

SOSEN LED Driver, Your Smart Choice

Specifications

SS-55EP-M54BH LED Driver

Model: SS-55EP-M54BH

Description: 55W LED Driver

Rev: V01

Release Date: 2025-02-27

SS-55EP-M54BH LED Driver

SOSEN
LED DRIVER



LED DRIVER

EP-M54BH



Features:

- Efficiency up to 87%
- 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



Description:

SS-55EP-M54BH are 55W constant current LED Driver with wide O/P voltage and adjustable O/P current. It has high efficiency, compact housing, good cooling, all-around protections. LED luminaries manufacturers can easily design luminaries and reduce cost.

Applications:

High Pole lighting, Wall washer lighting, Flood lighting

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	Default Output Current	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-55EP-M54BH	108-380Vac	55W	18-54V	36-54V	0.2-1.52A	1.02A	10%	0.95	87%	90°C

Note:

- 1.Default Tested: at 277Vac, 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	120Vac		347Vac	Ref. derating curve
AC Input Range	108Vac		380Vac	Ref. derating curve
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			0.7A	120Vac, Full load
Max Input Power			70W	120Vac, Full load
Max Inrush Current(120Vac)			80A	Cold start
Max Inrush Current(277Vac)			140A	Cold start
Max Inrush Current(347Vac)			160A	Cold start
No Load Power			3W	347Vac/60Hz, No load
Power Factor	0.90	0.95		347Vac/60Hz, Full load
	0.90			120-347Vac/60Hz, 70%-100% load
THD		10%	15%	347Vac/60Hz, Full load
			20%	120-347Vac/60Hz, 70%-100% load

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O/P 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	83.0%	85.0%		O/P 54V/1.02A
Efficiency @277Vac	85.0%	86.0%		O/P 54V/1.02A
Efficiency @347Vac	86.0%	87.0%		O/P 54V/1.02A
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)		5%	10%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			1.0S	120Vac, Full load
			0.75S	347Vac, Full load
Line Regulation	-2%		+2%	Full load
Load Regulation	-2%		+2%	
Temperature Coefficient	-0.03%/°C		+0.03%/°C	Tc: 0°C~90°C
OTP	90°C	95°C	100°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	1V		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	Not available with negative logic
	Dim Range	10%Iomax		100%Ioset	DIM+ source current 110uA.
Dim to Off (Optional)	Dim off	7%	8%	9%	By DC voltage, PWM, resistance dimming ratio
	Dim on	9%	10%	11%	By DC voltage, PWM, resistance dimming ratio
Lifetime(Tc≤85°C)		≥50,000 hours			80% load
MTBF		205,000 hours			220Vac, Full load, Ta=25°C (MIL-HDBK-217F)
Tc		90°C			
Warranty		5 years			Tc: 85°C
Net Weight		420g			
Dimension		164mm*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°C	25°C	+90°C	
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/cUL	UL8750	✓	
TUV	EN 61347-2-13:2014/A1:2017 EN 61347-1:2015 EN 62493:2015		
RCM	AS/NZS61347.2.13		
CCC	GB 19510.14-2009		
CE	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013		

EMI/EMS	Criterion	Remark
Conduction Emission	FCC Part15: Subpart A ANSI 63.4:2014	Class A
Radiation Emission	FCC Part15: Subpart A ANSI 63.4:2014	Class A
Harmonic Current Emissions	IEC/EN 61000-3-2	Class C
Surge	ANSI/C82.77-5-2017	DM: 6kV,CM: 6kV,Criterion B
Ring Wave	ANSI/C82.77-5-2017	DM: 6kV,CM: 6kV,Criterion B

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Safety Test Items:

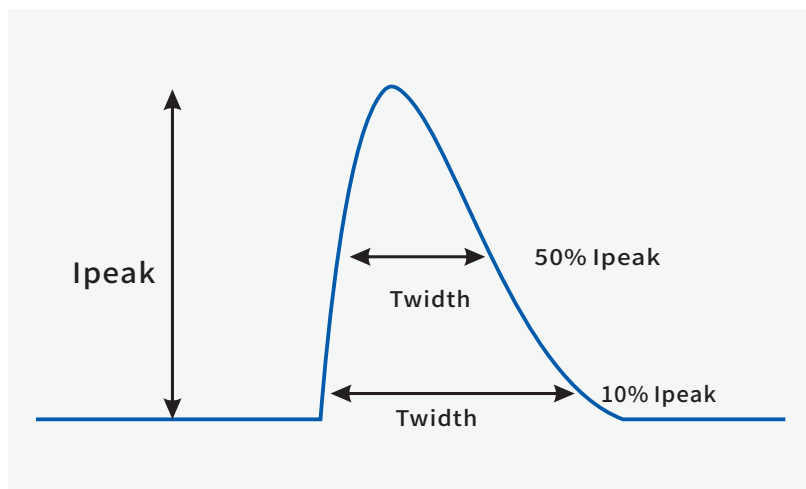
Safety Test Items	Technical Indicators	Remark
Insulation Requirements	UL Insulation Requirements	
Input-Case	2U+1000	
Input-Dim	2U+1000	
Dim-Case	500Vac	
Insulation Resistance	$\geq 10\text{M}\Omega$	Input-O/P, Test voltage: 500Vdc
Ground Resistance	$\leq 0.1\Omega$	25A/1min
Leakage Current	$\leq 0.75\text{mA}$	347Vac

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 - and Vaux+ and Vaux-) when Hi-pot test.

Performance Curves:

Input Inrush Current

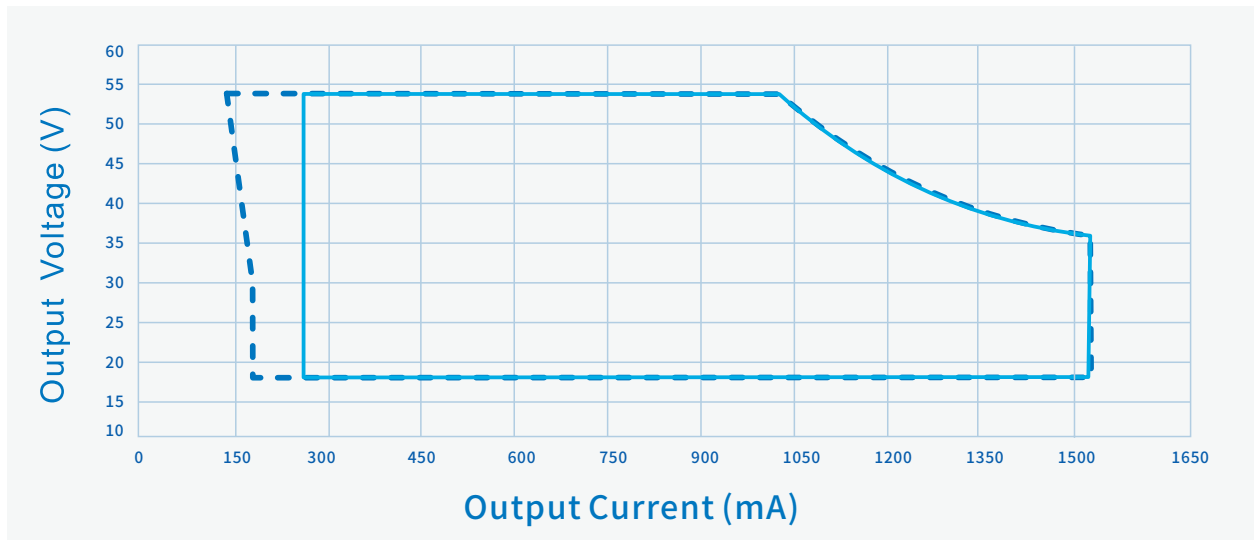


Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
120Vac	80A	500uS	100uS
277Vac	140A	300uS	200uS
347Vac	160A	1640uS	500uS

