SOSEN

SPECIFICATIONS

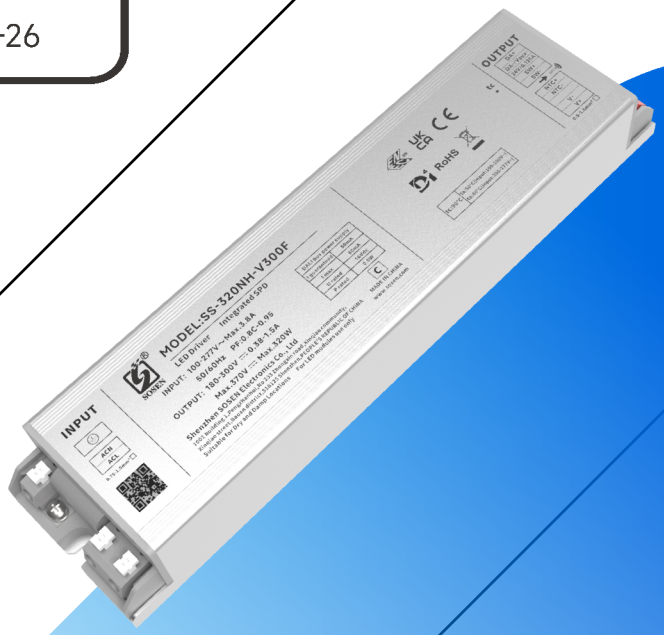
SS-320NH-V300F D4i CC DRIVER

Model: SS-320NH-V300F

Power: 320W

Rev.: V00

Release date: 2025-12-26



SS-320NH-V300F LED DRIVER

Features

- Efficiency up to 96.5%
- Can be programmed via NFC
- D4i certified
- Time-controlled programmable
- Auxiliary source: 24V/125mA
- Standby Power<0.5W
- Protections: SCP/OTP/OVP/UVP
- Built-in 16Vdc DALI bus power supply
- Built-in AC power metering with accuracy up to ±1%
- NTC, Optical, Dial Power Range Programmable
- Surge protection: CM: 6kV,DM: 6kV，dimming line CM: 2kV,DM: 1kV
- Long lifetime
- Warranty: 5 years

Description

SS-320NH-V300F series are 320W non-isolated constant current LED Driver It adopts the D4i intelligent lighting system standardized interface, enabling compatibility and connectivity with various intelligent lighting systems and controllers to achieve precise control and management. This product features multiple intelligent functions, such as real-time adjustment of lamp power and brightness parameters, support for intelligent lighting scene settings and adjustments, as well as monitoring of lampstatus and faults, enabling remote management and maintenance. Additionally, it incorporates multiple protection mechanisms, efficient power conversion, and stable output performance, providing LED lamps with stable, safe, and reliable power supply support.

Applications:

Shoebox Light, Linear high bay light, Flood lighting, Wall lamp

Model List

Model	AC Input Range	Max. Pout	Vout Range	Recommended Volltage	Iout Range	Default Current	THD (Typ.)	PF (Typ.)	Eff. (Typ.)	Max.Tc
SS-320NH-V300F	90-305Vac	320W	180-300V	200V-300V	0.38-1.5A	1.28A	8%	0.97	96.5%	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.

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Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	100Vac		200Vac	≤Ta: 50°C (conditioned use) 108V or less
	200Vac		277Vac	<Ta:60°C (conditioned use)
AC Input Range	90Vac		305Vac	Reference derating curve
Input DC Voltage Range	140Vdc		260Vdc	
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			3.8A	100Vac
Max Input Power			380W	100Vac
Input under-voltage protection	79Vac	82Vac	85Vac	
Input under-voltage recovery	84Vac	87Vac	90Vac	
Input overvoltage protection	312Vac	315Vac	318Vac	
Input overvoltage recovery	307Vac	310Vac	313Vac	
Max Inrush Current(120Vac)			60A	Cold start
Max Inrush Current(220Vac)			100A	Cold start
Max Inrush Current(277Vac)			150A	Cold start
AC Power Metering Accuracy	-3%	1%	3%	220Vac, Full load
Standby Power			0.5W	220Vac/50Hz, Dim-to-off 24V auxiliary source no load
Power Factor	0.95	0.97		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

