SOSEN

SPECIFICATIONS

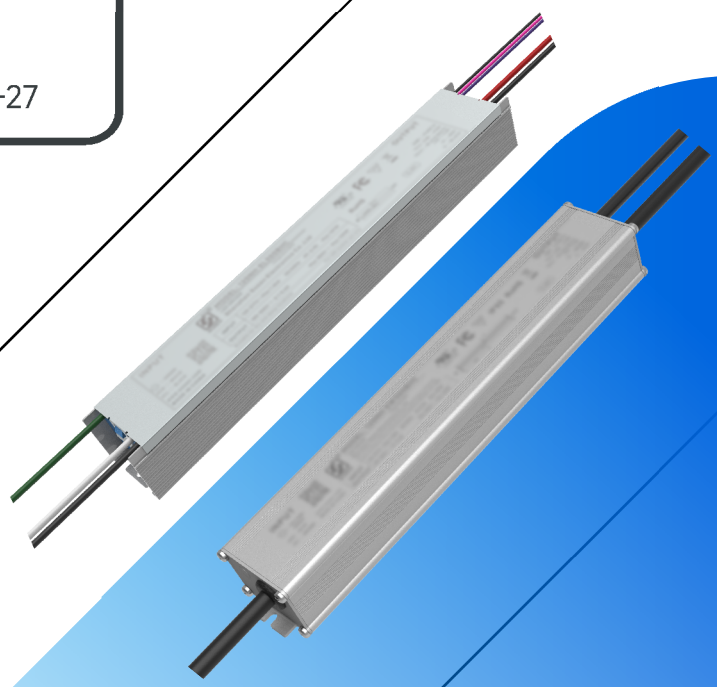
120NH-E*300BHC CC DRIVER

Model: 120NH-E*300BHC

Power: 120W

Rev.: V02

Release date: 2026-07-27



120NH-E*300BHC Series LED Driver

Features

- Efficiency up to 96%
- Dimming: 0-10V,PWM,Resistor,Timing
- Isolated Dim-to-off
- AUX Power：12V/0.2A
- Soft-start, Constant Lumen, Life Warning
- Standby power<0.5W
- Protections: OTP/OVP
- Surge protection: CM: 6kV, DM: 6kV
- Dual-live-wire input off without afterglow
- Warranty: 5 years

c UL us E360758 Type HL FC 110 IP65 RoHS

Description

120NH-E*300BHC series are 120W non-isolated constant current LED Driver with 108-305VAC. It has DIM to Off, high efficiency, isolated auxiliary power supply, compact housing ,fullypotted , high reliability, high cost performance and other advantages.

Applications:

Plant lighting

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
120NH-E*300BHC	108-305Vac	120W	180-300V	200V-300V	0.1-0.6A	8%	0.97	95%	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

"*"	AUX 12V (suffix:H)	Dimming off 0-10V/PWM/Resistor	Timing	Dual-live-wire input off	IP65	Type HL	Remark
L	✓	✓	✓	✓			
W	✓	✓	✓	✓	✓	✓	

Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	120Vac		277Vac	Full load
AC Input Range	108Vac		305Vac	Ref. derating curve
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			1.46A	120Vac, Full load
Max Input Power			147W	120Vac, Full load
Max Inrush Current(120Vac)			40A	Cold start
Max Inrush Current(220Vac)			80A	Cold start
Max Inrush Current(277Vac)			100A	Cold start
Standby Power			0.5W	230Vac/50Hz, Dim-to-off
Power Factor	0.95	0.97		220Vac/50Hz, Full load
	0.90			120-277Vac, 70%-100% load
THD		8%	10%	220Vac/50Hz, Full load
			20%	120-277Vac,70%-100% load

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Output Characteristics:

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	180V		300V	Power derated @180-200V
Rated O/P Voltage	200V		300V	Po=Vo*Io=120W, Full load
Rated O/P Current	0.4A		0.6A	0.6A for 200V,0.4A for 300V
Adj. O/P Current (AOC)Range	0.1A		0.6A	
No Load Voltage			350V	
Efficiency @120Vac	91.0%	93.0%		Output 300V/0.4A
Efficiency @220Vac	92.0%	95.0%		Output 300V/0.4A
Efficiency @277Vac	94.0%	96.0%		Output 300V/0.4A
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
Line Regulation	-2%		+2%	Full load(Low temperature±5%)
Load Regulation	-6%		+6%	
Temperature Coefficient	-0.03%/°C		+0.03%/°C	Tc:0°C~90°C
OTP	90°C	95°C	100°C	>Tc Typ., Current derating <Tc Min., Current recovery

