

SOSEN LED Driver, Your Smart Choice

Specifications

SS-120CNL-E(64) Series LED Driver

Model: SS-120CNL-E260*

Description: 120W LED Driver

Rev.: V04

Release Date: 2023-11-15

SS-120CNL-E(64) Series LED Driver

SOSEN
LED DRIVER



LED DRIVER

CNL-E(64) Series



Features:

- Efficiency up to 95%
- Isolated dimming: DALI-2, 0-10V, PWM, Resistor
- Optional aux : 12V/0.2A
- Dim to off
- Protections: SCP/OTP/OVP
- IP65
- Surge protection: CM: 6kV, DM: 6kV
- Warranty: 5 years



IP65

RoHS

Description:

SS-120CNL-E(64) 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	Default Current	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-120CNL-E260*	90-305Vac	120W	180-260V	200-260V	0.4-0.6A	0.5A	8%	0.97	94.5%	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.

SS-120CNL-E(64) Series LED Driver

“★” Means Additional Function

“★”	DALI (suffix:D)	AUX 12V (suffix:H)	Dimming off 0-10V/PWM/Resistor	1-10V/PWM /Resistor (suffix:B)	Remark
No Suffix					
B				✓	
BH		✓	✓		
D	✓				

Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	120Vac		277Vac	
AC Input Range	90Vac		305Vac	Reference derating curve
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			1.2A	120Vac, Full load
Max Input Power			144W	120Vac, 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, Dim to off, For BH model
Power Factor	0.95	0.97		220Vac/50Hz, Full load
	0.90			120-277Vac/50Hz, 70%-100% load
THD		8%	12%	220Vac/50Hz, Full load
			20%	120-277Vac/50Hz, 70%-100% load

SS-120CNL-E(64) Series LED Driver

Output Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Output Voltage Range	180V		260V	Power Derated @180-200V
Rated Output Voltage	200V		260V	$P_o = V_o \cdot I_o = 120W$, Full load
Rated Output Current	0.46A		0.6A	0.6A for 200V, 0.46A for 260V
Adj. O/P Current (AOC) Range	0.4A		0.6A	
No Load Voltage			310V	
Efficiency @120Vac	90.0%	92.0%		Output 260V/0.46A
Efficiency @220Vac	92.5%	94.5%		Output 260V/0.46A
Efficiency @277Vac	93.0%	95.0%		Output 260V/0.46A
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
			0.75S	220Vac, Full load, DALI-2
Line Regulation	-2%		+2%	Full load
Load Regulation	-3%		+3%	
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				Driver will not be damaged
				Driver will not be damaged, Shut down for DALI-2

SS-120CNL-E(64) Series LED Driver

Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
Aux Power (Optional)	O/P Voltage	10.8V	12V	13.8V	
	O/P Current			200mA	
0-10V Dimming (Optional)	Dim Vmax	0V		12V	DIM+ source current 100uA.
	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 100uA.
	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 100uA.
	Dim Range	10%Iomax		100%Ioset	
Dim to Off (BH Type)	Dim off	0.7V	0.8V	0.95V	Afterglow(Standard)
	Dim on	0.95V	1.1V	1.2V	Without afterglow(Optional)
DALI Dimming Level		1-170(10%)		254(100%)	Logarithmic dimming curve
DALI Dimming(Optional)		Meet DALI-2			
Lifetime(Tc≤85°C)		≥50,000 hours			
MTBF		200,000 hours			220Vac,Full load, Ta=25°C (MIL-HDBK-217F)
IP Grade		IP65			
Tc		90°C			
Warranty		5 years			Tc: 85°C
Net Weight		735g			
Dimension		Φ128mm*62.5mm			D x H

NOTE: All the parameters above are tested Ta 25°C and LED load, unless specified.

