SOSEN
LED DRIVER

SOSEN LED Driver, Your Smart Choice

Specifications

SS-200CNH-300* Series LED Driver

Model: SS-200CNH-300*

Description: 200W LED Driver

Rev.: V00

Release Date: 2024-09-24

SS-200CNH-300* Series LED Driver

SOSEN
LED DRIVER

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CNH Series

Features:

- Efficiency up to 97%
- Isolated dimming:0-10V,PWM,Resistor
- Optional aux: 12V/0.2A
- Time-controlled programmable
- Dim to off
- Standby Power<0.5W
- Protections: SCP/OTP/OVP/UVP
- Compatible with intelligent emergency controls
- Wide output voltage range, Dip power range programmable
- IP65
- Surge protection: CM: 6kV,DM: 6kV
- Long lifetime
- Warranty: 5 years

IP65

Description:

SS-200CNH-300* Series are 200W round non-isolated constant current LED driver. This series of products have the advantages of isolated dimming function, ultra-high efficiency, compact housing, fully potted, Compatible with intelligent emergency controls, good thermal design and waterproof performance, high reliability and high cost effective.

Applications:

High bay lighting, Sports 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-200CNH-300*	90-305Vac	200W	180-300V	260V-300V	0.25-1.0A	0.8A	7%	0.97	97%	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.

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SS-200CNH-300* Series LED Driver

“*” Means Additional Function

"*"	3CCT+ DIP Power	DIP Power	AUX 12V (suffix:H)	Dimming off 0-10V/PWM/Resistor	1-10V/PWM /Resistor (suffix:B)	Remark
BB		✓			✓	
BD	✓				✓	
BHB		✓	✓	✓		
BHD	✓		✓	✓		

Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	100Vac		277Vac	Reference derating curve
AC Input Range	90Vac		305Vac	Reference derating curve
DC Input voltage Range	140Vdc		280Vdc	
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			2.4A	108Vac, Full load
Max Input Power			240W	108Vac, Full load
Max Inrush Current(120Vac)			60A	Cold start,Full load
Max Inrush Current(220Vac)			100A	Cold start,Full load
Max Inrush Current(277Vac)			130A	Cold start,Full load
Standby Power			0.5W	220Vac/50Hz, Dim to off, (BHB/BHDmodel)
Power Factor	0.95	0.97		220Vac/50Hz, Full load
	0.90			100-277Vac/50Hz, 70%-100% load
THD		7%	12%	220Vac/50Hz, Full load
			20%	100-277Vac/50Hz, 70%-100% load

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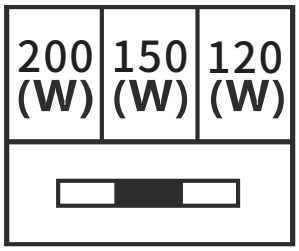
Dip Switches:

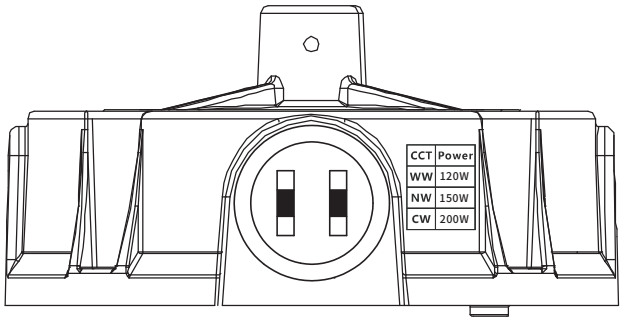
BD/BHD: Dip Switch to adjust output power
+ Dip Switch to adjust color temperature

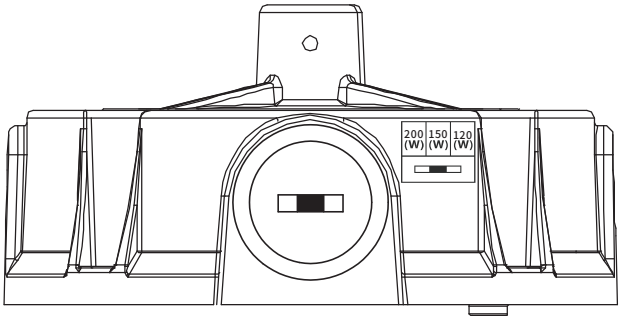
CCT	Power
WW	120W
NW	150W
CW	200W

BB/BHB: Dip Switch to adjust output power

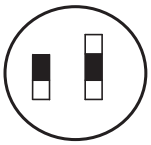


CW: White light NW: Neutral light WW: Warm light





If 2CCT is required please add the following Mylar tabs to be affixed above the toggle code.



Note: Adjustment of power and color temperature needs to be operated after cut off power.

