



SPECIFICATIONS

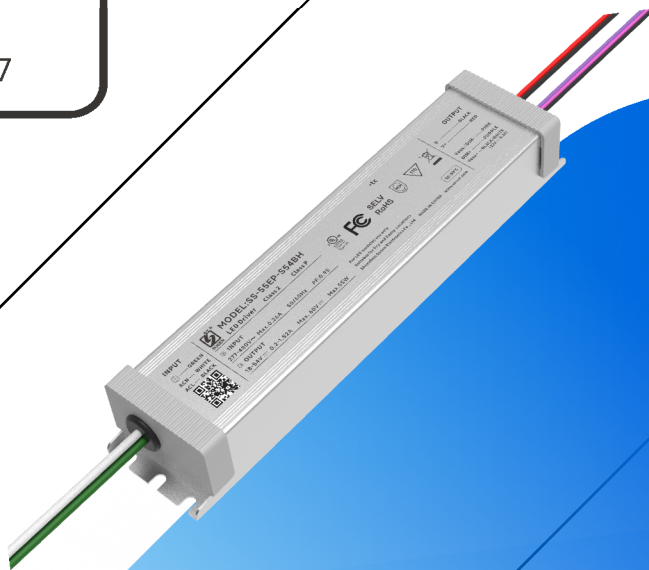
SS-55EP-S54BH CC DRIVER

Model: SS-55EP-S54BH

Power: 55W

Rev.: V00

Release date: 2025-11-27



SS-55EP-S54BH LED DRIVER

Features

- Efficiency up to 86.5%
- Isolated dimming:0-10V,PWM,Resistor
- Protections: SCP/OTP/OVP/OPP
- Output Programmable
- UL Class 2, UL Class P
- AUX Power: 12V/0.2A
- Surge protection: CM: 6kV, DM: 6kV
- Warranty: 5 years

Class 2 Class P  RoHS SELV  US
LISTED
E360758

Description

The SS-55EP-S54BH is a 55W constant-current LED driver power supply featuring wide-range output characteristics and adjustable output current. It offers ultra-high efficiency, a compact housing design, excellent heat dissipation, and comprehensive protection, facilitating LED lamp design and reducing costs for LED lighting manufacturers.

Applications:
High mast lights, wall-washing lights, floodlights

Model List

Model	AC Input Range	Max. Pout	Vout Range	Recommended Voltage	Iout	THD (Typ.)	PF (Typ.)	Eff. (Typ.)	Max.Tc
SS-55EP-S54BH	249-528Vac	55W	18-54V	36V-54V	0.2-1.52A	8%	0.97	86.5%	90°C

Note:
1.Default Tested: at 347Vac, full load, Ta 25°C。
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;

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Input Characteristics

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	277Vac		480Vac	Reference derating curve
AC Input Range	249Vac		528Vac	Reference derating curve
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			0.26A	277Vac, Full load
Max Input Power			72W	277Vac, Full load
Max Inrush Current(277Vac)			80A	Cold start
Max Inrush Current(347Vac)			140A	Cold start
Max Inrush Current(480Vac)			160A	Cold start
Standby Power			5W	347Vac/50Hz, No load
Power Factor	0.95	0.97		347Vac/50Hz, Full load
	0.90			277-480Vac/50Hz,70%-100%load
THD		8%	10%	347Vac/50Hz, Full load
			20%	277-480Vac/50Hz,70%-100%load

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Output Characteristics

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	18V		54V	Power derated @18-36V
Rated O/P Voltage	36V		54V	$P_o = V_o \cdot I_o = 55W$, Full load
Rated O/P Current	1.02A		1.52A	1.52A for 36V, 1.02A for 54V
Adj. O/P Current (AOC) Range	0.2A		1.52A	
No Load Voltage			60V	
Efficiency @120Vac	85.0%	86.5%		Output 54V/1.02A
Efficiency @220Vac	85.0%	86.5%		Output 54V/1.02A
Efficiency @277Vac	84.5%	86.0%		Output 54V/1.02A
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)			20%	
Start-up Current Overshoot			10%	Full load
Start-up Time			1.0S	277Vac, Full load
			1.0S	480Vac, Full load
Line Regulation	-5%		+5%	Full load
Load Regulation	-5%		+5%	
Temperature Coefficient	-0.03%/°C		+0.03%/°C	Tc: 0°C~90°C
OTP	90°C	100°C	110°C	Drop current when OTP, and it can be automatically restored after the abnormality is removed.
Short Circuit Protection				Driver will not be damaged

