



SOSEN LED Driver, Your Smart Choice

Specifications

SS-120CNL Series LED Driver

Model: SS-120CNL-130*

Description: 120W LED Driver

Rev.: V10

Release Date: 2021-11-11

SS-120CNL Series LED Driver

SOSEN
LED DRIVER



LED DRIVER

CNL Series



Features:

- Efficiency up to 93%
- Isolated dimming:0-10V,PWM,Resistor
- Optional aux : 12V/0.2A
- IP65
- Protections: SCP/OTP/OVP
- Surge protection: CM: 6kV, DM: 6kV
- Warranty: 5 years



IP65

Description:

SS-120CNL series are 120W round non-isolated constant current LED Driver. It is specially designed for commercial lightings with isolation dimming function. Ultra high efficiency, compact housing design and fully potted thermally conductive silicon ensure LED Driver cooling and waterproof, high reliability, high cost performance and many more.

Applications:

High bay lighting, High pole lighting

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-120CNL-130*	90-305Vac	120W	90-130V	120-130V	0.7-1.0A	7%	0.96	93%	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.

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“*” Means Additional Function

“*”	DALI (suffix:D)	AUX 12V (suffix:H)	Timing (suffix:T)	0-10V/PWM /Resistor (suffix:B)	Remark
No Suffix					
B				✓	
BH/BHC		✓		✓	

Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	100Vac		277Vac	
AC Input Range	90Vac		305Vac	Reference derating curve
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			1.5A	100Vac, Full load
Max Input Power			150W	100Vac, Full load
Max Inrush Current(120Vac)			60A	Cold start
Max Inrush Current(220Vac)			80A	Cold start
Max Inrush Current(277Vac)			100A	Cold start
Standby Power			0.5W	220Vac/50Hz, No load
Power Factor	0.95	0.97		220Vac/50Hz, Full load
	0.90			100-277Vac/50Hz, 70%-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
Output Voltage Range	90V		130V	
Rated Output Voltage	120V		130V	$P_o = V_o \cdot I_o = 120W$, Full load
Rated Output Current	0.92A		1.0A	1.0A for 120V, 0.92A for 130V
Adj. O/P Current (AOC) Range	0.7A		1.0A	
No Load Voltage			180V	
Efficiency @120Vac	89.0%	91.0%		Output 130V/0.92A
Efficiency @220Vac	91.0%	93.0%		Output 130V/0.92A
Efficiency @277Vac	91.5%	93.5%		Output 130V/0.92A
Output Current Tolerance	-5%		+5%	
Output Current Ripple(PK-AV)		5%	10%	
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	Tc: 0°C~90°C
OTP	90°C	100°C	110°C	>Tc Typ., Current derating <Tc 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	10.8V	12V	13.2V	Maximum no-load voltage 14V
	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	0.95V	When DIM- and Vaux- are shared with single wire output, the dimming off point and dimming on point are tested under no load of the auxiliary power.
	Dim on	1.0V	1.1V	1.2V	
Lifetime(Tc≤72°C)		≥62,000 hours			80% load,220Vac
MTBF		200,000 hours			220Vac,Full load, Ta=25°C (MIL-HDBK-217F)
IP Grade		IP65			
Tc		90°C			
Warranty		5 years			Tc: 72°C
Net Weight		860g			
Dimension		Φ130.5mm*61.8mm			D 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 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/EN 61000-4-5	DM: 6kV,CM: 6kV,Criterion B
	ANSI/C82.77-5-2017	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:

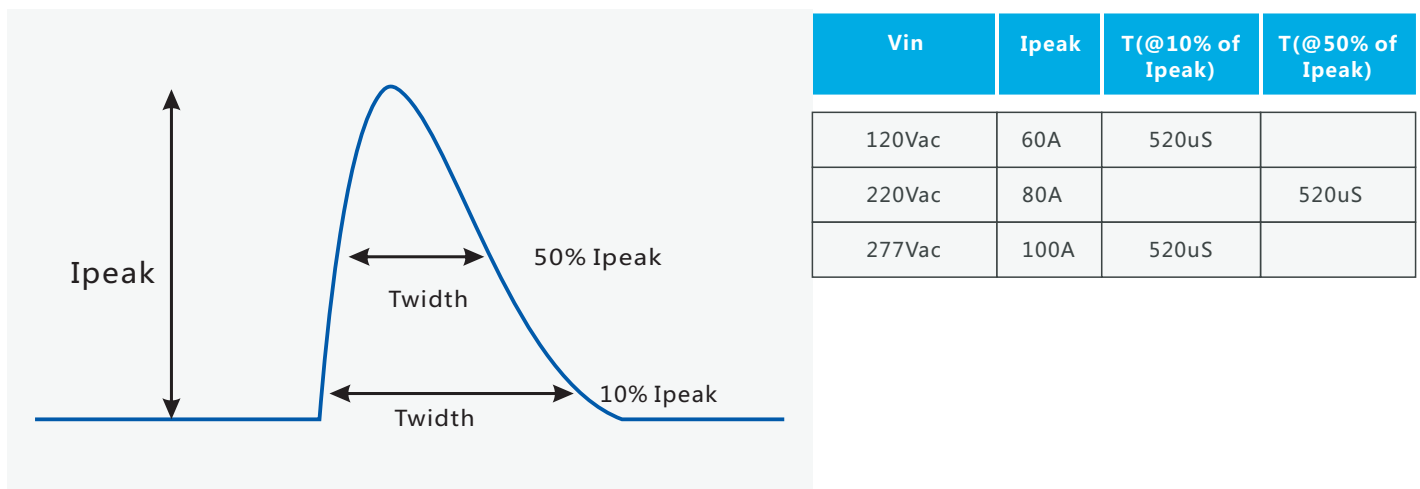
Safety test items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	TUV Insulation Requirements	CCC Insulation Requirements	
Input-Case	1600Vac	1500Vac	1875Vac	Basic insulation
Input-Dim	1600Vac	3000Vac	3750Vac	Reinforced insulation
O/P-Dim	1600Vac	3000Vac	3750Vac	Reinforced 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 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:

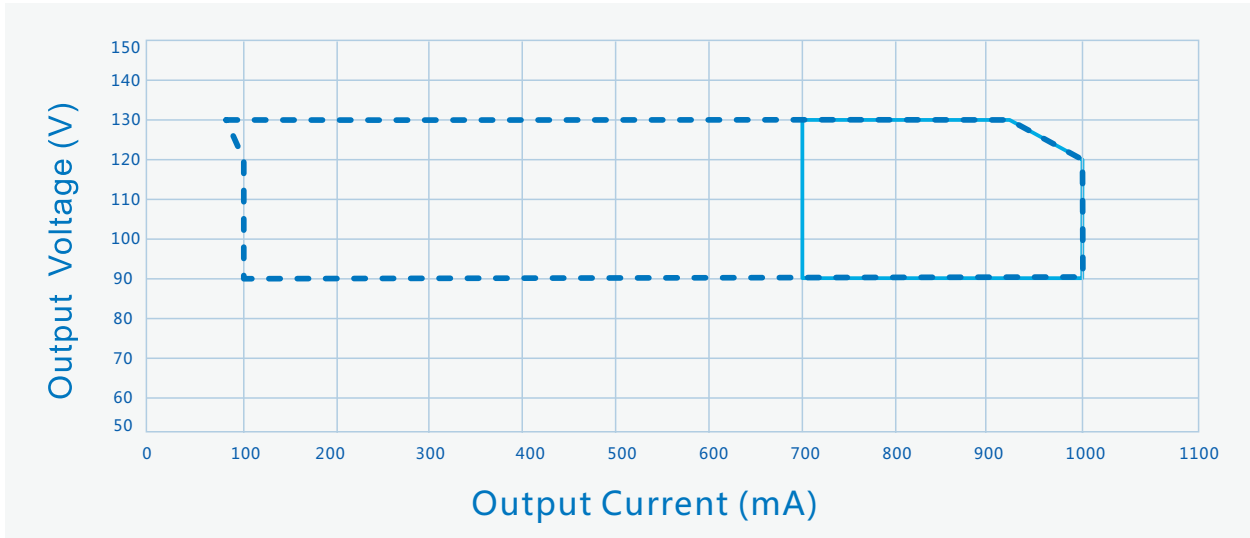
Input Inrush Current



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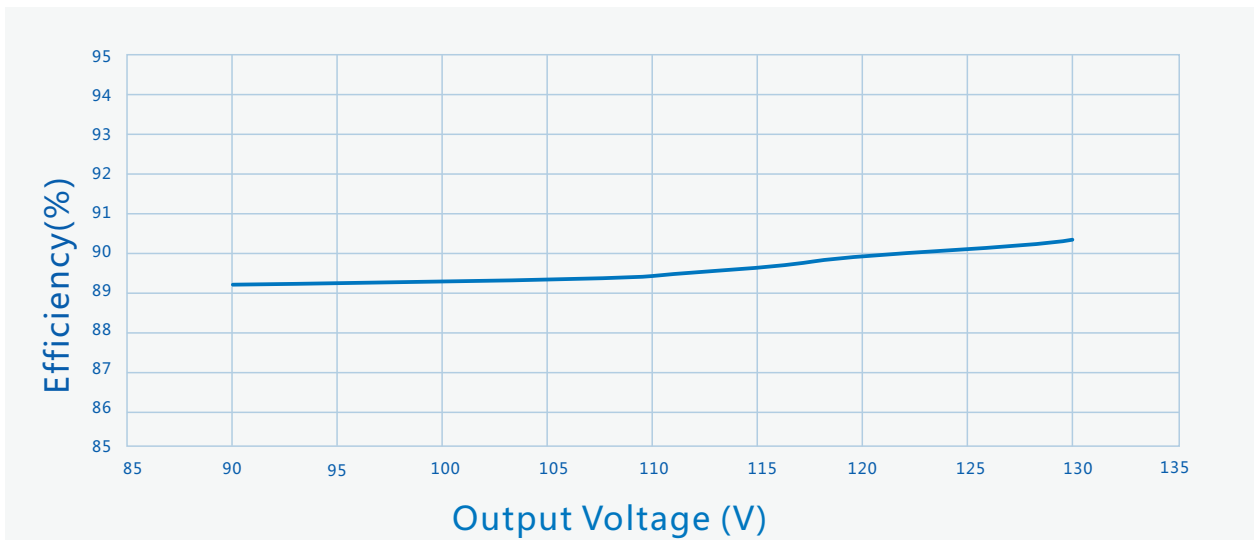
Performance Curves:

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



----- Dimming Window ————— AOC Window

Efficiency Vs. Output Voltage ($V_{in}=120V_{ac}$)