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Output Characteristics

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	180V		300V	Power derated @180-214V
Rated O/P Voltage	214V		300V	Po=Vo*Io=320W, Full load
Rated O/P Current	1.06A		1.5A	1.5A for 214V,1.06A for 300V
Adj. O/P Current (AOC) Range	0.38A		1.5A	
No Load Voltage			370V	
Efficiency @120Vac	92.0%	93.5%		Output 300V/1.06A
Efficiency @220Vac	94.5%	96.0%		Output 300V/1.06A
Efficiency @277Vac	95.0%	96.5%		Output 300V/1.06A
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			1.0S	120Vac,Full load
			1.0S	220Vac,Full load
Line Regulation	-5%		+5%	Full load
Load Regulation	-5%		+5%	
Temperature Coefficient	-0.06%/°C		+0.06%/°C	Tc:0°C~90°C
OTP	90°C	95°C	100°C	Drop current when OTP, and it can be automatically restored after the abnormality is removed.
Short Circuit Protection				Driver will not be damaged Constant current mode or hiccups

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Output Characteristics

Parameter		Min.	Typ.	Max.	Remark
DALI-2	DA+, DA- high level	9.5V	16V	22.5V	
	DA+, DA- low level	-6.5V	0V	6.5V	
	DA+, DA- current	0mA		2mA	
Auxiliary power supply function	Rated output voltage	21.6V	24V	26.4V	Reference ground is "DA-"Output peak current 420mA, @5.2mS
	No-load output voltage			30V	
	Rated output current	0mA		125mA	
Built-in DALI bus power supply voltage		12V	16V	20V	
Built-in DALI bus power supply current		50mA		60mA	
Dial adjustment	Current range	0.424A		1.5A	Dialing range can be set via PC software
Lifetime(Tc≤85°C)		≥50,000 hours			80% load
MTBF		200,150 hours			220Vac,Full load, Ta=25°C (MIL-HDBK-217F)
Tc		90°C			
Warranty		5 years			Tc 85°C
Net Weight		750g			
Dimension		225mm*55mm*34mm			L x Wx 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	UL8750		
CUL	CAN/CSA C22.2 No.250.13		
ENEC	EN 61347-1 EN 61347-2-13 EN IEC 62384	✓	
RCM	AS/NZS61347.2.13		
CCC	GB/T 19510.1 GB/T 19510.213		
CE	EN 61347-1 EN 61347-2-13 EN 62493	✓	
	EN 301 489-1 EN 301 489-3 EN 300 330 EN 62479/EN 50663/EN 50665/EN 50364	✓	

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Safety and EMI/EMS Standards

EMI/EMS	Criterion	Status	Remark
Conduction Emission	EN IEC 55015	✓	230Vac
	GB/T 17743		
	FCC Part 15 Subpart B;ANSI C63.4		120/277Vac;ClassB
Radiation Emission	EN IEC 55015	✓	230Vac
	GB/T 17743		
	FCC Part 15 Subpart B;ANSI C63.4		120/277Vac;ClassB
Harmonic Current Emissions	EN IEC 61000-3-2	✓	ClassC
	GB 17625.1		ClassC
Surge	IEC EN61000-4-5	✓	DM: 6kV,CM: 6kV,Criterion B
	ANSI/C82.77-5		DM: 6kV,CM: 6kV,Criterion B
Lighting surge caused by lightning strike	IEC 61000-4-5	✓	DM: 1kV,CM: 2kV,Criterion B,
Ring Wave	IEC EN 61000-4-12	✓	DM: 6kV,CM: 6kV,Criterion B
	ANSI/C82.77-5		DM: 6kV,CM: 6kV,Criterion B

