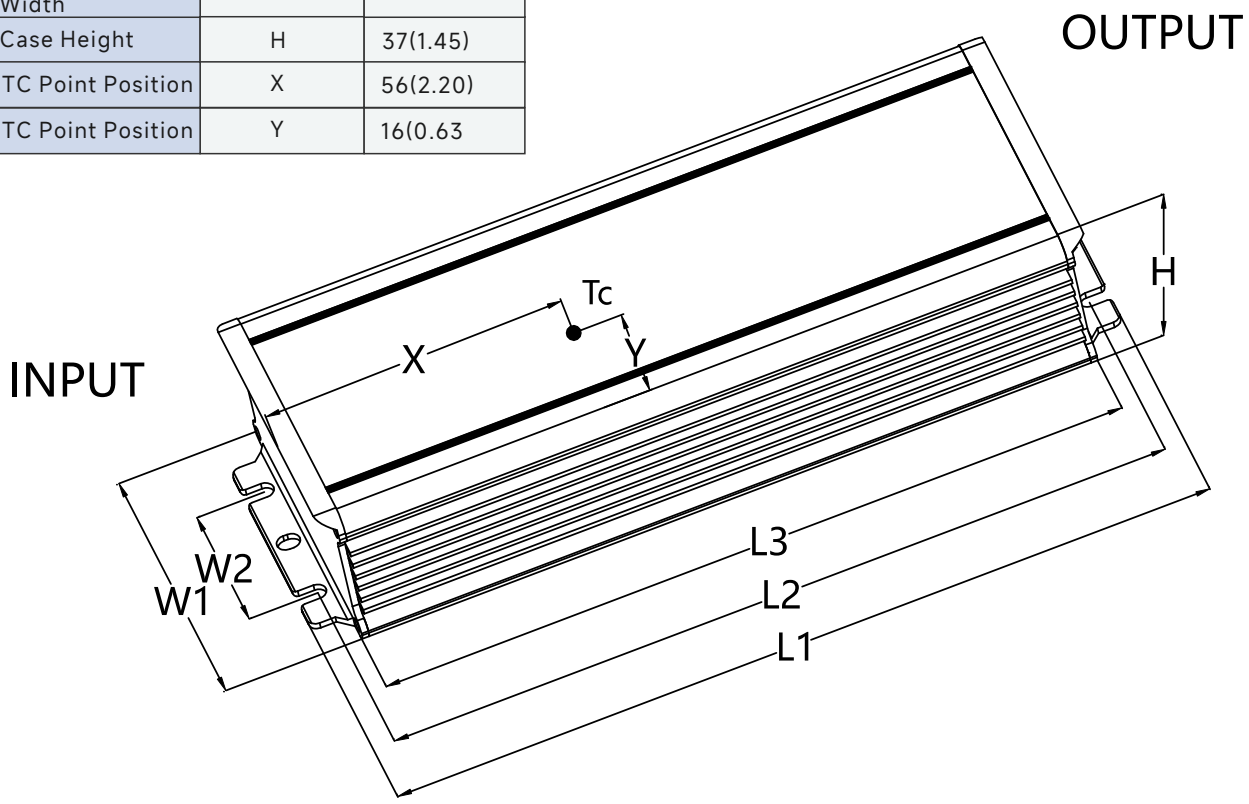
Global model: SJOW, 2*14AWG, O.D: 7.7mm, Brown: V+ Blue: V-

Name Description	Standard Code	mm(In.)
Overall Length	L1	165(6.49)
Mounting Hole Length	L2	156.1(6.14)
Case Length	L3	148(5.82)
Case Width	W1	66(2.59)
Mounting Hole Width	W2	32(1.26)
Case Height	H	37(1.45)
TC Point Position	X	56(2.20)
TC Point Position	Y	16(0.63

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 lengthof cable:43±5mm,
Tinned length of wire:10±2mm



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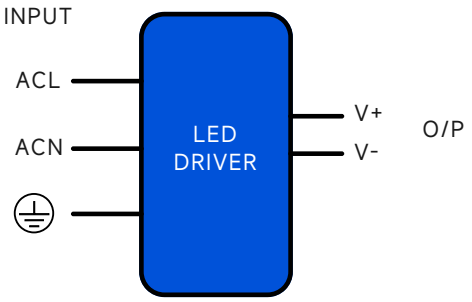
SS-250AX-XX Series LED DRIVER

Mechanical Characteristic(SS-250AX-24)