SS-120CNL-E(64) Series LED Driver

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	✓	
UKCA	EN 61347-1:2015+A1:2021 EN 61347-2-13:2014+A1:2017 EN 62493:2015 BS EN 61347-1:2015+A1:2021 BS EN 61347-2-13:2014+A1:2017 BS EN 62493:2015	✓	
EAC	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013 TP TC 004/2011 TP TC 020/2011	✓	
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	EN IEC 55015:2019+A11:2020	
Radiation Emission	EN IEC 55015:2019+A11:2020	
Harmonic Current Emissions	IEC/EN 61000-3-2:2019+A1:2021	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 ^①
Ring Wave	IEC/EN 61000-4-12;ANSI/C82.77-5-2017	DM: 6kV,CM: 6kV,Criterion B

Note: ① ANSI/C82.77-5-2017 surge standard is optional.

SS-120CNL-E(64) Series LED Driver

Safety Test Items:

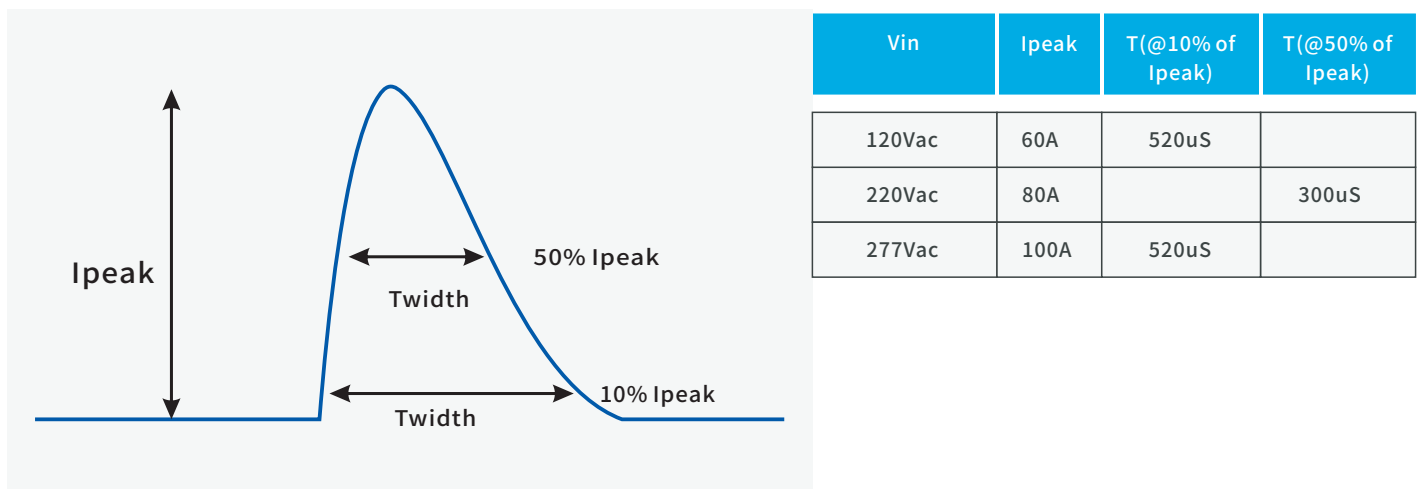
Safety test items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	TUV Insulation Requirements	CCC Insulation Requirements	
Input-Case	1600Vac	1500Vac	1875Vac	Basic insulation
Input-Dim	1600Vac	3000Vac	3750Vac	Reinforced insulation
O/P-Dim	1600Vac	3000Vac	3750Vac	Reinforced insulation
Dim-Case	500Vac	500Vac	500Vac	Basic insulation
Insulation Resistance	$\geq 10M\Omega$			Input-Dim, Test voltage: 500Vdc
Ground Resistance	$\leq 0.1\Omega$			25A/1min
Leakage Current	$\leq 0.75mA$			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. During the HI-POT, the built-in GDT and the ground connection terminal wire shall be disconnected.