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Safety Test Items

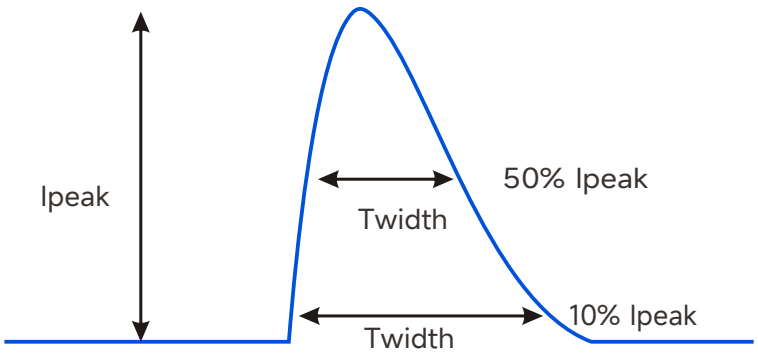
Safety Test Items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	ENEC Insulation Requirements	TUV Insulation Requirements	
Input-Case	2U+1000Vac	2U+1000Vac	/	Basic insulation
Input-Dim	2U+1000Vac	2U+1000Vac	/	Basic insulation
Dim-Case	2U+1000Vac	2U+1000Vac	/	Basic insulation
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. For voltage withstand test, short-circuit between L/N, short-circuit between output line positive/negative, short-circuit between dimmer line and Vaux+ or between dimmer line and auxiliary source positive/negative.

Performance Curves

Input Inrush Current



Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
120Vac	60A	970us	500us
220Vac	100A	970us	500us
277Vac	150A	970us	500us

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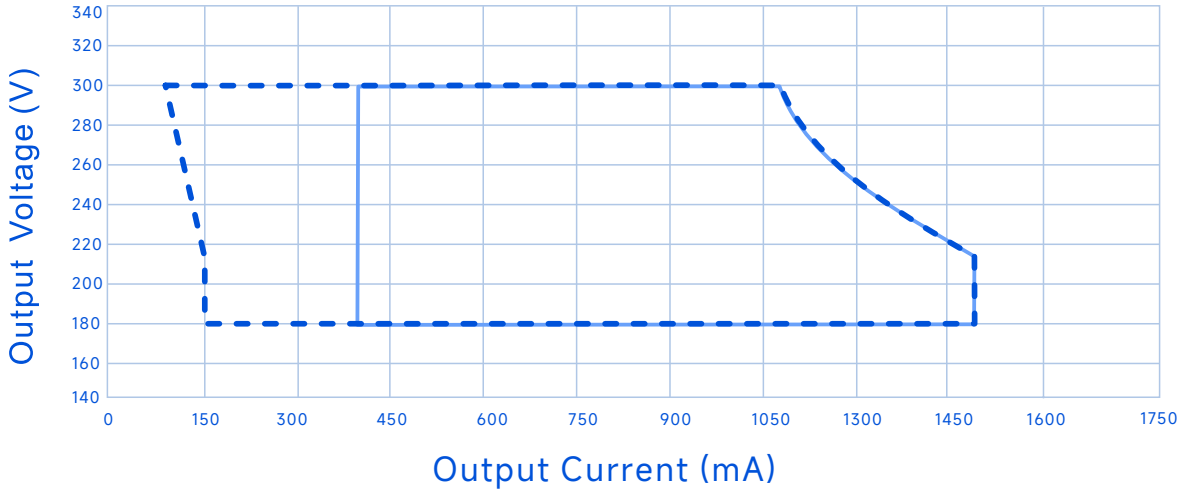
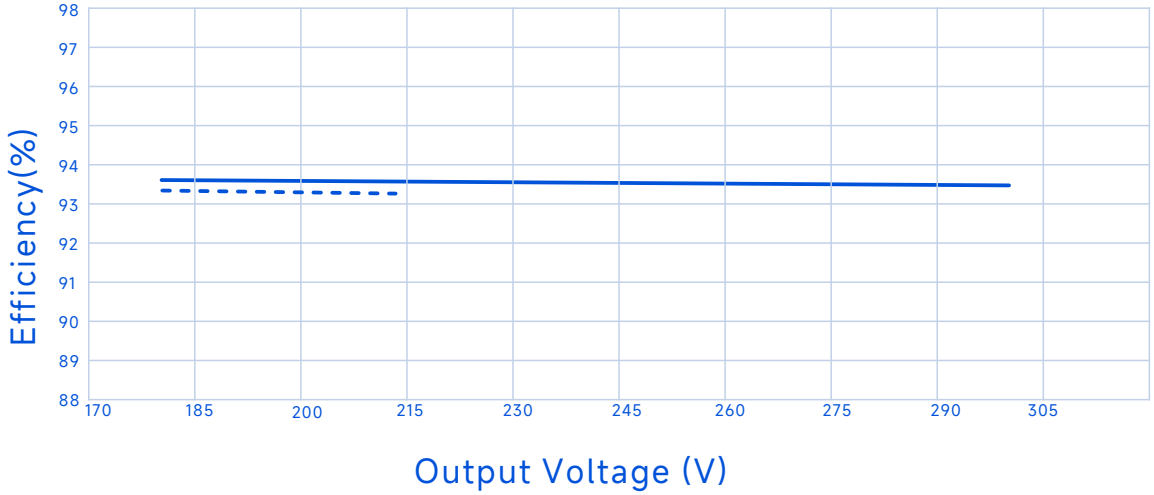
Performance Curves