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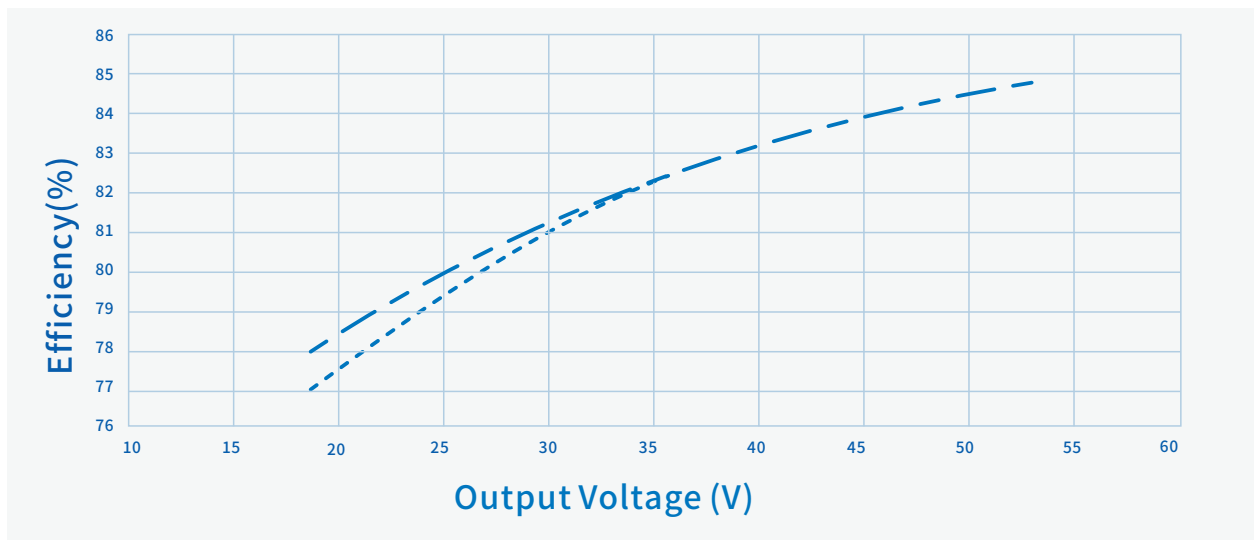
Performance Curves:

O/P Voltage Vs. O/P Current(Dim/AOC Window)



----- Dimming Window ————— AOC Window

Efficiency Vs. O/P Voltage ($V_{in}=120V_{ac}$)