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Output Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Output Voltage Range	180V		300V	Power Derated @180-200V
Rated Output Voltage	200V		300V	Rated output power Po=Vo*Io=200W
Rated Output Current	0.667A		1.0A	1.0A for 200V,0.667A for 300V
Dip Switch to adjust output power	0.667A		1.0A	
	0.5A		0.75A	
	0.4A		0.6A	
No Load Voltage			350V	
Efficiency @120Vac	92.0%	94.0%		Output 300V/0.667A
Efficiency @220Vac	94.0%	96.0%		Output 300V/0.667A
Efficiency @277Vac	95.0%	97.0%		Output 300V/0.667A
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
			0.5S	220Vac
Line Regulation	-2.5%		+2.5%	Full load
Load Regulation	-5%		+5%	
Temperature Coefficient	-0.06%/℃		+0.06%/℃	Tc:0℃~90℃
OTP	90℃	93℃	96℃	Drop current when OTP,and it can be automatically restored after the abnormality is removed
Short Circuit Protection				Driver will not be damaged

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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 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	0.9V	Auxiliary source 12V No load
	Dim on	0.9V	1.0V	1.1V	
Intelligent Emergency Control (Optional, off by default)	Emergency switchover time	3S			AC power failure switching to battery power supply time
	Output Current		8%	10%	Emergency output current can be set via PC software
	Auto-exit time		2H		When the sensor does not detect a signal; configurable
	Access to emergency communications	4Hz duty cycle 20%, high level: 3-10V, low level: 0-0.3V			Duration 30S
	Withdrawal from emergency communications	1Hz duty cycle 20%, high level: 3-10V, low level: 0-0.3V			Duration 2H; configurable
Timing Curve(Optional)		By programming			Set by program
Lifetime(Tc≤85℃)		≥50,000 hours			80% load
MTBF		198,000 hours			220Vac,Full load, Ta=25℃ (MIL-HDBK-217F)
IP		IP65			
Tc		90℃			
Warranty		5 years			Tc: 85℃
Net Weight		790g			Input line: 300mm
Dimension		Φ128mm*62.5mm			D 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		
ENEC	EN 61347-1:2015+A1:2021 EN 61347-2-13:2014+A1:2017 EN IEC 62384:2020	✓	
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	230Vac: Class B
Radiation Emission	EN IEC 55015:2019+A11:2020	230Vac: Class B
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
Ring Wave	IEC/EN 61000-4-12	DM: 6kV,CM: 6kV,Criterion B

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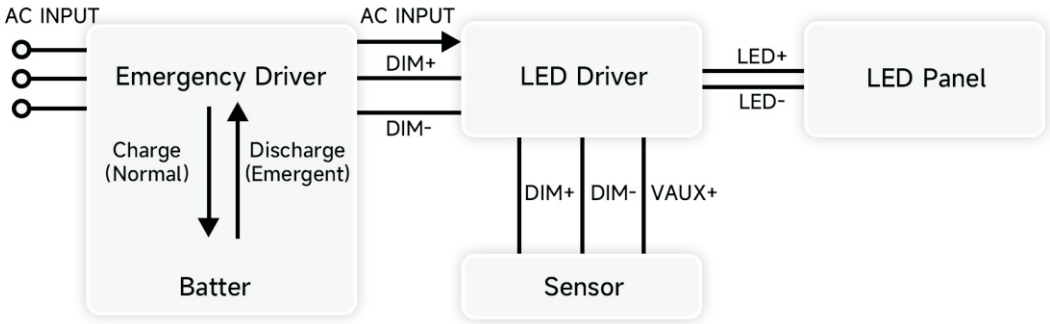
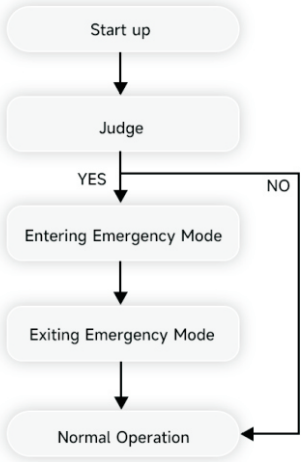
IEC (Intelligent Emergency Control) Description:

Connection Diagram



Emergency control logical diagram



Technical Specifications for Emergency Lighting Communication Protocol

(1) Definition of Communication Levels:Active High Level: 3V - 10V (ON); Active Low Level: 0V - 0.3V (OFF).
(2) Positive Duty Cycle of Communication Signal: 20%.
(3) Entering Emergency Mode:The emergency driver supply will send a signal with 4Hz and a duty cycle of 20% after entering the emergency state. The LED diver supply must continuously detect this signal four times (signal duration of 30 seconds) before entering the emergency mode.
(4) Exiting Emergency Mode:
Scenario 1: Upon restoration of AC driver, the emergency driver supply sends a signal with 1Hz and a duty cycle of 20%, The LED driver supply must continuously detect this signal four times to exit the emergency mode.
Scenario 2: If it’ s timeout in the emergency state, the LED driver supply automatically exits the emergency mode after a default period of 2 hours（can be set）.
Notes:
In the absence of a detected signal from the sensor (dimming line is a short circuit), the LED driver supply automatically exits the emergency mode after 2 hours.To ensure timely exit from the emergency mode, upon sensor signal detection (releasing the short circuit on the dimming line), the emergency driver supply continues to send the 1Hz exit signal for 2 hours after detecting the restoration of AC driver.
The LED driver supply is equipped with an emergency function switch that can be enabled through our proprietary PC software (default setting is “off”). For obtaining relevant emergency certifications, compatibility with the emergency driver supply system during certification is required.
When the emergency function is used, and the system is operating under no-load conditions or with the "Dim-off" function enabled, the system should delay switching to battery for 15 seconds after AC power loss.

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Safety Test Items:

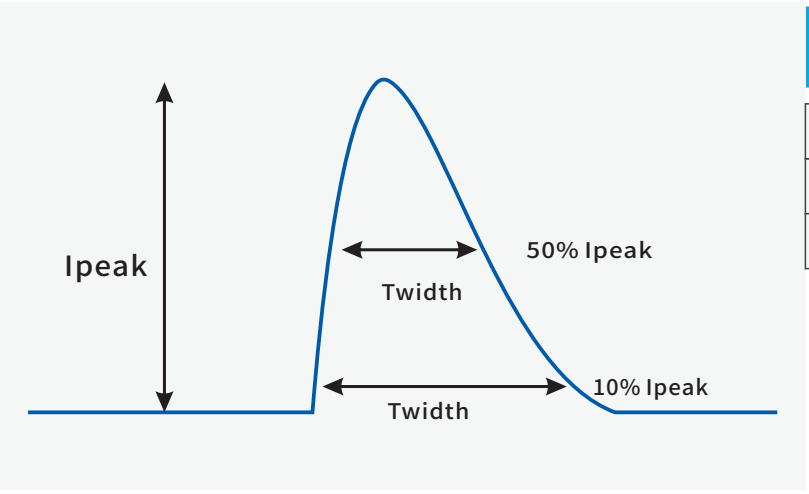
Safety test items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	TUV Insulation Requirements	CCC Insulation Requirements	
Input-Case	/	2U+1000	/	Basic insulation
Input-Dim	/	4U+2000	/	Reinforced insulation
Dim-Case	/	500Vac	/	Basic insulation
Insulation Resistance	⩾10MΩ			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.

Performance Curves:

Input Inrush Current



Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
120Vac	60A	400uS	200uS
220Vac	100A	400uS	200uS
277Vac	130A	400uS	200uS