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



Efficiency Vs. Output Voltage (Vin=120Vac)



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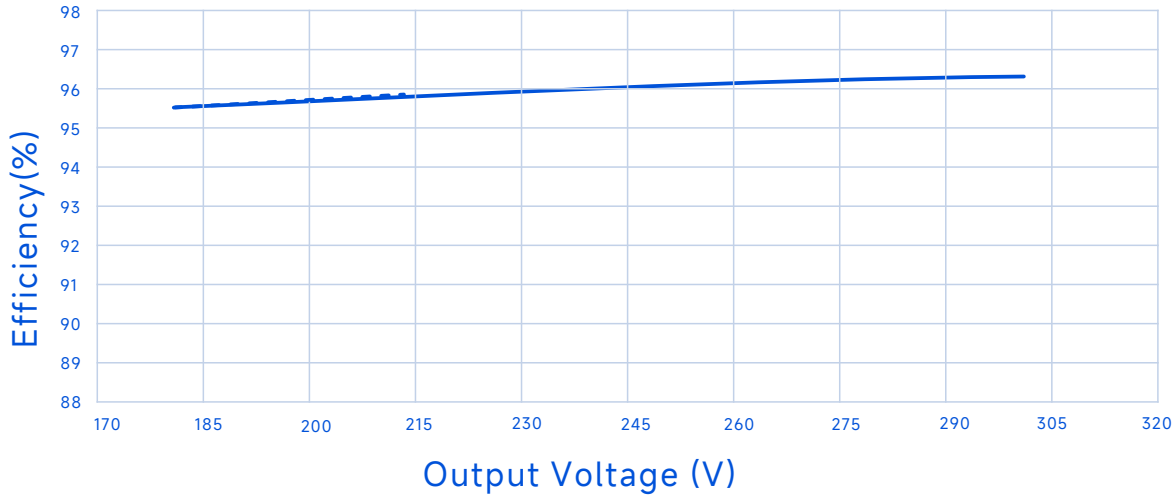
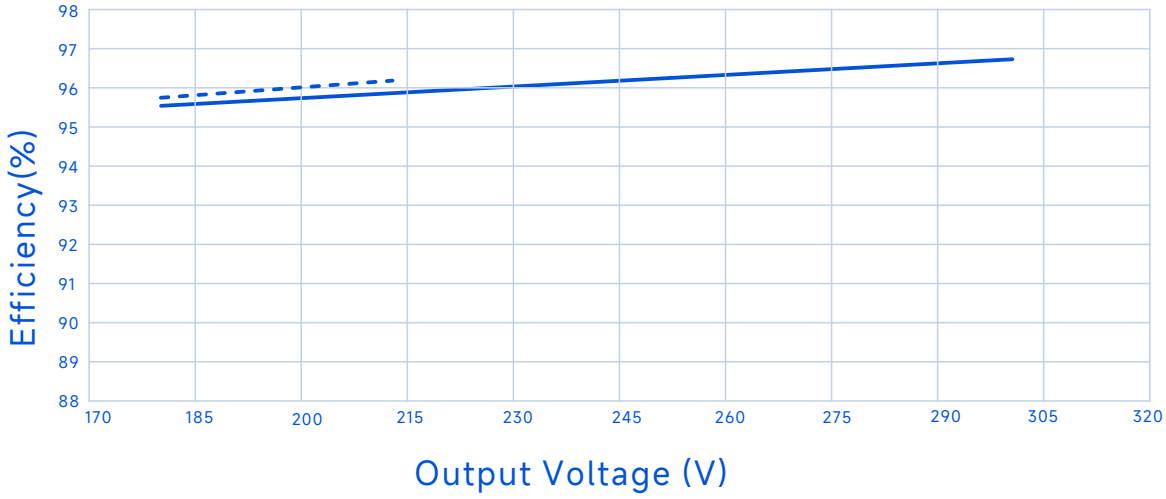
Performance Curves

