

SOSEN LED Driver, Your Smart Choice

Specifications

SS-160NS-260^{*} Series LED Driver

Model: SS-160NS-260^{*}

Description: 160W LED Driver

Rev.: V00

Release Date: 2024-01-23

SS-160NS-260* Series LED Driver

SOSEN
LED DRIVER



LED DRIVER

NS Series



Features:

- Efficiency up to 95%
- Isolated dimming: 0-10V,PWM,Resistor
- OTP temperature programmable
- Dim-to-Off
- Surge protection: CM: 6kV, DM: 6kV
- AUX Power : 12V/0.2A
- Type HL, Suitable for hazardous locations
- Protections: SCP/OTP/UVF
- Warranty: 5 years



RoHS

Description:

SS-160NS Series are 160W non-isolated constant current LED Driver with 249-528VAC. It has DIM to Off, high efficiency, isolated auxiliary power supply, compact housing, fully potted, high reliability, high cost performance and other advantages.

Applications:

Wall washers, Linear high bay light, Flood lighting, Wall lamp

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-160NS-260*	249-528Vac	160W	180-260V	200-260V	0.5-0.8A	8%	0.97	95%	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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“★” Means Additional Function

“★”	AUX 12V (suffix:H)	Dimming off 0-10V/PWM/Resistor	Adjust power (Single DIP)	Optical control	Remark
BH	✓	✓			
BHB	✓	✓	✓		
BHP	✓	✓		✓	
BHBP	✓	✓	✓	✓	

Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	277Vac		480Vac	
AC Input Range	249Vac		528Vac	
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			0.65A	277Vac, Full load
Max Input Power			180W	277Vac, Full load
Max Inrush Current(277Vac)			71A	Cold start
Max Inrush Current(347Vac)			95A	Cold start
Max Inrush Current(480Vac)			120A	Cold start
Standby Power			1.5W	347Vac/60Hz, Dim to off
Power Factor	0.95	0.97		277-480Vac/60Hz, Full load
	0.90			277-480Vac/60Hz, 70-100% load
THD		8%	10%	277-480Vac/60Hz, Full load
			20%	277-480Vac/60Hz, 70-100% load

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O/P Characteristics:

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	180V		260V	Power derated @180-200V
Rated O/P Voltage	200V		260V	$P_o = V_o \cdot I_o = 160W$, Full load
Rated O/P Current	0.62A		0.8A	0.8A for 200V, 0.62A for 260V
Adj. O/P Current (AOC) Range	0.5A		0.8A	
No Load Voltage			310V	
Efficiency @277Vac	90.0%	92.0%		Output 260V/0.62A
Efficiency @347Vac	93.0%	95.0%		Output 260V/0.62A
Efficiency @480Vac	93.0%	95.0%		Output 260V/0.62A
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)		10%	15%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			0.75S	277Vac, Full load
			0.5S	480Vac, Full load
Line Regulation	-3%		+3%	Full load
Load Regulation	-6%		+6%	
Temperature Coefficient	-0.03%/°C		+0.03%/°C	Tc: 0°C~90°C
OTP	90°C	95°C	100°C	>Tc Typ., Linear current derating <Tc Min., Current recovery
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	13.5V	
	O/P Current			200mA	
0-10V Dimming	Dim Vmax	0V		12V	DIM+ source current 110uA.
	Dim Range	10%loset		100%loset	Dimming prohibits reverse connection
	Rec.Dim Range	0V		10V	
PWM Dimming	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	Resistance	0Kohm		100Kohm	DIM+ source current 110uA.
	Dim Range	10%lomax		100%loset	
Dim to Off	Dim off	0.7V	0.8V	0.95V	
	Dim on	0.95V	1.1V	1.2V	
Life Time($T_c \leq 85^\circ\text{C}$)		50,000 hours			80% Load
MTBF		198,000 hours			347Vac, Full load, $T_a = 25^\circ\text{C}$ (MIL-HDBK-217F)
T_c		90°C			
Warranty		5 years			$T_c: 85^\circ\text{C}$
Net Weight		535g			
Dimension		192mm*52.5mm*34mm			L x W x H