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Other Characteristics

Parameter		Min.	Typ.	Max.	Remark
Aux Power	O/P Voltage	10.8V	12V	13.2V	
	O/P Current			200mA	
0-10V Dimming (Optional)	Dim Vmax	0V		12V	DIM+ source current 110uA.
	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 110uA.
	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 110uA.
	Dim Range	10%Iomax		100%IoSet	
Dim to Off	Dim off	0.7V	0.8V	0.9V	
	Dim on	0.8V	0.9V	1.0V	
Lifetime(Tc≤85°C)		≥50,000 hours			347Vac,80% load
MTBF		205,000 hours			347Vac,Full load, Ta=25°C (MIL-HDBK-217F)
Tc		90°C			
Warranty		5 years			Tc 85°C
Net Weight		530g			
Dimension		200mm*45.5mm*31mm			L x W x H

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

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Environmental Requirements

Parameter	Min.	Typ.	Max.	Remark
Operating Temperature(Tcase)	-40℃	25℃	+90℃	
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/cUL	UL8750	✓	
TUV	EN 61347-2-13 EN 61347-1 EN 62493		
RCM	AS/NZS61347.2.13		
CCC	GB 19510.14		
CE	EN 61347-2-13 EN61347-1		

EMI/EMS	Criterion	Remark
Conduction Emission	FCC Part15: Subpart B ANSI 63.4	Class A
Radiation Emission	FCC Part15: Subpart B ANSI 63.4	Class A
Harmonic Current Emissions	IEC/EN 61000-3-2	Class C
Surge	ANSI/C82.77-5	DM: 6kV,CM: 6kV,Criterion B
Ring Wave	ANSI/C82.77-5	DM: 6kV,CM: 6kV,Criterion B

SS-55EP-S54BH LED DRIVER

Safety Test Items

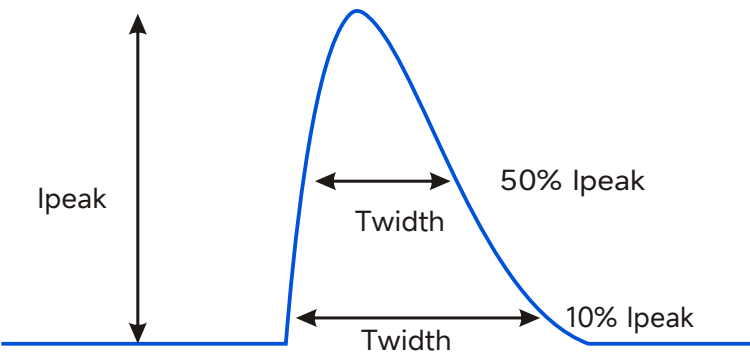
Safety Test Items	Technical Indicators	Remark
Insulation Requirements	UL Insulation Requirements	
Input-Case	2U+1000Vac	
Input-Dim	2U+1000Vac	
Dim-Case	500Vac	
Insulation Resistance	≥10MΩ	Input-Dim,Test voltage:500Vdc
Ground Resistance	≤0.1Ω	25A/1min
Leakage Current	≤0.75mA	480Vac

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. Pleaseshort(ACLandACN),(V+andV-),(Dim+andDim-andVaux+ andVaux-)when Hi-pottest.

