

SOSEN LED Driver, Your Smart Choice

Specifications

SS-150CA Series LED Driver

Model: SS-150CA-XX*

Description: 150W LED Driver

Rev.: V10

Release Date: 2023-02-01

SS-150CA Series LED Driver

SOSEN
LED DRIVER



LED DRIVER

CA Series



Features:

- Efficiency up to 92%
- Dimming: DALI-2, 0-10V, PWM, Resistor
- 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/OPP
- Warranty: 5 years



CE IP65 Class P

Description:

SS-150CA 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-150CA-56*	90-305Vac	151.2W	28-56V	36-56V	2.1-4.2A	2.33-4.2A	7%	0.97	92%	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
BH		✓		✓	
DH	✓	✓			

Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	100Vac		277Vac	
AC Input Range	90Vac		305Vac	
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			1.8A	100Vac, Full load
Max Input Power			190W	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 or STB Enable
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
O/P Voltage Range	28V		56V	Power derated @28-36V
Rated O/P Voltage	36V		56V	$P_o = V_o \cdot I_o = 150W$, Full load
Rated O/P Current	2.7A		4.2A	4.2A for 36V, 2.7A for 56V
Adj. O/P Current (AOC) Range	2.1A		4.2A	
	2.33A		4.2A	For DALI-2
No Load Voltage			60V	
Efficiency @120Vac	89.0%	90.0%		Output 43V/3.5A
Efficiency @220Vac	91.0%	92.0%		Output 43V/3.5A
Efficiency @277Vac	91.0%	92.0%		Output 43V/3.5A
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%/°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 not be damaged, In constant current mode
			0.5W	Driver will not be damaged, Shut down for DALI-2

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Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
AUX Power (Optional)	O/P Voltage	10.5V	12V	13.5V	
	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 Range	10%Iomax		100%Ioset	DIM+ source current 110uA.
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°C)		62,000 hours			80% load
MTBF		200,800 hours			220Vac, Full load, Ta=25°C (MIL-HDBK-217F)
IP Grade		IP65			
Tc		90°C			
Warranty		5 years			Tc : 75°C
Net Weight		1500g			
Dimension		Φ151mm*71.5mm			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℃	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

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Safety Test Items:

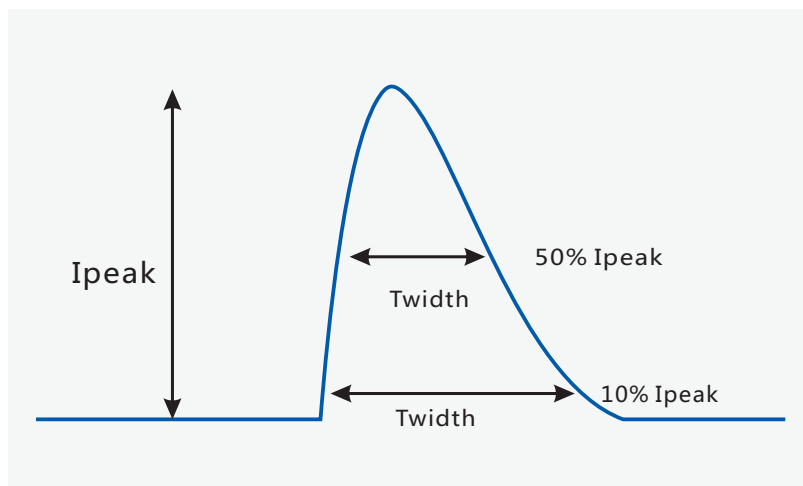
Safety Test Items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	ENEC Insulation Requirements	CCC Insulation Requirements	
Input-Output	1600Vac	3000Vac	3750Vac	Reinforced insulation
Input-Case	1600Vac	1500Vac	1875Vac	Basic insulation
Input-Dim	1600Vac	3000Vac	3750Vac	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	$\geq 10\text{M}\Omega$			Input-Output, 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 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

