SOSEN

SPECIFICATIONS

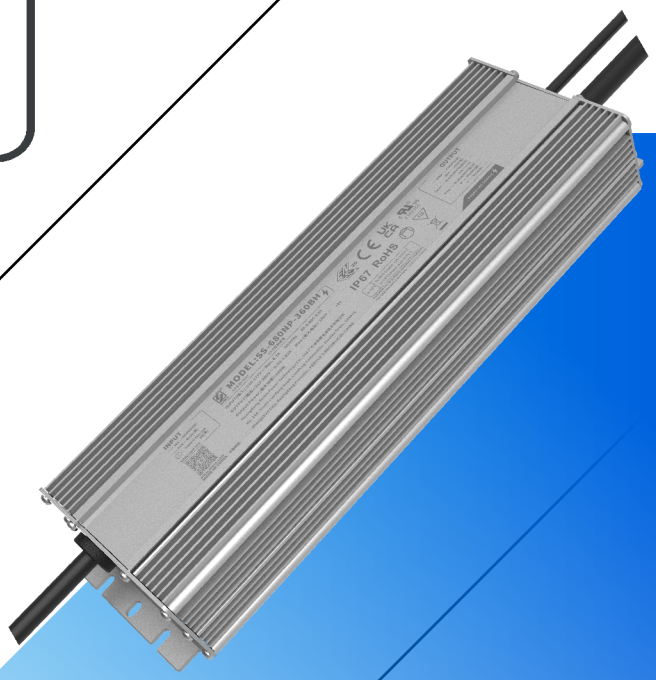
SS-680NP-360*
CC DRIVER

Model: SS-680NP-360*

Power: 680W

Rev.: V03

Release date: 2026-06-24



SS-680NP-360XX Series LED Driver

Features

- Efficiency up to 97%
- Dimming: 0-10V,PWM,Resistor,Timing
- Surge protection: CM: 6kV, DM: 6kV
- AUX Power：12V/0.3A
- Constant Lumen, Life Warning
- Standby Power<0.5W
- IP67
- Communication with PC
- Protections: OTP
- Warranty: 5 years

E360758 IP67

Description

SS-680NP-360XX is 680W non-isolated constant current LED Driver with 90-305Vac input and wide O/P voltage range and adjustable O/P current by program. LED luminaire manufactures can easily design luminaires and reduce cost.
Applications:
Plant lamp, high pole lamp, Stadium lighting, Fish lighting

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	Default Current	THD (Typ.)	PF (Typ.)	Eff. (Typ.)	Max.Tc
SS-680NP-360*	90-305Vac	680W	210-360V	240-360V	0.35-2.83A	1.88A	6%	0.97	96%	90°C

Note:
1.Default Tested: at 220Vac,fullload, 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 .

SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

"*" Means Additional Function

"*"	DALI (suffix:D)	AUX 12V suffix:H)	NTC suffix:N)	Timing	0-10V/PWM Dim /Resistor (suffix:B)	Output-Ground	Remark
BH		✓		✓	✓		
BHN		✓	✓	✓	✓		
BH-G		✓		✓	✓	✓	
BHN-G		✓	✓	✓	✓	✓	

Input Characteristics:

Parameter	Min.	Typ.	Max.	
Rated AC Input Range	120Vac		131Vac	<Ta:45°C
	132Vac		277Vac	<Ta:55°C
AC Input Range	90Vac		305Vac	
Input Frequency Range	47Hz	50/60Hz	63Hz	
Derating curve (reference)	Reduce to 40% below 108V			Automatic Derating
Max Input Current			6.7A	120Vac
Max Input Power			800W	120Vac
Max Inrush Current(120Vac)			20A	Cold start
Max Inrush Current(220Vac)			25A	Cold start
Max Inrush Current(277Vac)			30A	Cold start
Standby Power			0.5W	230Vac/50Hz, Dim-off
Power Factor	0.95	0.97		220Vac/50Hz, Full load
	0.90			120-277Vac, 70-100% load
THD		6%	8%	220Vac/50Hz, Full load
			12%	120-277Vac, 70-100% load

SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

O/P Characteristics:

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	210V		360V	Power derated @210-240V
Rated O/P Voltage	240V		360V	Po=Vo*Io=680W, Full load
Rated O/P Current	1.88A		2.83A	2.83A for 240V,1.88A for 360V
Adj. O/P Current (AOC)Range	0.35A		2.83A	Adjustable by program
No Load Voltage			390V	
Efficiency @120Vac	92.0%	94.0%		O/P 360V/1.88A
Efficiency @220Vac	94.0%	96.0%		O/P 360V/1.88A
Efficiency @277Vac	95.0%	97.0%		O/P 360V/1.88A
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
			0.5S	230Vac,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	110°C	Drop current when OTP, and it can be automatically restored after the abnormality is removed.

SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
AUX Power	O/P Voltage	10.8V	12V	13.8V	
	O/P Current			300mA	
0-10V Dimming (Optional)	Dim Vmax	0V		12V	
	Dim Range	10%loset		100%loset	DIM+ source current 110uA .
	Rec.Dim Range	0V		10V	Dimming prohibits reverse connection.
PWM Dimming (Optional)	PWM High	9.8V		10.2V	
	PWM Low	0V		0.3V	DIM+ source current 110uA .
	Frequency	1KHz		2KHz	Dimming prohibits reverse connection.
	PWM Duty	0%loset		100%loset	
Resistor Dimming (Optional)	Resistance	0Kohm		100Kohm	
	Dim Range	10%		100%	DIM+ source current 110uA .
Dim to Off	Dim off	7%	8%	9%	By DC voltage, PWM, resistance dimming ratio
	Dim on	8%	9%	10%	By DC voltage, PWM, resistance dimming ratio
NTC Founction(Optional)		By programming			External resistance value 10K Ω, B value 3950 or 3435 NTC thermistor, set parameters through corresponding programs
Timing Curve(Optional)		By programming			Set by program
Constant Lumen(Optional)		By programming			Set by program
Life Warning(Optional)		By programming			Set by program
Life Time(Tc≤75°C)		50,000 hours			80% Load, 220Vac
MTBF		198,000 hours			220Vac,Full load, Ta=25°C (MIL-HDBK-217F)
IP Grade		IP67			
Tc		90°C			
Warranty		5 years			Tc:75°C
Net Weight		2190g			
Dimension		297mm*89.5mm*44.5mmm			L x W x H

NOTE:
1.All the parameters above are tested Ta 25°C and LED load, unless specified.
2.When using resistor dimming (parallel connection of dimming wires), if the number of parallels is: N, the dimming resistor should be realized 0-100% dimming range, resistance value: 91KΩ/N.

SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

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	UL8750	✓	
CUL	CAN/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		For NFC wireless products

SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

Safety and EMI/EMS Standards

EMI/EMS	Standard	Status	Remark
Conduction Emission	EN IEC 55015	✓	
	GB/T 17743		
	FCC Part 15 Subpart B;ANSI C63.4		ClassB
Radiation Emission	EN IEC 55015	✓	
	GB/T 17743		
	FCC Part 15 Subpart B;ANSI C63.4		ClassB
Harmonic Current Emissions	EN IEC 61000-3-2	✓	ClassC
	GB 17625.1		ClassC
Surge	IEC/EN61000-4-5	✓	DM: 6kV,CM: 6kV,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

SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

Safety Test Items:

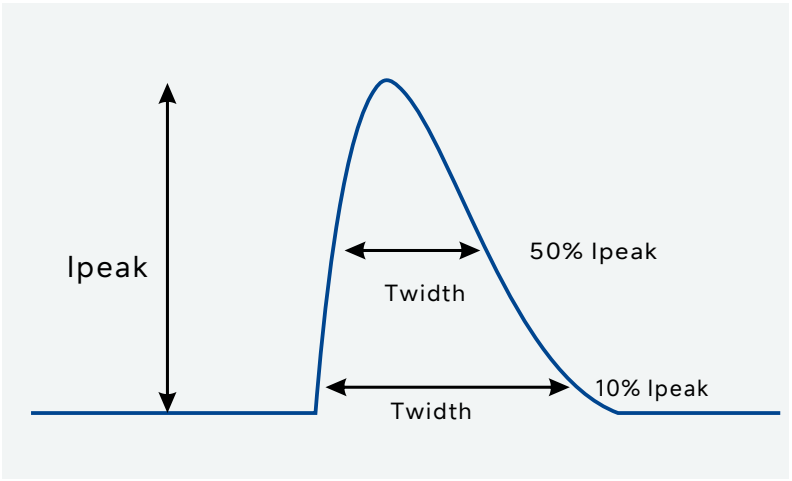
Safety Test Items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	ENEC Insulation Requirements	CCC Insulation Requirements	
Input-Case	2U+1000	2U+1000	2U+1000	Basic insulation
Input-Dim	2U+1000	4U+2000	4U+2000	UL Basic insulation,ENEC and CCC Reinforced insulation
Dim-Case	500Vac	500Vac	500Vac	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 as component.
2. Please short (ACL and ACN), (V+ and V-), (Dim+ and Dim - and Vaux+) when Hi-pot test (Turn off ARC) .