Performance Curves

Input Inrush Current

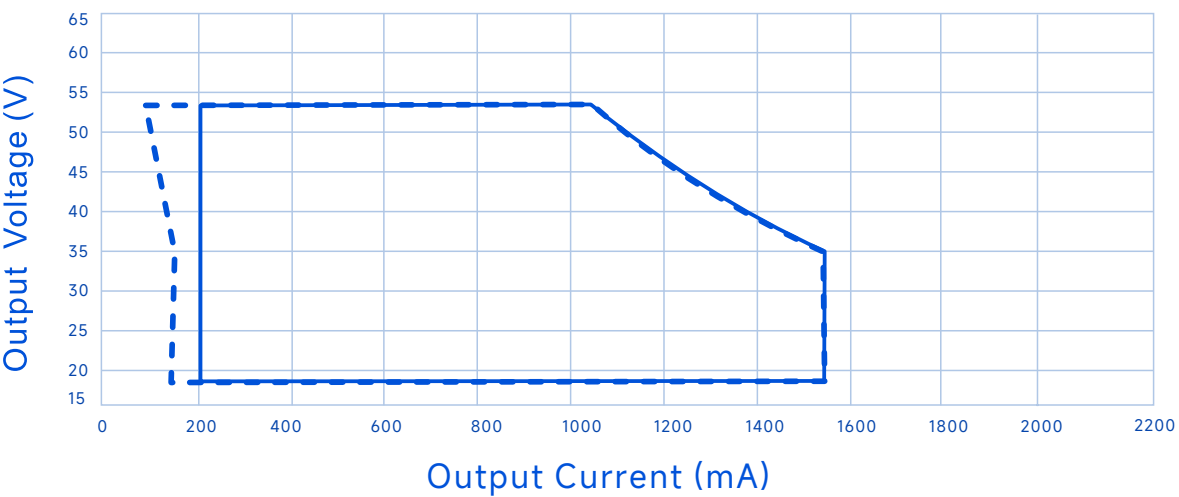


Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
277Vac	80A	500us	300us
347Vac	140A	500us	300us
480Vac	160A	500us	300us

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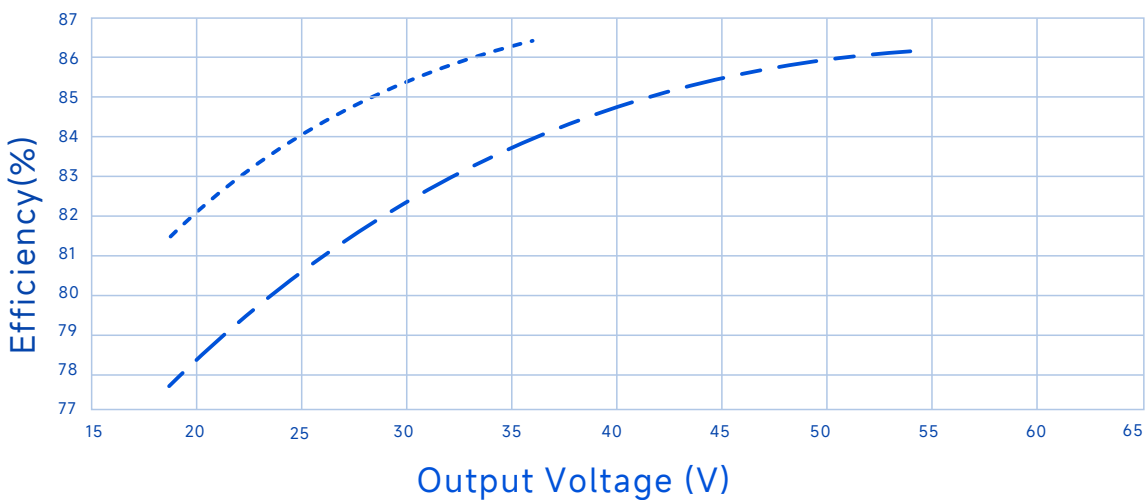
Performance Curves

Output Voltage Vs. Output Current(Dim/AOC Window)



----- Dimming Window ————— AOC Window

Efficiency Vs. Output Voltage(Vin=277Vac)