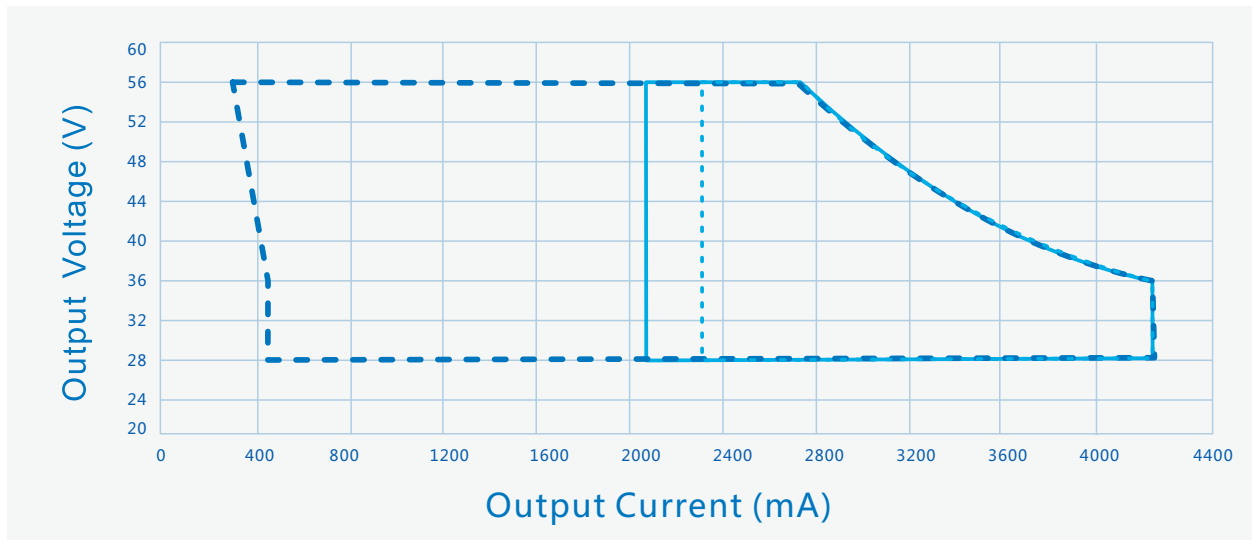


Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
120Vac	60A	600uS	
220Vac	100A		230uS
277Vac	130A	500uS	

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Performance Curves:

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

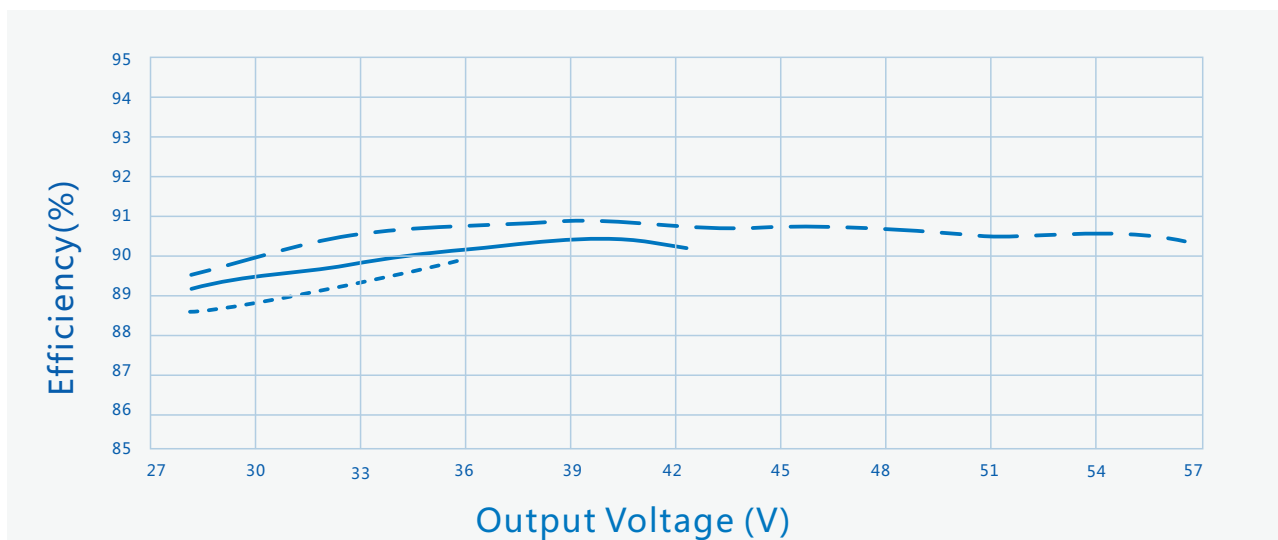


----- Dimming Window

———— AOC Window

..... AOC Window For DALI-2

Efficiency Vs. Output Voltage (Vin=120Vac)



