

SOSEN LED Driver, Your Smart Choice

Specifications

SS-240NH Series LED Driver

Model: SS-240NH-260BH

Description: 240W LED Driver

Rev.: V06

Release Date: 2020-10-17

SS-240NH Series LED Driver

SOSEN
LED DRIVER



LED DRIVER

NH Series



Features:

- Efficiency up to 95%
- Dimming: 0-10V,PWM,Resistor
- Isolated Dim-to-off
- AUX Power : 12V/0.2A
- Standby power<0.5W
- Protections: SCP/OTP/OVP
- Surge protection: CM: 4kV, DM: 4kV
- Warranty: 5 years

Description :

SS-240NH series are 240W non-isolated constant current LED Driver with 90-305VAC. It is suitable for wall washers, high pole lights and flood lights. It has DIM to Off, high efficiency, isolated auxiliary power supply, compact housing ,fully potted , high reliability, high cost performance and other advantages.

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-240NH-260BH	90-305Vac	240W	180-260V	200V-260V	0.84-1.2A	7%	0.97	95%	90°C

Note:

- 1.Default Tested: at 220Vac, 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;
- 3.Suffix BH for model with 3-in-1 dimming (0-10V, PWM, Resistor)+AUX.

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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			3.0A	100Vac, Full load
Max Input Power			275W	100Vac, Full load
Max Inrush Current(120Vac)			60A	Cold start
Max Inrush Current(220Vac)			100A	Cold start
Max Inrush Current(277Vac)			130A	Cold start
Standby Power			0.5W	220Vac/50Hz, Dim to off
Power Factor	0.95	0.97		220Vac/50Hz, Full load
	0.90			100-277Vac/50Hz, 80%-100% load
THD		7%	10%	220Vac/50Hz, Full load
			20%	100-277Vac/50Hz,70%-100% load

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Output Characteristics:

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	180V		260V	Power derated @180-200V
Rated O/P Voltage	200V		260V	$P_o = V_o \cdot I_o = 240W$, Full load
Rated O/P Current	0.92A		1.2A	1.2A for 200V, 0.92A for 260V
Adj. O/P Current (AOC) Range	0.84A		1.2A	
No Load Voltage			310V	
Efficiency @120Vac	90.0%	92.0%		Output 260V/0.92A
Efficiency @220Vac	93.0%	95.0%		Output 260V/0.92A
Efficiency @277Vac	93.0%	95.0%		Output 260V/0.92A
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)		10%	15%	
Start-up Current Overshoot			10%	Full load
Start-up Time			1.0S	120Vac, Full load
			0.5S	220Vac, Full load
Line Regulation	-2%		+2%	Full load
Load Regulation	-2%		+2%	
Temperature Coefficient	-0.03%/°C		+0.03%/°C	$T_c: 0^{\circ}C \sim 90^{\circ}C$
OTP	90°C	100°C	110°C	> T_c Typ., Current derating < T_c Min., Current recovery
Short Circuit Protection			10W	Driver will not be damaged, Hiccup mode

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Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
Aux Power	O/P Voltage	11.4V	12V	12.6V	Maximum no-load voltage 14V
	O/P Current			200mA	
0-10V Dimming	Dim Vmax	0V		12V	DIM+ can output 110uA current.
	Dim Range	10%Iomax		100%loset	Dimming prohibits reverse connection
	Rec.Dim Range	0V		10V	
PWM Dimming	PWM High	9.8V		10.2V	DIM+ can output 110uA current.
	PWM Low	0V		0.3V	Dimming prohibits reverse connection
	Frequency	1KHz		2KHz	
	PWM Duty	0%		100%	
Resistor Dimming	Resistance	0Kohm		100Kohm	DIM+ can output 110uA current.
	Dim Range	10%Iomax		100%loset	
Dim to Off	Dim off	0.5V	0.7V	0.9V	
	Dim on	0.5V	0.9V	1.0V	
Lifetime(Tc≤74℃)		≥62,000 hours			80% load
MTBF		200,000 hours			220Vac, Full load, Ta=25℃ (MIL-HDBK-217F)
Tc		90℃			
Warranty		5 years			Tc : 74℃
Net Weight		850g			
Dimension		183mm*63.5mm*37mm			L x W x 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)	-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 61347-2-13:2014/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 EN61347-1:2008+A1:2011+A2:2013		