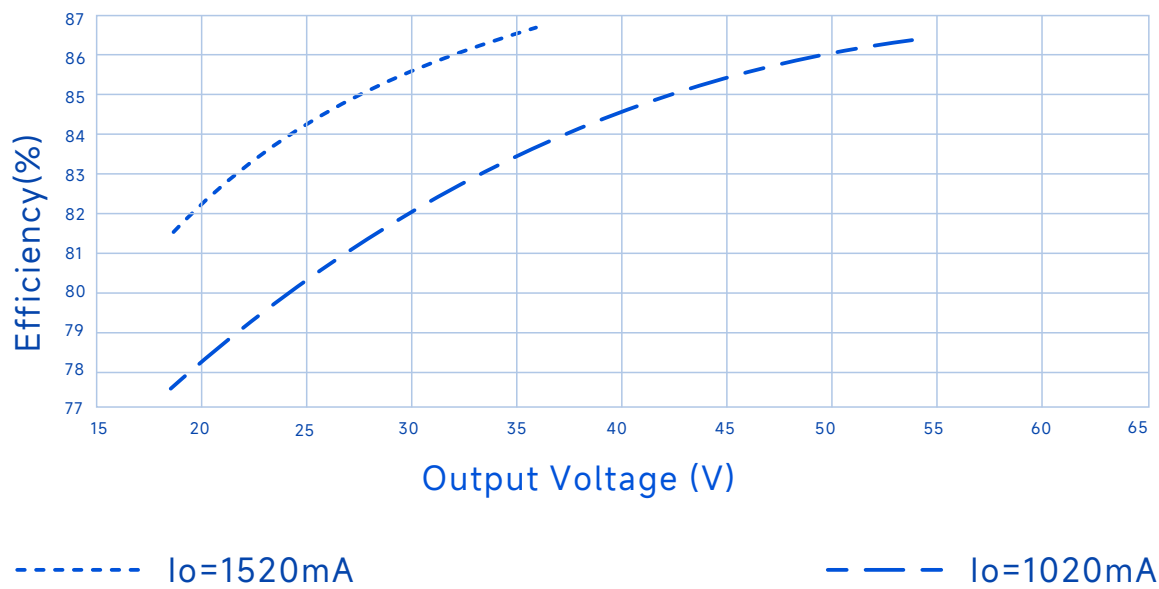


----- Io=1520mA - . - . Io=1020mA

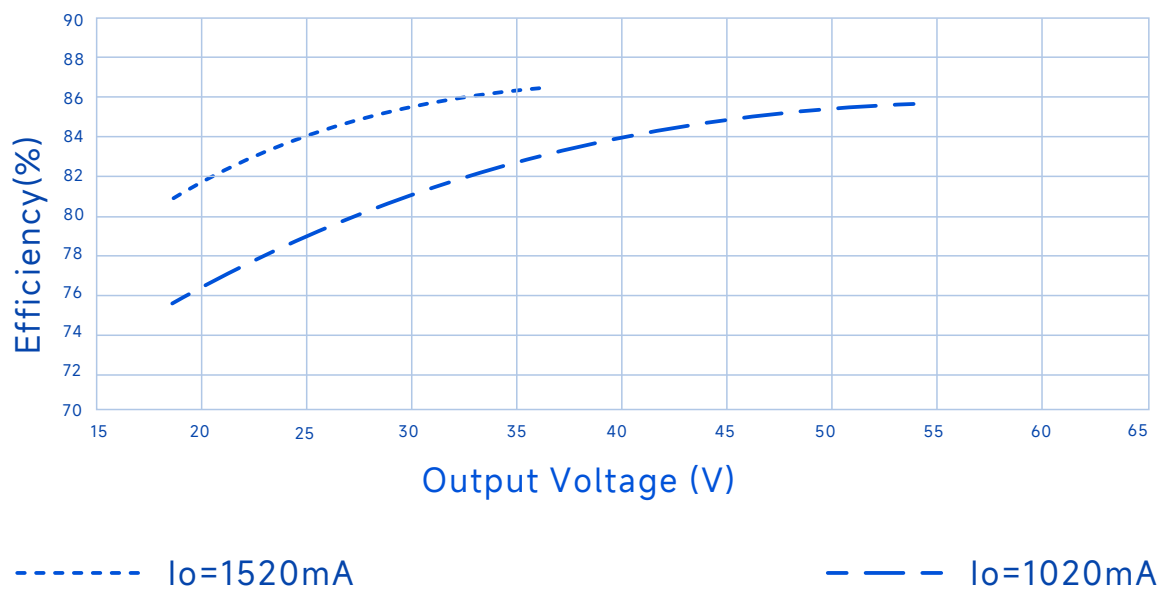
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Performance Curves

Efficiency Vs. Output Voltage (Vin=347Vac)



