SOSEN LED DRIVER

SOSEN LED Driver, Your Smart Choice

Specifications

SS-480CA Series LED Driver

Model: SS-480CA-XX*

Description: 480W LED Driver

Rev.: V05

Release Date: 2023-02-01

SS-480CA Series LED Driver

SOSEN
LED DRIVER

LED DRIVER
—
CA Series

Features:

- Efficiency up to 94%
- Dimming: DALI-2,0-10V,PWM,Resistor,Timing
- Dim-to-Off
- Surge protection: CM: 6kV, DM: 6kV
- Auxiliary Power : 12V/0.2A
- Standby Power<0.5W
- IP65
- Type HL, suitable for hazardous locations
- Protections: SCP/OTP/UVP/OPP
- Warranty: 5 years

05 DALI-2 c UL us LISTED E360758

CE IP65 Class P

Description:

SS-100CA series are constant current waterproof LED Driver in round shape with 90-305Vac and high efficiency, supporting multiple dimming models, dim-to-off,auxiliary power

Applications:

High bay lighting, Plant lighting,

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Working Voltage	Iout	Iout (DALI-2)	THD (Typ.)	PF (Typ.)	Eff. (Typ.)	Max.Tc
SS-480CA-228*	90-305Vac	480W	114-228V	171-228V	1.4-2.8A	1.55-2.8A	8%	0.98	94%	90℃

Note:
1.Default Tested: at 220Vac, full load, Ta 25℃.
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
: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104
: 86-755-29358800
: 86-755-29358816
: info@sosen.com
: www.sosen.com

"*" Means Additional Function

"*"	DALI (suffix:D)	AUX 12V (suffix:H)	Timing (suffix:T)	0-10V/PWM /Resistor (suffix:B)	Remark
BH		✓		✓	
DH	✓	✓			

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			5.8A	100Vac, Full load
Max Input Power			545W	100Vac, Full load
Max Inrush Current(120Vac)			60A	Cold start
Max Inrush Current(220Vac)			110A	Cold start
Max Inrush Current(277Vac)			140A	Cold start
Standby Power			0.5W	220Vac/50Hz, Dim to off
Power Factor	0.95	0.98		220Vac/50Hz, Full load
	0.90			100-277Vac/50Hz, 70-100% load
THD		8%	10%	220Vac/50Hz, Full load
			20%	100-277Vac/50Hz, 70-100% load

SHENZHEN SOSEN ELECTRONICS CO.,LTD
: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104
: 86-755-29358800
: 86-755-29358816
: info@sosen.com
: www.sosen.com

Output Characteristics:

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	114V		228V	Power derated @114-171V
Rated O/P Voltage	171V		228V	Po=Vo*Io=480W, Full load
Rated O/P Current	2.1A		2.8A	2.8A for 171V,2.1A for 228V
Adj. O/P Current (AOC)Range	1.4A		2.8A	
	1.55A		2.8A	For DALI-2
No Load Voltage			250V	
Efficiency @120Vac	89.0%	91.0%		Output 228V/2.1A
Efficiency @220Vac	92.0%	94.0%		Output 228V/2.1A
Efficiency @277Vac	92.0%	94.0%		Output 228V/2.1A
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			0.5S	120Vac, Full load
			0.5S	220Vac, Full load
			0.7S	230Vac,For DALI-2
Line Regulation	-2%		+2%	Full load
Load Regulation	-2%		+2%	
Temperature Coefficient	-0.03%/℃		+0.03%/℃	Tc:0℃~90℃
OTP	90℃	100℃	110℃	>Tc typ., Current Derating <Tc min., Current recovery
Short Circuit Protection			10W	Driver not be damaged, Hiccup mode
			0.5W	Driver will not be damaged, Shut down for DALI-2

SHENZHEN SOSEN ELECTRONICS CO.,LTD
: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104
: 86-755-29358800
: 86-755-29358816
: info@sosen.com
: www.sosen.com

Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
AUX Power (Optional)	O/P Voltage	10.5V	12V	13.8V	
	O/P Current			200mA	Operate max 15min at 300mA
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 (Optional)	Dim off	0.7V	0.8V	0.9V	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	0.8V	0.9V	1.0V	
DALI Dimming Level		1-170(10%)		254(100%)	Logarithmic dimming curve
DALI Dimming(Optional)		Meet DALI-2			
Lifetime(Tc≤75℃)		62,000 hours			80% load
MTBF		200,800 hours			220Vac,Full load, Ta=25℃ (MIL-HDBK-217F)
IP Grade		IP65			
Tc		90℃			
Warranty		5 years			Tc : 75℃
Net Weight		2770g			
Dimension		Φ208mm*69.5mm			D x H

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

SHENZHEN SOSEN ELECTRONICS CO.,LTD
: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104
: 86-755-29358800
: 86-755-29358816
: info@sosen.com
: www.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/cUL	UL8750	✓	
ENEC	EN 61347-1:2015 EN 61347-2-13:2014 EN 61347-2-13:2014/A1:2017	✓	
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 FCC Part 15 Subpart B; ANSI C63.4:2014	Class B
Radiation Emission	EN55015:2013+A1:2015 FCC Part 15 Subpart B; ANSI C63.4:2014	Class B
Harmonic Current Emissions	IEC/EN 61000-3-2	Class C
Surge	IEC/EN 61000-4-5;ANSI/C82.77-5-2017	DM: 6kV,CM: 6kV,Criterion B
Ring Wave	IEC/EN 61000-4-12;ANSI/C82.77-5-2017	DM: 6kV,CM: 6kV,Criterion B

SHENZHEN SOSEN ELECTRONICS CO.,LTD
: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104
: 86-755-29358800
: 86-755-29358816
: info@sosen.com
: www.sosen.com

Safety Test Items:

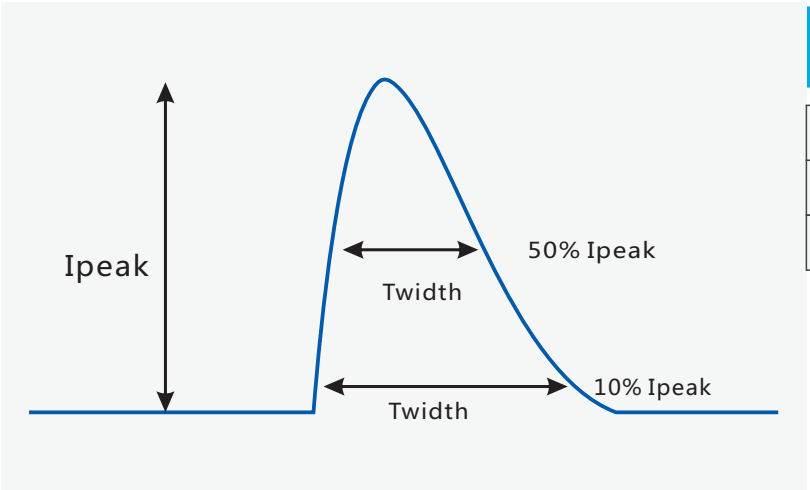
Safety Test Items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	ENEC Insulation Requirements	CCC Insulation Requirements	
Input-Output	1600Vac	3000Vac	3750Vac	Reinforced insulation
Input-Case	1600Vac	1500Vac	1875Vac	Basic insulation
Input-Dim	1600Vac	3000Vac	3750Vac	Reinforced insulation
Output-Dim	1600Vac	1000Vac	1000Vac	Basic insulation
Output-Case	500Vac	1000Vac	1000Vac	Basic insulation
Dim-Case	500Vac	250Vac	500Vac	Basic insulation
Insulation Resistance	≥10MΩ			Input-Output,Test voltage:500Vdc
Ground Resistance	≤0.1Ω			25A/1min
Leakage Current	≤0.75mA			277Vac

NOTE:

1. SOSEN warrants the LED drivers 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- and STB)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