Performance Curves:

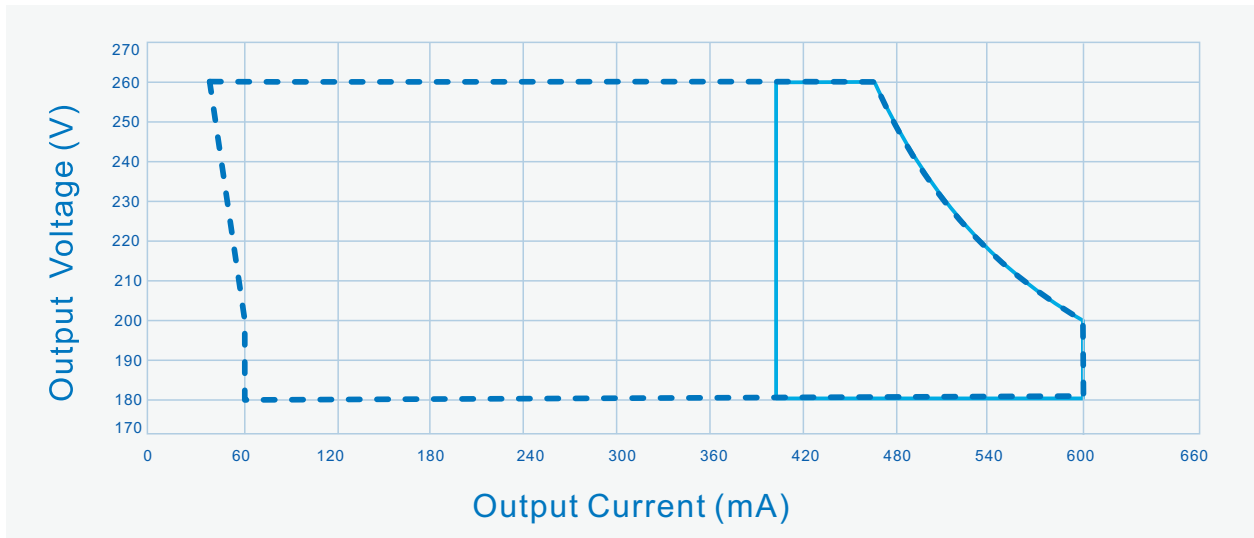
Input Inrush Current



SS-120CNL-E(64) Series LED Driver

Performance Curves:

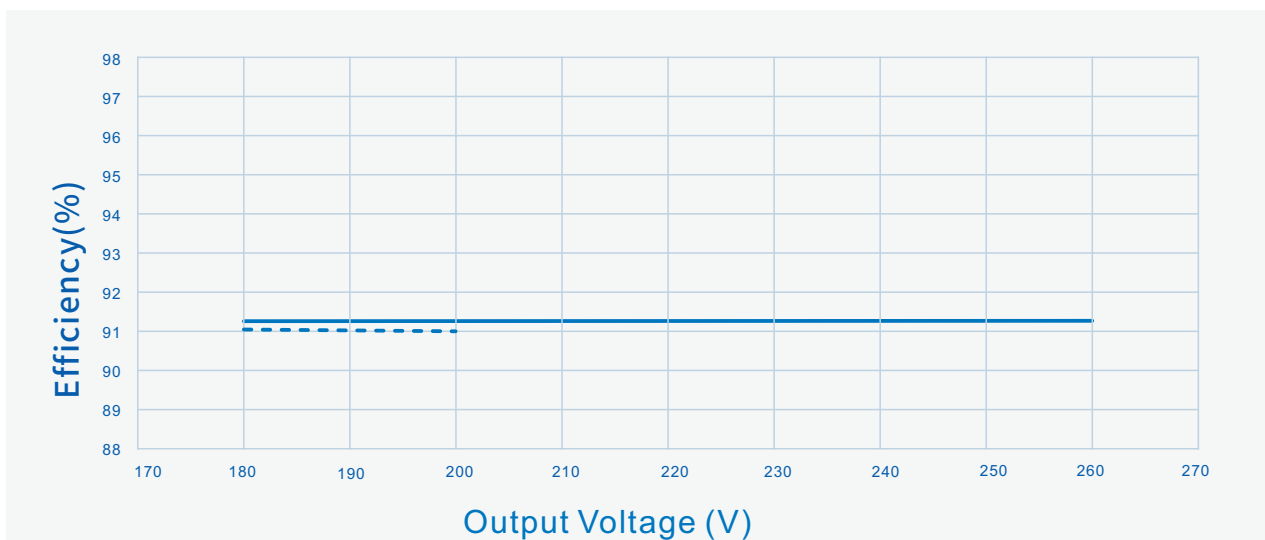
Output Voltage Vs. Output Current(Dim/AOC Window)