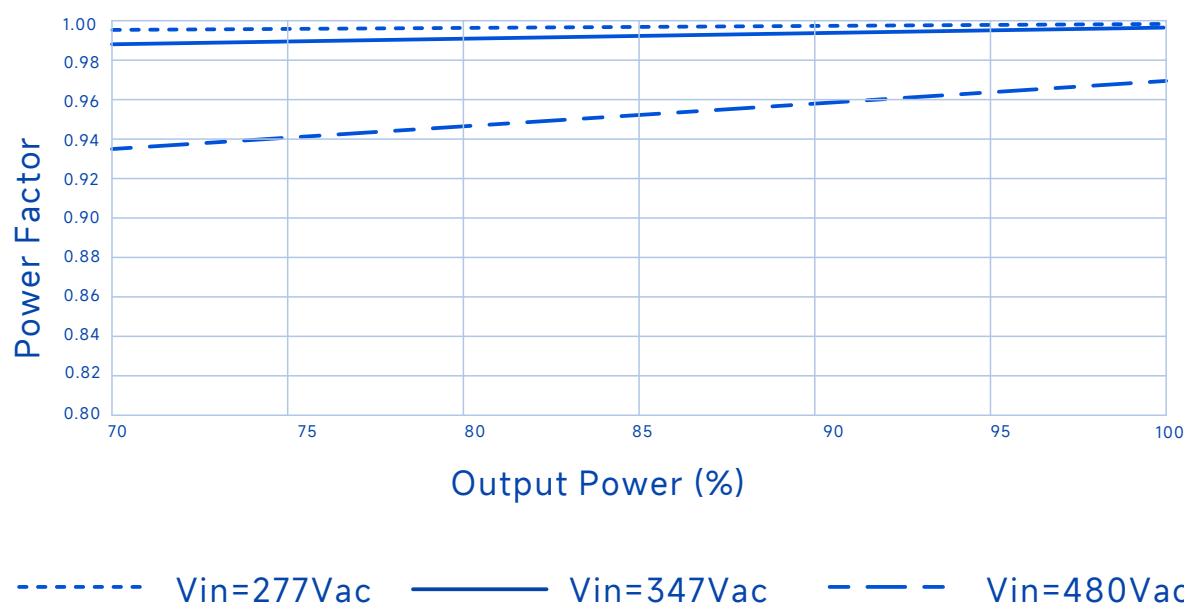
Efficiency Vs. Output Voltage(Vin=480Vac)



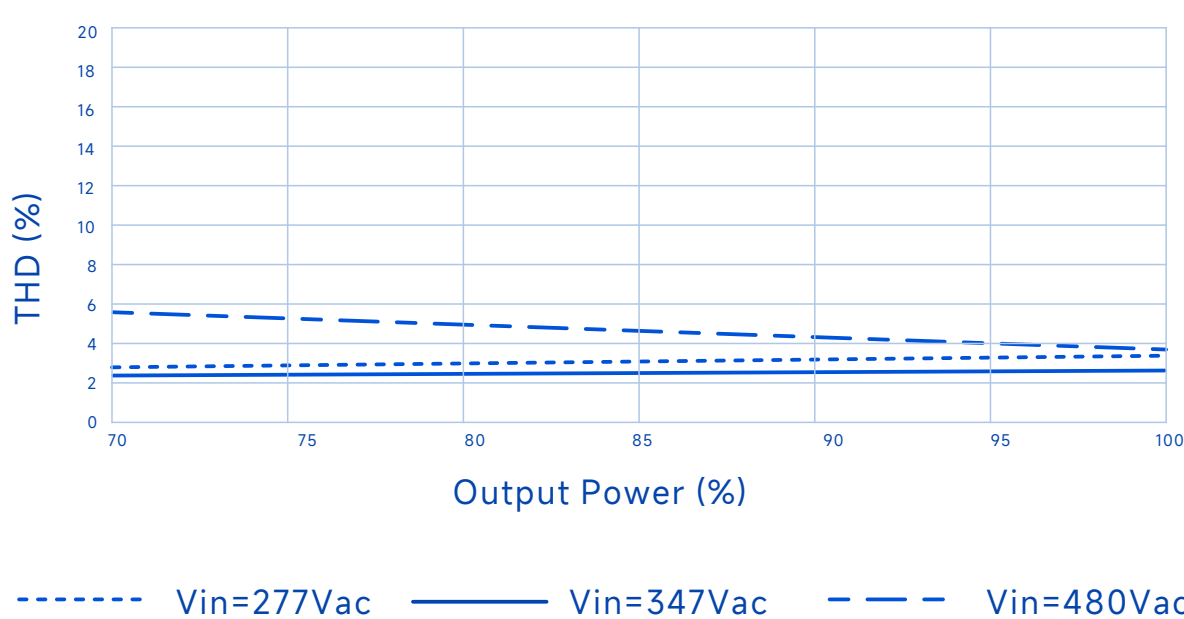
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Performance Curves

