SOSEN
LED DRIVER

SOSEN LED Driver, Your Smart Choice

Specifications

SS-40NL-E Series LED Driver

Model: SS-40NL-E130B

Description: 40W LED Driver

Rev.: V02

Release Date: 2026-01-21

SS-40NL-E Series LED Driver

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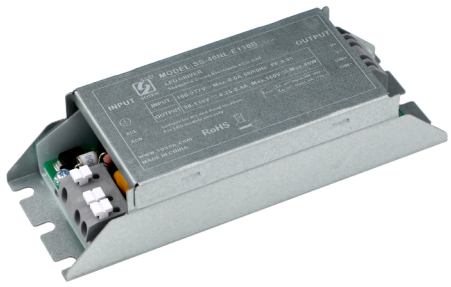
—
NL-E Series



Features:

- Efficiency up to 91%
- Isolated dimming:0-10V,PWM,Resistor
- Isolated Dim-to-off
- Protections: SCP/OVP
- Surge protection: CM: 6kV, DM: 4kV
- Warranty: 5 years

c US E360758

Description

SS-40NL-E series are 40W non-isolated constant current LED Driver with 90-305VAC. It has DIM to Off, high efficiency, compact housing ,high reliability, high cost performance and other advantages.

Applications:

Linear high bay lighting, Wall lamp, Flood lighting

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-40NL-E130B	90-305Vac	40W	90-130V	100-130V	0.25-0.4A	8%	0.97	91%	90℃

Note:

1.Default Tested: at 220Vac, full load, Ta 25℃.

2.The performance of the LED Driver can be guaranteed within the full power Vo range.The voltage lower than full power Vo range, it is need to test the performance with the LED module;

3.Suffix B for model with 3-in-1 dimming (0-10V, PWM, Resistor).

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Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	100Vac		277Vac	Ref. derating curve
AC Input Range	90Vac		305Vac	Ref. derating curve
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			0.6A	100Vac, Full load
Max Input Power			60W	100Vac, Full load
Max Inrush Current(120Vac)			10A	Cold start
Max Inrush Current(220Vac)			15A	Cold start
Max Inrush Current(277Vac)			20A	Cold start
No Load Power			3W	220Vac/50Hz
Power Factor	0.95	0.97		220Vac/50Hz, Full load
	0.90			100-277Vac/50Hz, 80%-100% load
THD		8%	10%	220Vac/50Hz, Full load
			20%	100-277Vac/50Hz,80%-100% load

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Output Characteristics:

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	90V		130V	Power derated @90-100V
Rated O/P Voltage	100V		130V	Po=Vo*Io=40W, Full load
Rated O/P Current	0.25A		0.4A	Po=Vo*Io=40W, Full load
No Load Voltage			160V	
Efficiency @120Vac	87.5%	89.5%		Output 130V/0.3A
Efficiency @220Vac	89.0%	91.0%		Output 130V/0.3A
Efficiency @277Vac	88.5%	90.5%		Output 130V/0.3A
O/P Current Tolerance	-7%		+7%	
O/P Current Ripple(PK-AV)		85%	100%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			1.0S	120Vac, Full load
			0.5S	220Vac, Full load
Line Regulation	-7%		+7%	Full load
Load Regulation	-7%		+7%	
Short Circuit Protection				Driver will not be damaged, Hiccup mode

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Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
0-10V Dimming (Optional)	Dim Vmax	0V		12V	DIM+ source current 100uA.
	Dim Range	10%Iomax		100%Ioset	Dimming prohibits reverse connection
	Rec.Dim Range	0V		10V	
PWM Dimming (Optional)	PWM High	9.8V		10.2V	DIM+ source current 100uA.
	PWM Low	0V		0.3V	Dimming prohibits reverse connection
	Frequency	1KHz		2KHz	
	PWM Duty	0%		100%	
Resistor Dimming (Optional)	Resistance	0Kohm		100Kohm	DIM+ source current 100uA.
	Dim Range	10%Iomax		100%Ioset	
Dim to Off	Dim off	0.3V	0.5V	0.7V	
	Dim on	0.5V	0.7V	0.9V	
Lifetime(Tc≤75℃)		≥55,000 hours			80% load,220Vac
MTBF		201,000 hours			220Vac,Full load, Ta=25℃ (MIL-HDBK-217F)
Tc		90℃			
Warranty		5 years			Tc 75℃
Net Weight		180g			
Dimension		130mm*46mm*30mm			L x Wx H

NOTE: All the parameters above are tested Ta 25℃ and LED load, unless specified.