----- Dimming Window

————— AOC Window

Efficiency Vs. Output Voltage (Vin=120Vac)



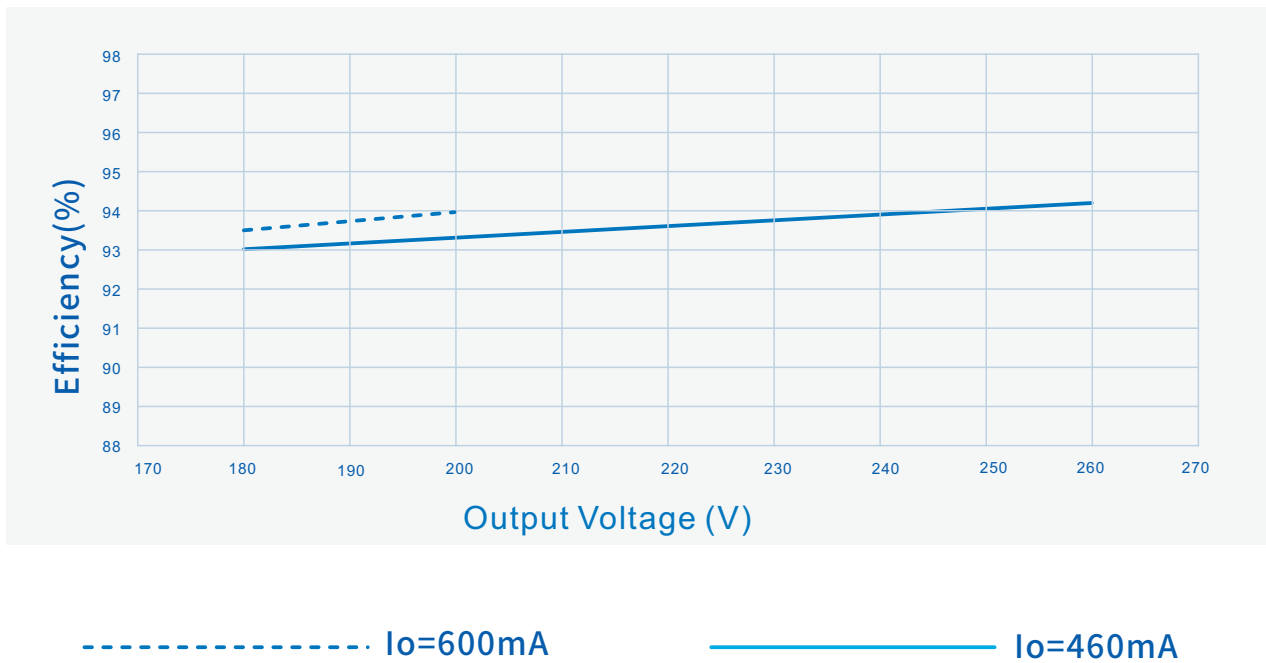
----- Io=600mA

————— Io=460mA

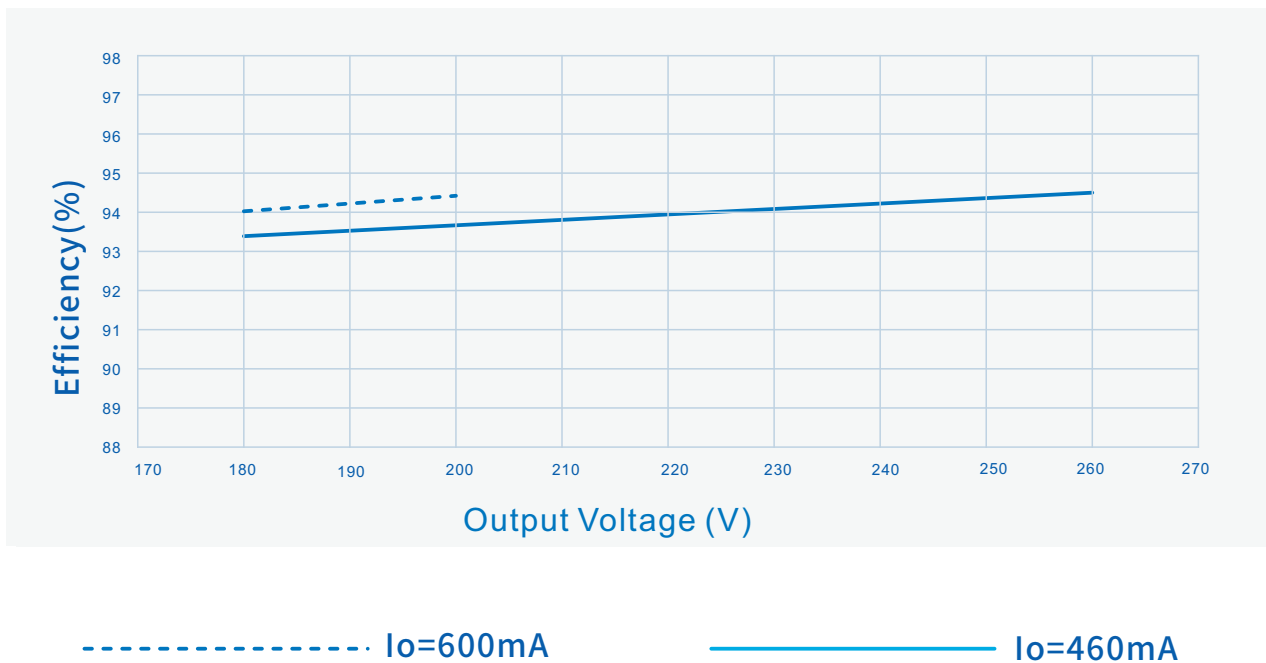