Power Factor Vs. Output Power



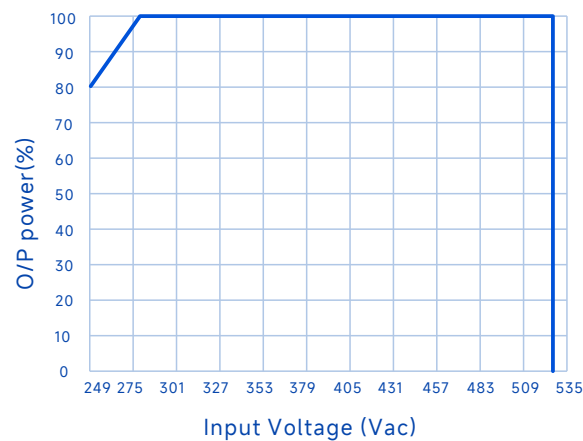
THD Vs. Output Power



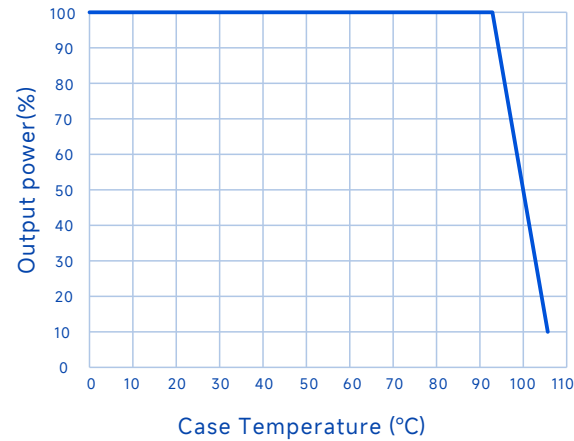
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Performance Curves

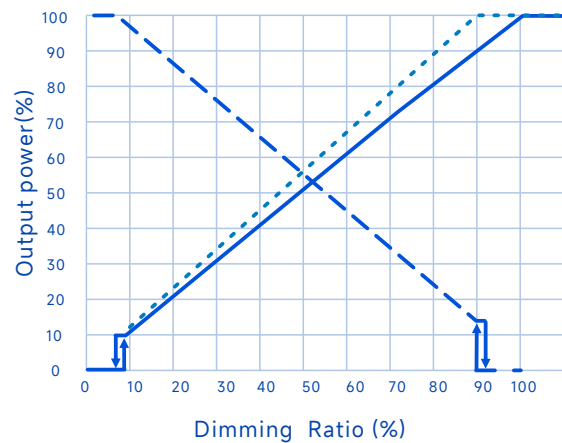
Output Power Vs. Input Voltage



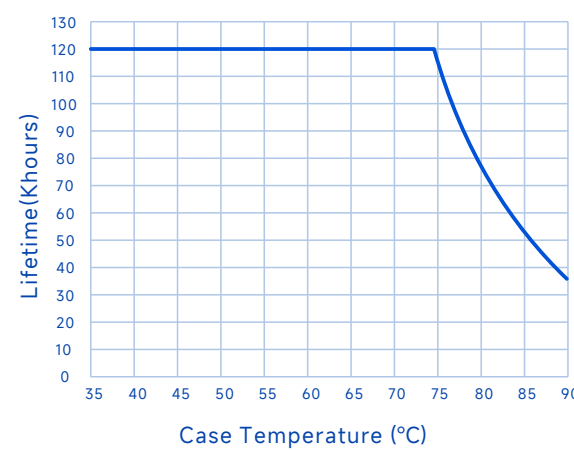
Output Power Vs. Case Temperature



Output Power Vs. Dimming



Lifetime Vs. Case Temperature



- DC ,PWM Dimming
- - - 10-0V
- Resistor Dimming(100KΩ)