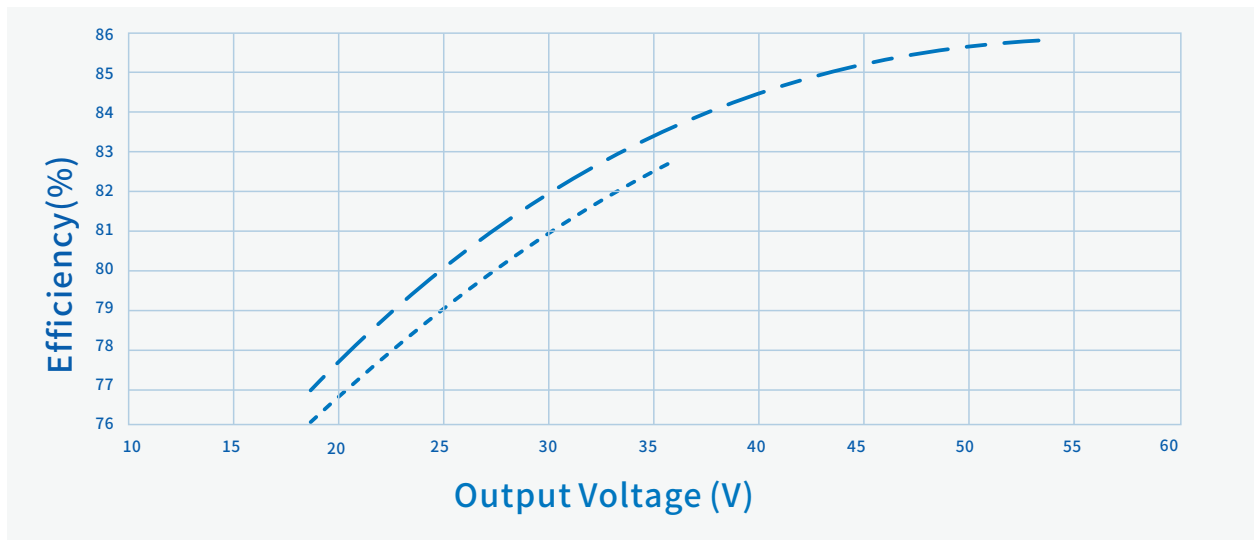
----- $I_o=1520mA$

- - - $I_o=1020mA$

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Performance Curves:

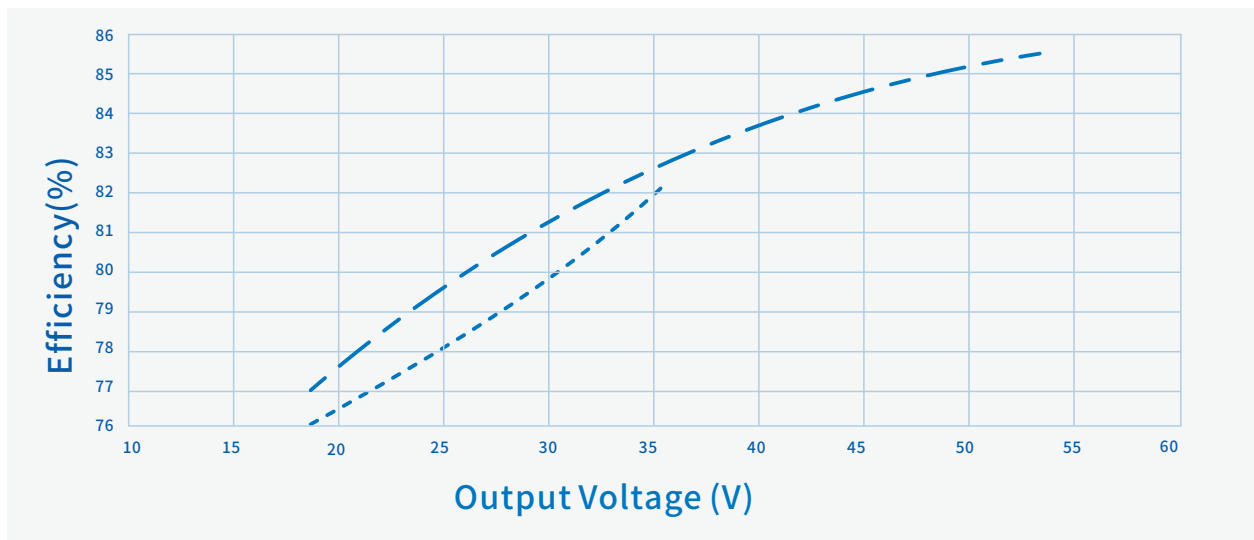
Efficiency Vs. O/P Voltage ($V_{in}=277V_{ac}$)



----- $I_o=1520mA$

- . - . $I_o=1020mA$

Efficiency Vs. O/P Voltage ($V_{in}=347V_{ac}$)