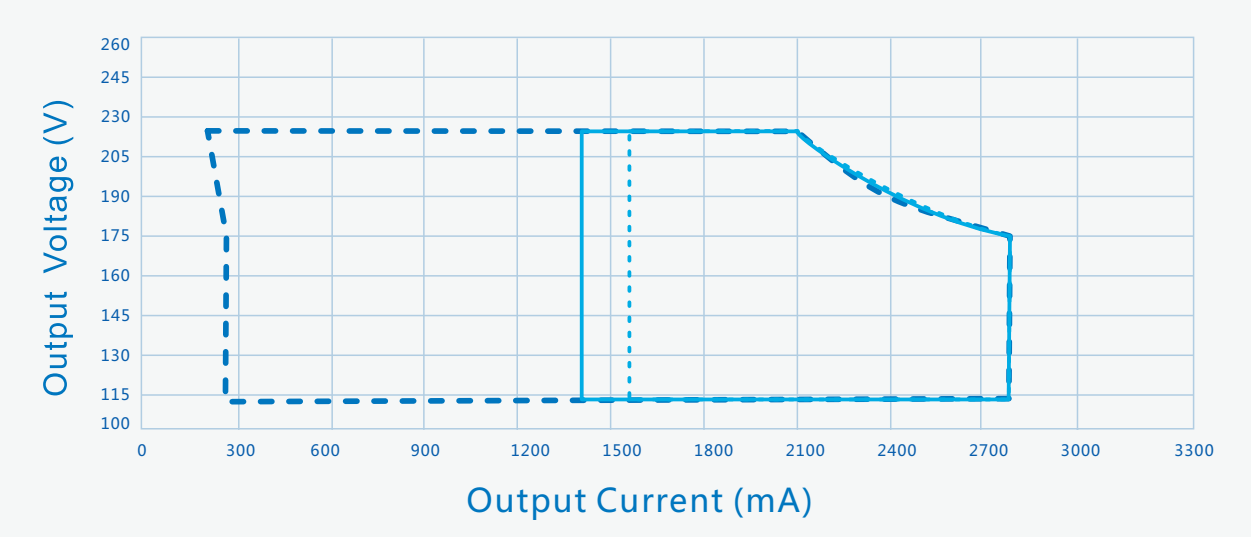


Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
120Vac	60A	1200uS	
220Vac	110A		500uS
277Vac	140A	800uS	

SHENZHEN SOSEN ELECTRONICS CO.,LTD
: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104
: 86-755-29358800
: 86-755-29358816
: info@sosen.com
: www.sosen.com

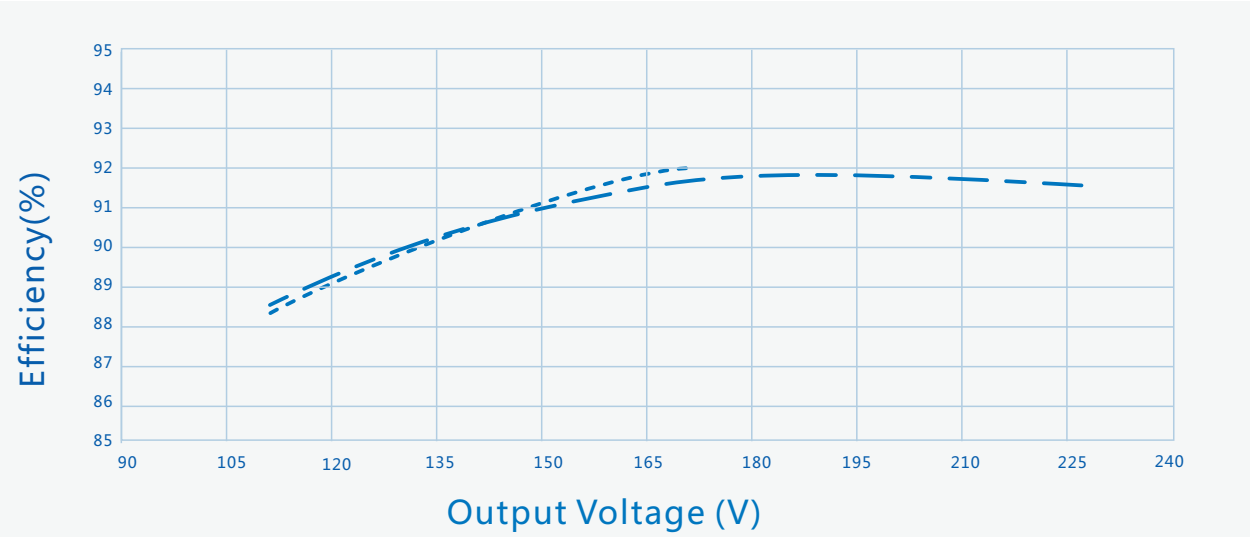
Performance Curves:

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



Dimming Window — AOC Window — AOC Window For DALI-2

Efficiency Vs. Output Voltage (Vin=120Vac)

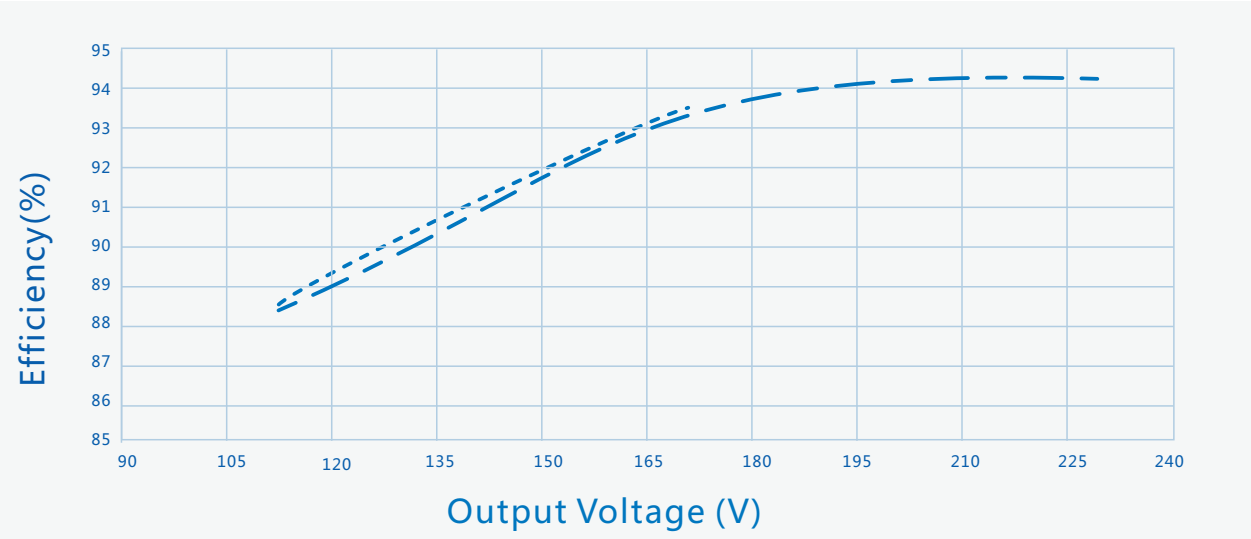


Io=2800mA — Io=2100mA

SHENZHEN SOSEN ELECTRONICS CO.,LTD
: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104
: 86-755-29358800
: 86-755-29358816
: info@sosen.com
: www.sosen.com