NOTE: All the parameters above are tested $T_a 25^\circ\text{C}$ 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 EN61347-1:2015 EN62493:2015		
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 B; ANSI 63.4:2014	Class A
Radiation Emission	FCC Part15: Subpart B; ANSI 63.4:2014	Class A
Harmonic Current Emissions	IEC/EN 61000-3-2	Class C
Surge	IEC/EN61000-4-5	DM: 6kV,CM: 6kV,Criterion B
Ring Wave	IEC/EN 61000-4-12	DM: 6kV,CM: 6kV,Criterion B

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Safety Test Items:

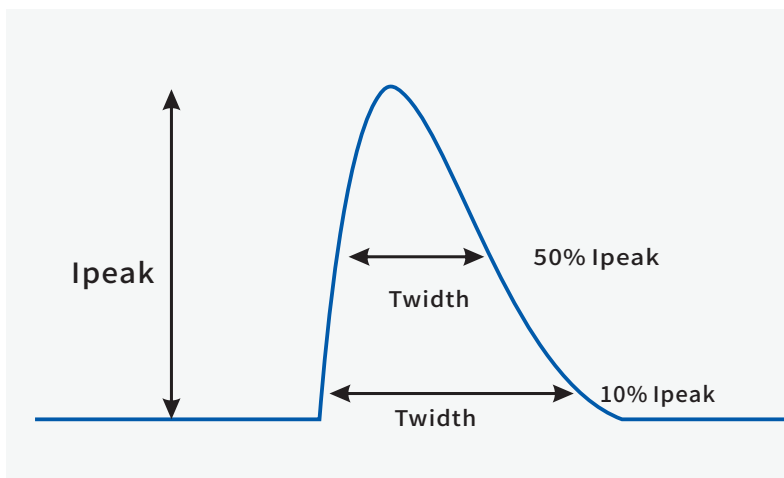
Safety Test Items	Technical Indicators	Remark
Insulation Requirements	UL Insulation Requirements	
Input-Case	2000Vac	Basic insulation
Input-Dim	2000Vac	Reinforced insulation
Output-Dim	2000Vac	Reinforced insulation
Dim-Case	500Vac	Basic insulation
Insulation Resistance	$\geq 10\text{M}\Omega$	Input-Dim, Test voltage: 500Vdc
Ground Resistance	$\leq 0.1\Omega$	25A/1min
Leakage Current	$\leq 0.75\text{mA}$	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. Please short (ACL and ACN), (V+ and V-), (Dim+ and Dim - and Vaux+ and Vaux-) when Hi-pot test.

Performance Curves:

Input Inrush Current

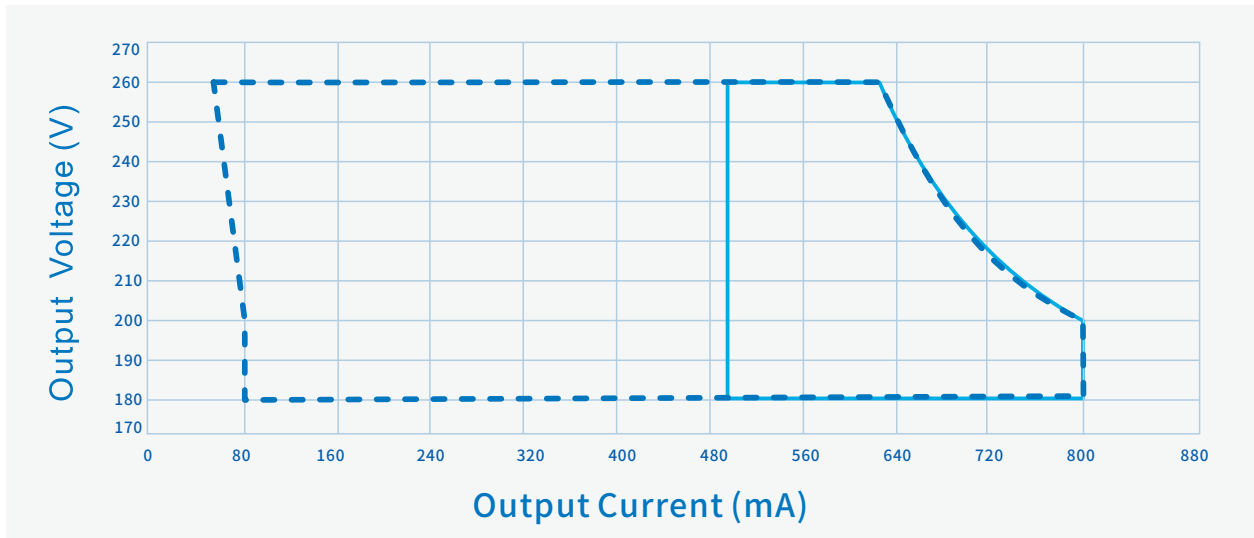


Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
277Vac	71A	270uS	180uS
347Vac	95A	370uS	210uS
480Vac	120A	560uS	320uS