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Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
Aux Power	O/P Voltage	10.8V	12V	13.8V	
	O/P Current			200mA	
0-10V Dimming	Dim Vmax	0V		12V	Dimming prohibits reverse connection. DIM+ source current 110uA .
	Dim Range	10%loset		100%loset	
	Rec.Dim Range	0V		10V	
PWM Dimming	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	Resistance	0Kohm		100Kohm	DIM+ source current 110uA.
	Dim Range	10%loset		100%loset	
Dim to Off	Dim off	0.7V	0.8V	0.9V	
	Dim on	0.8V	0.9V	1.0V	
Timing Curve(Optional)		By programming			Set by program
Constant Lumen(Optional)		By programming			Set by program
Life Warning(Optional)		By programming			Set by program
Lifetime(Tc≤75°C)		≥50,000 hours			220Vac,80% load
MTBF		201,000 hours			220Vac,Full load, Ta=25°C (MIL-HDBK-217F)
Tc		90°C			
Warranty		5 years			Tc:75°C
Net Weight		500g			120NH-EL300BHC
Net Weight		650g			120NH-EW300BHC
Dimension 120NH-EL300BHC		250mm*36mm*30.5mm			L x Wx H
Dimension 120NH-EW300BHC		250mm*42mm*31mm			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)	-30°C	25°C	+90°C	
Storage Temperature	-40°C	25°C	+90°C	
Operation Humidity	10%RH		90%RH	
Storage Humidity	5%RH		90%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		For NFC wireless products

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Safety and EMI/EMS Standards

EMI/EMS	Standard	Status	Remark
Conduction Emission	FCC Part 15 Subpart B;ANSI C63.4	✓	120Vac/277Vac:Class A
Radiation Emission	FCC Part 15 Subpart B;ANSI C63.4	✓	120Vac/277Vac:Class A
Harmonic Current Emissions	EN IEC 61000-3-2	✓	ClassC
Surge	IEC/EN61000-4-5	✓	DM: 6kV,CM: 6kV,Criterion B
	ANSI/C82.77-5	✓	DM: 6kV,CM: 6kV,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	
Input-Case	2U+1000Vac	Basic insulation
Input-Dim	2U+1000Vac	Basic 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:

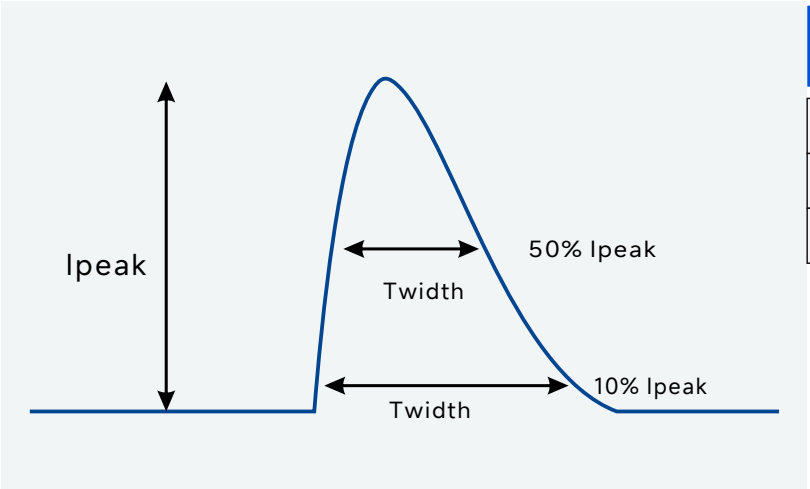
1.SOSEN warrants the LED Driver itself complies with EMC standard. However, LED Driver's EMC should be re-checked when integrated into lighting systems due to unexpected interference of components.

2.Please short (ACL and ACN), (V+ and V-), (Dim+ and Dim - and Vaux+ and Vaux-)when Hi-pot test.

3.During the HI-POT, the built-in GDT and the ground connection terminal wire shall be disconnected.