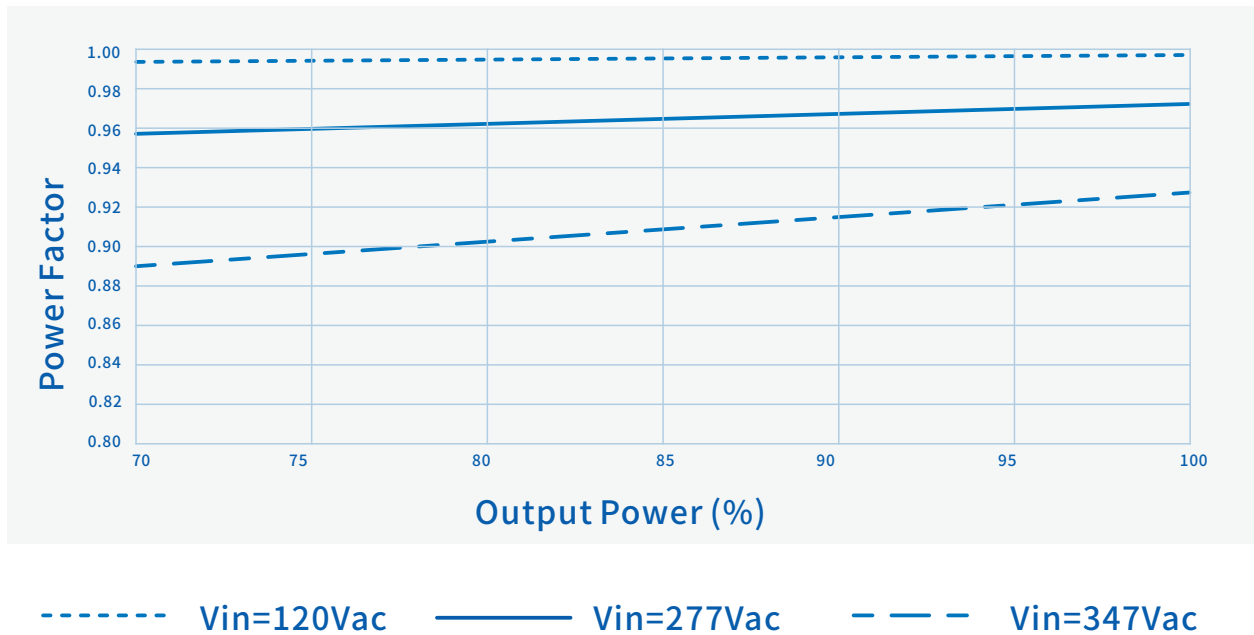
----- $I_o=1520mA$

- . - . $I_o=1020mA$

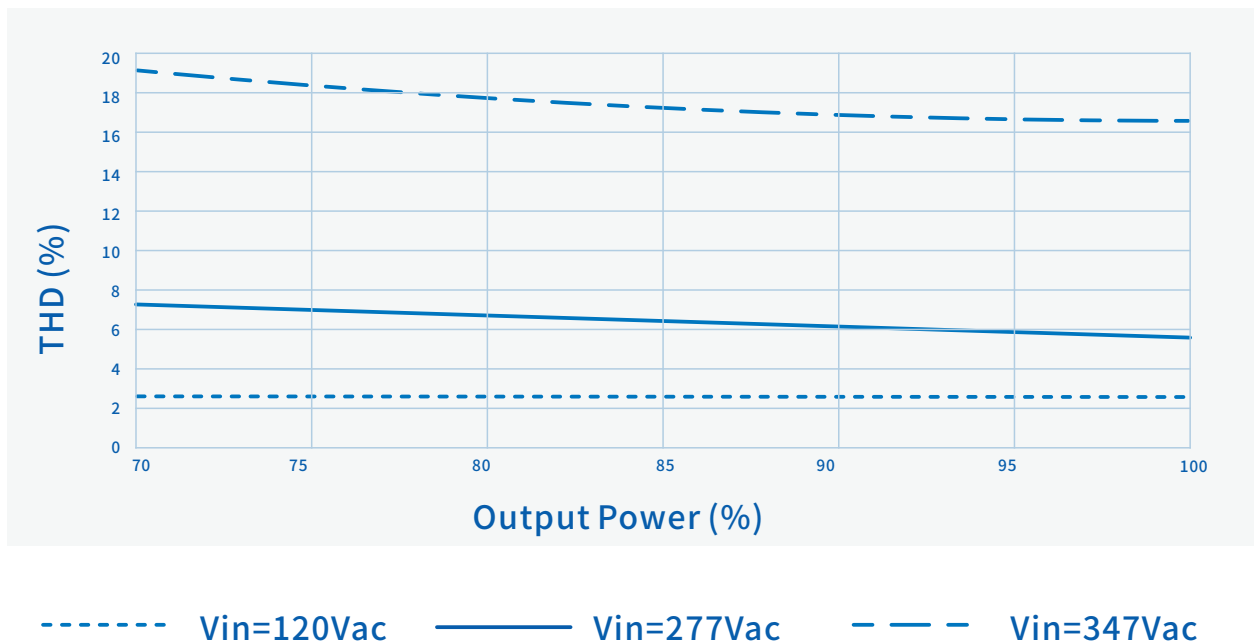
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Performance Curves:

Power Factor Vs. O/P Power



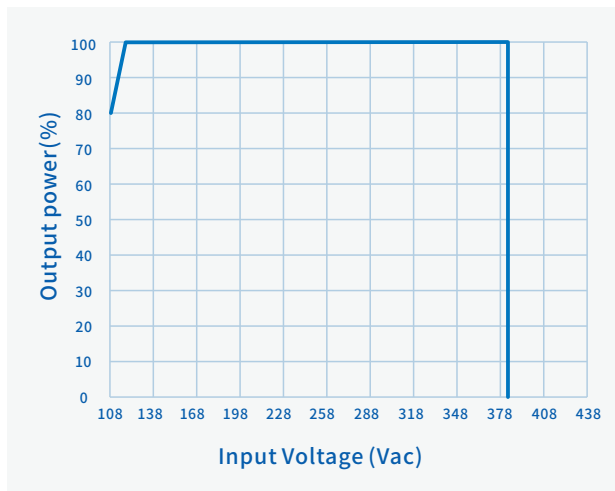
THD Vs. O/P Power



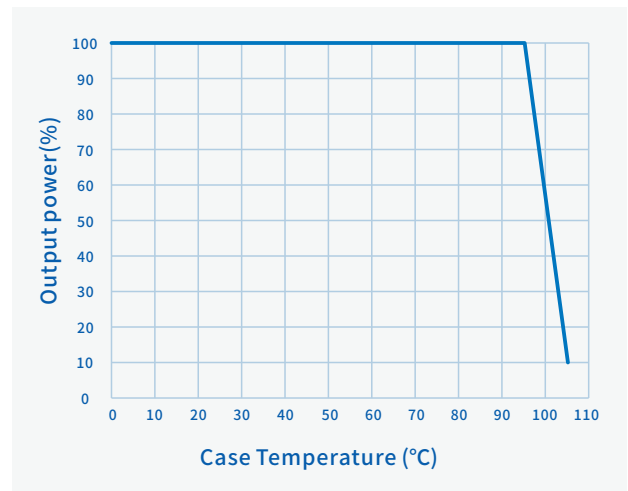
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Performance Curves:

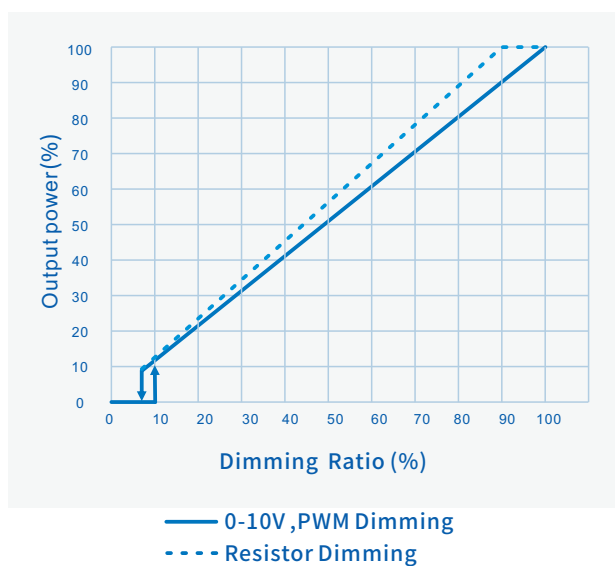
O/P Power Vs. Input Voltage



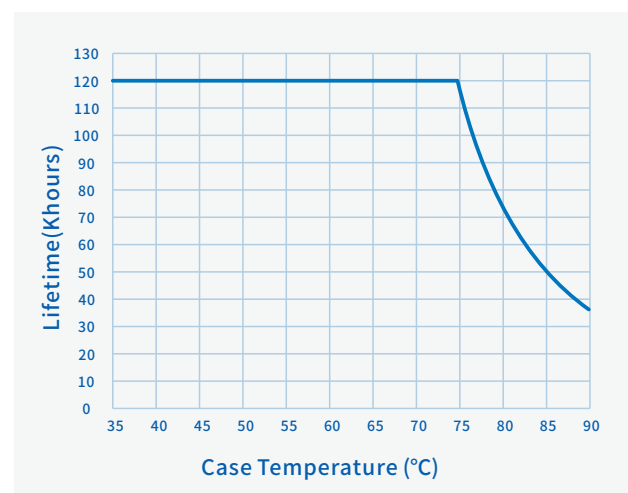
O/P Power Vs. Case Temperature



O/P Power Vs. Dimming



Lifetime Vs. Case Temperature



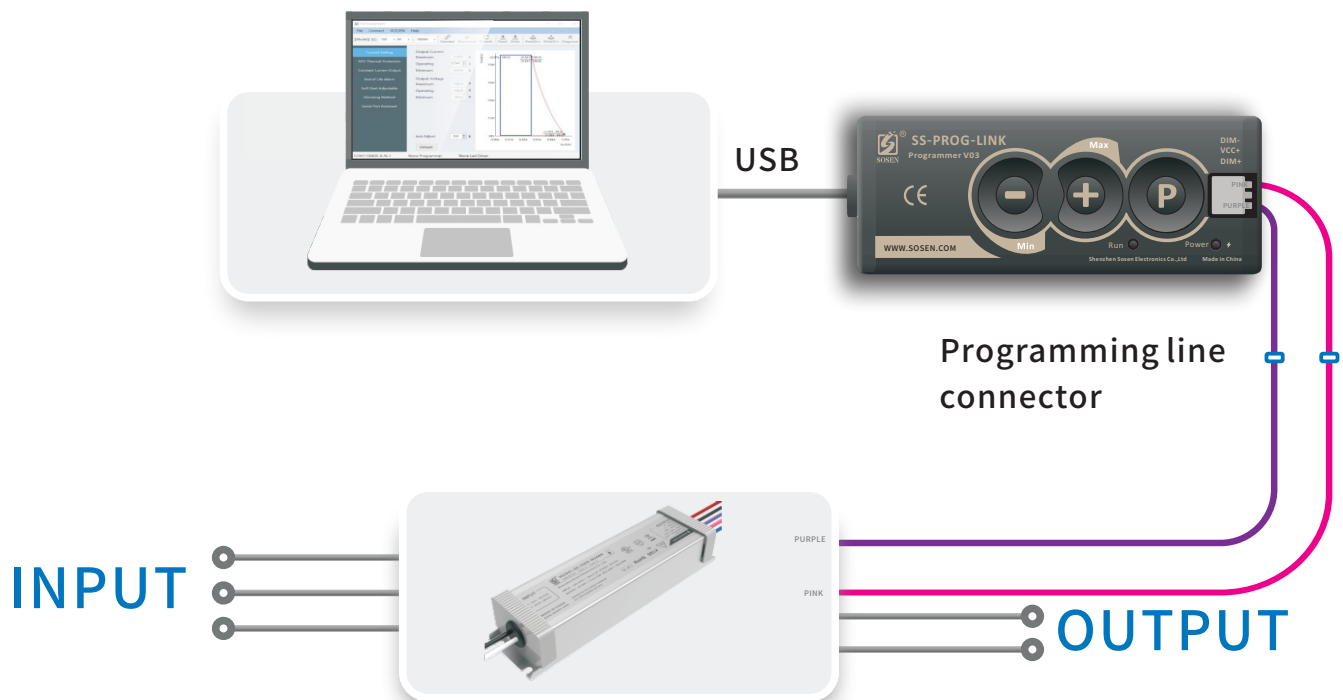
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Programming Connection Diagram:

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:

Programming could be completed by off-line mode either without turn on the Driver nor without PC, other than the traditional on-line mode.