SS-120CNL-E(64) Series LED Driver

Performance Curves:

Efficiency Vs. Output Voltage (Vin=220Vac)



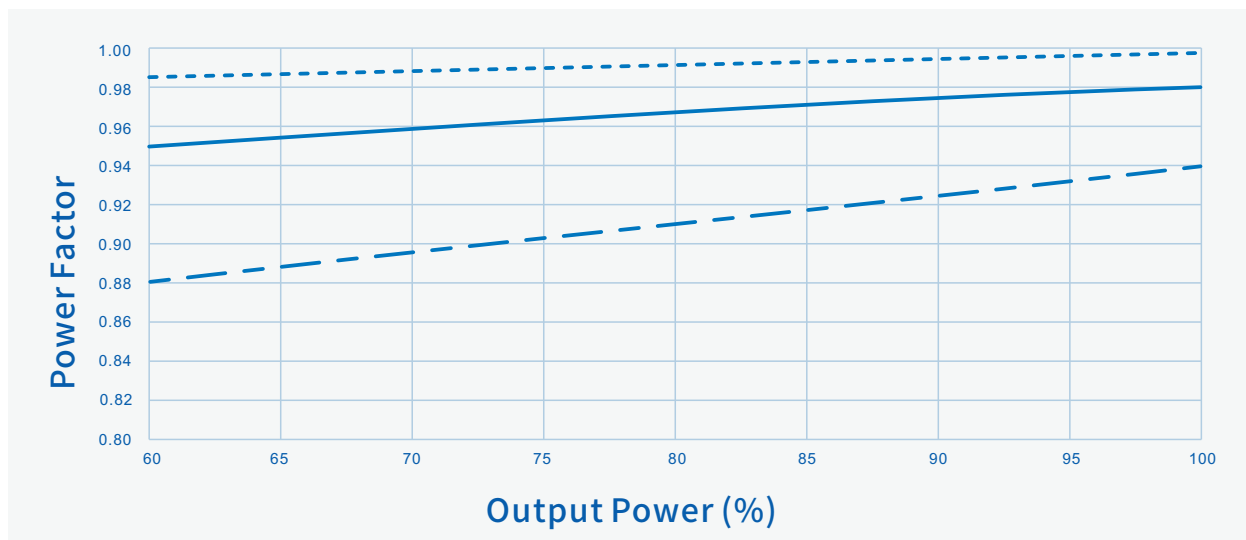
Efficiency Vs. Output Voltage (Vin=277Vac)