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Environmental Requirements

Parameter	Min.	Typ.	Max.	Remark
Operating Temperature(Tcase)	-30℃	25℃	+90℃	
Storage Temperature	-30℃	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/cUL	UL8750	✓	
TUV	EN 61347-2-13:2014/A1:2017 EN61347-1:2015 EN62493:2015	✓	
RCM	AS/NZS61347.2.13		
BIS	IS15885:2012 Part 2 Sec 13		
CCC	GB 19510.14-2009		
CE	EN 61347-2-13:2014 EN 61347-1:2008+A1:2011+A2:2013		

EMI/EMS	Criterion	Remark
Conduction Emission	EN IEC 55015:2019+A11:2020	
Radiation Emission	EN IEC 55015:2019+A11:2020	
Harmonic Current Emissions	IEC/EN 61000-3-2:2019+A1:2021	Class C
Surge	IEC/EN61000-4-5	DM: 4kV,CM: 6kV,Criterion B

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Safety Test Items:

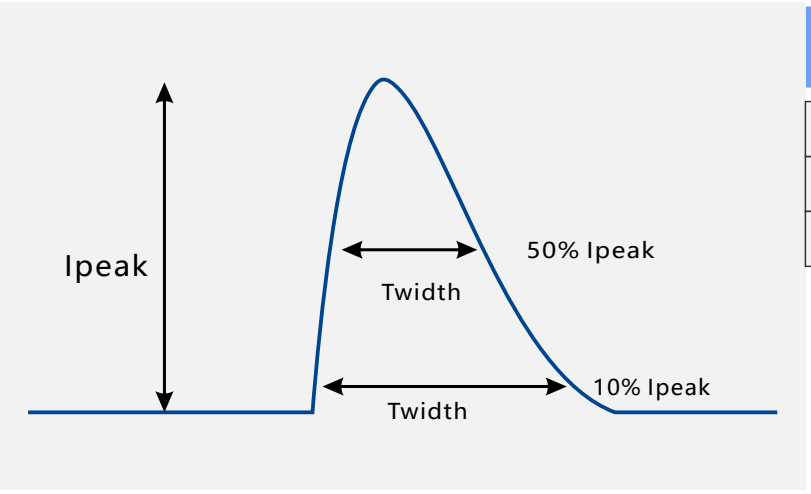
Safety Test Items	Technical Indicators		Remark
Insulation Requirements	UL Insulation Requirements	TUV Insulation Requirements	
Input-Case	1600Vac	1500Vac	Basic insulation
Input-Dim	1600Vac	3000Vac	Reinforced insulation
Dim-Case	500Vac	250Vac	Basic insulation
Insulation Resistance	≥10MΩ		Input-Dim,Test 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-), (Dim+ and Dim -)when Hi-pot test.

Performance Curves:

Input Inrush Current



Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
120Vac	10A	130uS	
220Vac	15A		50uS
277Vac	20A	150uS	