Efficiency Vs. Output Voltage (Vin=220Vac)



------- Io=1500mA ——— Io=1060mA

Efficiency Vs. Output Voltage (Vin=277Vac)



------- Io=1500mA ——— Io=1060mA

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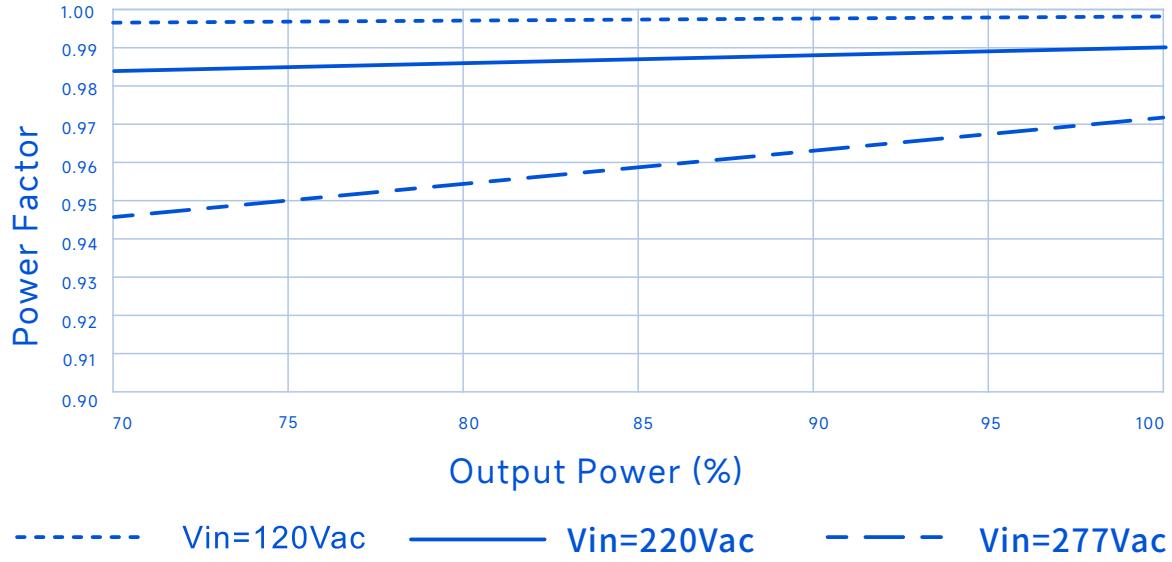
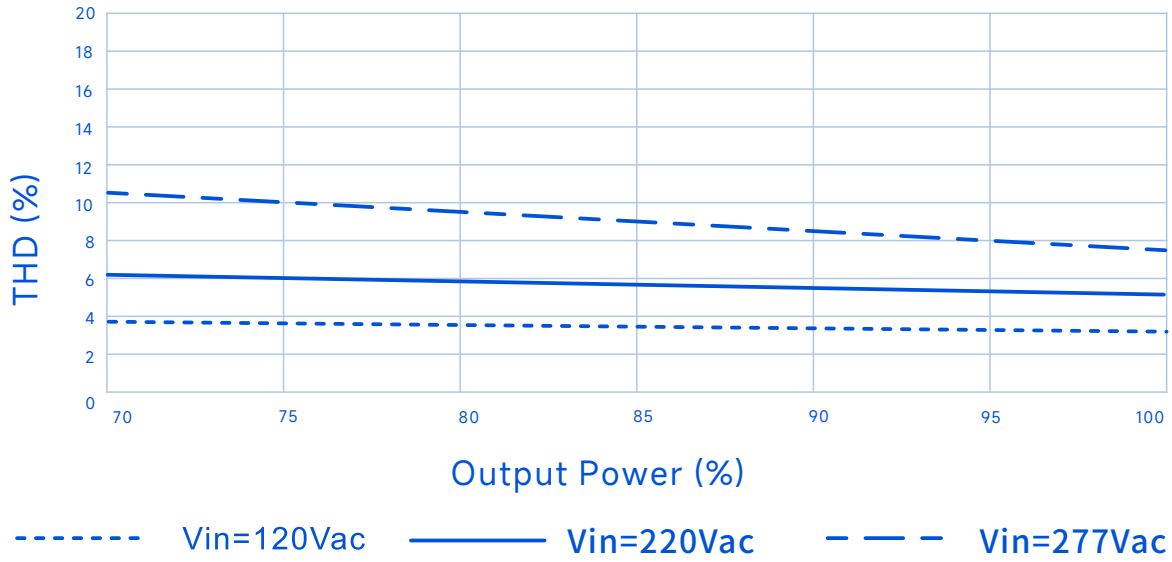
Performance Curves