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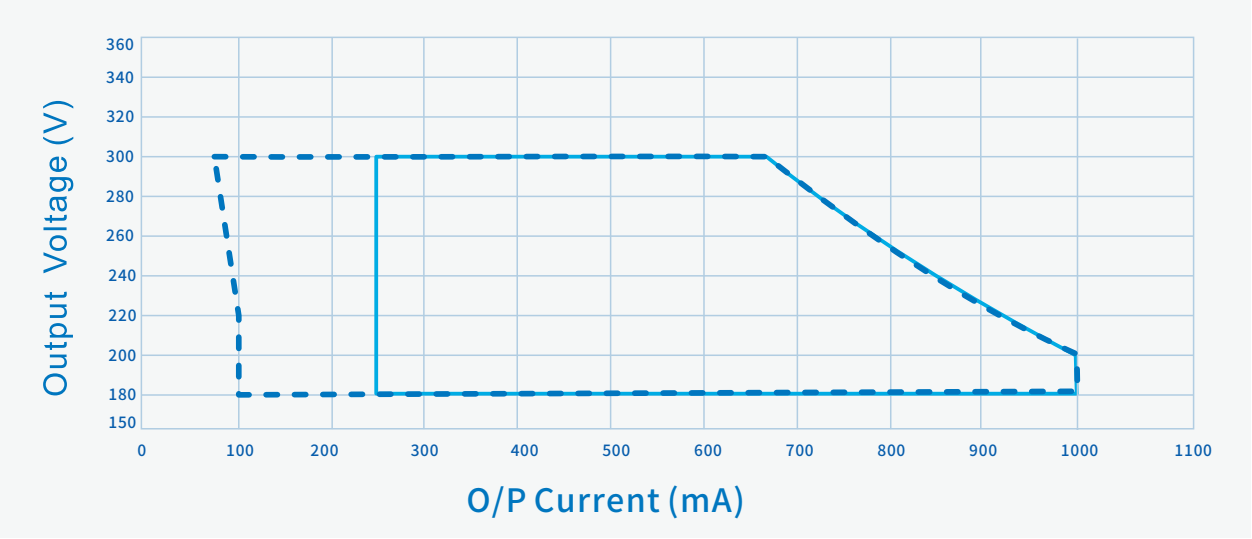
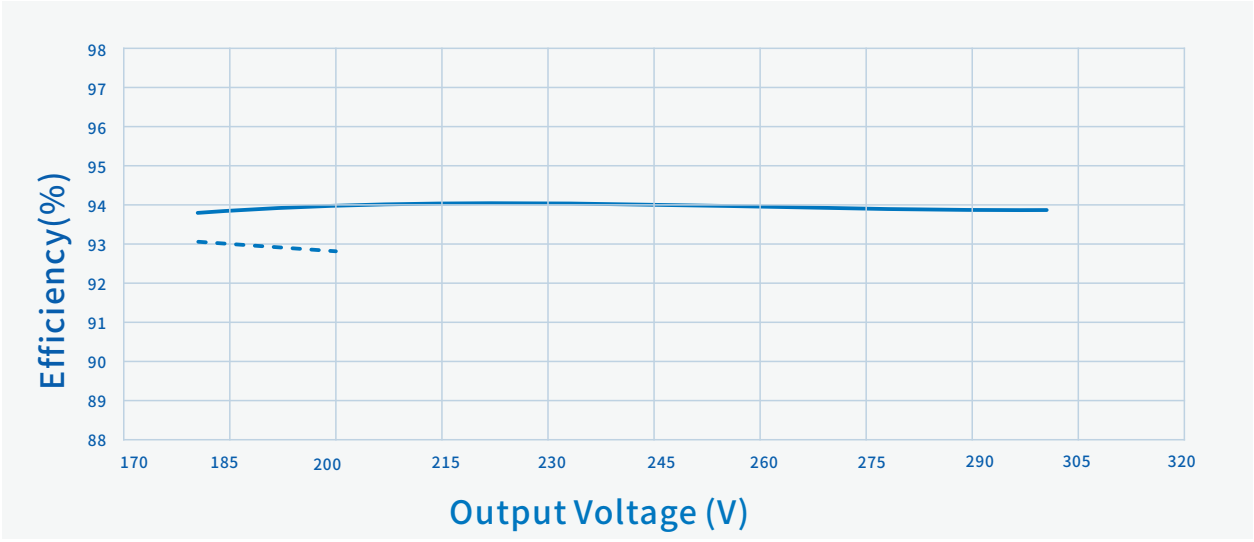
Performance Curves:

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



Dimming Window — AOC Window

Efficiency Vs. Output Voltage (Vin=120Vac)