----- Io=4200mA

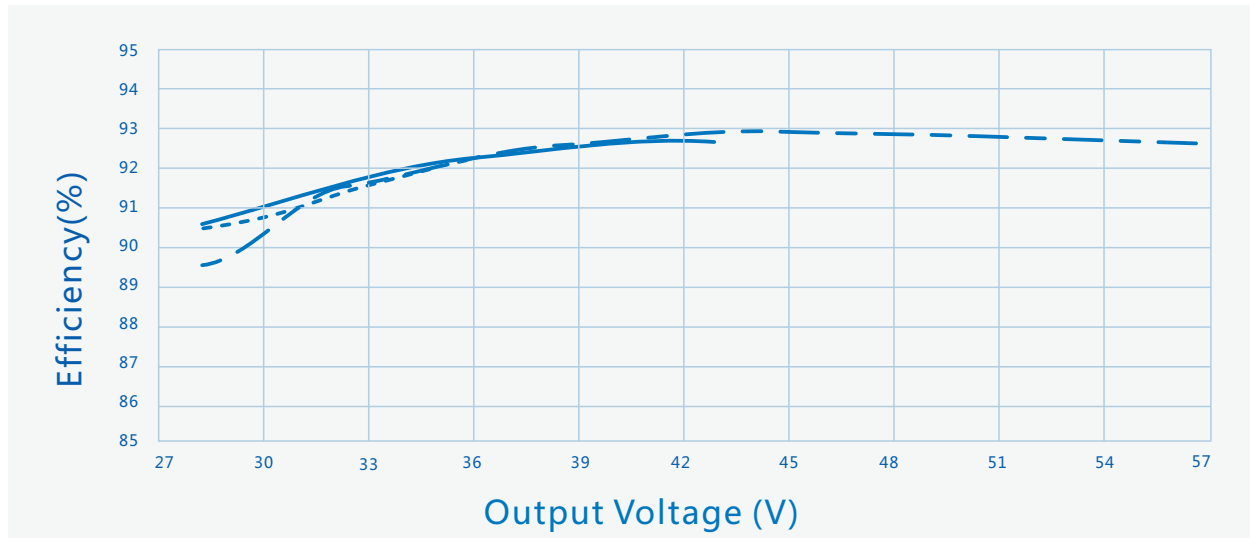
———— Io=3500mA

- - - Io=2700mA

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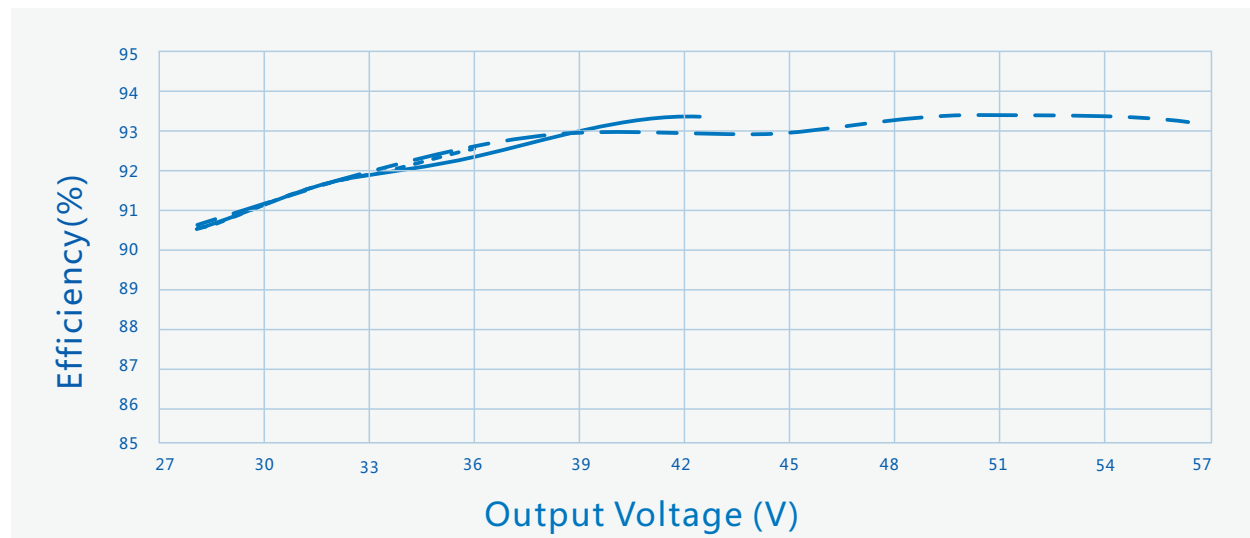
Performance Curves:

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



----- $I_o=4200mA$ ————— $I_o=3500mA$ - - - $I_o=2700mA$

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

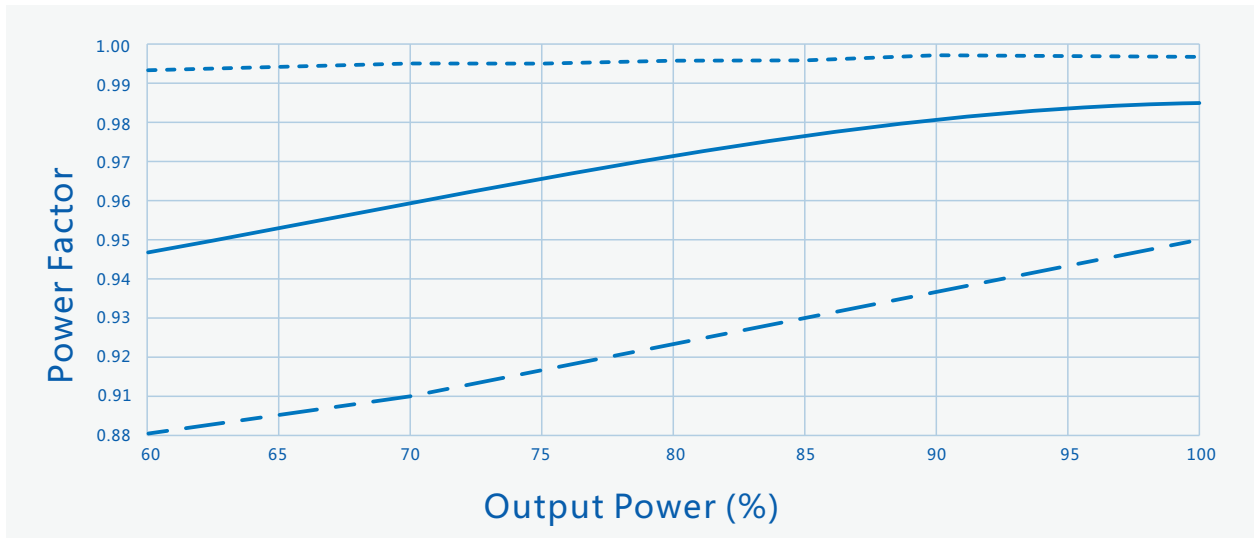


----- $I_o=4200mA$ ————— $I_o=3500mA$ - - - $I_o=2700mA$

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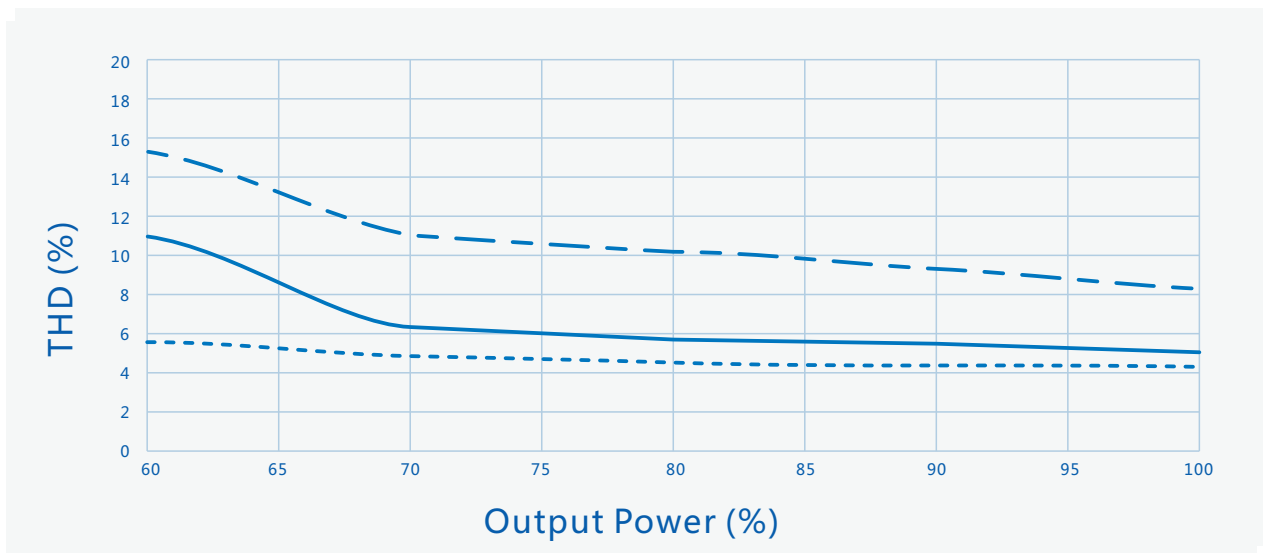
Performance Curves:

Power Factor Vs. Output Power



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

THD Vs. Output Power

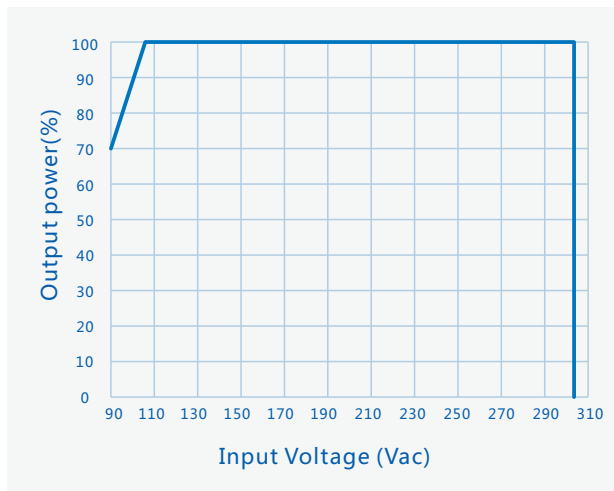


----- Vin=120Vac ————— Vin=220Vac - . - . Vin=277Vac

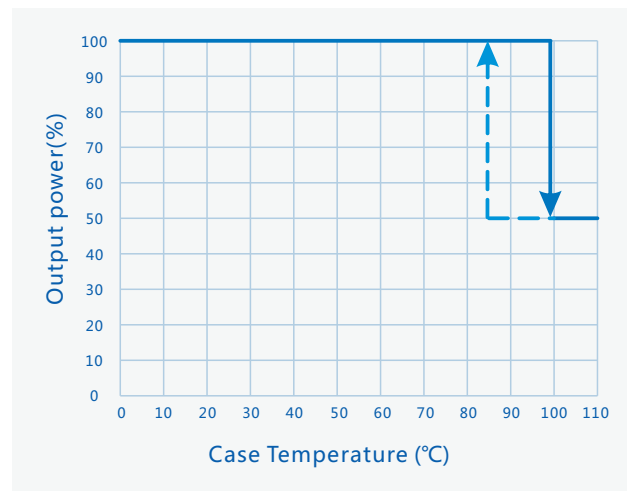
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Performance Curves:

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



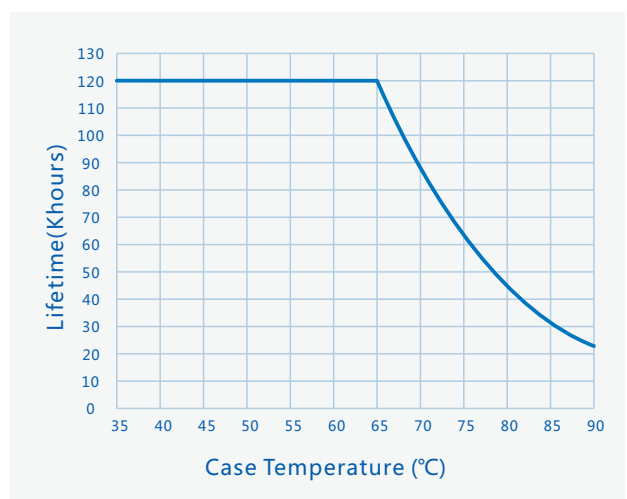
Output Power Vs. Case Temperature



Output Power Vs. Dimming

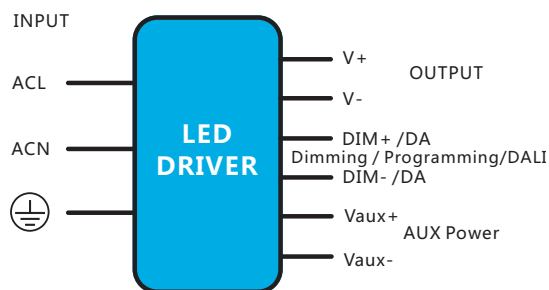


Lifetime Vs. Case Temperature



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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-