Power Factor Vs. Output Power



THD Vs. Output Power



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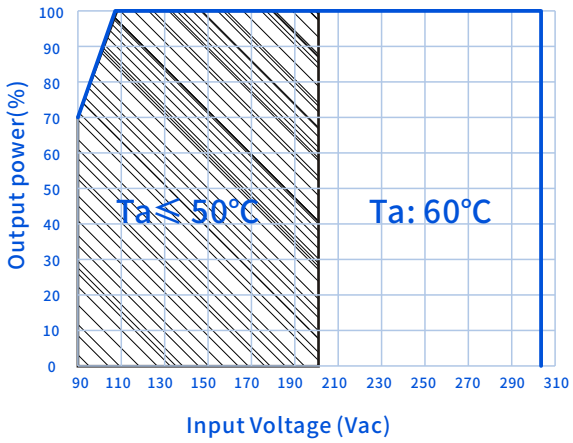
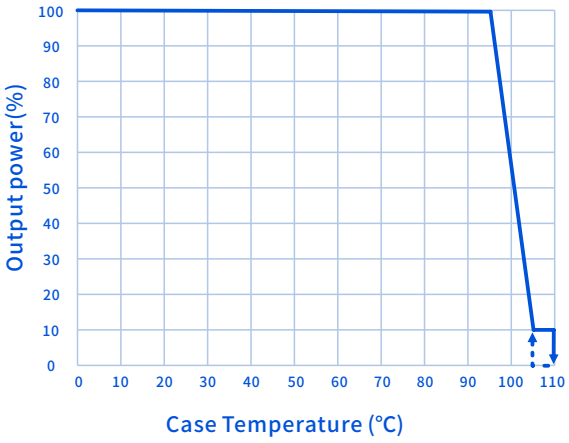
Performance Curves