SS-120CNL-E(64) Series LED Driver

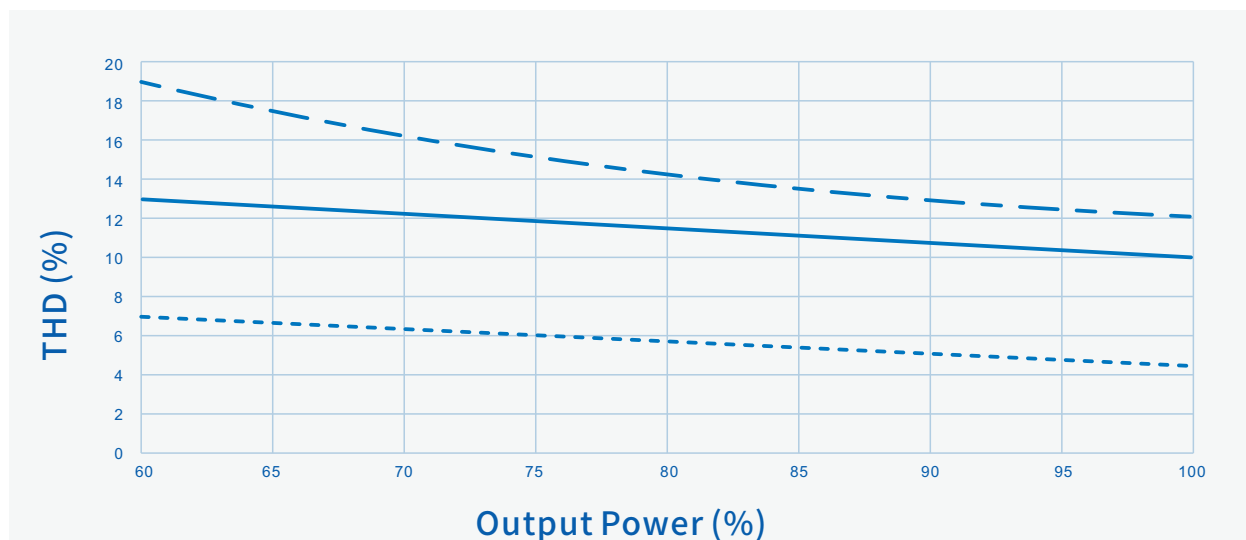
Performance Curves:

Power Factor Vs. Output Power



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

THD Vs. Output Power

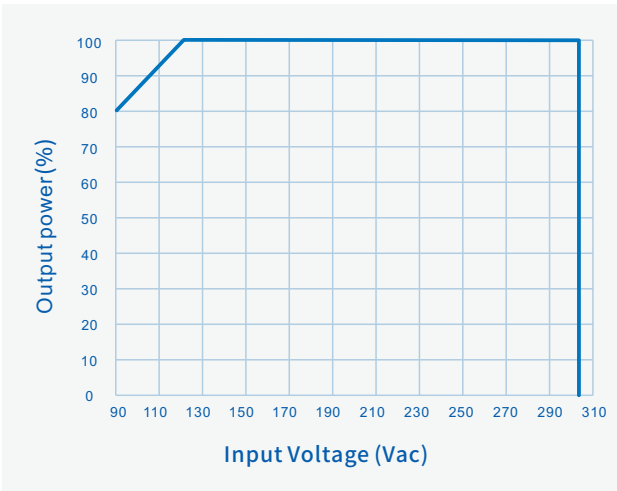


----- Vin=120Vac ————— Vin=220Vac - . - . Vin=277Vac

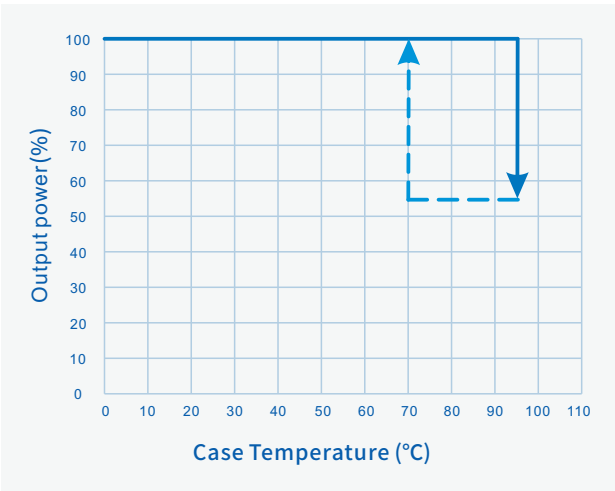
SS-120CNL-E(64) Series LED Driver

Performance Curves:

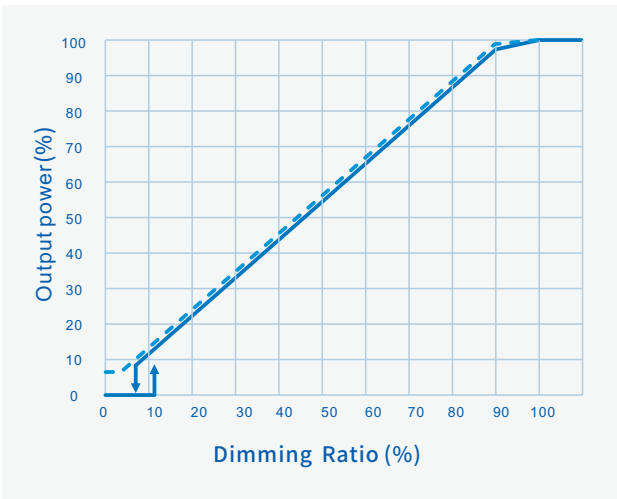
Output power Vs. Input Voltage



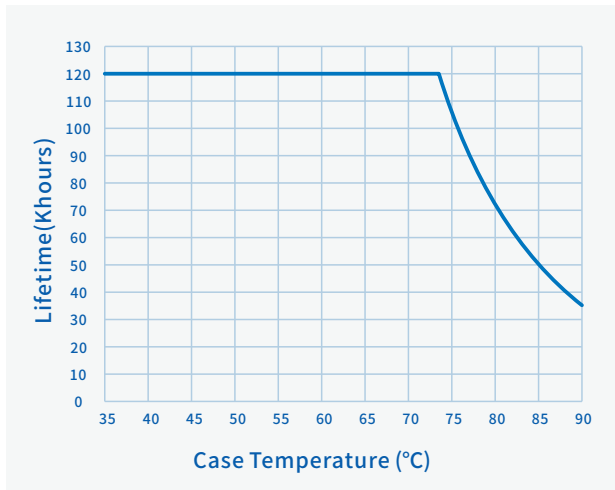
Output power Vs. Case Temperature



Output Power Vs. Dimming



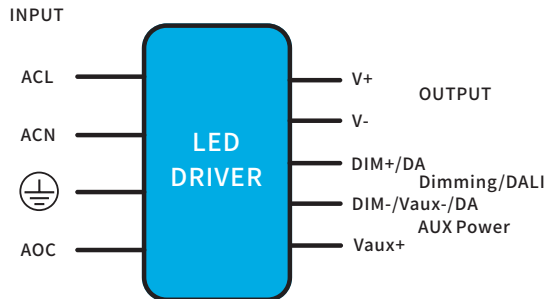
Lifetime Vs. Case Temperature



—— BH Type - - - - - B Type

SS-120CNL-E(64) Series LED Driver

Mechanical Characteristics:



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

Global model: SJOW,3*17AWG ,O.D:8.0mm,Brown:ACL, Blue:ACN,Yellow/Green: ⏏

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

Global model: SJOW,2*17AWG ,O.D:7.7mm, Brown:V+, Blue:V-

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

UL/EU/Global Model:

UL 21996 3*22AWG , O.D: 4.9mm, Purple: DIM+, Pink: DIM-/Vaux-, Black/White: Vaux+