AC Input Cable(Exposed Length 300±10mm):
Global model: SJOW, 3*17AWG, O.D: 8.0mm, Brown: L, Blue: N, Yellow/Green: ⏚

DC O/P Cable(Exposed Length 300±10mm):
Global model: SJOW, 2*14AWG, O.D: 7.7mm, Brown: V+ Blue: V-

Name Description	Standard Code	mm(In.)
Overall Length	L1	165(6.49)
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Note
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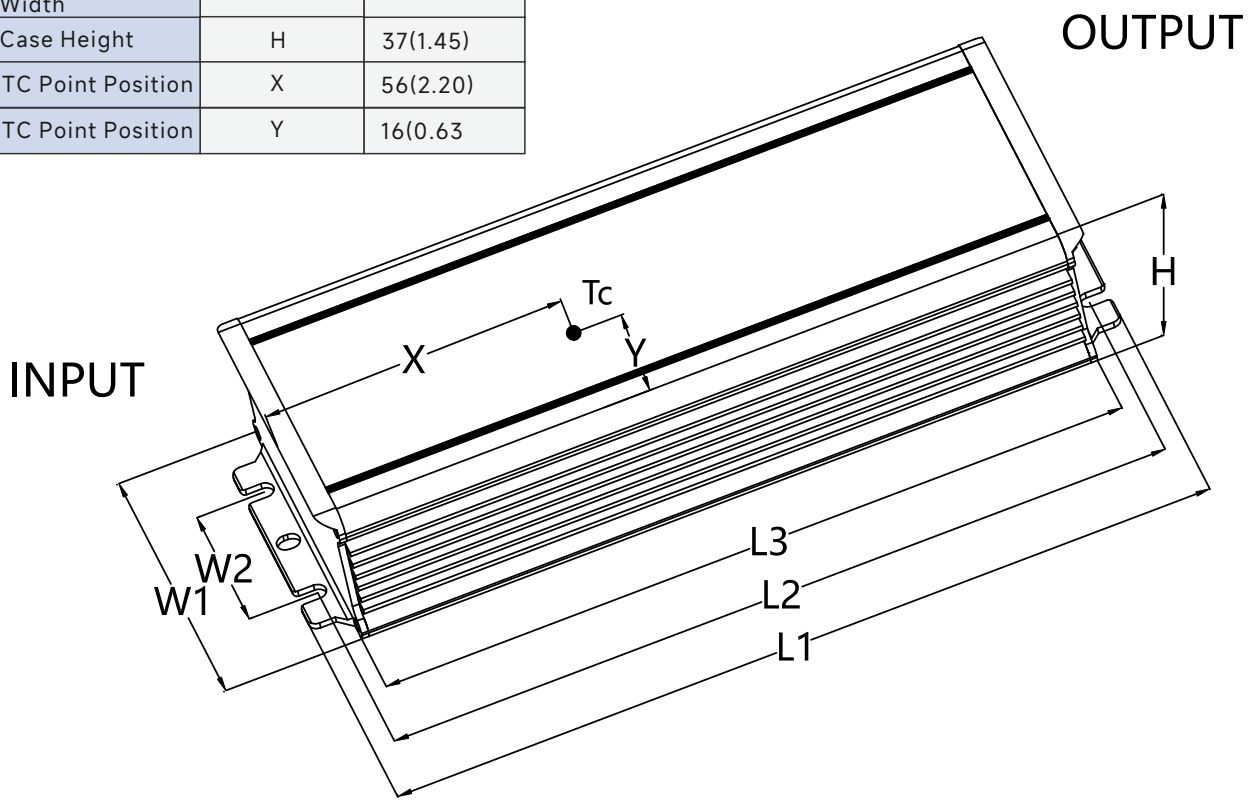
2,AC Input Cable,DC O/P Cable:Peeled lengthof cable:43±5mm,
Tinned length of wire:10±2mm



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Assembly Tips

The output current of constant voltage products is relatively large, please use connectors and wires that meet the maximum output current resistance to prevent the wires from heating up.

Package

- Outside carton dimension: L×W×H =495mm×385mm×162mm(19.49Inch×15.16Inch×6.38Inch);
- 16PCS/Carton;
- Net weight/Piece0.79kg;Gross weight/Carton:14.08kg;
- 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.

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Revision History

Version	Description of Update	Updated Date	Remark
V00	Original Release	2025/09/22	
V01	Update the number of packages	2025/12/22	

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