Performance Curves:

Input Inrush Current



Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
120Vac	40A	480uS	220uS
220Vac	80A	410uS	200uS
277Vac	100A	410uS	200uS

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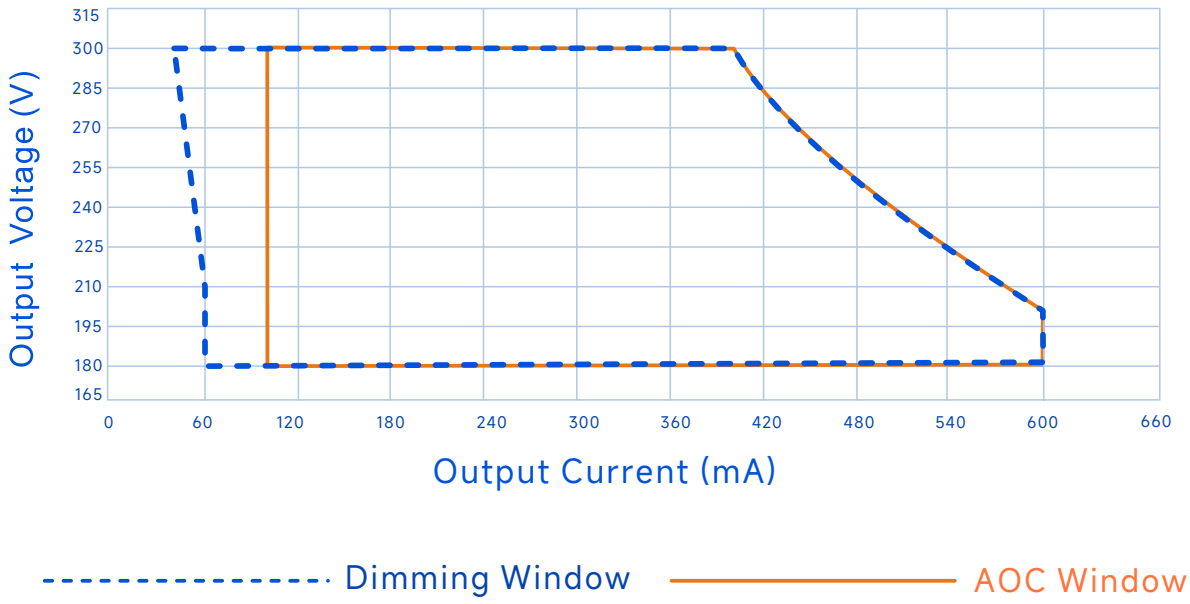
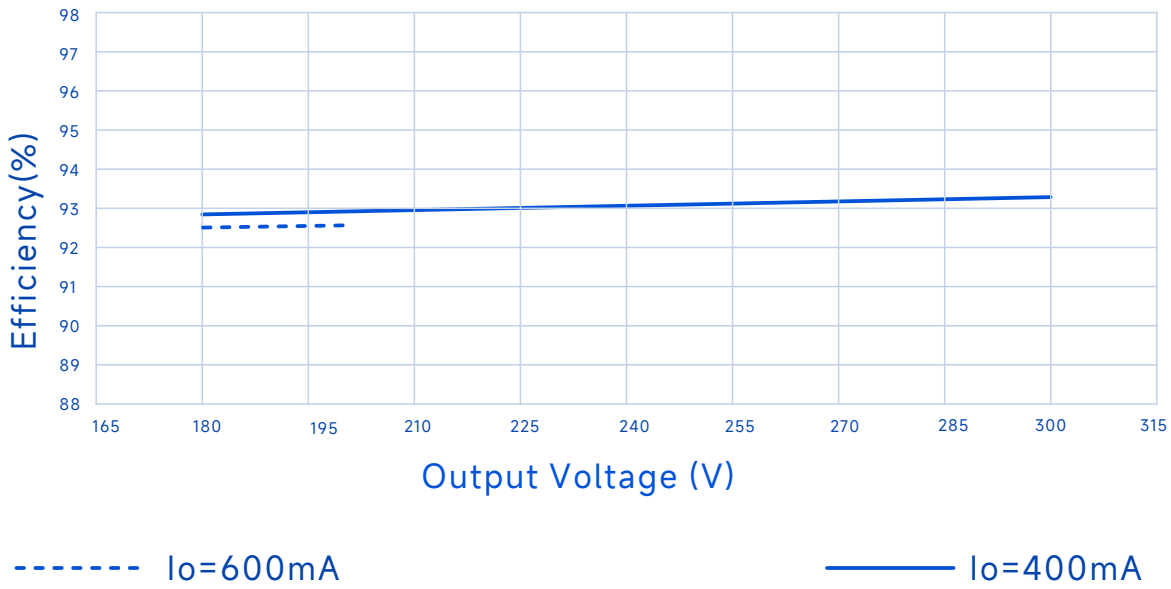
Performance Curves:

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



Efficiency Vs. Output Voltage (Vin=120Vac)



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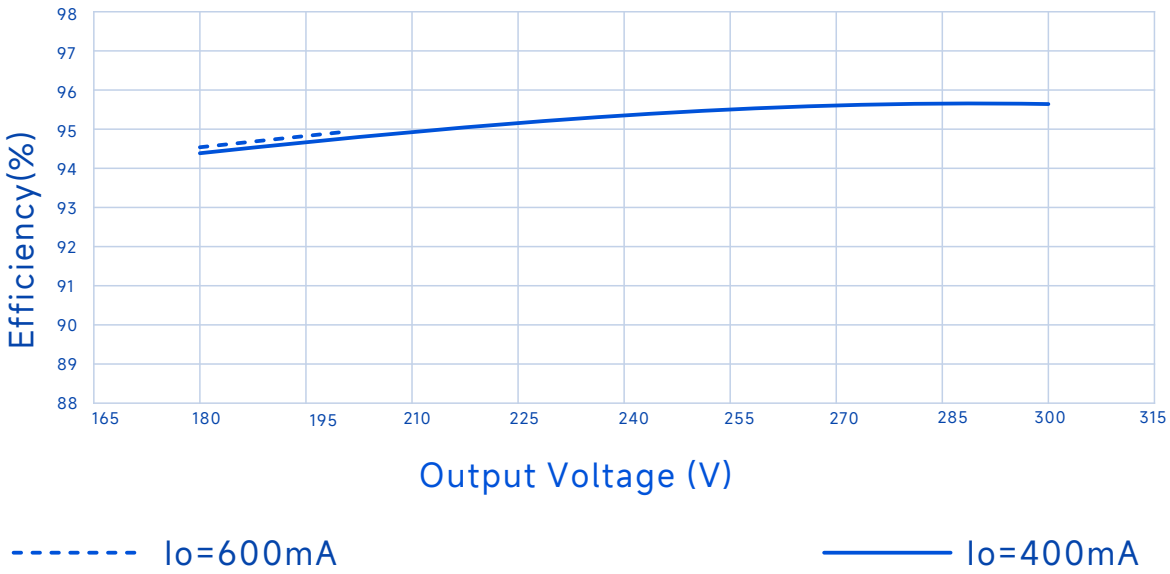
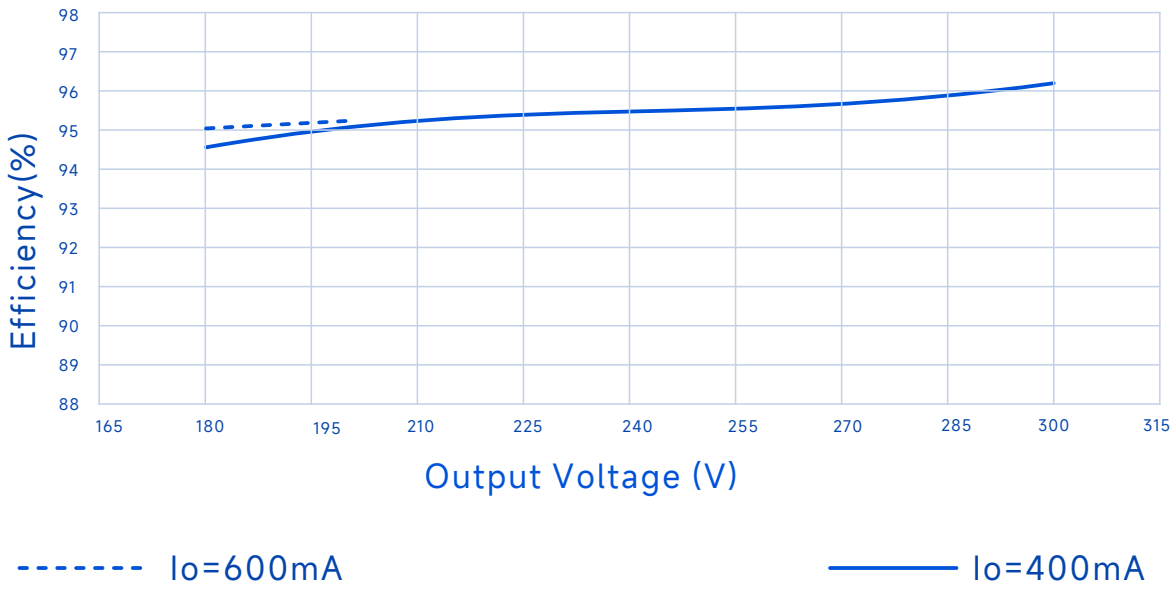
Performance Curves:

Efficiency Vs. Output Voltage (Vin=220Vac)



Efficiency Vs. Output Voltage (Vin=277Vac)



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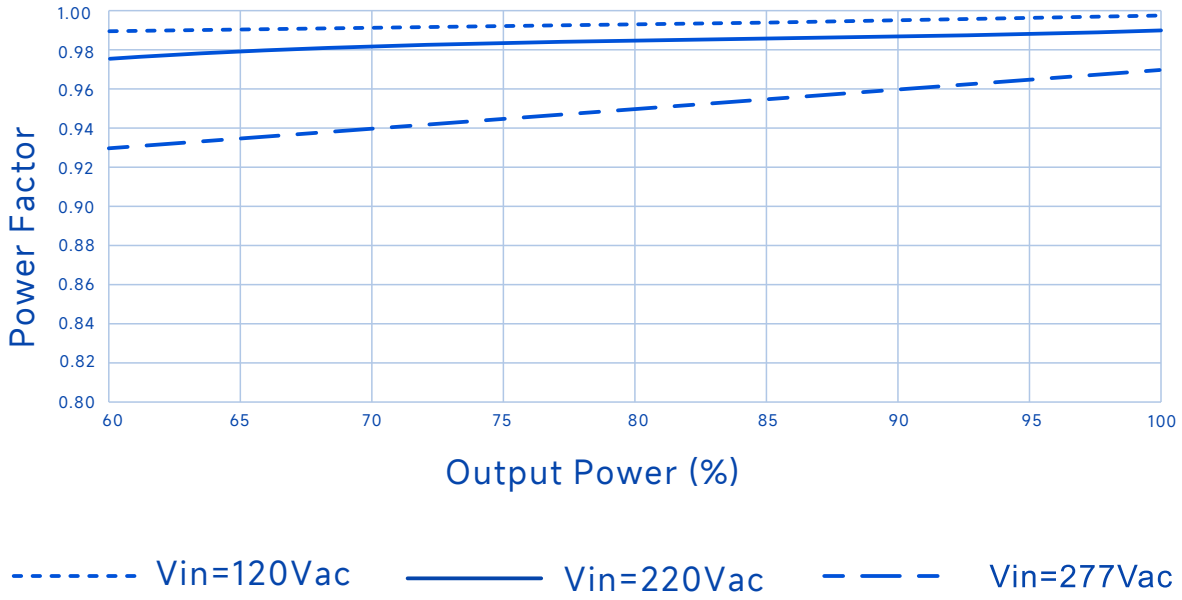
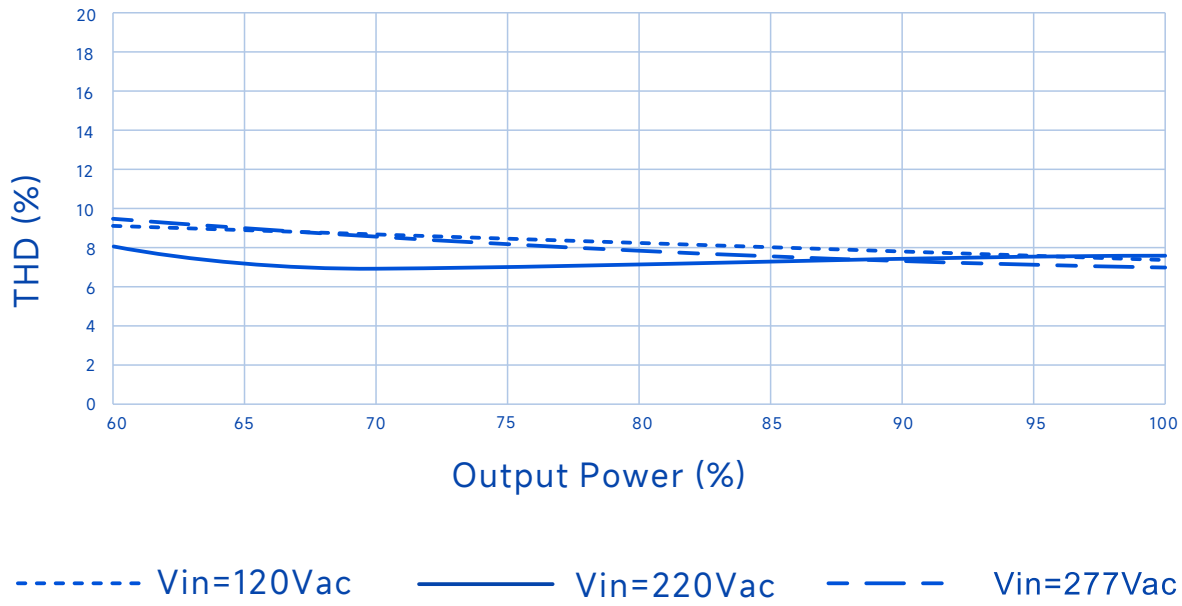
Performance Curves:

Power Factor Vs. Output Power



THD Vs. Output Power



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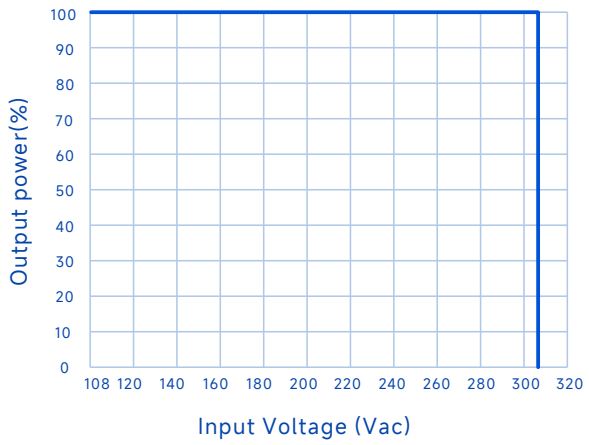
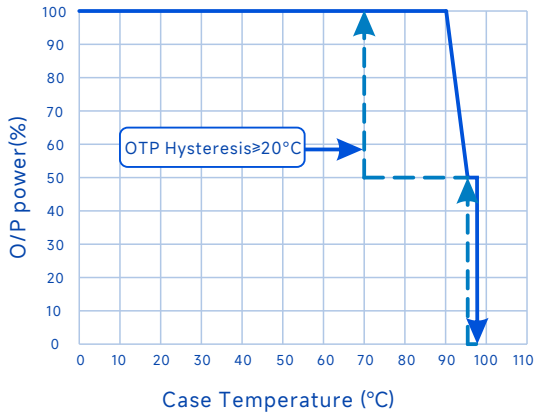
Performance Curves:

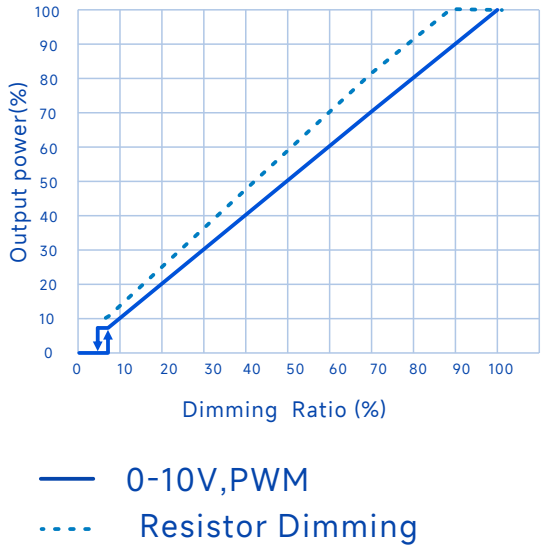
Output Power Vs. Input Voltage



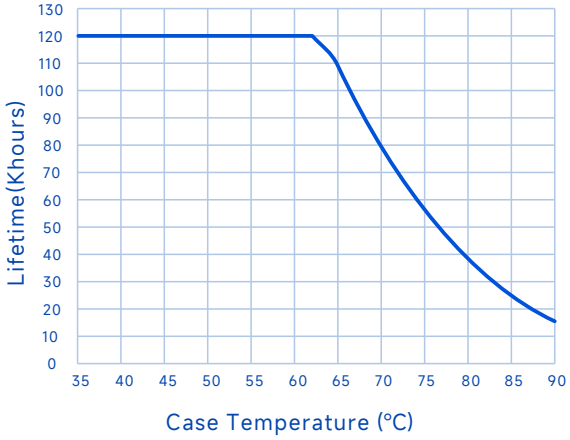
Output Power Vs. Case Temperature



Output Power Vs. Dimming



Lifetime Vs. Case Temperature



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Software TOP function

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

Timer Dimming

Automatic conversion between DST and Standard Time.Traditional Timer Dimming, Self-Adapt-Midnight Timer, Self-Adapt-Percentage Timer. The time dimming percentage can be set by setting 8 curves.

Traditional timer: After power-on, it works according to the set timing curve Increasing fade time allows for slow changes between different dimming levels, preventing sudden changes in brightness and causing dazzle)

Self Adapting-Midnight: Automatically save power-on times and use 2 valid timers to assume that the center point of the dimming curve is local midnight time.

Self Adapting-Percentage: Runs the initially set dimming curve according to an automatically calculated adaptive cycle time.

CLO Constant Lumen Output

Light failure compensation function, in the Luminaire life cycle, by gradually increasing the output current, to achieve a constant output of LED luminous flux, the overall luminous effect remains unchanged.

ELA End-of-Life Alert

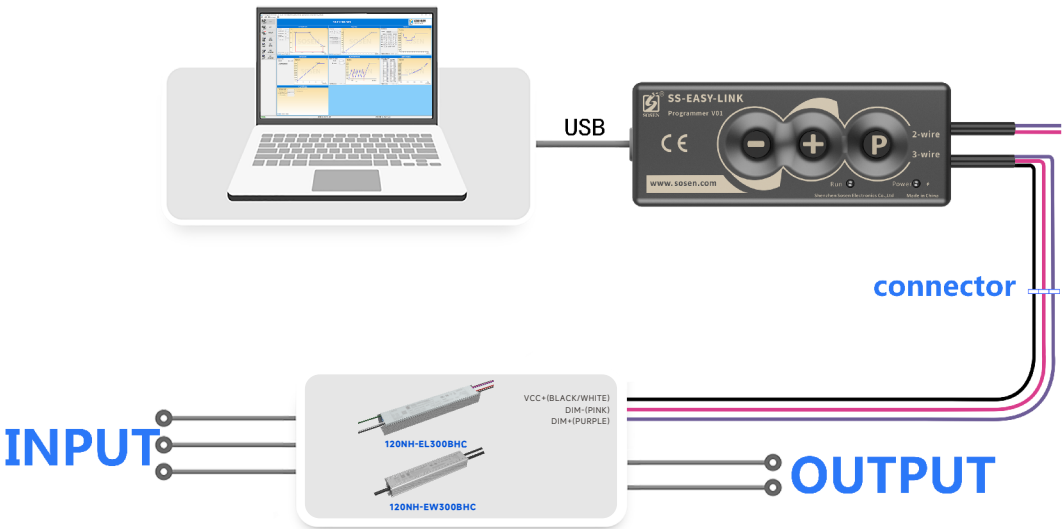
By presetting a LED driver life time, such as 50KH, after the luminaire has accumulated 50KH of light-up time, every time the luminaire is powered on, it will blink 5 times to remind the user to replace the LED driver.

SSA software startup

By setting the soft start time, the lamp gradually lights up slowly within the set time, thus achieving the purpose of protecting the lamp.

Programming connection diagram

1. During the programming process, all programming functions can be realized without powering on the driver.
2. All programming functions can be realized without powering off the drive that is currently in use.
3. It can be disconnected from the PC and offline programming can be implemented.