Performance Curves:

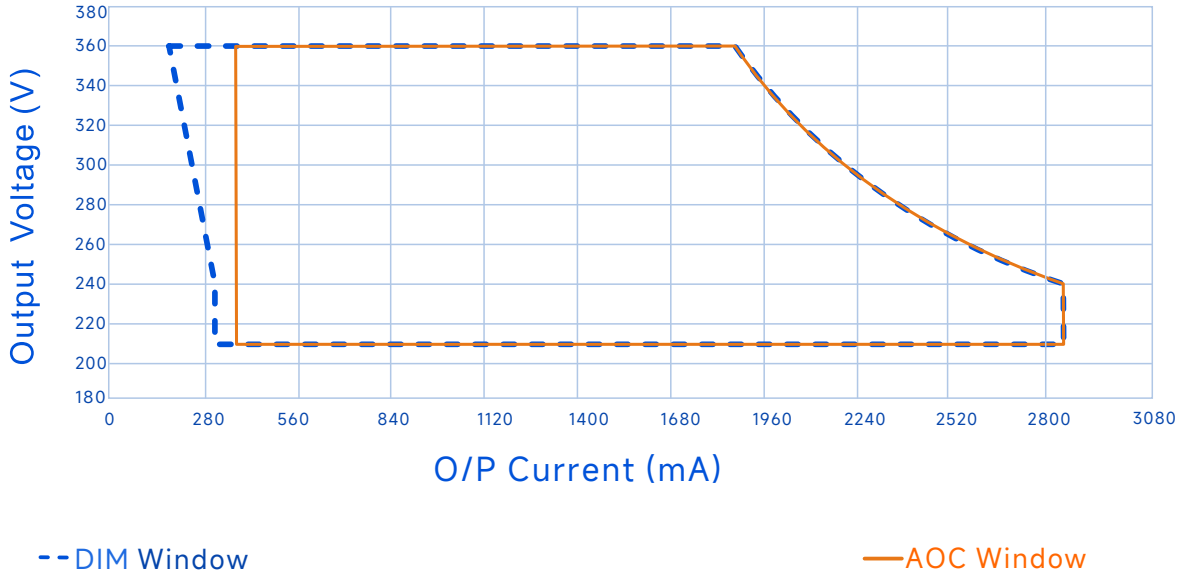
Input Inrush Current



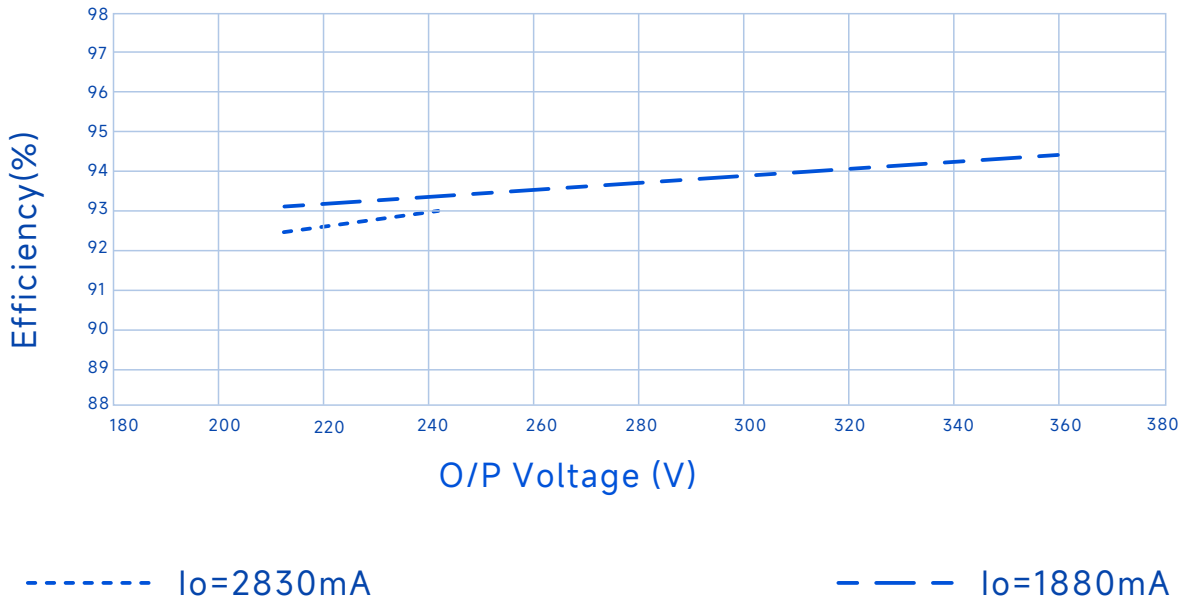
Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
120Vac	20A	5.5mS	1.8mS
220Vac	25A	6.9mS	2.1mS
277Vac	30A	7.5mS	2.24mS

SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

Performance Curves:



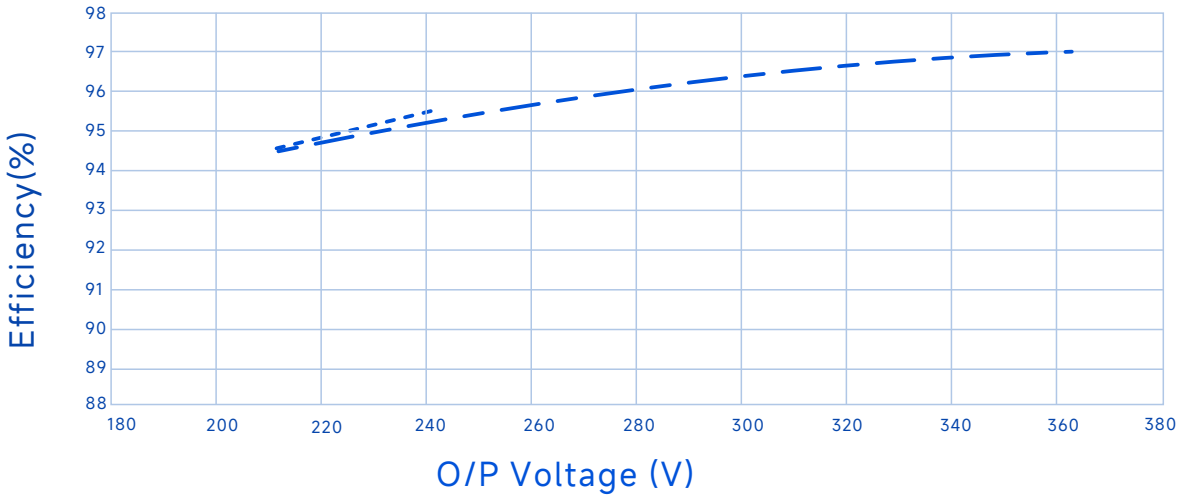
Efficiency Vs. O/P Voltage (Vin=120Vac)



SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

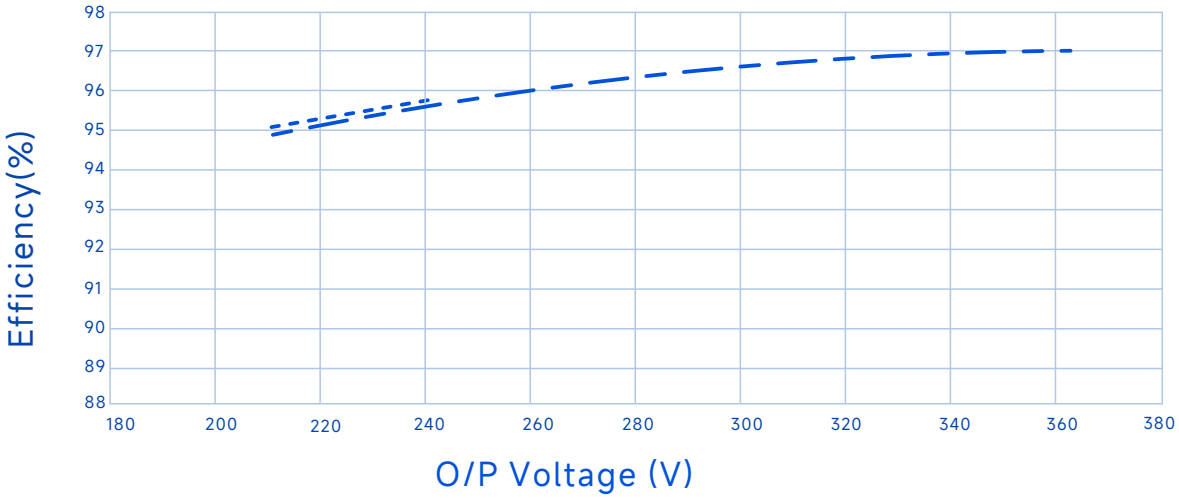
Performance Curves:

Efficiency Vs. O/P Voltage (Vin=220Vac)



------- Io=2830mA — — — Io=1880mA

Efficiency Vs. O/P Voltage (Vin=277Vac)