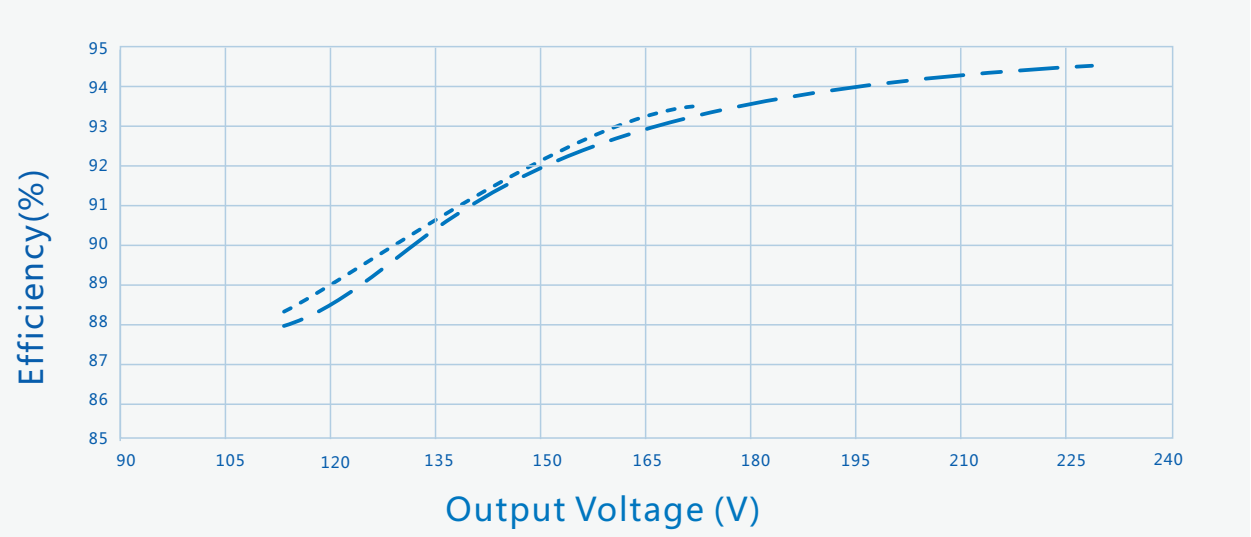
Performance Curves:

Efficiency Vs. Output Voltage (Vin=220Vac)



------- Io=2800mA — — — Io=2100mA

Efficiency Vs. Output Voltage (Vin=277Vac)