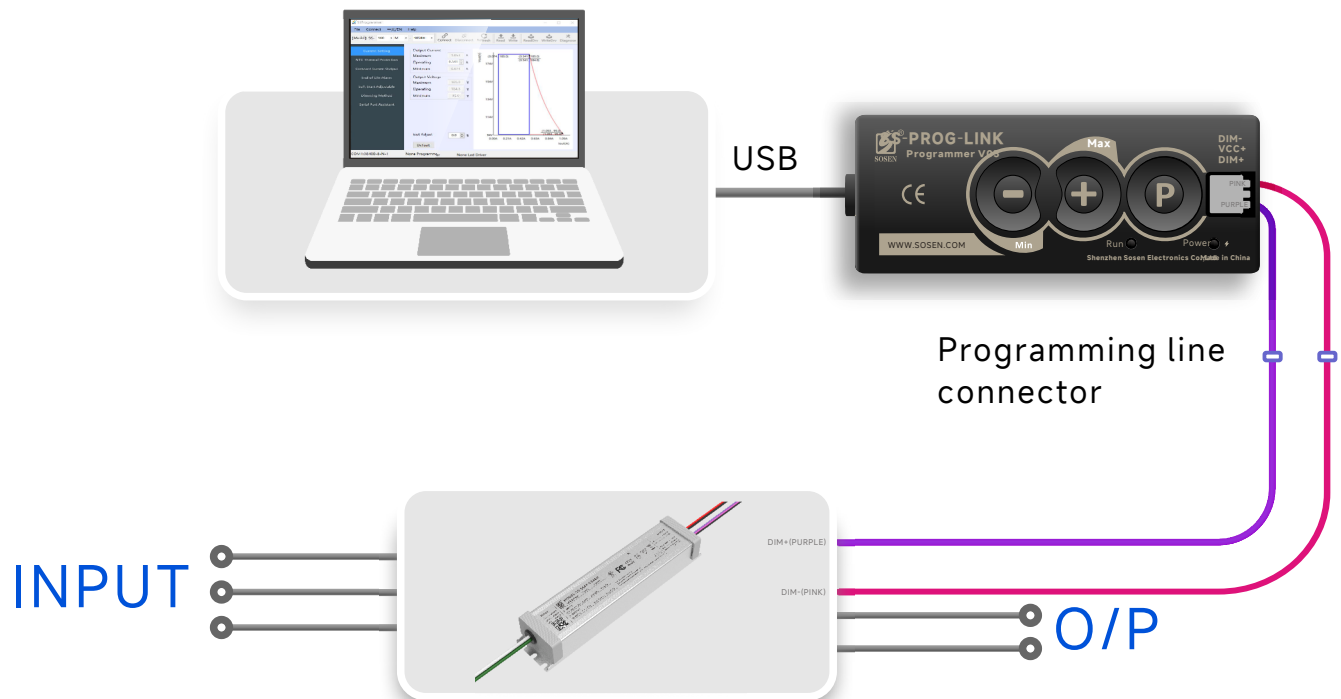
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Programming connection diagram

Legacy Timer: Driver's O/P follows the pre-programmed timing curve after turn-on.

Auto-Adjust by Percentage: Driver's O/P will be adjusted by automatically changed dimming curve by the period percentage based on the latest 5 dimming curve.

Auto-Adjust by Mid-point: Driver's O/P will be adjusted by automatically changed dimming curve by mid-point based on the latest 5 dimming curve.



Note:

For details, please refer to the Sosen SS-PR OG-LINK Programmer Manual.

SS-55EP-S54BH LED DRIVER

Mechanical Characteristic

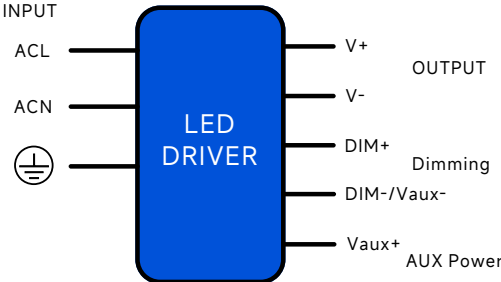


Diagram showing the LED DRIVER pinout. INPUT terminals on the left: ACL, ACN, and a ground symbol. OUTPUT terminals on the right: V+, V-, DIM+ (Dimming), DIM-/Vaux- (Dimming), and Vaux+ (AUX Power).