EMI/EMS	Criterion	Remark
Conduction Emission	EN55015:2013+A1:2015	
Radiation Emission	EN55015:2013+A1:2015	
Harmonic Current Emissions	IEC/EN 61000-3-2	Class C
Surge	IEC/EN61000-4-5	DM: 4kV,CM: 4kV,Criterion B
Ring Wave	IEC/EN 61000-4-12	DM: 4kV,CM: 4kV,Criterion B

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Safety Test Items:

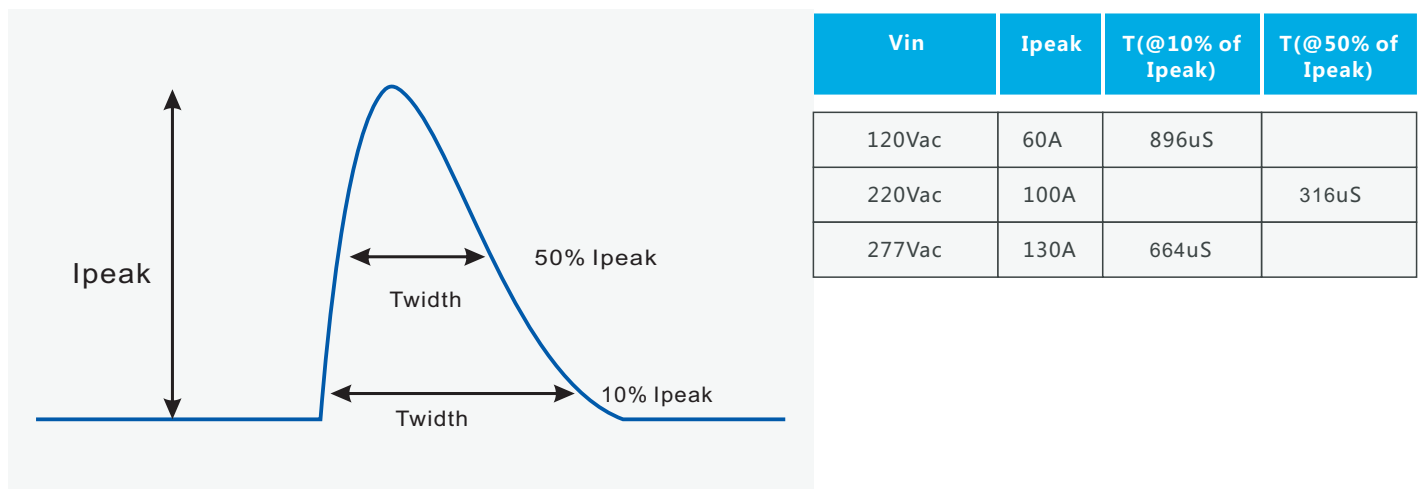
Safety Test Items	Technical Indicators		Remark
Insulation Requirements	UL Insulation Requirements	TUV Insulation Requirements	
Input-Case	1600Vac	1500Vac	Basic insulation
Input-Dim	1600Vac	3000Vac	Reinforced insulation
Dim-Case	500Vac	250Vac	Basic insulation
Insulation Resistance	$\geq 10\text{M}\Omega$		Input-Dim, Test voltage: 500Vdc
Ground Resistance	$\leq 0.1\Omega$		25A/1min
Leakage Current	$\leq 0.75\text{mA}$		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 - and Vaux+ and Vaux-) when Hi-pot test.
3. The CCC withstand voltage test needs to disconnect the built-in lightning protection tube. According to the IEC 60598-1:14 standard section 10.2, the "built-in lightning protection tube" can be marked on the nameplate to disconnect the discharge tube on testing.