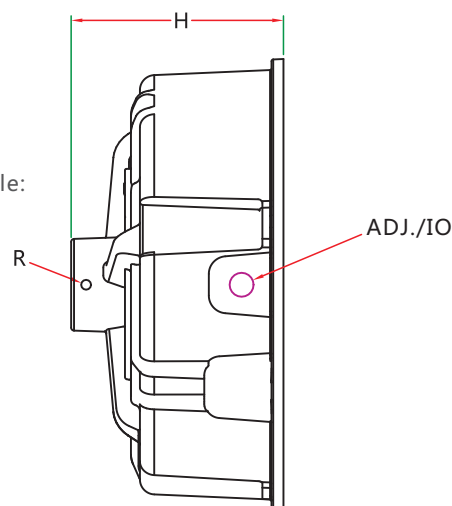
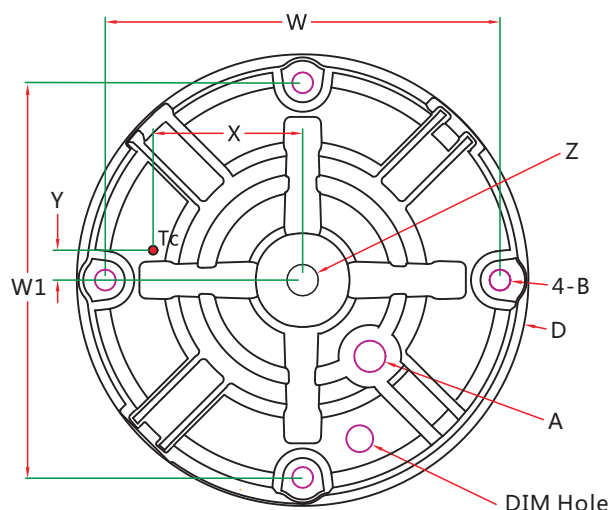
DIM /AUX Cable(Exposed Length 220±10mm):

UL/EU/Global model: UL 21996, 3*22AWG , O.D: 4.9mm, Purple : DIM+, Pink: DIM-/Vaux-, Black/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
Fixed Screw Diameter	4-B	Φ7.0(0.28)
Case Diameter	D	Φ151.0(5.95)
Height	H	71.5(2.82)
Ring Hole	Z	M12*1.75(Depth 20mm) G1/2(Depth 17mm)
Ring Fixed Hole	R	M4*0.7
Fixed Size	W	132.0(5.2)
Fixed Size	W1	132.0(5.2)
TC Point Position	X	50(1.97)
TC Point Position	Y	10(0.4)



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.

Package

- Outside carton dimension: L×W×H =495mm×385mm×162mm;
- 9PCS/Carton;
- Net weight/Piece: 1.5kg;Gross weight/Carton: 15kg;
- 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.

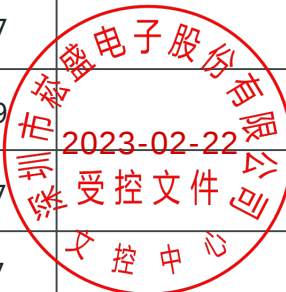
Storage

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.

Revision History

Version	Description of Update	Updated Date	Remark
V00	Original Release	2019/09/17	
V01	Update CCC Insulation Requirements	2019/10/29	
V02	Update Structure Dimension Characteristics	2020/04/07	
V03	Update Cable Length	2020/04/27	
V04	Update Dim to Off Point	2021/01/19	
V05	Update Tinned Length Of Wire	2021/07/02	
V06	Update DIM Cable Color	2021/09/02	
V07	Increase Note About Dim To Off	2021/11/11	
V08	Increase The Content Of DALI-2	2022/01/18	
V09	Delete Timing	2022/11/28	
V10	Add Page Number	2023/02/01	