Io=1000mA — Io=667mA

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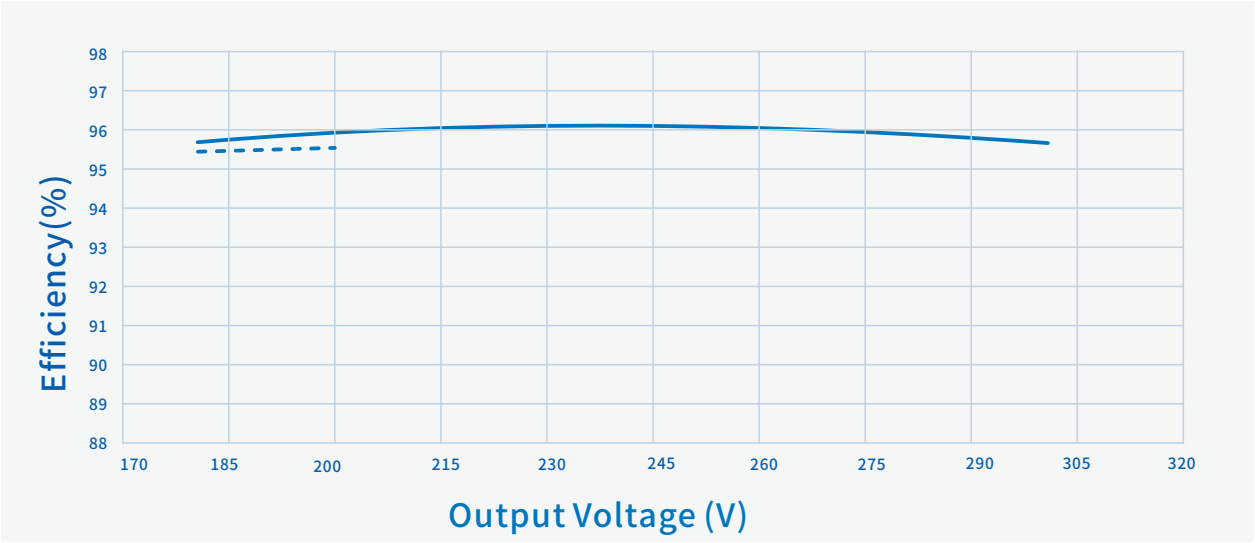
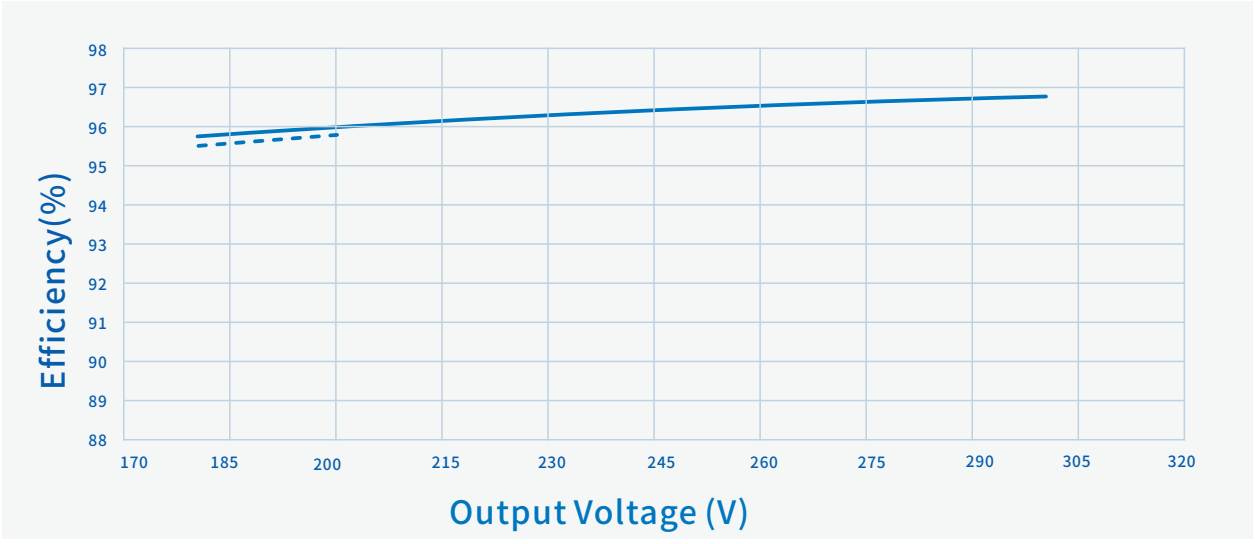
Performance Curves:

Efficiency Vs. Output Voltage (Vin=220Vac)



Io=1000mA Io=667mA

Efficiency Vs. Output Voltage (Vin=277Vac)