------- Io=2800mA — — — Io=2100mA

SHENZHEN SOSEN
ELECTRONICS CO.,LTD

: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104

: 86-755-29358800

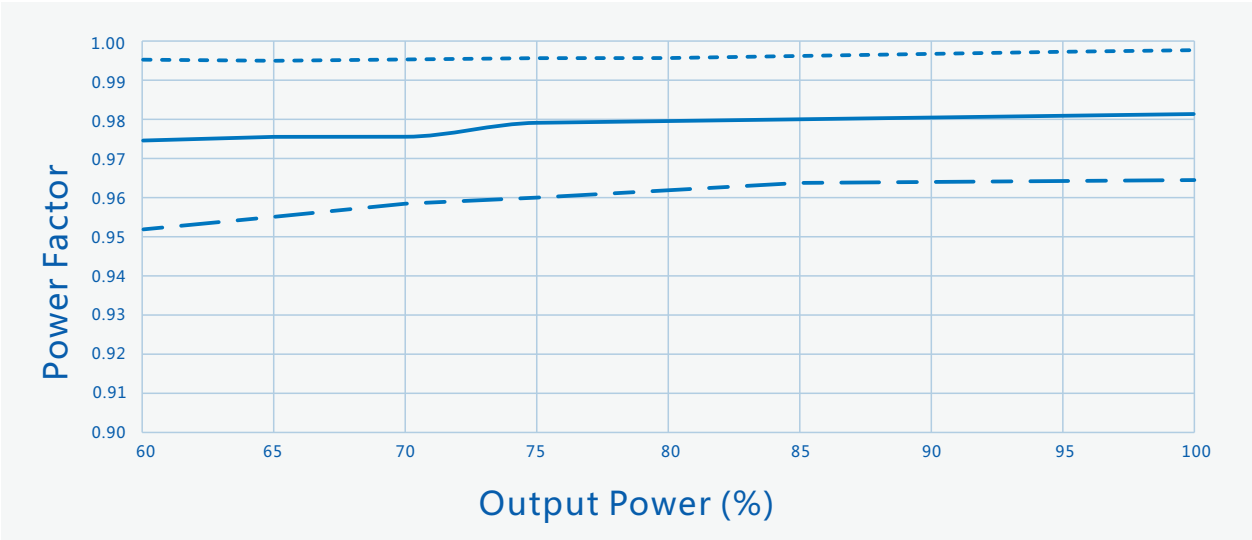
: 86-755-29358816

: info@sosen.com

: www.sosen.com

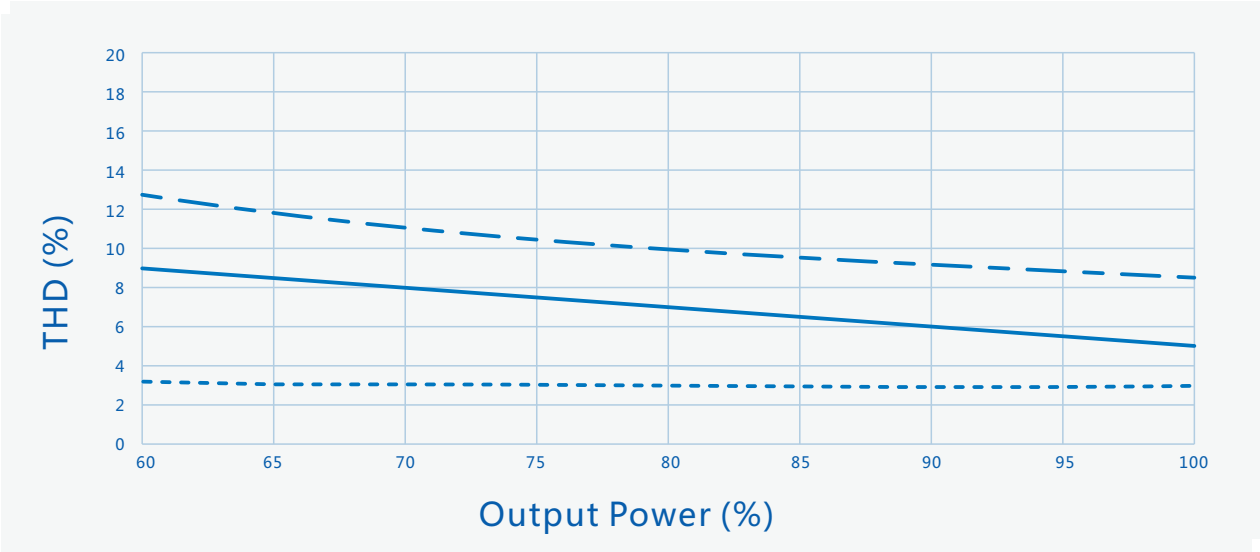
Performance Curves:

Power Factor Vs. Output Power



Vin=120Vac Vin=220Vac Vin=277Vac

THD Vs. Output Power

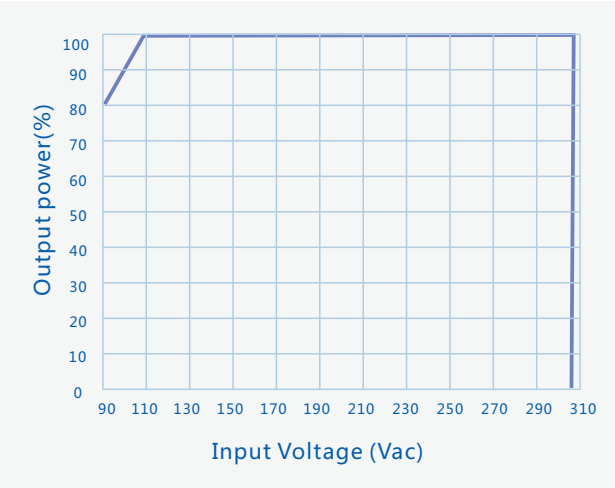


Vin=120Vac Vin=220Vac Vin=277Vac

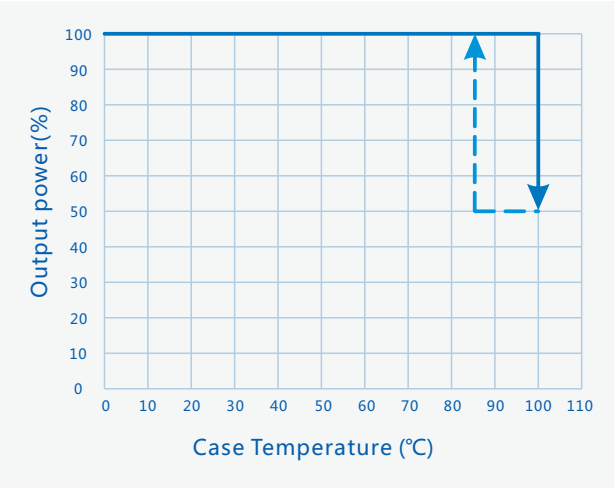
SHENZHEN SOSEN ELECTRONICS CO.,LTD
: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104
: 86-755-29358800
: 86-755-29358816
: info@sosen.com
: www.sosen.com

Performance Curves:

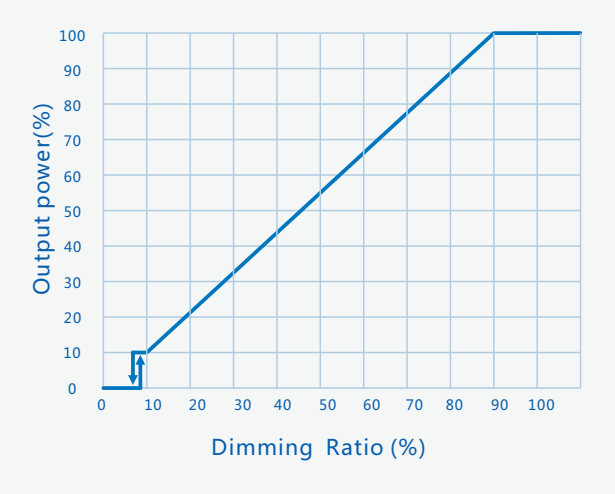
Output Power Vs. Input Voltage (Ta Max.50℃)



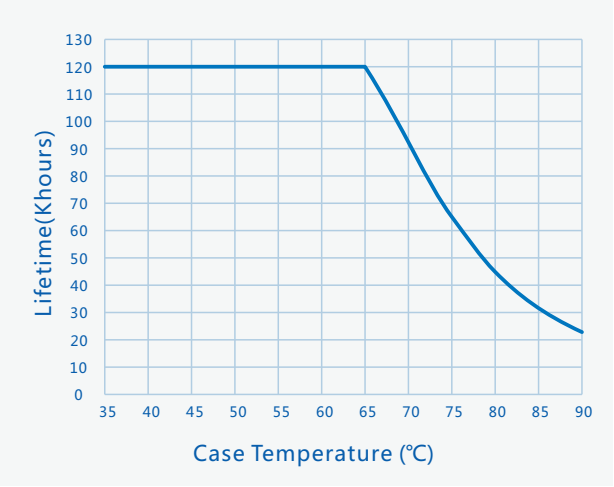
Output Power Vs. Case Temperature



Output Power Vs. Dimming

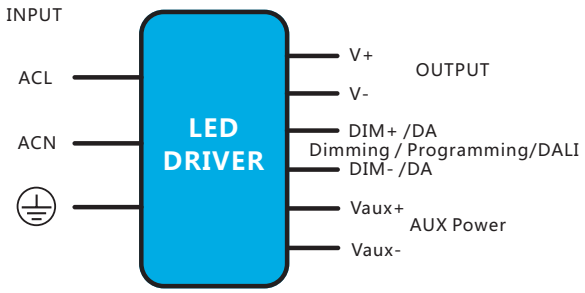


Lifetime Vs. Case Temperature



SHENZHEN SOSEN ELECTRONICS CO.,LTD
: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104
: 86-755-29358800
: 86-755-29358816
: info@sosen.com
: www.sosen.com

Mechanical Characteristics



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

UL model: SJTW,3*18AWG,O.D: 7.8mm,Black:L,White:N,Green:⏚
EU model: H05RN-F,3*1.0mm², O.D:7.4mm,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:6.8mm, Brown:V+, Blue:V-
Global model: SJOW,2*17AWG, O.D:7.7mm, Brown:V+ , Blue:V-