Performance Curves:

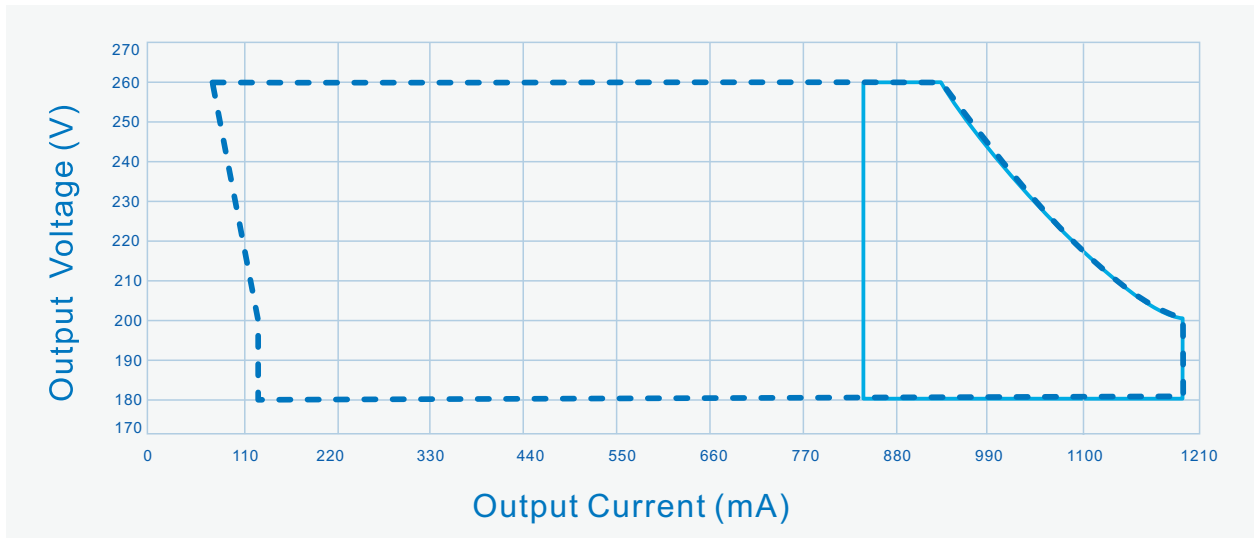
Input Inrush Current



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Performance Curves:

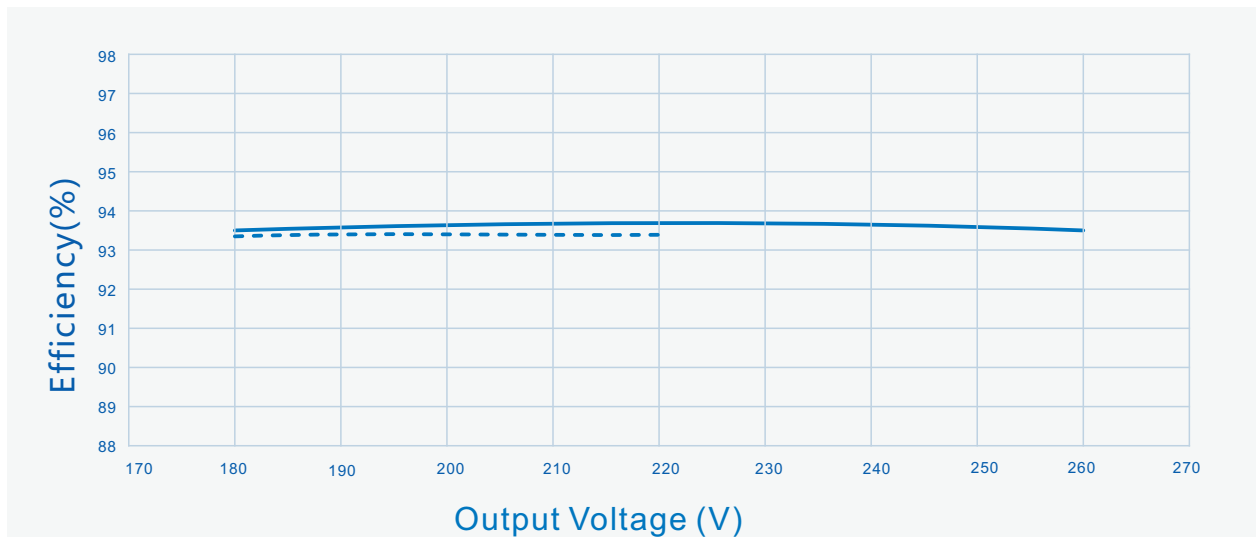
Output Voltage Vs. Output Current(Dim/AOC Window)