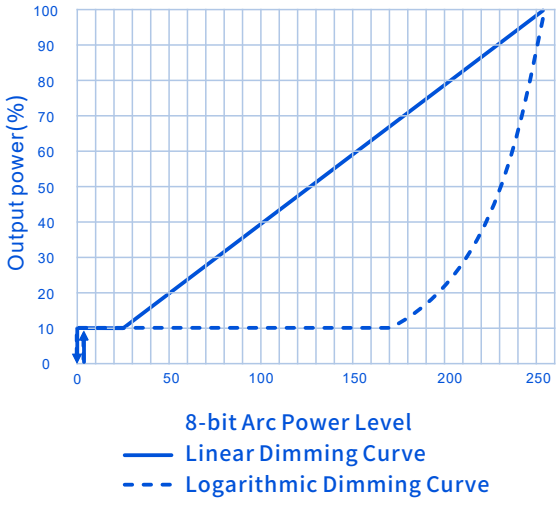
Output Power Vs. Input Voltage



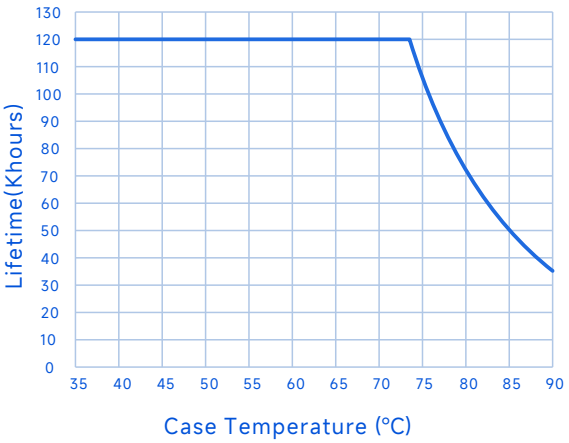
Output Power Vs. Case Temperature



Linear and Logarithmic Dimming Curves



Lifespan vs. Case Temperature



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Software OTP function:

Software OTP is an optional feature, and OTP parameters can be set through the software page.

Time-controlled dimming:

Adaptive midpoint alignment: Automatically saves effective operating time, automatically calculates the adaptive cycle time based on four effective timings, and virtualizes local midnight.Adaptive percentage: Runs the initially set dimming curve based on the automatically calculated adaptive cycle time.

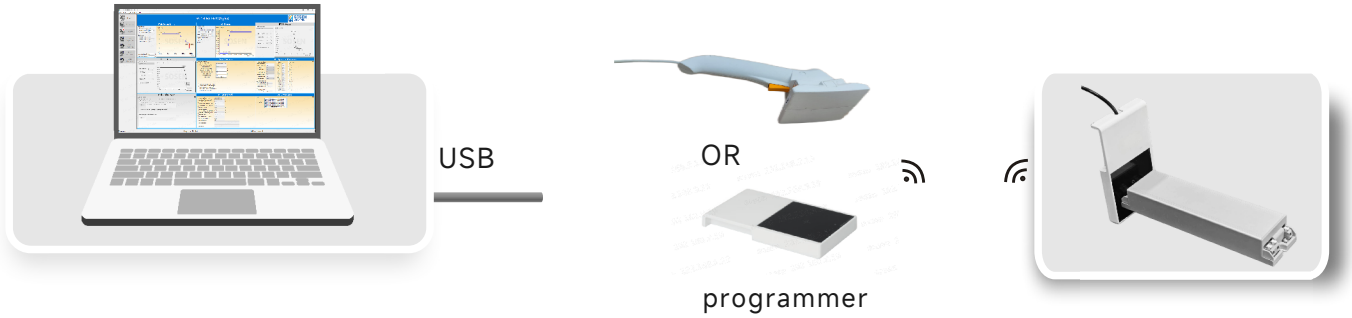
CLO Constant Luminous Output:

During the lamp's life cycle, the light output is kept constant by gradually increasing the output current to maintain the lamp's luminous efficacy.

ELA End-of-Life Alert:

Preset LED luminaire life time, such as 50,000 hours. When the cumulative operating time of the luminaire reaches 50,000 hours, it will flash 5 times each time it is powered on toremind users to replace the driver.

NFC programming connection diagram:



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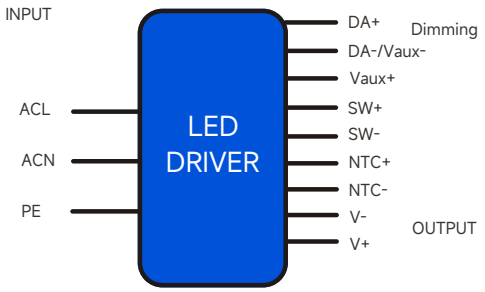
SS-320NH-V300F LED DRIVER