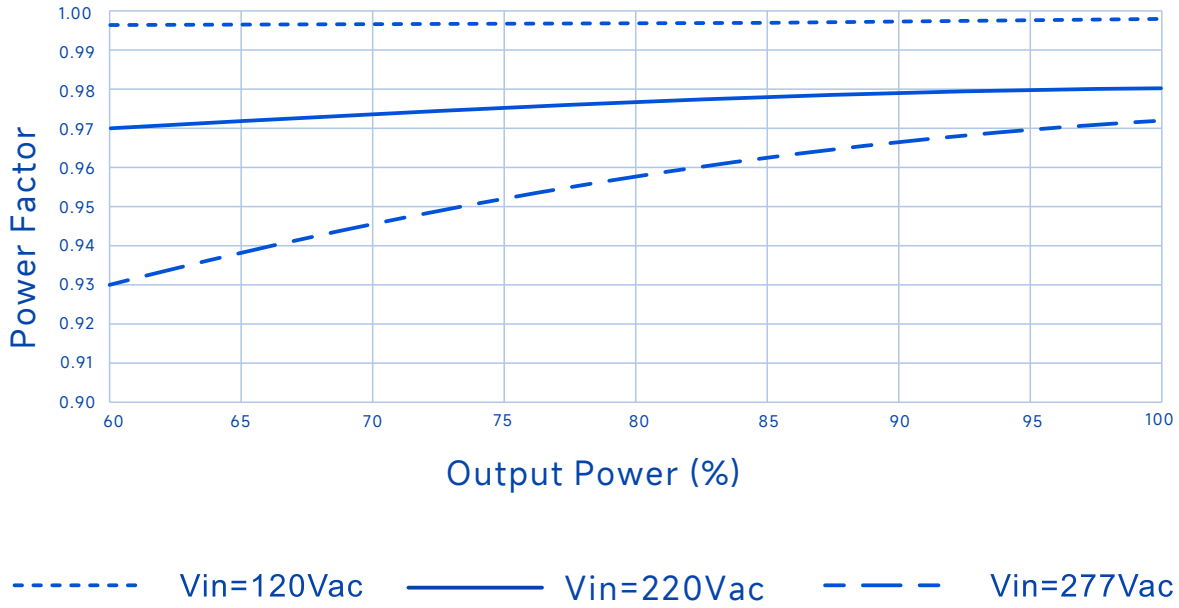


------- Io=2830mA — — — Io=1880mA

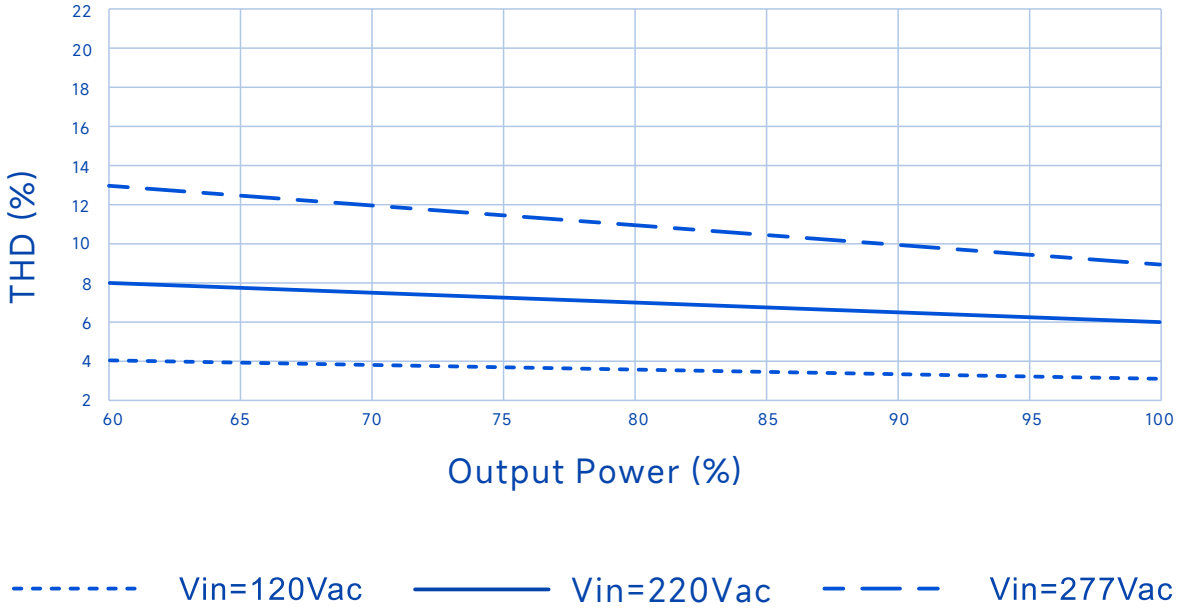
SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

Performance Curves:

Power Factor Vs. O/P Power



THD Vs. O/P Power

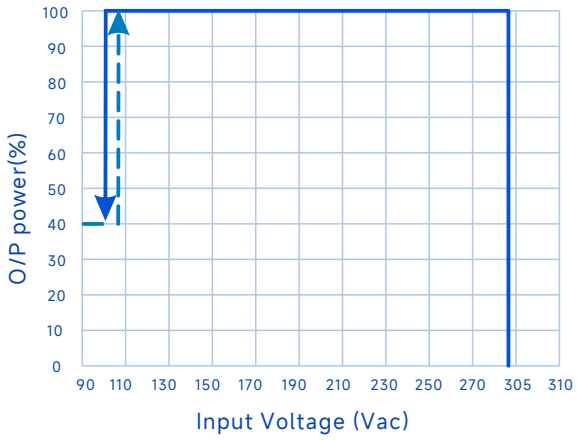


SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

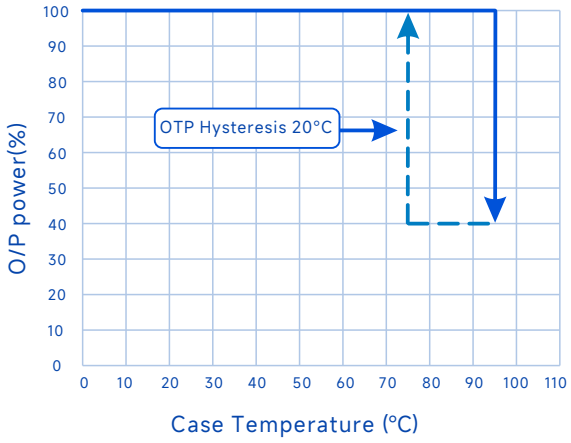
Performance Curves:

O/P Power Vs. Input Voltage

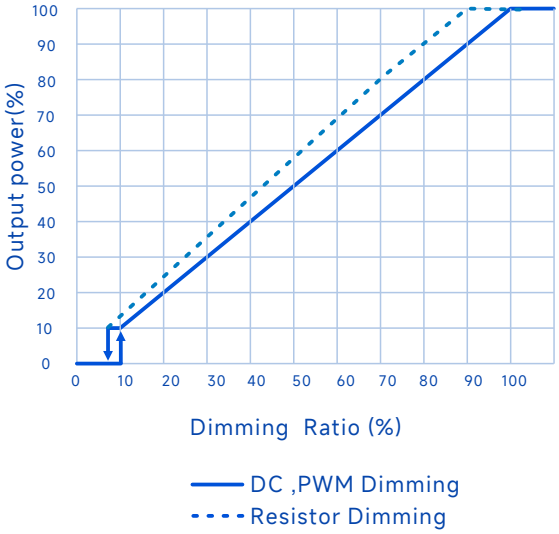
Note: Input below 108 Vac for automatic derating



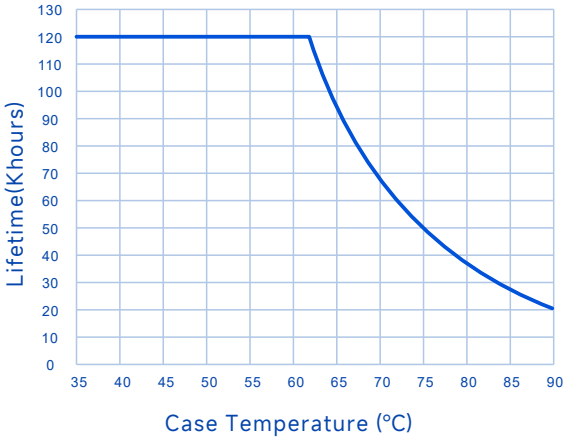
O/P Power Vs. Case Temperature



O/P Power Vs. Dimming



Lifetime Vs. Case Temperature



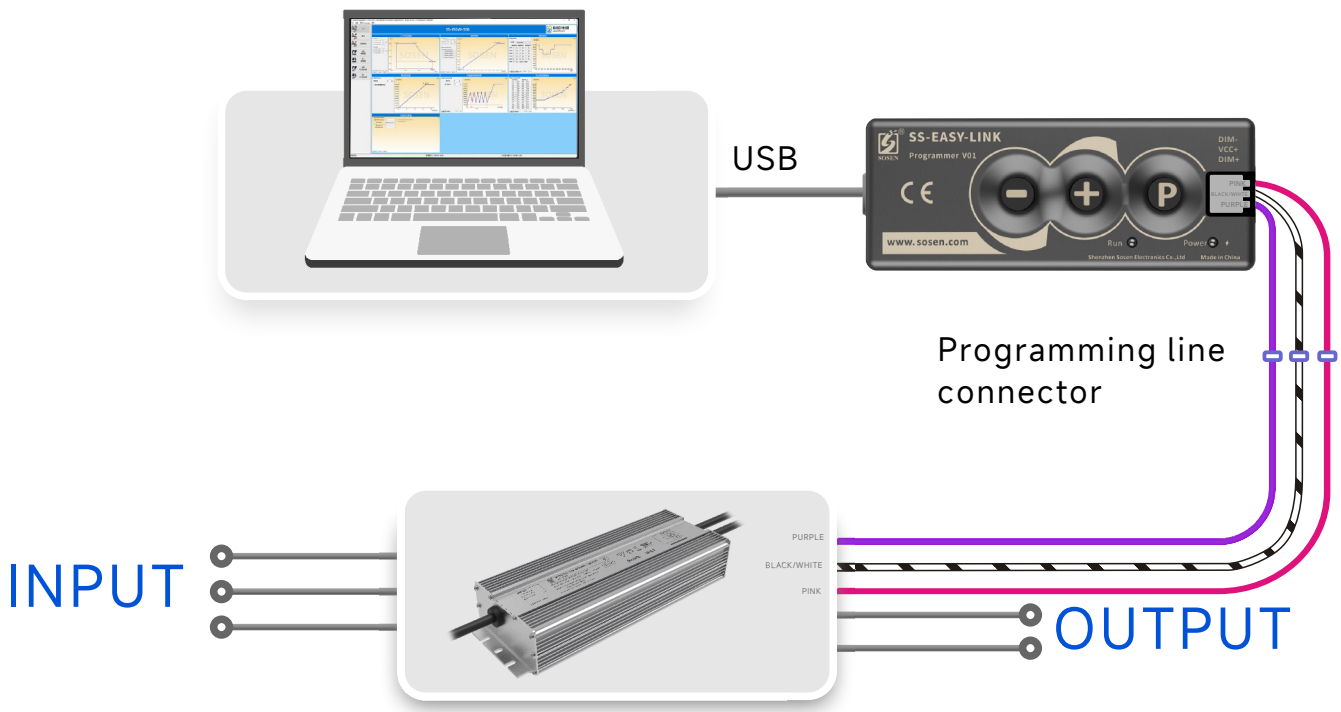
SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

Constant Lumen Output

Constant Lumen Output are design to maintain fixture's stable output lumen by increasing driver's output current within driver's life span to counteract LED lumen degradation.