----- Dimming Window

————— AOC Window

Efficiency Vs. Output Voltage (Vin=120Vac)



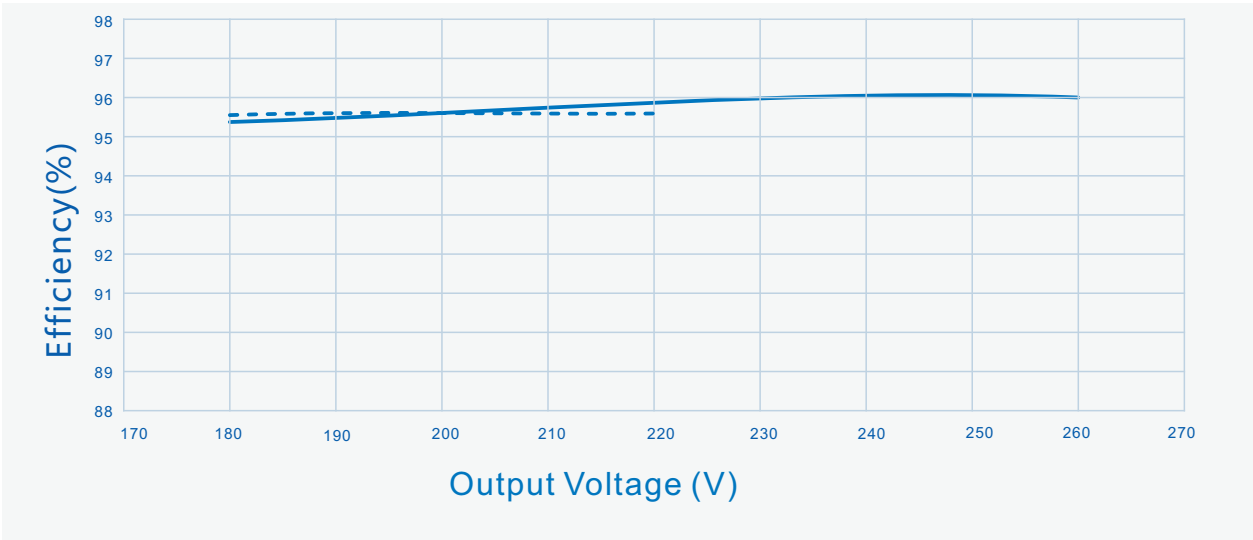
----- Io=1200mA

————— Io=920mA

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Performance Curves:

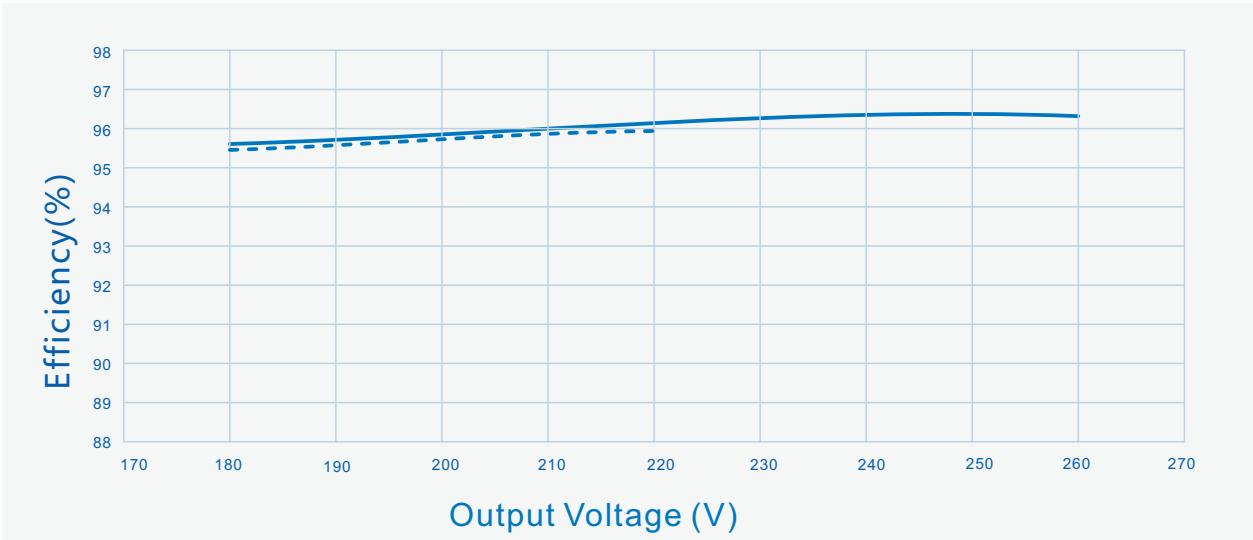
Efficiency Vs. Output Voltage (Vin=220Vac)



----- Io=1200mA

———— Io=920mA

Efficiency Vs. Output Voltage (Vin=277Vac)