Mechanical Characteristic



AC Input Terminal

ACL: connect to L wire, ACN: connect to N wire,
⏚ :connect to earth wire

DC Input Terminal

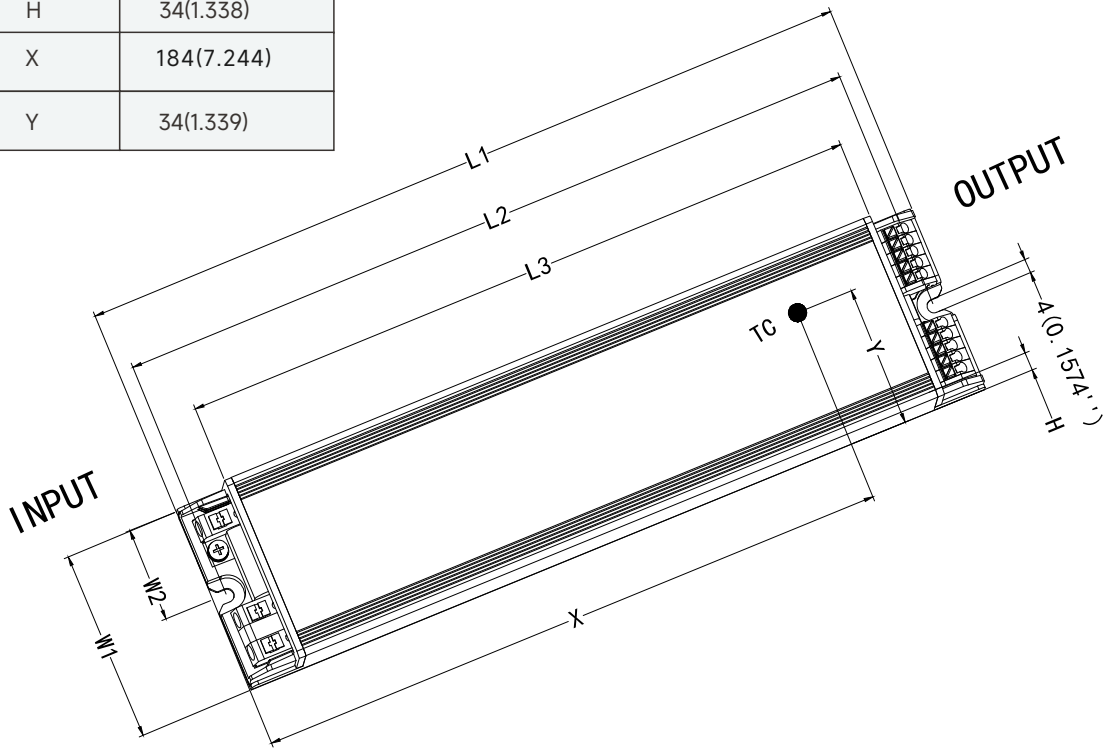
V+: light source board positive, V-: light source board negative

Function Terminal

DA+:Dimming Positive, DA-/Vaux-:Dimming negative terminal/Auxiliary source negative terminal, SW+/SW-:Dialing Power,Vaux+: Auxiliary source positive electrode,NTC+/NTC-:LED Over-temperature Protection.

Name Description	Standard Code	mm(In.)
Case Width	W1	55(2.165)
Mounting Hole Width	W2	27.5(1.083)
Overall Length	L1	225(8.858)
Mounting Hole Length	L2	217(8.543)
Case Length	L3	198(7.795)
Case Height	H	34(1.338)
TC Point Position	X	184(7.244)
TC Point Position	Y	34(1.339)

Note
1,Please follow the "LED Driver User Manual" obtained from SOSEN's official website for assembly.



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Assembly Tips

1.The trace routing on aluminum substrates is designed in compliance with creepage distance requirements specified by relevant certification regulations.
2.The creepage distance between LED+ and LED- on the aluminum substrate is designed in compliance with the relevant certification regulations.
3.Minimize the copper area on the aluminum PCB to reduce parasitic capacitance and leakage current.
4.It is recommended to design LED beads in parllel first and then in series.
5.The insulation level of LED light panels should meet the reliability design requirements.
6.It is recommended not to exceed the parameters used in the specification, otherwise it may lead to a higher risk of power supply reliability.
7.For other precautions, please refer to the "LED Driver User Manual".
8.SOSEN reserves the right of final interpretation of the above parameters.

Warning

Insufficient or compromised insulation voltage resistance in LED light panels may cause breakdown and short circuits to earth, resulting in damage to the luminaire and LED driver, and posing significant safety hazards. It is recommended to install a residual current device (RCD) during application.

Package

- Outside carton dimension: L×W×H =445mm×225mm×145mm;
-20PCS/Carton;
- Net weight/Piece: 0.75kg;Gross weight/Carton: 15.8kg;
- 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 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	2025/12/26	

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