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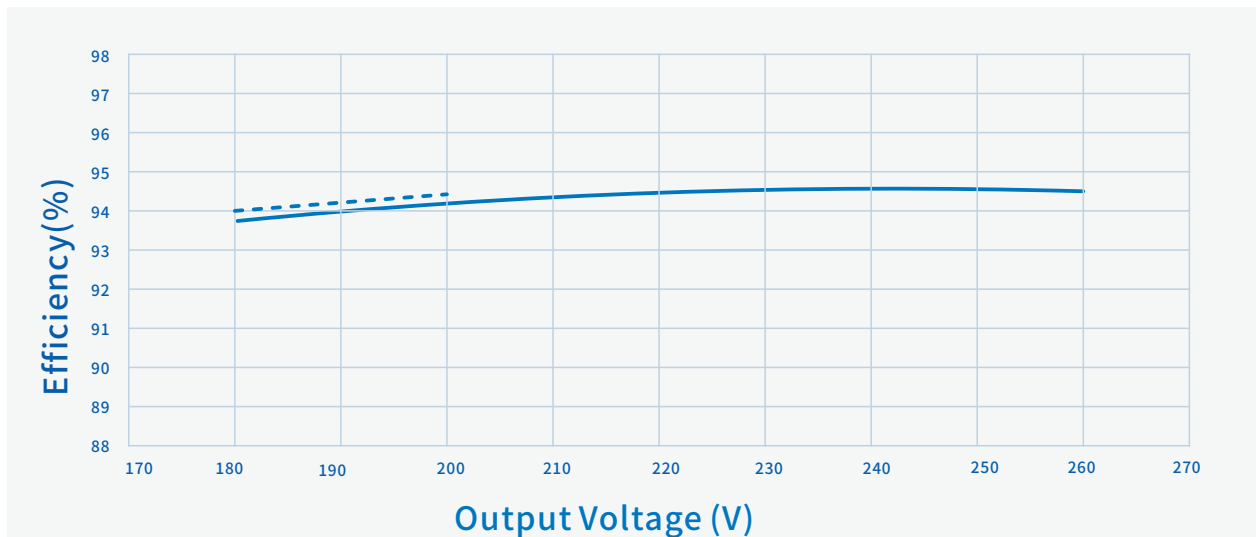
Performance Curves:

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



----- Dimming Window ————— AOC Window

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

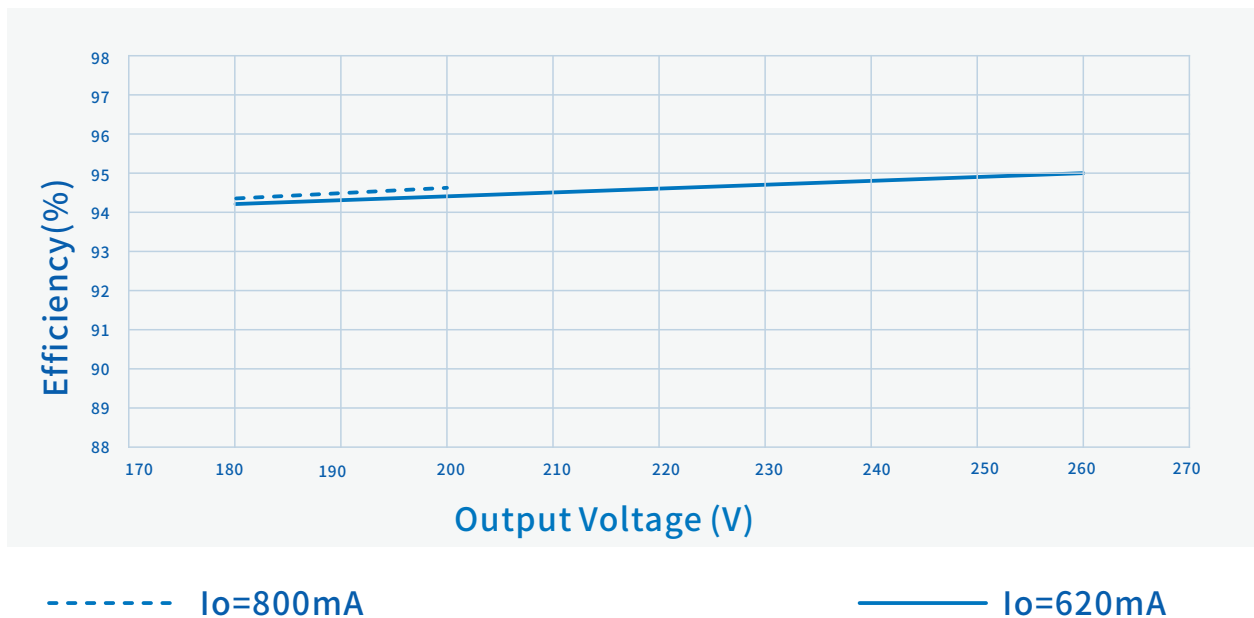


----- Io=800mA ————— Io=620mA

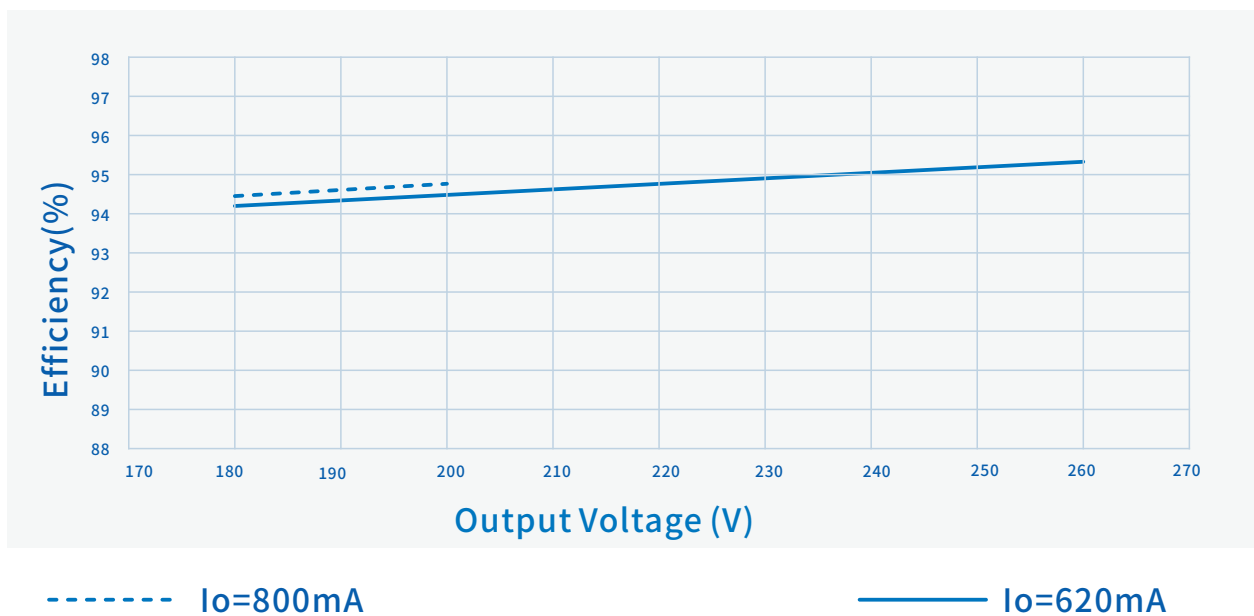
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Performance Curves:

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



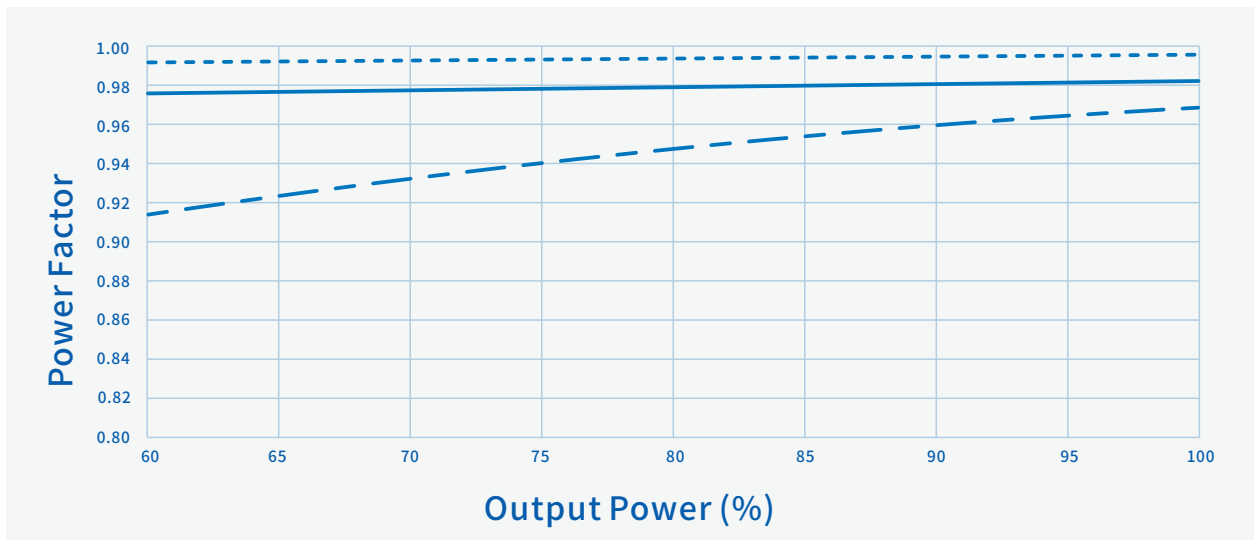
Efficiency Vs. O/P Voltage ($V_{in}=480V_{ac}$)



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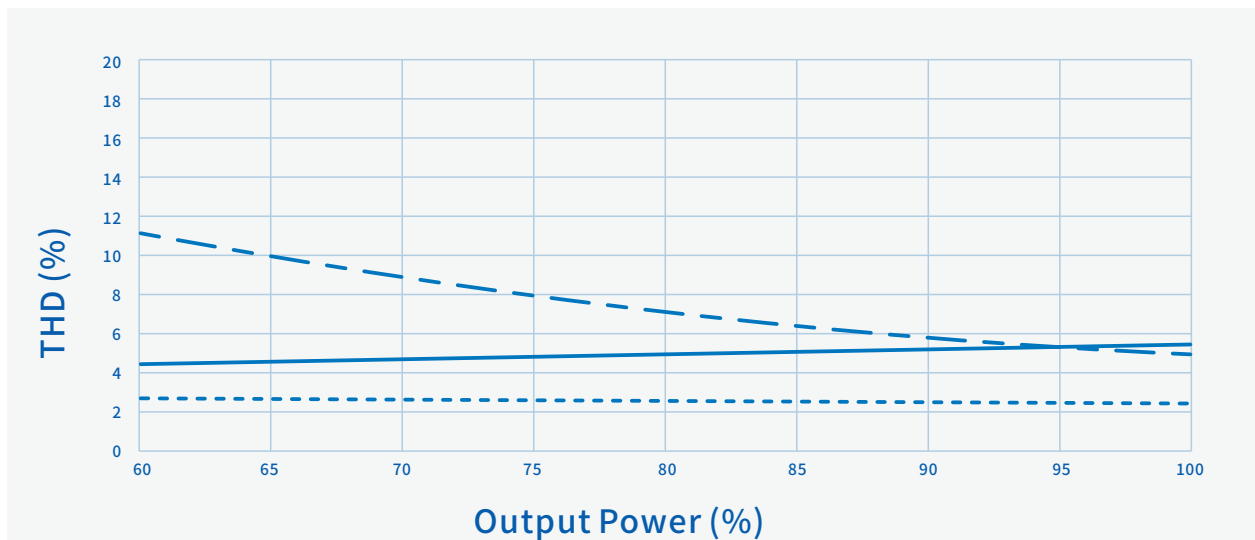
Performance Curves:

Power Factor Vs. O/P Power



----- Vin=277Vac ————— Vin=347Vac - . - . Vin=480Vac

THD Vs. O/P Power

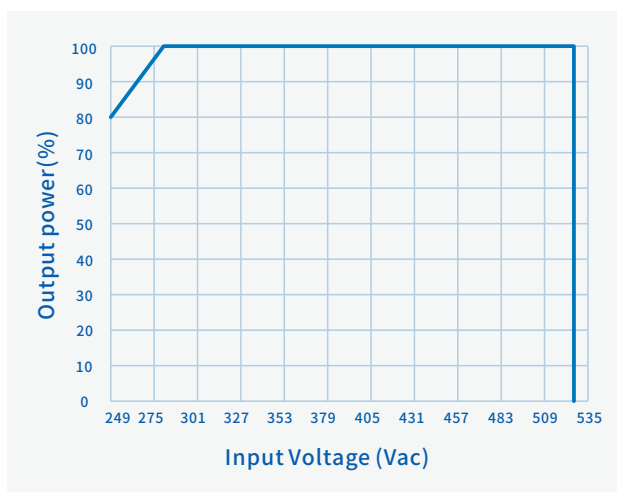


----- Vin=277Vac ————— Vin=347Vac - . - . Vin=480Vac

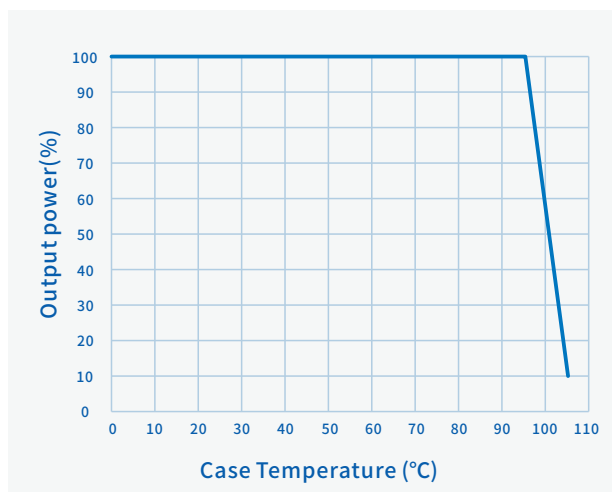
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Performance Curves:

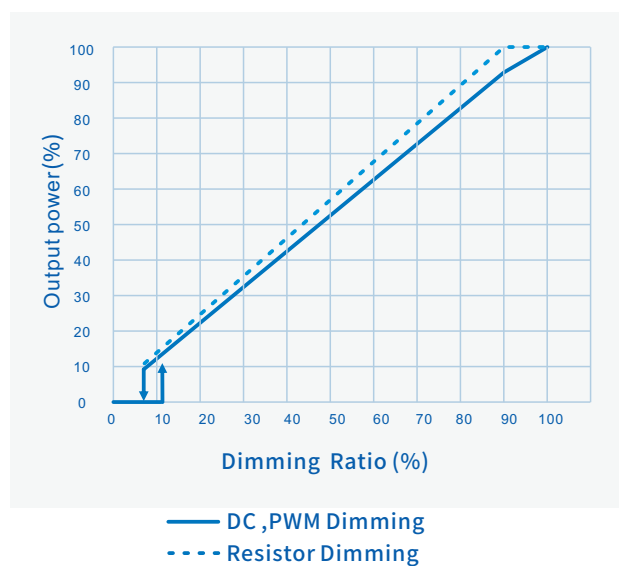
O/P power Vs. Input Voltage



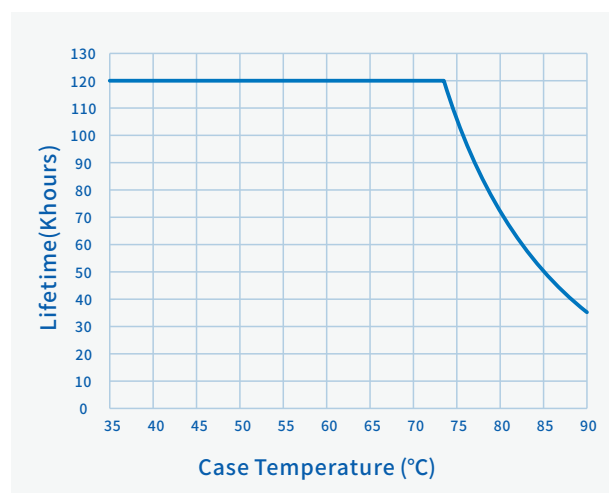
O/P power Vs. Case Temperature



O/P Power Vs. Dimming

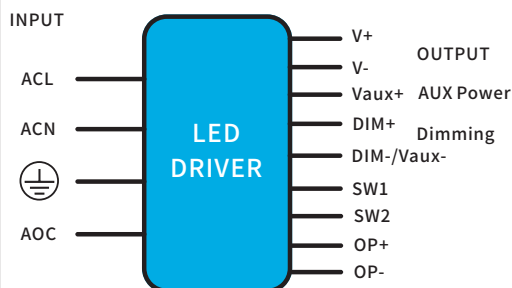


Lifetime Vs. Case Temperature



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Mechanical Characteristics



AC Input Cable(Exposed Length $300\pm 10\text{mm}$):

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

DC Output Cable(Exposed Length $300\pm 10\text{mm}$):

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

Resistance power regulating line with terminal Cable:

UL/EU model: 24AWG 150°C 300V O.D: 1.6mm,Orange: SW1,SW2

Optical control line with terminal:

UL/EU model: 24AWG 150°C 300V O.D: 1.6mm,Red: OP+,Black: OP-

DIM/AUX Power Cable(Exposed Length $220\pm 10\text{mm}$):

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

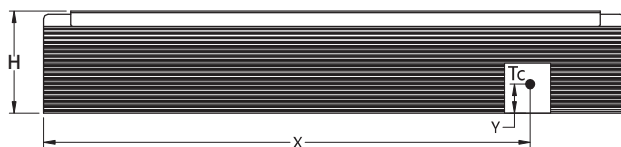
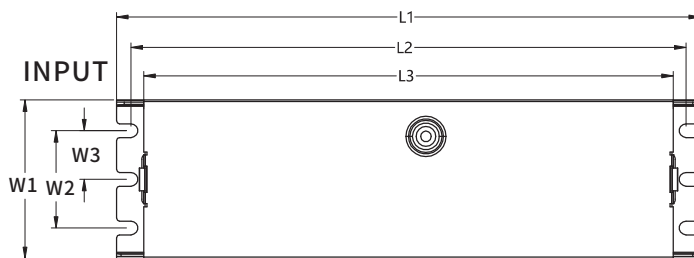
Name Description	Standard Code	mm(In.)
Case Length	L3	174(6.85)
Case Width	W1	52.5(2.07)
Case Height	H	34(1.34)
Overall Length	L1	192(7.56)
Mounting Hole Length	L2	182.5(7.19)
Mounting Hole Width	W2	32(1.26)
Mounting Hole Width	W3	16(0.63)
TC Point Position	X	160(6.3)
TC Point Position	Y	9.5(0.37)

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 Cable:

Tinned length of wire: $10\pm 2\text{mm}$



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Assembly Tips

1. Highly recommended to seal the adjustable hole with silicon glue(#704 preferred) after adjusting the Driver's output current. Avoid permanent damage to adjust the potentiometer with suitable strength.
2. Dimming or AUX Power tinned connectors should be capped if not used to avoid dimming or AUX Power parts damage from external signals.
3. In order to meet the requirements of the power derating and the maximum ambient temperature of 50°C, an auxiliary heat sink must be added. It is recommended that the heat sink has a heat dissipation area of 380cm² and volume of 115cm³. Thermal grease should be applied between led driver and the auxiliary heat sink to ensure the bottom of housing is in close contact with the heat sink.
4. Safety space between aluminum base and LED coppers >5mm.
5. Safety space/coppers between LED+ and LED- >1.8mm.
6. Minimize the copper area on the aluminum PCB to reduce parasitic capacitance and leakage current.
7. It is recommended to design LED beads in parallel first and then in series.
8. The insulation level of LED light panels should meet the reliability design requirements.
9. For other precautions, please refer to the "LED Driver User Manual" .

Package

- Outside carton dimension: L×W×H=495mm×385mm×162mm;
- 16PCS/Carton;
- Net weight/Piece: 0.535kg;Gross weight/Carton: 10.1kg;
- 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	2024/01/23	