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.



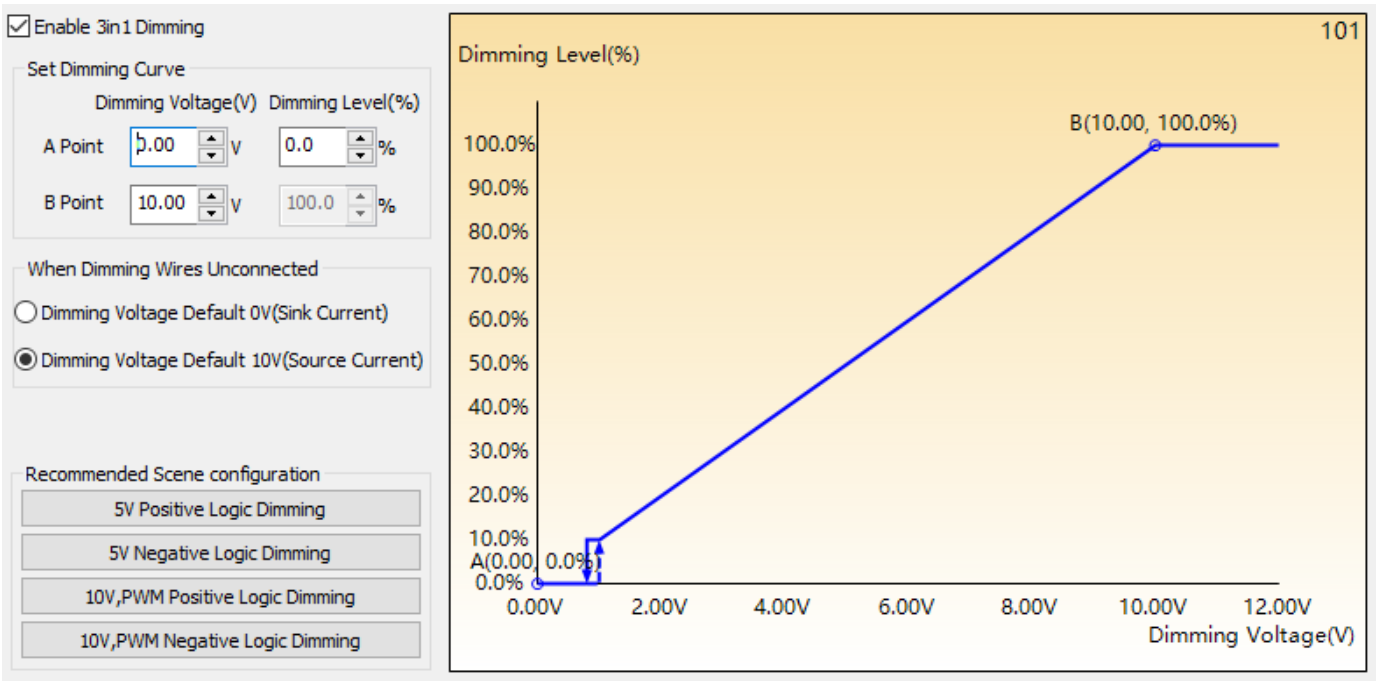
1.During the programming process, all programming functions can be realized without powering on the driver.
2.All programming functions can be realized without powering off the drive that is currently in use.
3.Offline programming can be achieved without PC.

SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

Parameter			Remark
Default setting	Positive logic dimming (0-10V)	Dimming voltage default 10V (source current)	
Dimming optional function	Positive logic dimming (0-10V)	Dimming voltage default 0V (sink current) Resistance dimming not available	When the dimming wire is not connected, the LED driver output is in the DIMOFF state (to be noted in the order)
			For parallel dimming applications with multiple LED drivers, it is recommended to use the sink current mode (to be noted in the order)

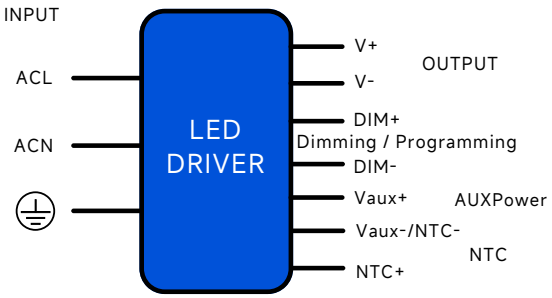
Note:
Select "Dimming voltage defaults to 10V (source current)" / "Dimming voltage defaults to 0V (sink current)", which needs to be set according to the dimmer used by the end user.