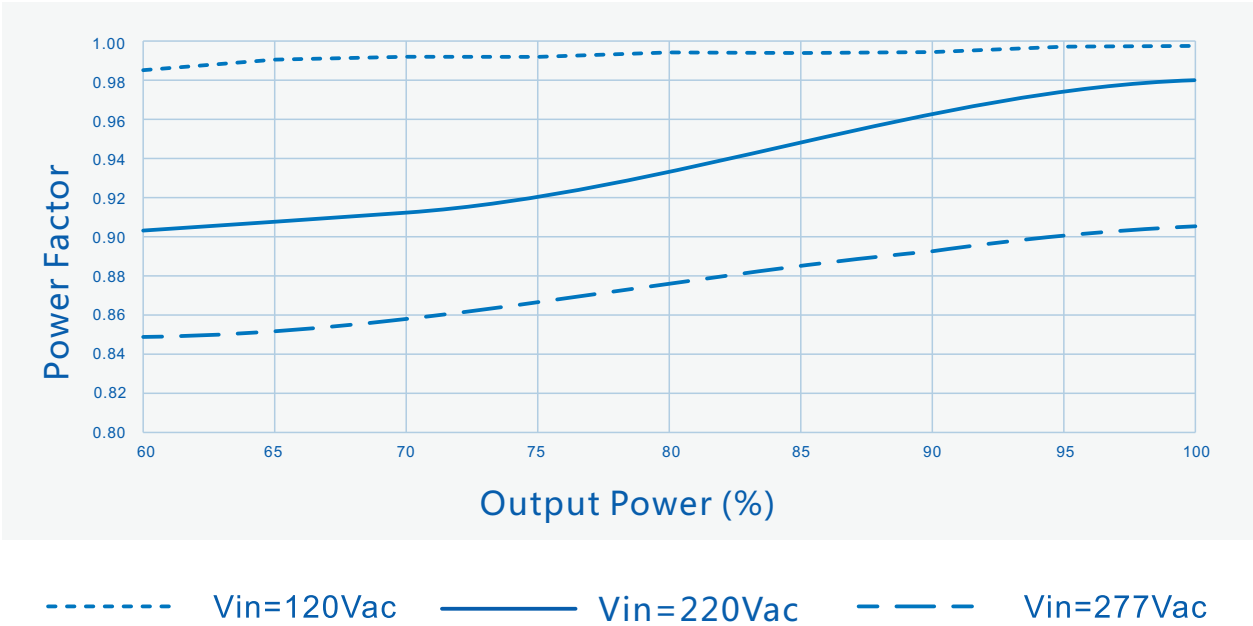
----- Io=1200mA

———— Io=920mA

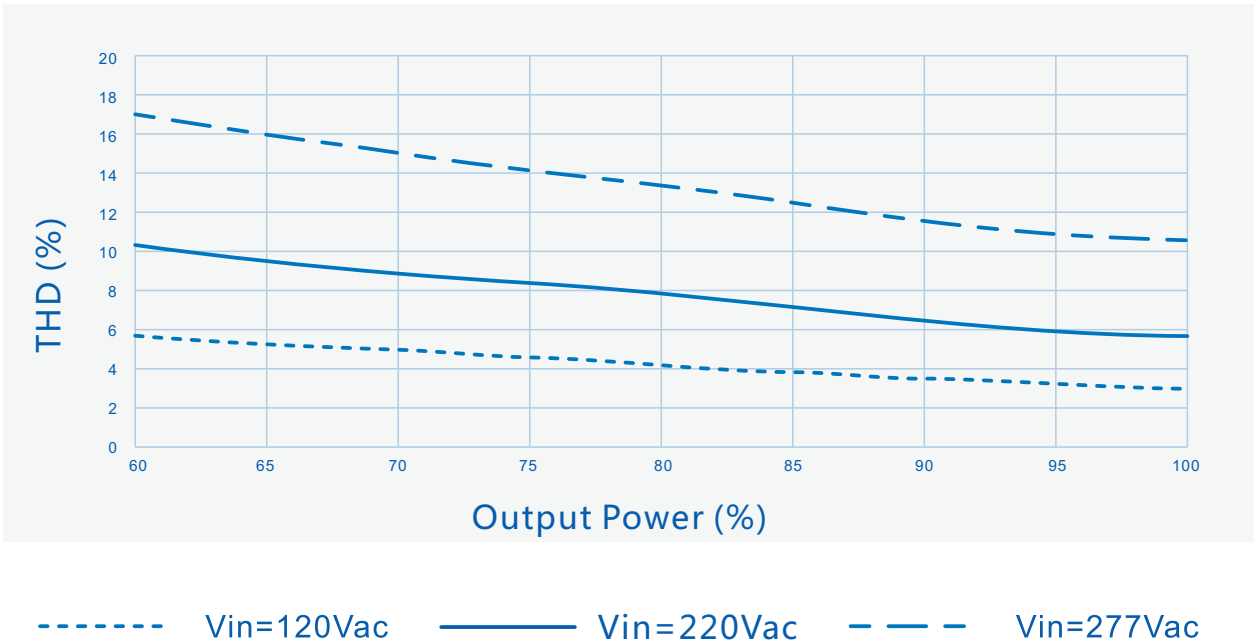
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Performance Curves:

Power Factor Vs. Output Power



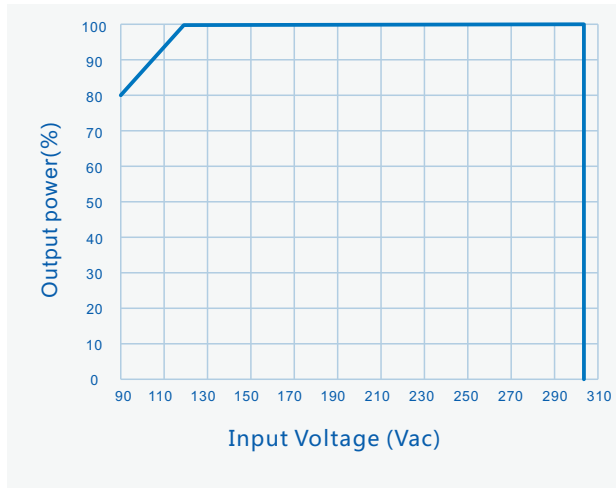
THD Vs. Output Power



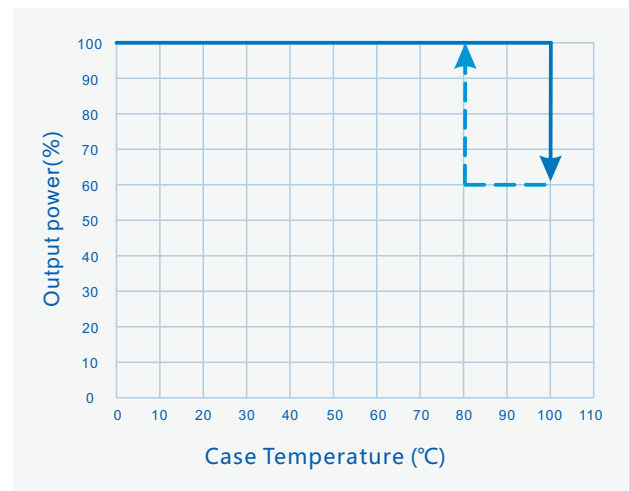
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Performance Curves:

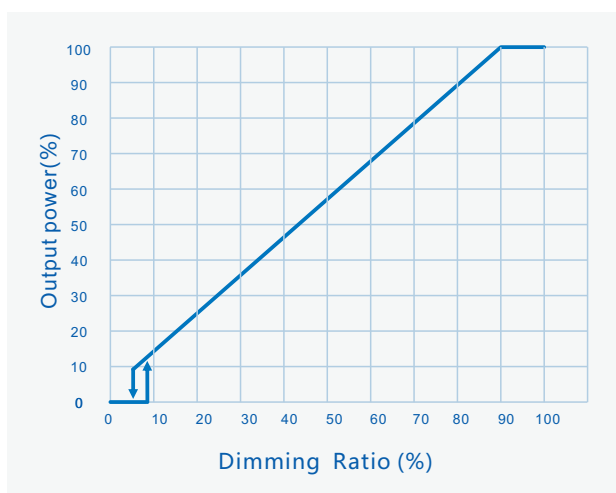
Output power Vs. Input Voltage
(Ta Max.50°C)