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Mechanical Characteristics

INPUT

ACL

ACN



LED DRIVER

V+

V-

DIM+

DIM-/Vaux-

Vaux+

OUTPUT

Dimming

AUX Power

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

UL/EU model: 18AWG 105°C 600V O.D: 2.77mm,Black:ACL,White:ACN,Green: 

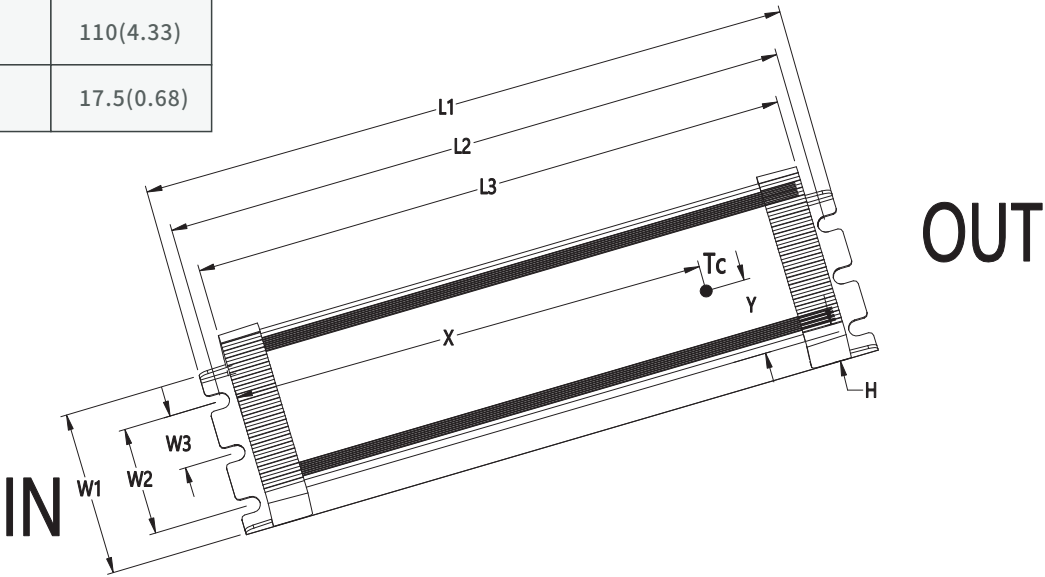
DC Output Cable(Exposed Length 300±10mm):

UL/EU model: 18AWG 105°C 300V O.D: 1.95mm,Red:V+, Black:V-

DIM/AUX Power Cable(Exposed Length 220±10mm):

UL/EU model: 22AWG 105°C 300V O.D: 1.52mm, Purple: DIM+, Pink: DIM-/Vaux-, Black/White: Vaux+

Name Description	Standard Code	mm(In.)
Case Width	W1	45.5(1.79)
Mounting Hole Width	W2	28(1.1)
Mounting Hole Width	W3	14(0.55)
Overall Length	L1	164(6.46)
Mounting Hole Length	L2	156(6.14)
Case Length	L3	150(5.91)
Case Height	H	31(1.22)
TC Point Position	X	110(4.33)
TC Point Position	Y	17.5(0.68)



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Assembly Tips

1. Dimming tinned connectors should be capped if not used to avoid dimming parts damage from external signals.

Package

- Outside carton dimension: $L \times W \times H = 495\text{mm} \times 385\text{mm} \times 162\text{mm}$;
- 20PCS/Carton;
- Net weight/Piece: 0.42kg; Gross weight/Carton: 10kg;
- 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	2024/07/17	
V01	Updated structural dimensional characteristics	2025/02/27	