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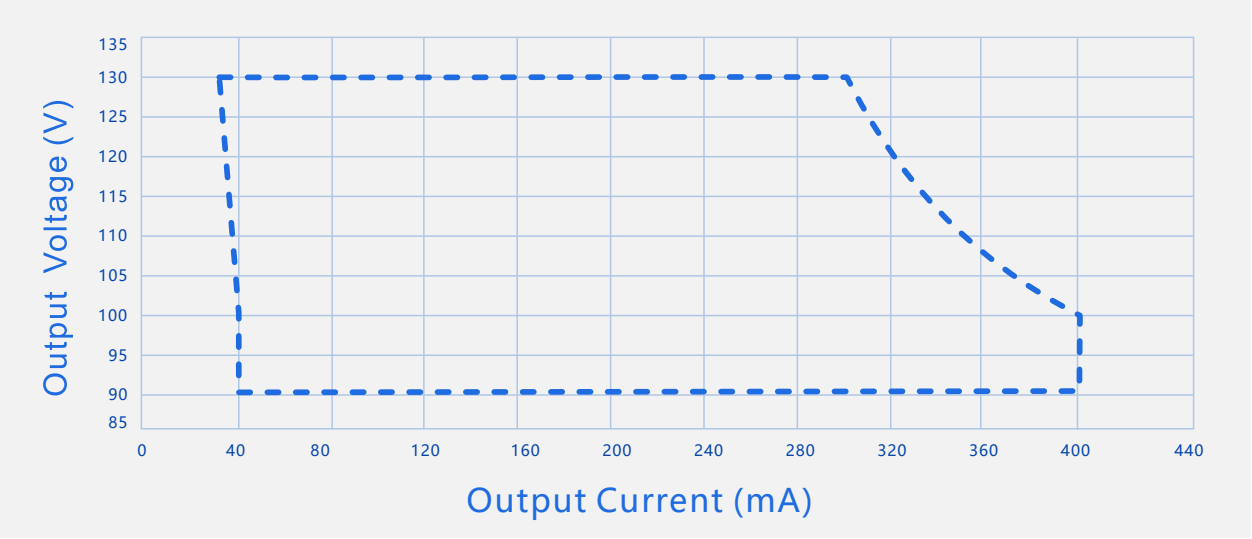
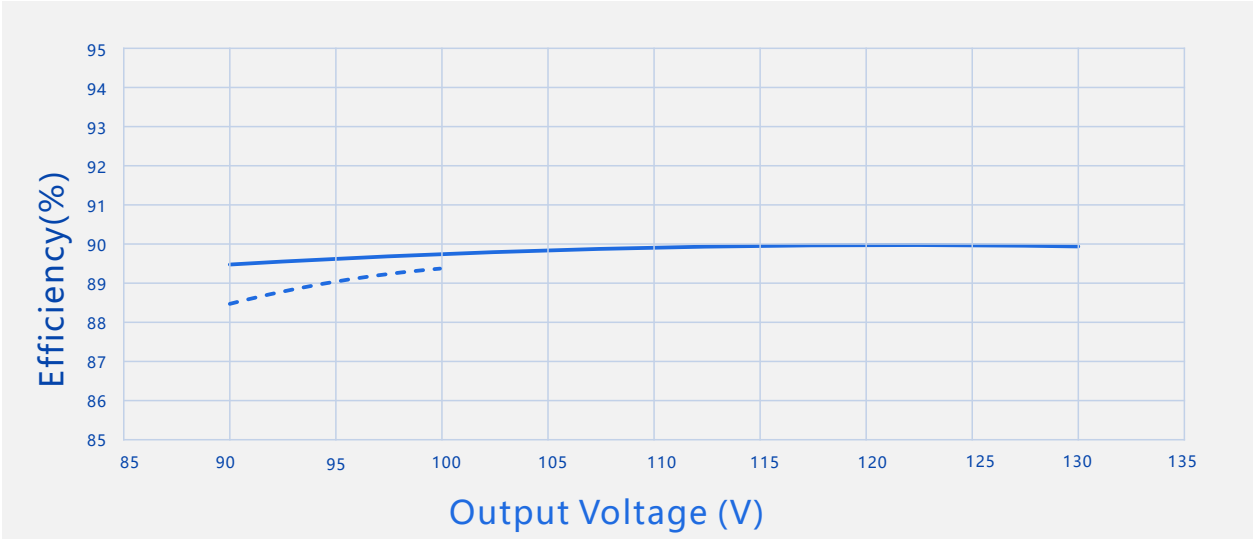
Performance Curves:

Output Voltage Vs. Output Current(Dim Window)



Dimming Window

Efficiency Vs. Output Voltage (Vin=120Vac)