Io=1000mA Io=667mA

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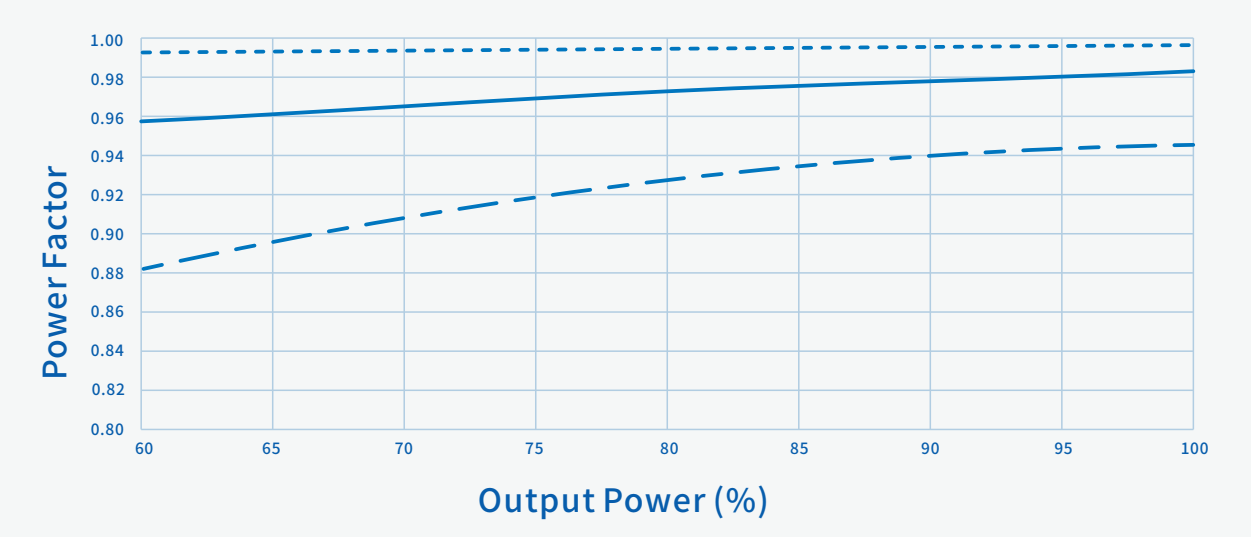
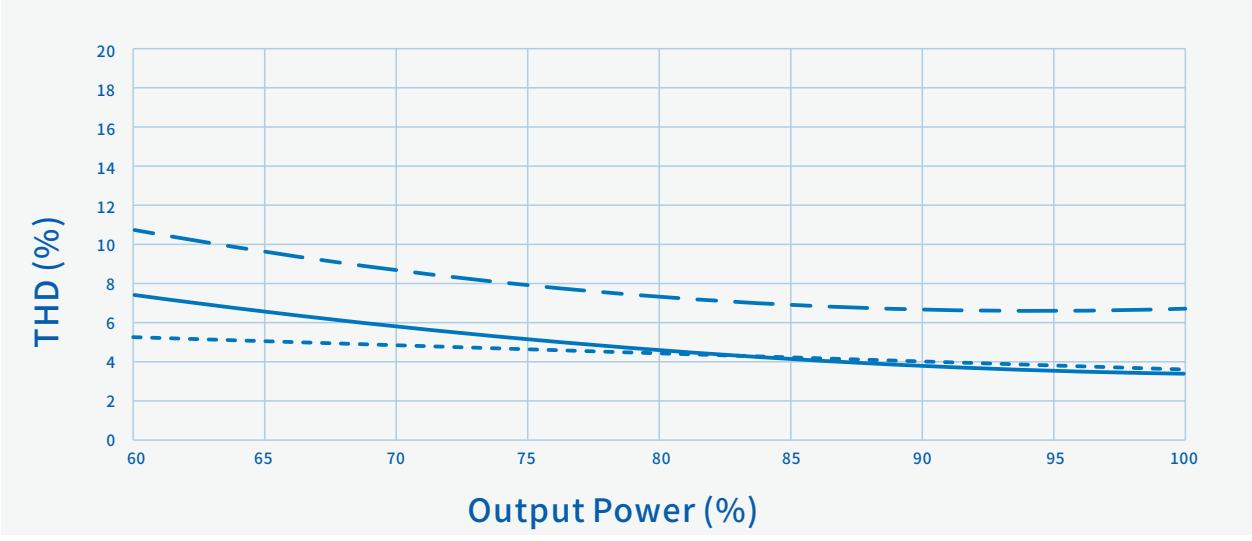
Performance Curves:

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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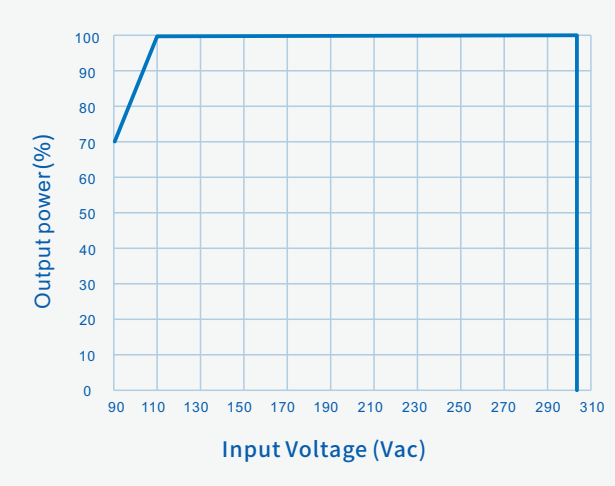
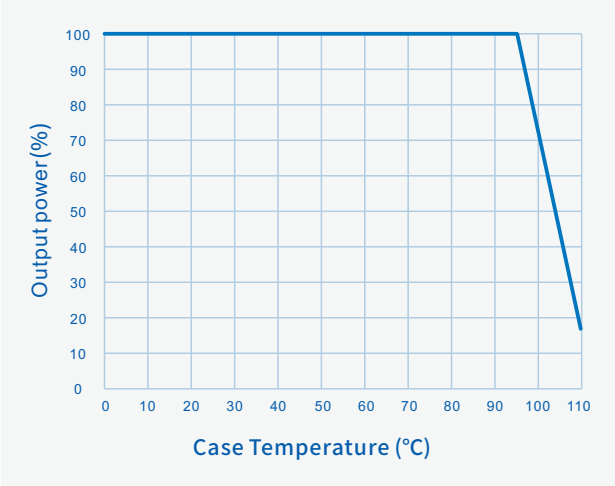
Performance Curves:

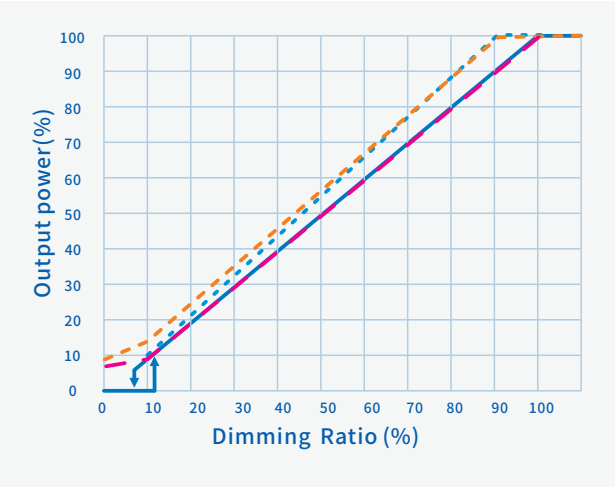
Output power Vs. Input Voltage



Output power Vs. Case Temperature



Output Power Vs. Dimming



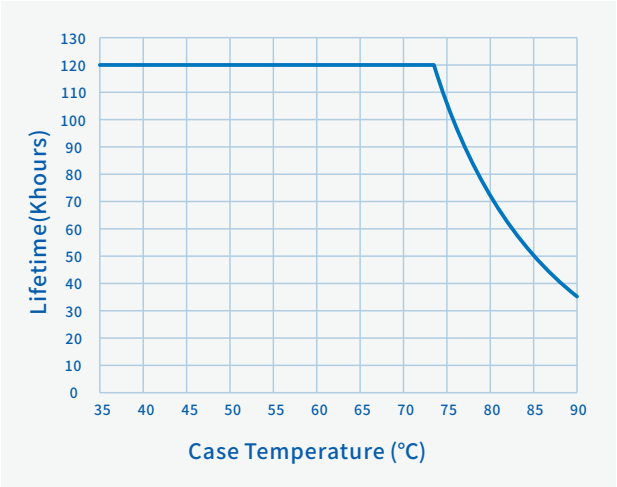
BHB/BHD:

0-10V ,PWM Dimming Resistor Dimming

BB/BD:

1-10V ,PWM Dimming Resistor Dimming

Lifetime Vs. Case Temperature



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Constant Lumen Output

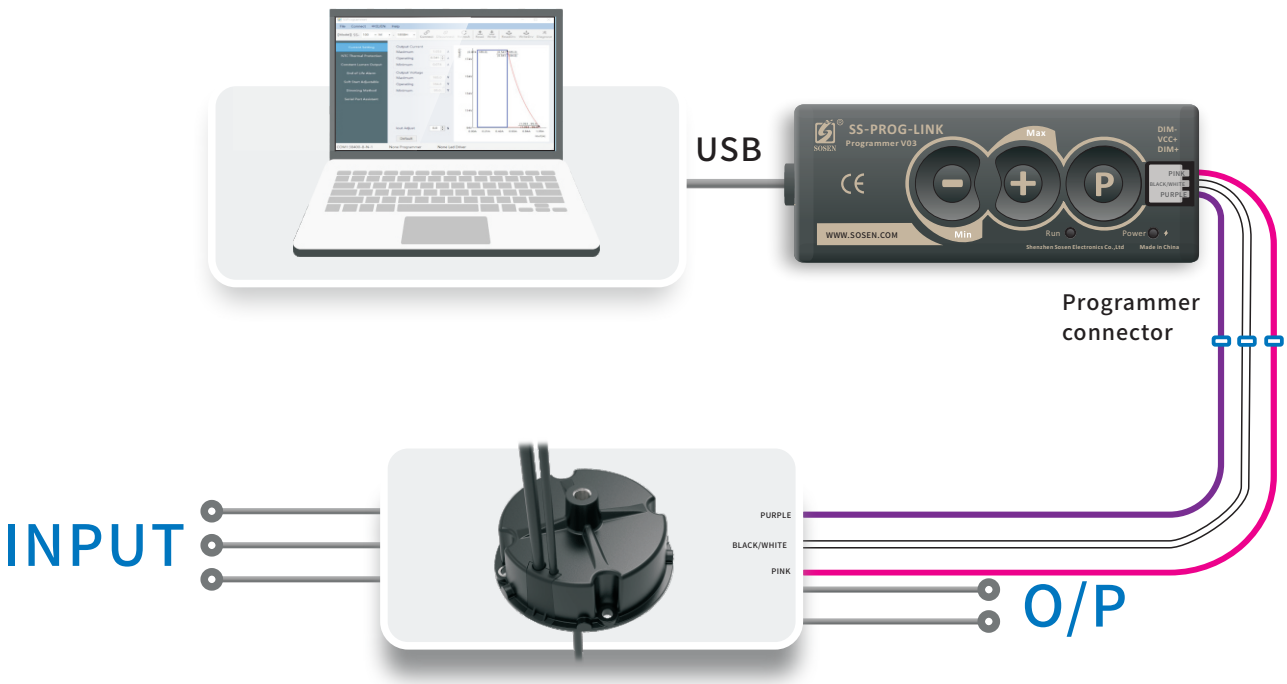
Constant Lumen Output are design to maintain fixture's stable output lumen by increasing driver's output current within driver's life span to counteract LED lumen degradation.