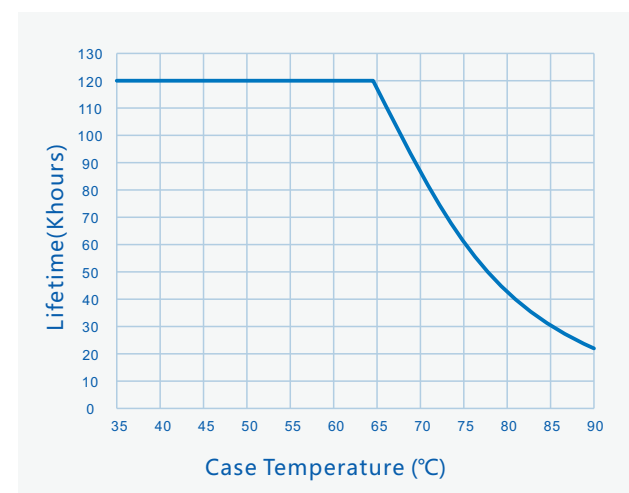
Output power Vs. Case Temperature



Output Power Vs. Dimming

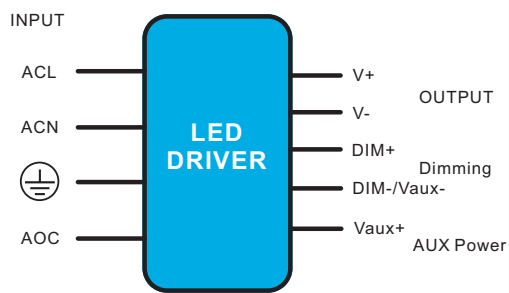


Lifetime Vs. Case Temperature



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Mechanical Characteristics



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

UL/EU model: 18AWG 105°C 600V I.D: 1.0mm O.D: 2.7mm,Black:L,White:N,Green:⏏

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

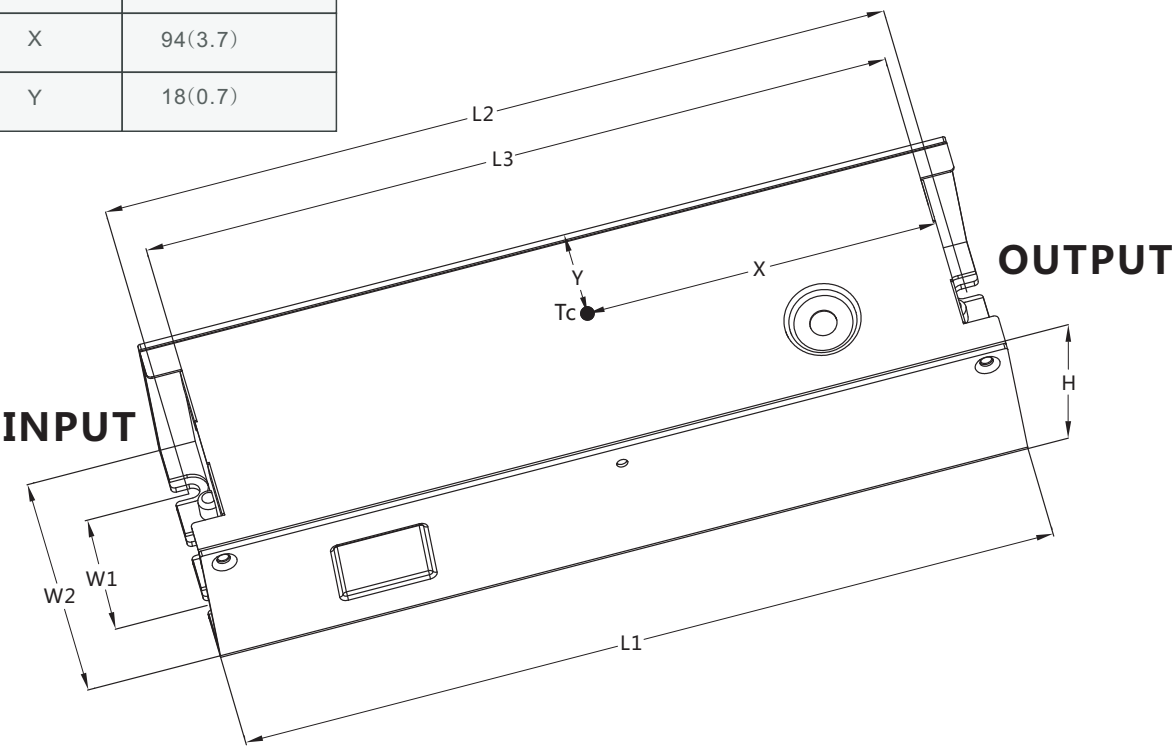
UL/EU model: 18AWG 105°C 600V I.D: 1.0mm O.D: 2.7mm,Red:V+ , Black:V-

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

UL/EU model: 18AWG 105°C 600V I.D: 1.0mm O.D: 2.7mm , Purple : DIM+, Gray: DIM- White: Vaux+,

Name Description	Standard Code	mm(In.)
Case Length	L3	168.5(6.63)
Case Width	W2	63.5(2.5)
Case Height	H	37(1.45)
Overall Length	L1	183(7.2)
Mounting Hole Length	L2	175(6.89)
Mounting Hole Width	W1	32(1.26)
TC point position	X	94(3.7)
TC point position	Y	18(0.7)

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:6±1mm



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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. Withstand voltage of dielectric layers between aluminum PCB and LED>3KV.
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.

Package

- Outside carton dimension: L×W×H =495mm×385mm×162mm;
- 20PCS/Carton;
- Net weight/Piece: 0.85kg;Gross weight/Carton: 18.5kg;
- 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 European Directive 2011/65/EC.

Revision History

Version	Description of Update	Updated Date	Remark
V00	Original Release	2019/08/14	
V01	Delete CCC Insulation Requirements	2019/11/14	
V02	Update Assembly Tips	2019/12/10	
V03	Update Structure Dimension	2020/04/11	
V04	Increase TUV Certification	2020/07/18	
V05	Update Mechanical Characteristics	2020/09/14	
V06	Update Package Quantity	2020/10/17	