Io=400mA

Io=300mA

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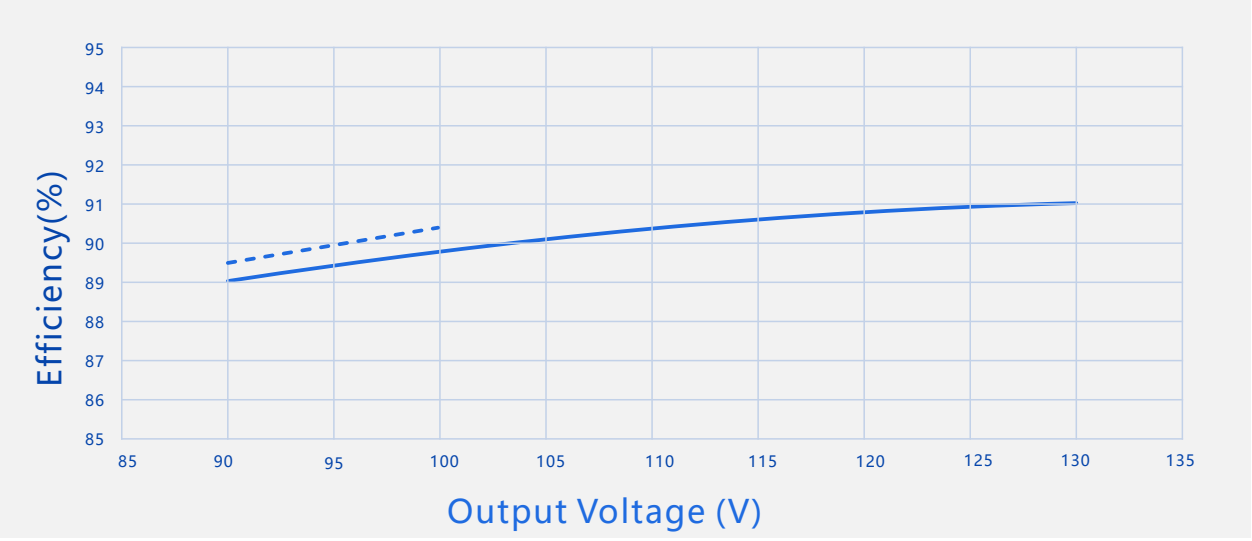
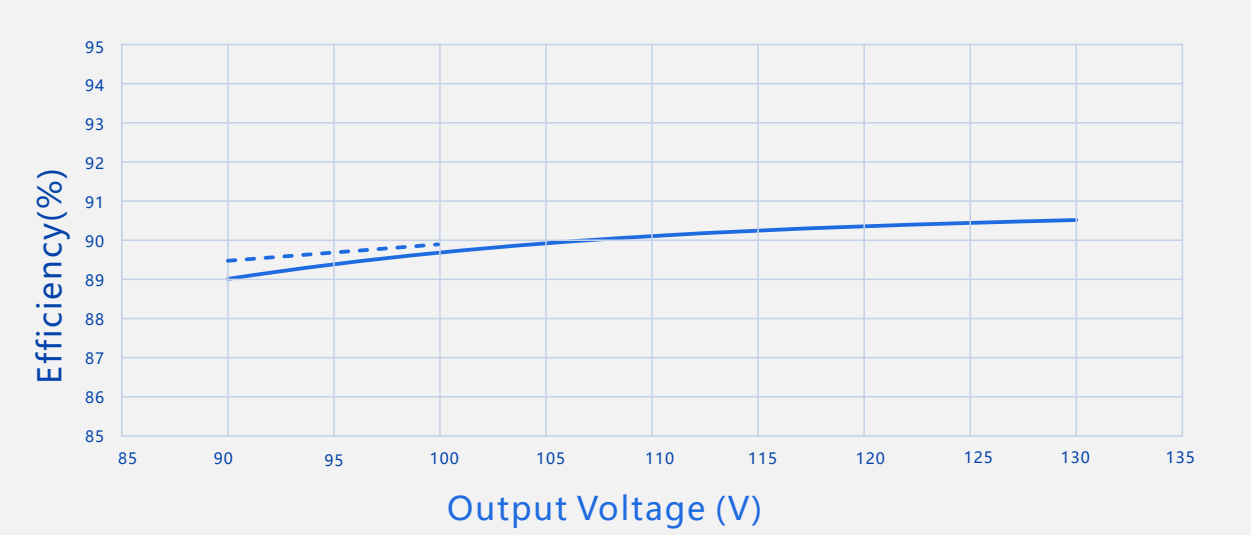
Performance Curves:

Efficiency Vs. Output Voltage (Vin=220Vac)



------- Io=400mA ——— Io=300mA

Efficiency Vs. Output Voltage (Vin=277Vac)