Settings Interface



SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

Mechanical Characteristics



AC Input Cable(Exposed Length 450±10mm):

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

DC O/P Cable(Exposed Length 250±10mm):

Global model: SJOW,2*17AWG,O.D: 7.7mm,Brown:V+ Blue:V-
Global model:SJOW,3*17AWG,O.D:8.0mm,Brown:V+,Blue:V-,
Yellow/Green:GND(Suffix-G)⏚

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

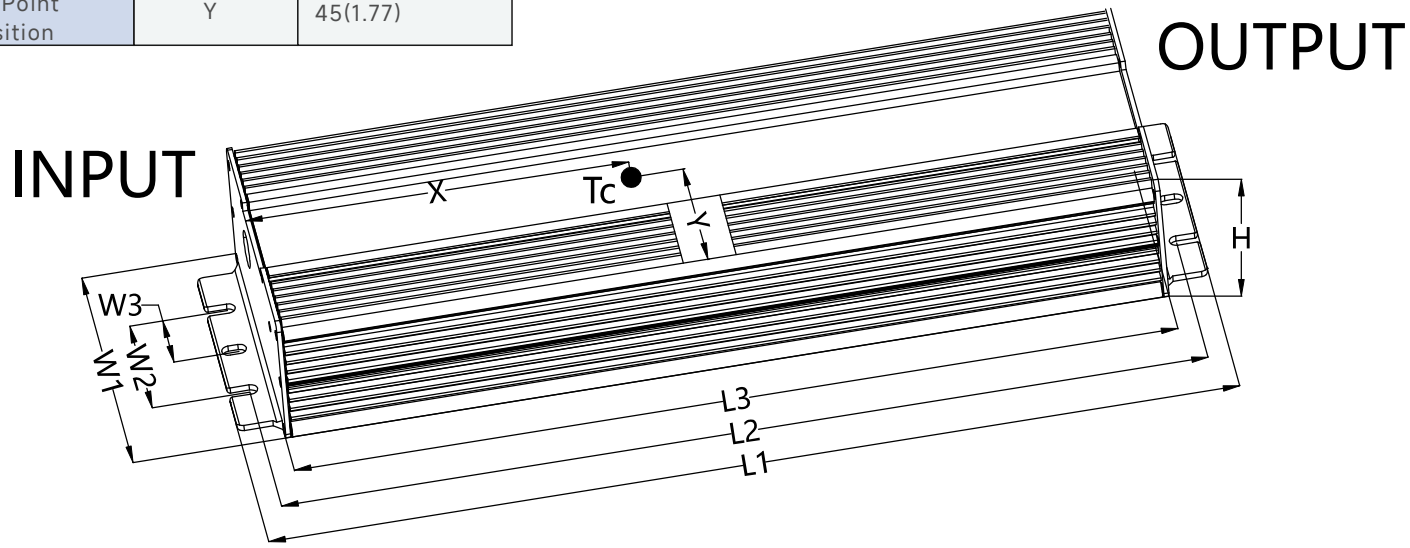
UL model: 21996, 4*22AWG , O.D: 5.6mm Purple DIM+, Pink: DIM-,
Black/White: Vaux+, Blue/White: Vaux-

BHN Model DIM/AUX Power/Programming /NTC Cable (Exposed Length 220±10mm):

UL model:21996,5*22AWG,O.D:6.0mm,Purple:DIM+,Pink:DIM-
Black/White:Vaux+,Blue/White:Vaux-/NTC-,Red/White:NTC+

Name Description	Standard Code	mm(In.)
Case Length	L3	270.2(10.64)
Case Width	W1	89.5(3.52)
Case Height	H	44.5(1.75)
Overall Length	L1	297(11.7)
Mounting Hole Length	L2	283.5(11.16)
Mounting Hole Width	W2	40(1.57)
TC Point Position	X	108.2(4.26)
TC Point Position	Y	45(1.77)

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,DIM/AUX Power/Programming Cable: Peeled length of cable:43±5mm, Tinned length of wire:10±2mm.



SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

Assembly Tips

1.Please take isolation and waterproof measures if the dimming cable is not in use.
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.
6.The insulation level of LED light panels should meet the reliability design requirements.
7.It's recommended to add resistors or capacitors in parallel with the LED on PCB to reduce the risk of surge when a non isolated LED driver is used for the luminaire
8.For other precautions, please refer to the "LED Driver User Manual".

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;
- 7PCS/Carton;
- Net weight/Piece: 2.19kg;Gross weight/Carton: 16.28kg;
- 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.

SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com

Revision History

Version	Description of Update	Updated Date	Remark
V00	Original Release	2025/02/17	
V01	Version upgrade	2025/07/04	
V02	Add warning statements	2026/02/28	
V03	Modify the tinning stripping length of the wire	2026/06/24	

SHENZHEN SOSEN ELECTRONICS CO.,LTD.
10F, Pengzhanhui No 1 Building, Zhongxin Road No 233, Xinqiao Street, Baoan District, Shenzhen, China
0755-29358800 www.sosen.com sosen@sosen.com