Programming Connection Diagram:

Legacy Timer: Driver's O/P follows the pre-programmed timing curve after turn-on.

Auto-Adjust by Percentage: Driver's O/P will be adjusted by automatically changed dimming curve by the period percentage based on the latest 5 dimming curve.

Auto-Adjust by Mid-point: Driver's O/P will be adjusted by automatically changed dimming curve by mid-point based on the latest 5 dimming curve.



Note:

1. Programming could be completed by off-line mode either without turn on the driver nor without PC, other than the traditional on-line mode.

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Mechanical Characteristics:

AC Input line Cable

EU model:
HO5RN-F,3*1.0mm,O.D:7.3mm,Brown:L, Blue:N,Yellow/Green: ⏚

Exposed Length （mm）	Peeled length（mm）	Tinned length of wire（mm）
1830±10	45±5	10±10
1530±10	45±5	10±2
300±10	45±5	10±2

DC Input line Cable

EU model:
1.H05RN-F，2*1.0mm^2, O.D:7.0mm, Brown:V+, Blue:V-
2.H05RN-F，3*1.0mm, O.D:7.3mm, Brown:V+, Blue:Warm light (V2-), Black: White light (V1-)

Exposed Length （mm）	Peeled length（mm）	Tinned length of wire（mm）
200±10	22±3	9±1
200±10	22±3	9±1
200±10	22±3	9±1

UP Dimming Cable

UL/EU/Global Model:
1.UL 21996 2*22AWG , O.D: 4.7mm，Purple: DIM+, Pink: DIM-
2.UL 21996 3*22AWG , Purple: DIM+, Pink: DIM-，Black/White: Vaux+

Exposed Length （mm）	Peeled length（mm）	Tinned length of wire（mm）
1830±10	45±5	10±10
1530±10	45±5	10±2
300±10	45±5	10±2

Down Dimming Cable

UL/EU/Global Model:
UL 21996 3*22AWG , Purple: DIM+, Pink: DIM-，Black/White: Vaux+

Exposed Length （mm）	Peeled length（mm）	Tinned length of wire（mm）
200±10	22±3	9±1
200±10	22±3	9±1
200±10	22±3	9±1

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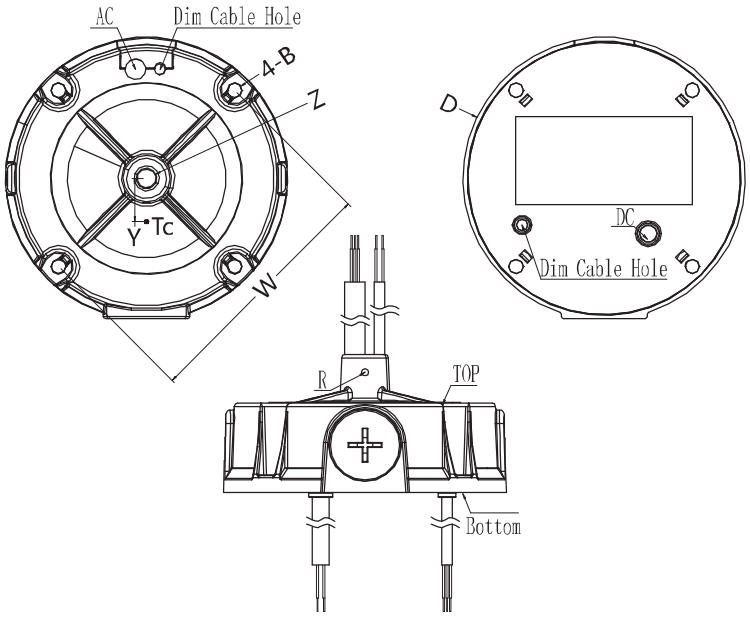
Mechanical Characteristics:

Name Description	Standard code	mm(In.)
Fixed Screw Diameter	4-B	Φ6.5(2.56)
Case Diameter	D	Φ128(5.04)
Height	H	62.5(2.46)
Ring Hole	Z	M10*1.5(Depth 20mm) G1/2(Depth 20mm)
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.

DIM cable from the bottom and top



SHENZHEN SOSEN ELECTRONICS CO.,LTD
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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. 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 parllel 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×W×H =577mm×385mm×162mm;
- 15PCS/Carton;
- Net weight/Piece: 0.79kg;Gross weight/Carton: 13.35kg;
- 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.

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Revision History

Version	Description of Update	Updated Date	Remark
V00	Original Release	2024/09/24	

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