------- Io=400mA ——— Io=300mA

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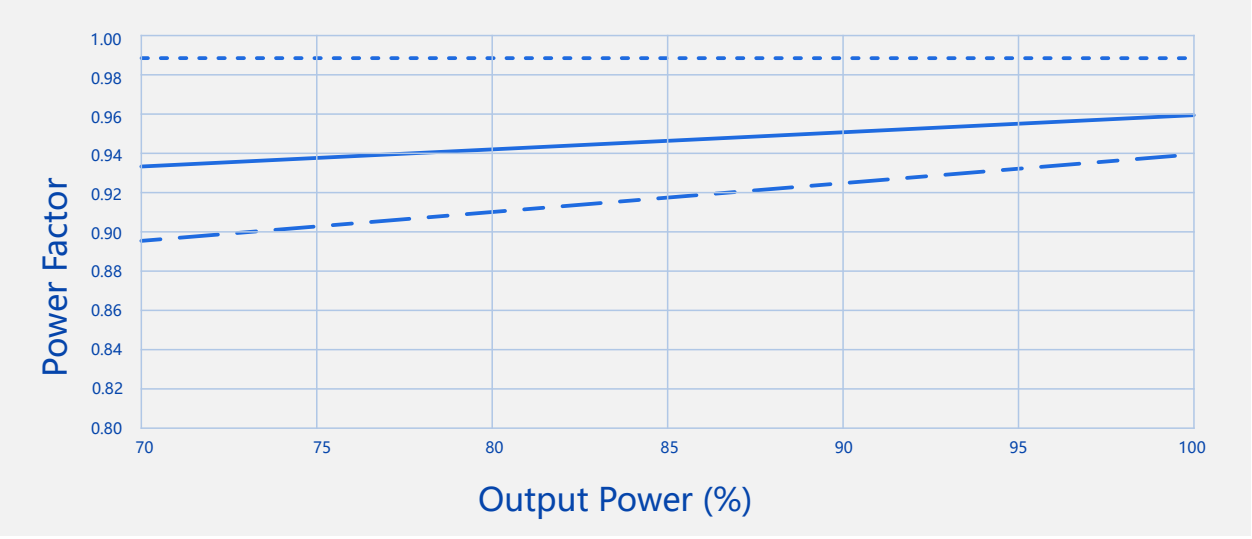
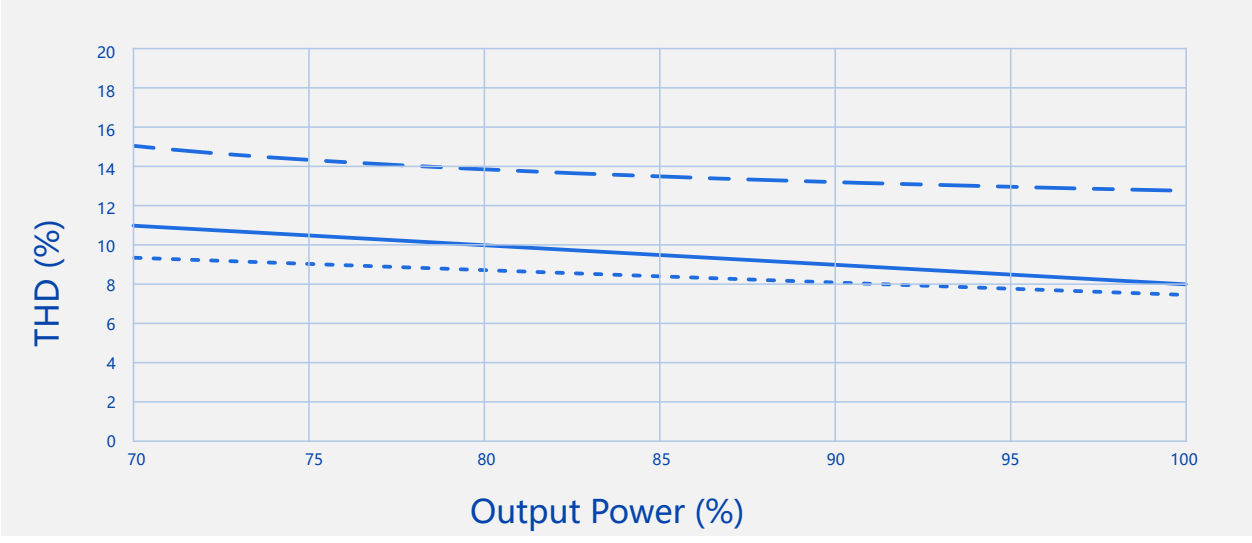
Performance Curves:

Power Factor Vs. Output Power



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

THD Vs. Output Power



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

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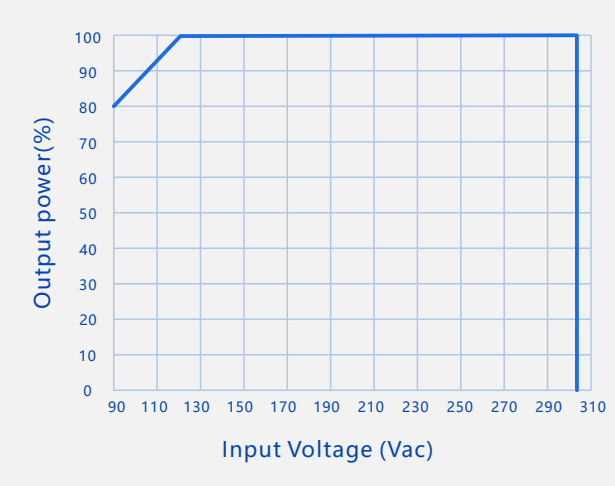
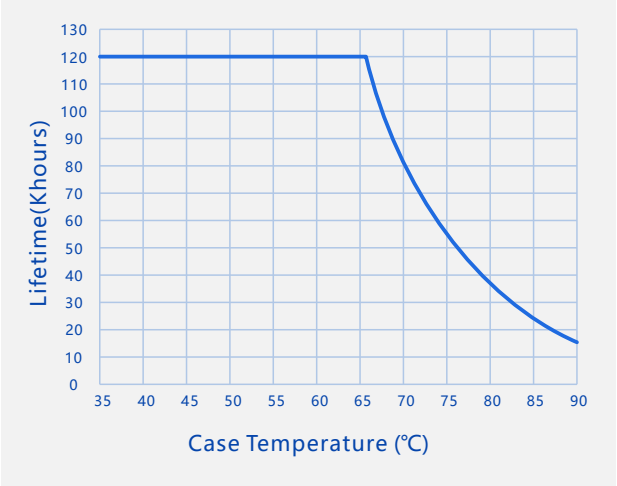
Performance Curves:

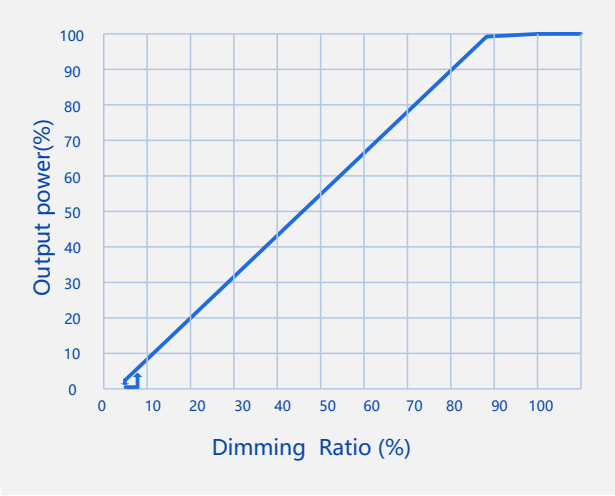
Output Power Vs. Input Voltage



Lifetime Vs. Case Temperature



Output Power Vs. Dimming



—— 0-10V,PWM,Resistor

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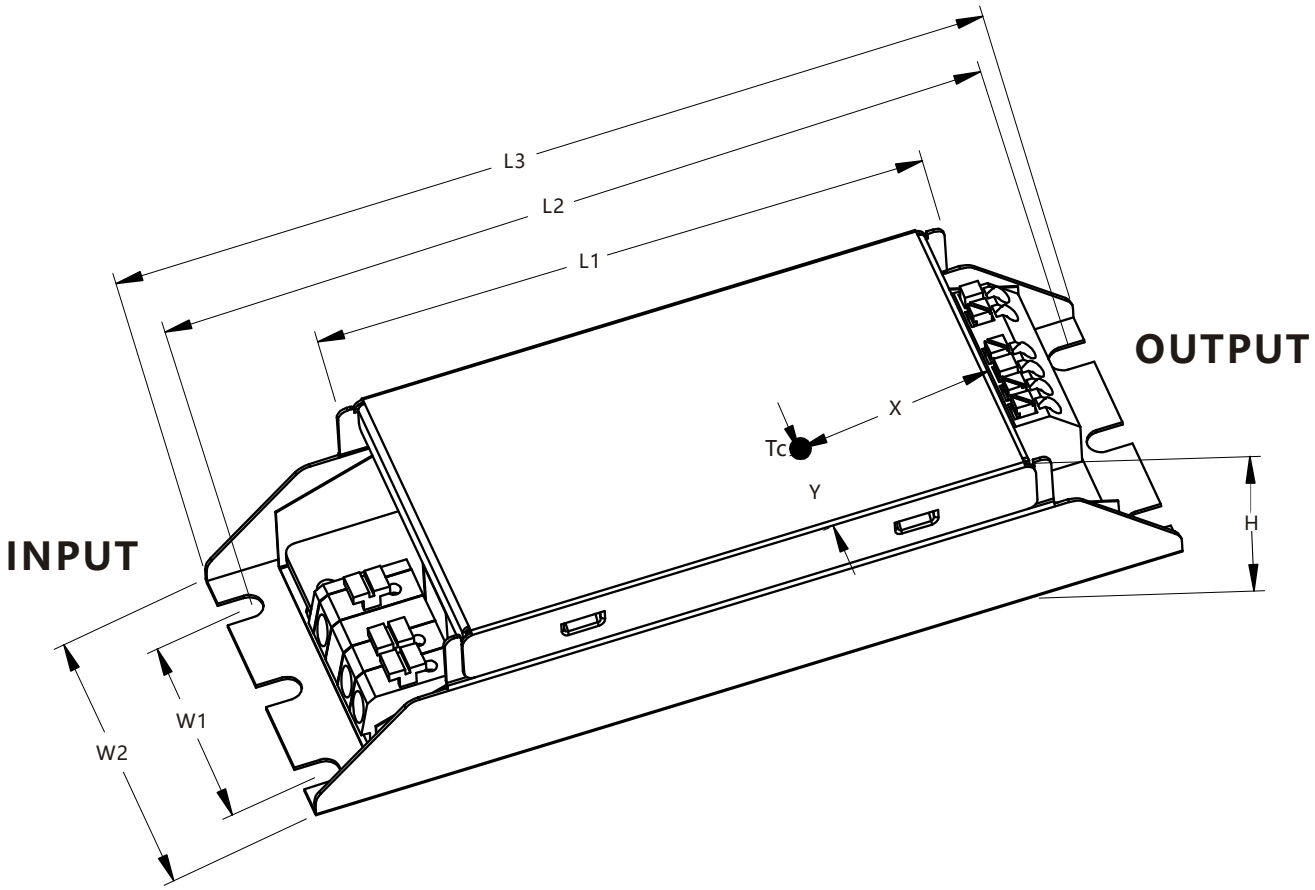
Mechanical Characteristics

Name Description	Standard Code	mm(In.)
Case Length	L3	130(8.78)
Case Width	W2	46(1.89)
Case Height	H	30(1.34)
Overall Length	L1	91(9.06)
Mounting Hole Length	L2	122.5(8.74)
Mounting Hole Width	W1	32(1.26)
TC Point Position	X	35(1.38)
TC Point Position	Y	18(0.71)

Note
1,Please follow the "LED Driver User Manual" obtained from SOSEN's official website for assembly.



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Assembly Tips

1. Withstand voltage of dielectric layers between aluminum PCB and LED>3KV.
2. The trace routing on aluminum substrates is designed in compliance with creepage distance requirements specified by relevant certification regulations.
3. The creepage distance between LED+ and LED- on the aluminum substrate is designed in compliance with the relevant certification regulations.
4. Minimize the copper area on the aluminum PCB to reduce parasitic capacitance and leakage current.
5. It is recommended to design LED beads in parllel first and then in series.

Warning

Insufficient or compromised insulation voltage resistance in LED light panels may cause breakdown and short circuits to earth, resulting in damage to the luminaire and LED driver,and posing significant safety hazards. It is recommended to install a residual current device (RCD) during application.

Package

- Outside carton dimension: L×W×H =495mm×385mm×162mm;
- 42PCS/Carton;
- Net weight/Piece: 0.18kg;Gross weight/Carton: 9.06kg;
- 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	2022/07/29	
V01	Update Package Quantity	2022/09/07	
V02	Add a warning notice	2026/01/21	

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