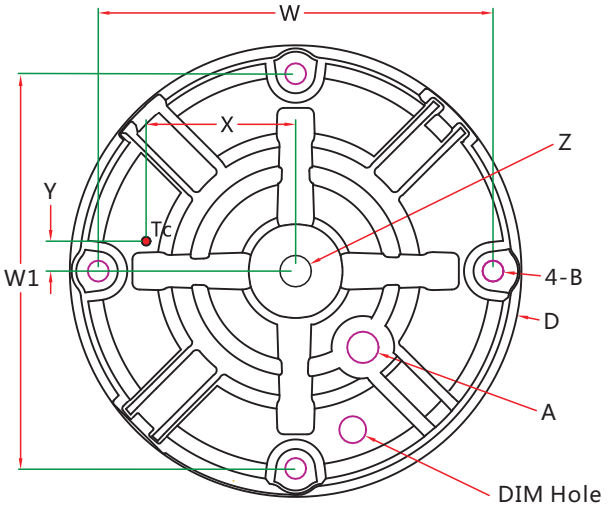
DIM /AUX Cable(Exposed Length 220±10mm):

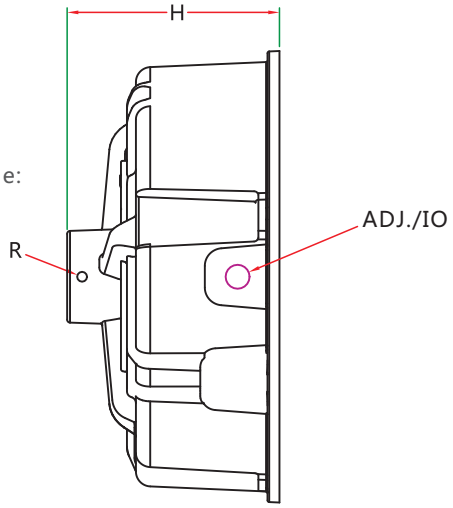
UL/EU/Global model: UL 21996, 4*22AWG , O.D: 5.6mm , Purple : DIM+, Pink: DIM-, Black/White:Vaux+,Blue/White:Vaux-

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

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

Name Description	Standard Code	mm(In.)
PG Size	A	M12*1.5
Mounting Screw Diameter	4-B	Φ8.5(0.33)
Case Diameter	D	Φ208.0(8.19)
Height	H	69.5(2.74)
Ring Hole	Z	M20*2.5(Depth 17mm) G1/2(Depth 17mm)
Ring Fixed Hole	R	M4*0.7
Mount Size	W	192.0(7.56)
Mount Size	W1	192.0(7.56)
TC Point Position	X	50(1.97)
TC Point Position	Y	25(0.98)





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
3,The DALI-2 models only support setting the rated output current through SS-DALI-PUSH and does not support potentiometer to adjust current.

SHENZHEN SOSEN ELECTRONICS CO.,LTD
: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104
: 86-755-29358800
: 86-755-29358816
: info@sosen.com
: www.sosen.com

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.

Package

- Outside carton dimension: L×W×H =555mm×350mm×245mm;
- 6PCS/Carton;
- Net weight/Piece: 2.77kg;Gross weight/Carton: 17.8kg;
- 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 stock for over 1 year before installation.

RoHS

Products comply with RoHS Directive (2011/65/EU) and amendment 2015/863/EU.

SHENZHEN SOSEN ELECTRONICS CO.,LTD

: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104

: 86-755-29358800

: 86-755-29358816

: info@sosen.com

: www.sosen.com

Revision History

Version	Description of Update	Updated Date	Remark
V00	Original Release	2020/05/20	
V01	Update Cable Length	2020/07/22	
V02	Update Tinned Length Of Wire	2021/07/02	
V03	Update DIM Cable Color	2021/09/02	
V04	Increase The Content Of DALI-2	2022/01/18	
V05	Add Page Number	2023/02/01	

SHENZHEN SOSEN
ELECTRONICS CO.,LTD

: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104

: 86-755-29358800

: 86-755-29358816

: info@sosen.com

: www.sosen.com