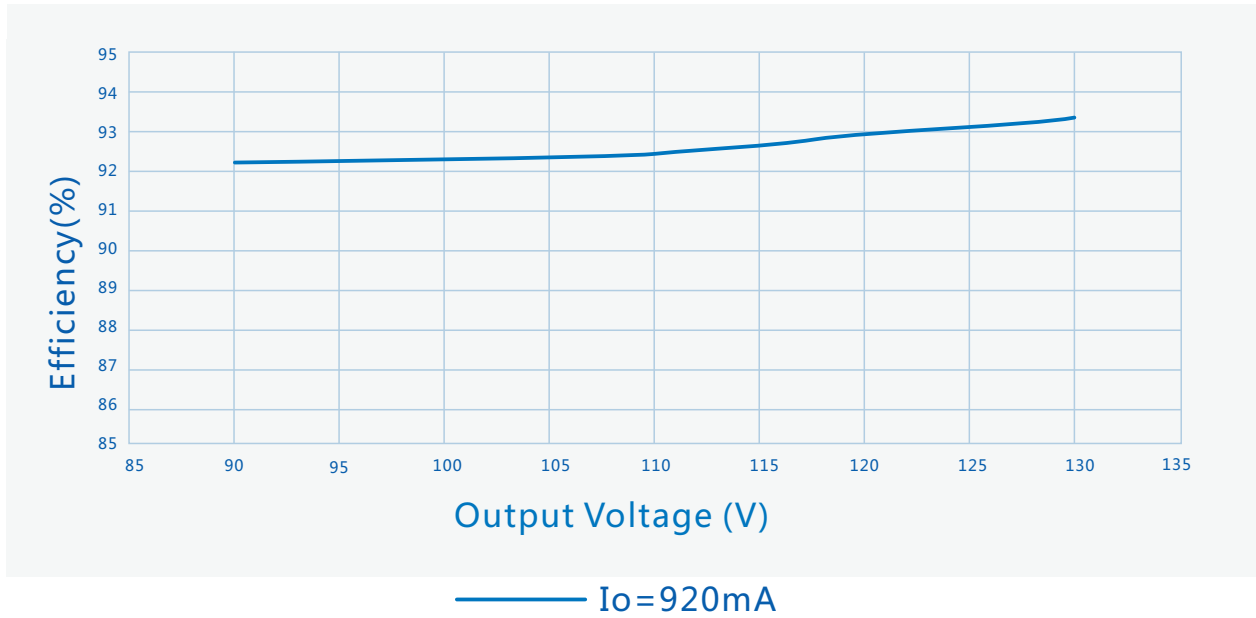


————— $I_o=920mA$

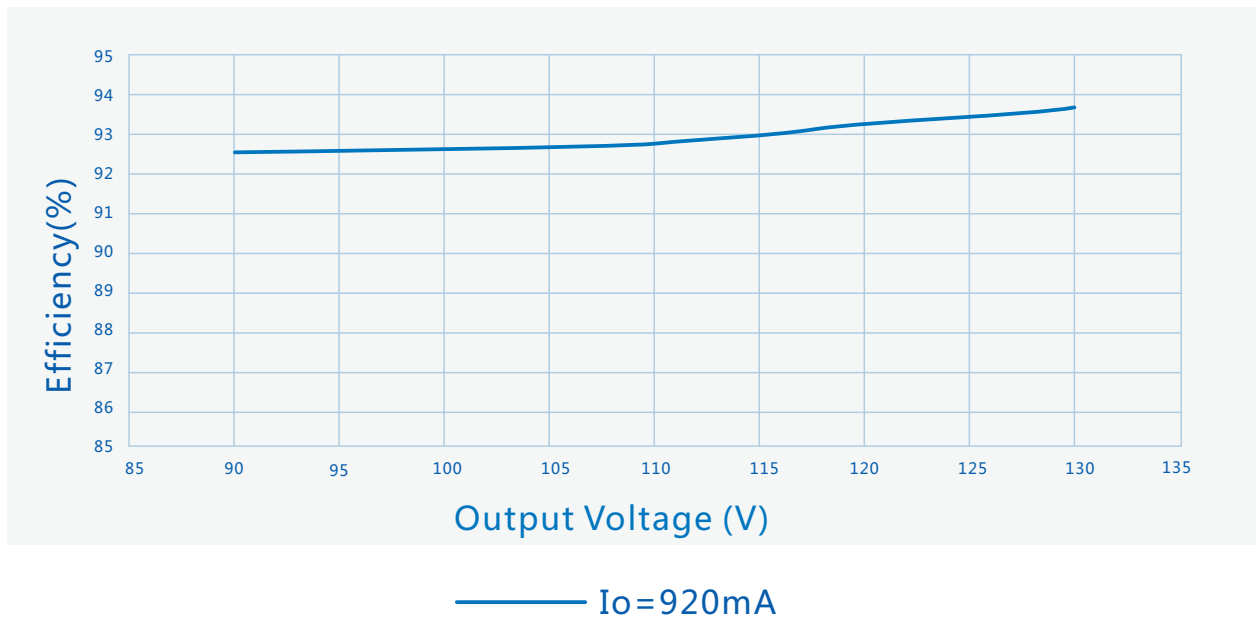
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Performance Curves:

Efficiency Vs. Output Voltage ($V_{in}=220V_{ac}$)



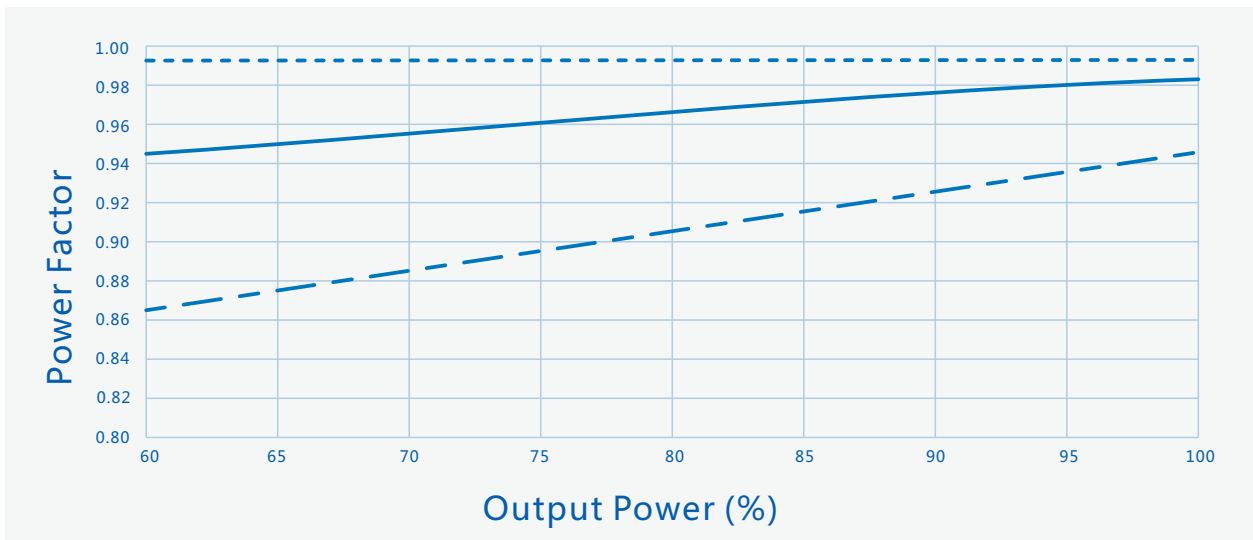
Efficiency Vs. Output Voltage ($V_{in}=277V_{ac}$)