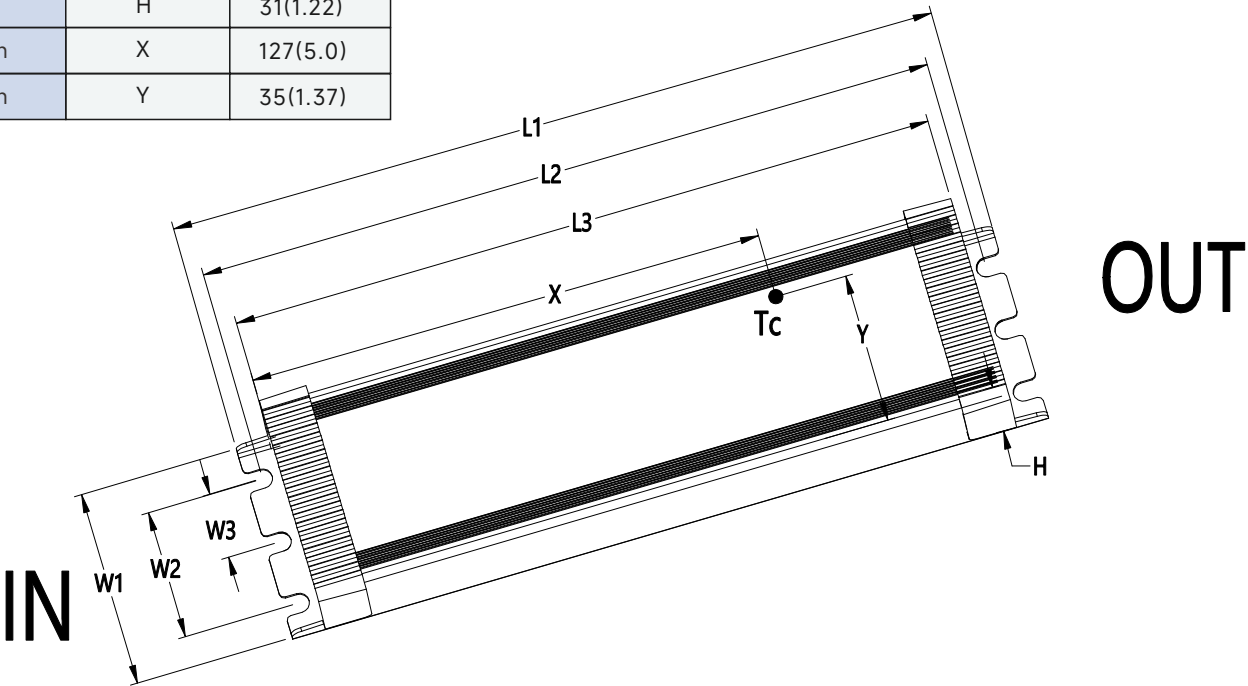
AC Input Terminal(Exposed length 300±10mm):
UL:18AWG 105°C 600V, Outer Diameter: 2.77mm, Black: ACL, White: ACN, Green: 

DC Input Terminal(Exposed length 300±10mm):
UL:18AWG 105°C 300V, Outer Diameter: 1.95mm, Red: V+, Black: V-

Function Terminal(Exposed length 220±10mm):
22AWG 105°C 300V, Outer Diameter: 1.52mm, Purple: DIM+, Pink: DIM-/Vaux-, Black/White: Vaux+

Name Description	Standard Code	mm(in.)
Case Width	W1	45.5(1.79)
Mounting HoleWidth	W2	28(1.1)
Mounting HoleWidth	W3	14(0.55)
Overall Length	L1	200(7.87)
Mounting Hole Length	L2	192(7.55)
Case Length	L3	186(7.32)
Case Height	H	31(1.22)
TC Point Position	X	127(5.0)
TC Point Position	Y	35(1.37)

- Note
- 1.Please follow the "LED Driver User Manual" obtained from SOSEN's official website for assembly.
 2. For AC input wires, DC output wires, DIM signal wires/auxiliary power wires/programming wires: Tin-plated length 10±2mm;



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Assembly Tips

1. When the dimming cable is not in use, seal the dimming cable connector with an insulating sleeve to prevent interference signals from entering and damaging the dimming circuit, which could affect normal power supply operation.
2. For plant lighting applications, perform a full fixture test first.

Package

- Outside carton dimension: L×W×H =495mm×385mm×162mm;
- 24PCS/Carton;
- Net weight/Piece: 0.53kg;Gross weight/Carton: 14.5kg;
- Please refer to the product name, model number, manufacturer identification, QC PASS, manufacturing date on the package.

Transportation

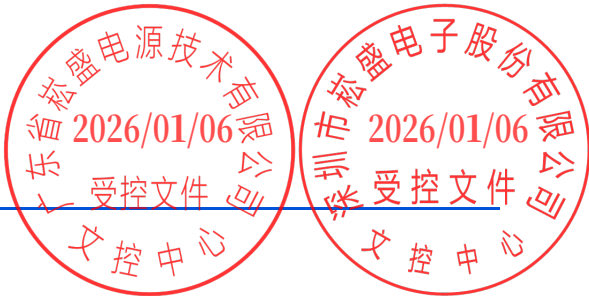
Packaging is designed suitable for transportation by trucks, vessels and flights. The products should be avoided direct sunlight and rain, loaded/unloaded with caution.

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	2025/11/27	