UL 21996 2*22AWG , O.D: 4.7mm, Purple: DIM+, Pink: DIM-

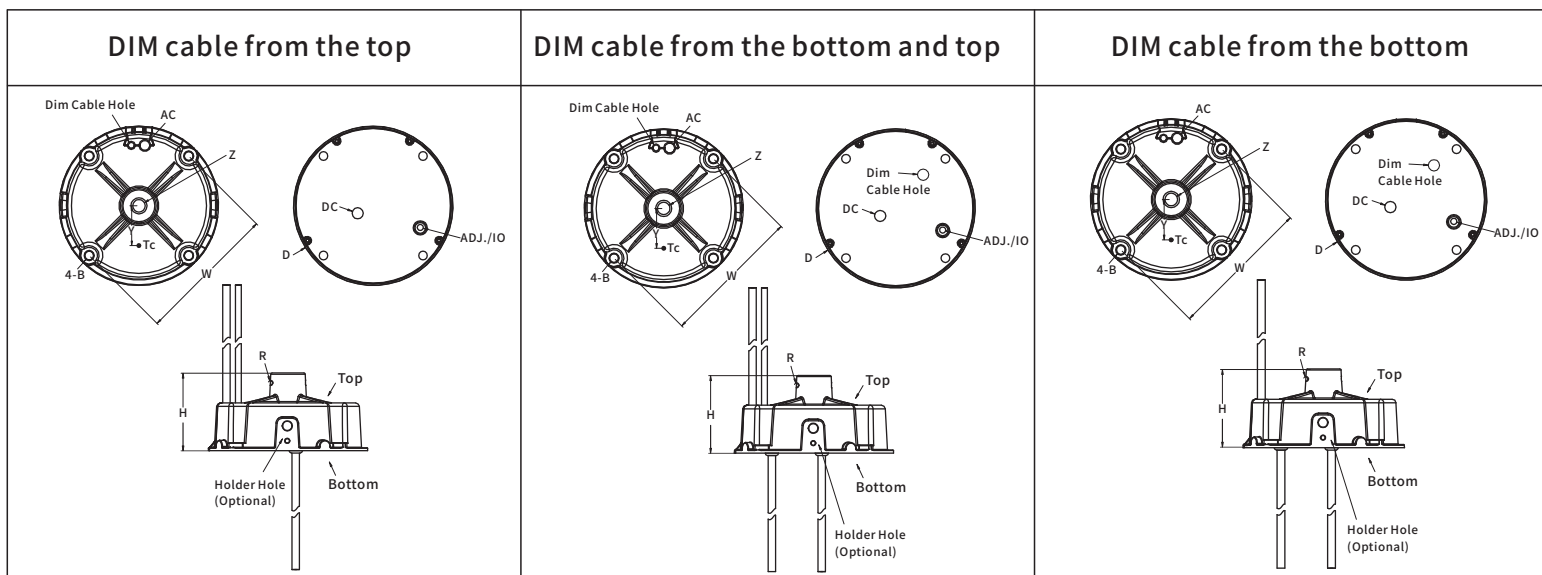
UL 21996 2*22AWG , O.D: 4.7mm, Purple: DA, Pink: DA

Name Description	Standard code	mm(In.)
Fixed Screw Diameter	4-B	$\Phi 7.0(0.28)$
Case Diameter	D	$\Phi 128(5.04)$
Height	H	62.5(2.46)
Ring Hole	Z	M10*1.5(Depth 18mm) G1/2(Depth 18mm)
Ring Fixed Hole	R	M4*0.7
Fixed Size	W	113(4.45)
TC Point Position	Y	32(1.26)

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: $43\pm 5\text{mm}$, Tinned length of wire: $10\pm 2\text{mm}$



SS-120CNL-E(64) Series LED Driver



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. Safety space between aluminum base and LED coppers >5mm.
4. Safety space/coppers between LED+ and LED- >1.8mm.
5. Minimize the copper area on the aluminum PCB to reduce parasitic capacitance and leakage current.
6. It is recommended to design LED beads in parallel first and then in series.
7. The insulation level of LED light panels should meet the reliability design requirements.
8. For other precautions, please refer to the "LED Driver User Manual" .

Package

- Outside carton dimension: $L \times W \times H = 495\text{mm} \times 385\text{mm} \times 162\text{mm}$;
- 9PCS/Carton;
- Net weight/Piece: 0.735kg;Gross weight/Carton: 7.81kg;
- 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	2022/06/30	
V01	Add DALI Model	2023/02/01	
V02	Update Assembly Tips	2023/04/14	
V03	Update Remark Of Dim To Off	2023/05/06	
V04	Update Lifetime	2023/11/15	