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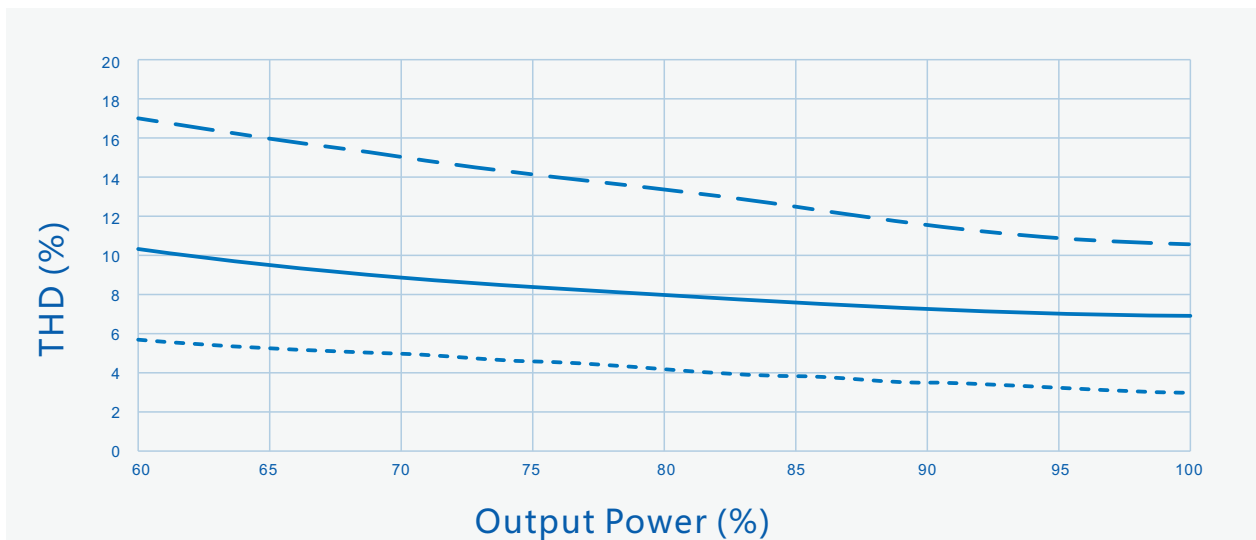
Performance Curves:

Power Factor Vs. Output Power



----- Vin=120Vac ——— Vin=220Vac - · - · Vin=277Vac

THD Vs. Output Power

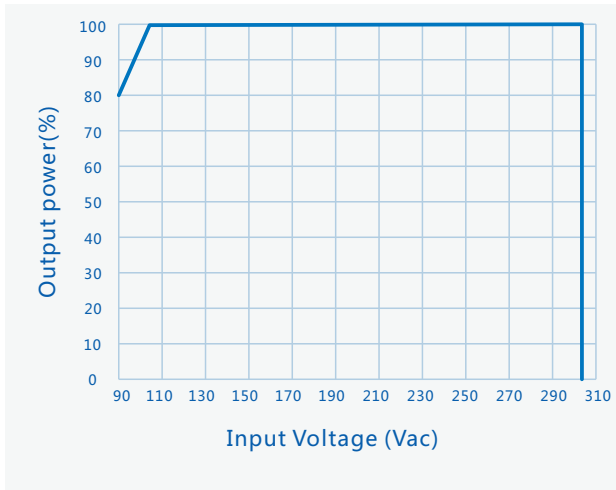


----- Vin=120Vac ——— Vin=220Vac - · - · Vin=277Vac

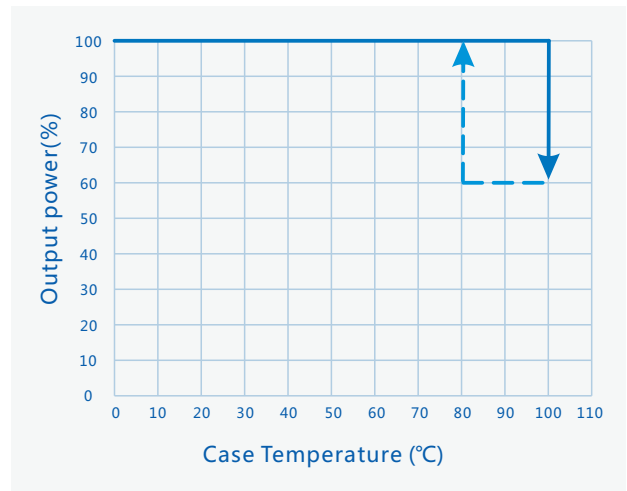
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Performance Curves:

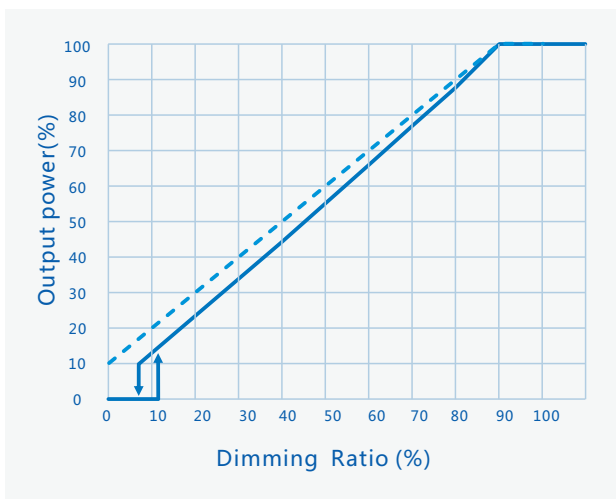
Output power Vs. Input Voltage (Ta Max.60°C)



Output power Vs. Case Temperature

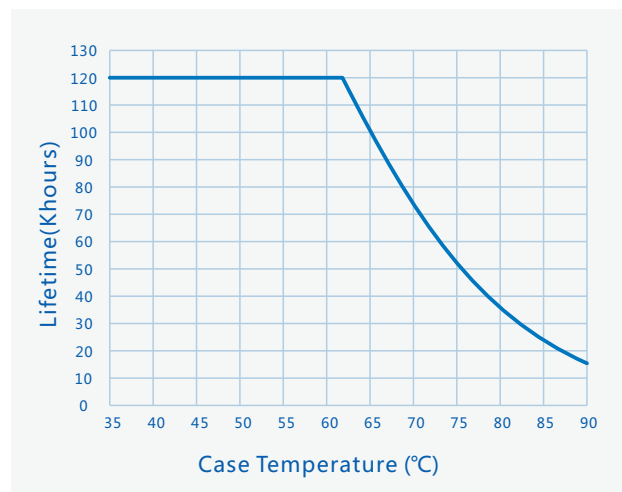


Output Power Vs. Dimming



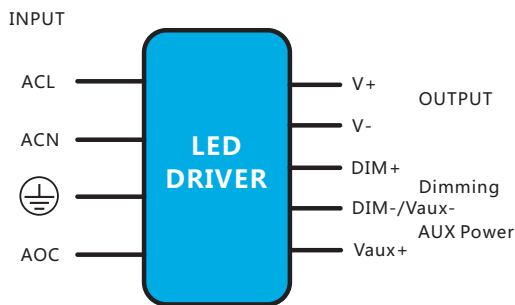
—— BH/BHC Type - - - - - B Type

Lifetime Vs. Case Temperature



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Mechanical Characteristics:



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

UL model: SJTW,3*18AWG,O.D: 7.8mm,Black:L,White:N,Green:⊕
 EU model: H05RN-F,3*1.0mm², ,O.D:7.3mm,Brown:L, Blue:N,Yellow/Green:⊕
 Global model: SJOW,3*17AWG ,O.D:8.0mm,Brown:L, Blue:N,Yellow/Green:⊕

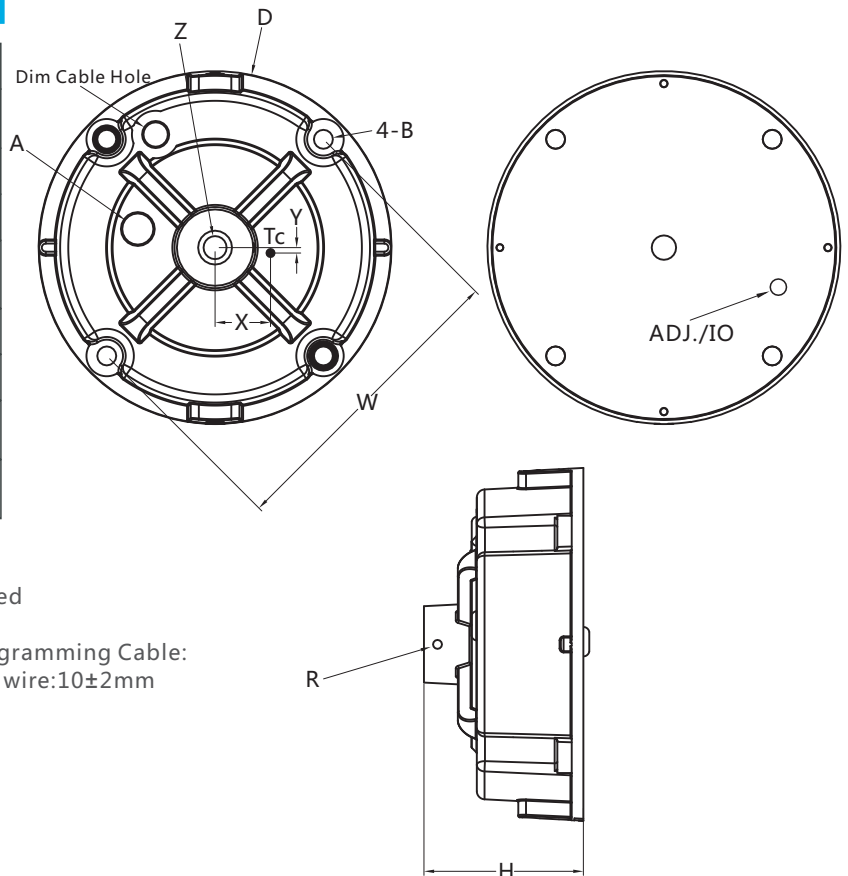
DC Output Cable(Exposed Length 300±10mm):

UL model: SJTW,2*18AWG,O.D: 7.3mm,Red:V+ , Black:V-
 EU model: H05RN-F,2*1.0mm², O.D:7.0mm, Brown:V+ , Blue:V-
 Global model: SJOW,2*17AWG ,O.D:7.7mm, Brown:V+ , Blue:V-

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

UL/EU/Global Model(BHC Model): UL 21996 4*22AWG , O.D: 5.6mm , Purple: DIM+ , Pink: DIM- , Black/White: Vaux+ , Blue/White: Vaux-
 UL/EU/Global Model(BH Model): UL 21996 3*22AWG , O.D: 4.9mm , Purple: DIM+ , Pink: DIM- /Vaux- , Black/White: Vaux+
 UL/EU/Global Model(B Model): UL 2733 2*22AWG , O.D: 5.7mm , Purple: DIM+ , Pink: DIM-

Name Description	Standard code	mm(In.)
Input line hole	A	11.5(0.45)
Fixed Screw Diameter	4-B	Φ7.0(0.28)
Case Diameter	D	Φ130.5(5.14)
Height	H	61.8(2.43)
Ring Hole	Z	M10*1.5(Depth 18mm) G1/2(Depth 17mm)
Ring Fixed Hole	R	M4*0.7
Fixed Size	W	113(4.45)
TC point position	X	20.4(0.8)
TC point position	Y	2.0(0.08)



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

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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;
- 9PCS/Carton;
- Net weight/Piece: 0.86kg;Gross weight/Carton: 9.24kg;
- 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	2019/07/22	
V01	Update Installation Tips	2019/09/18	
V02	Add Auxiliary Source	2019/11/06	
V03	Update Structure Dimension Characteristics	2020/04/02	
V04	Update Mechanical Characteristics	2020/09/17	
V05	Increase BHC Model	2020/12/11	
V06	Increase Global Cable	2021/03/24	
V07	Update Dim To Off Point	2021/04/16	
V08	Update Tinned Length Of Wire	2021/07/02	
V09	Update THD Vs. Output Power Curve	2021/09/02	
V10	Increase Note About Dim To Off	2021/11/11	