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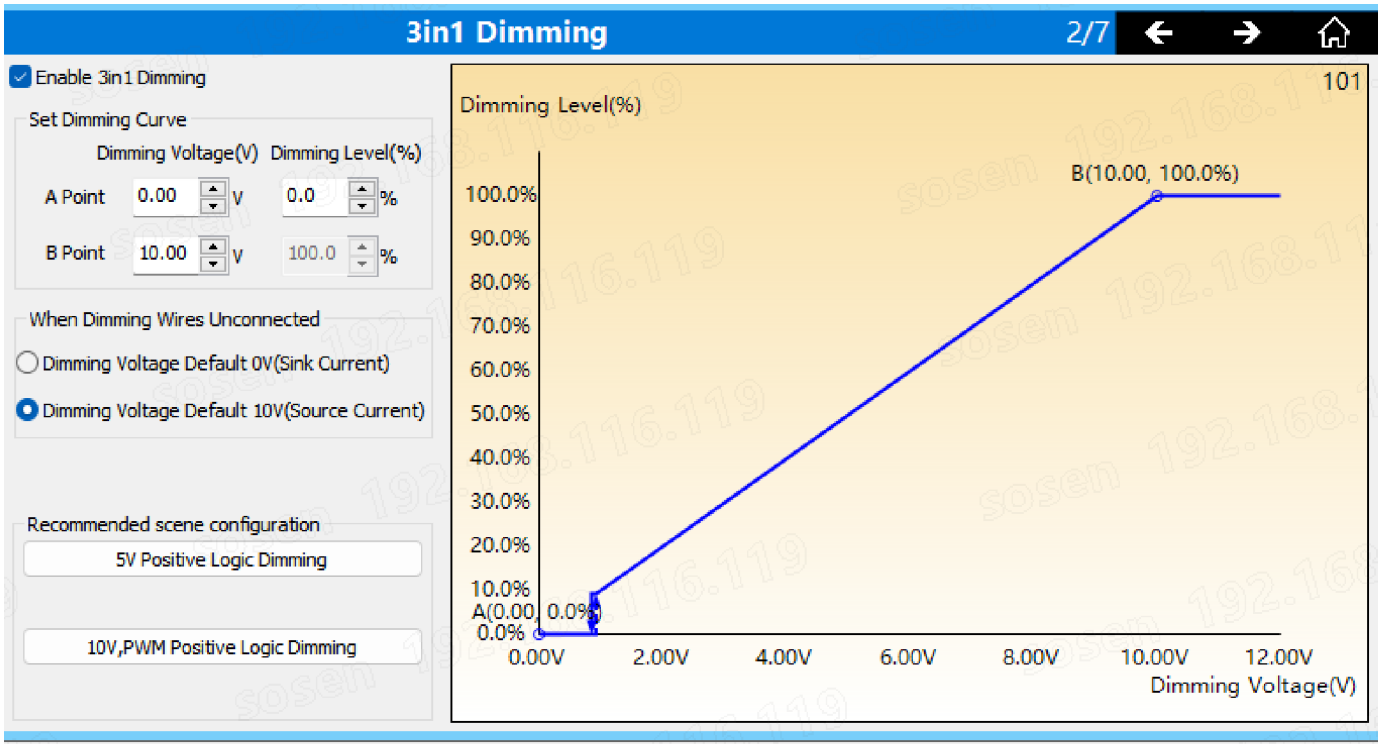
Parameter			Remark
Default setting	Positive logic dimming (0-10V)	Dimming voltage default 10V (source current)	Factory Default Model
Dimming optional function	Positive logic dimming (0-10V) Turn off the Constant current source	Dimming voltage default 0V (sink current) Resistance dimming not available	When the dimming wire is not connected, the LED driver output is in the DIMOFF state

Note:
Select "Dimming voltage defaults to 10V (source current)" / "Dimming voltage defaults to 0V (sink current)", which needs to be set according to the dimmer used by the end user.

Settings Interface



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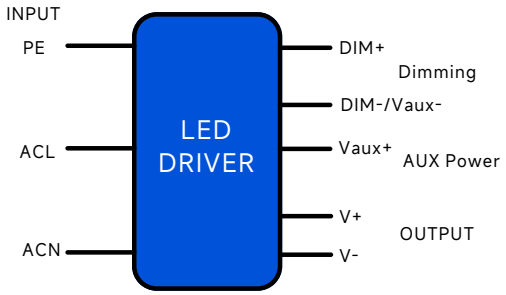
Mechanical Characteristics (120NH-EL300BHC)



AC Input Cable(Exposed Length 300±10mm):

UL/EU model: 18AWG 105°C 600V O.D: 2.77mm,Black:ACL,White:ACN,Green: ⏚

DC Output Cable(Exposed Length 300±10mm):

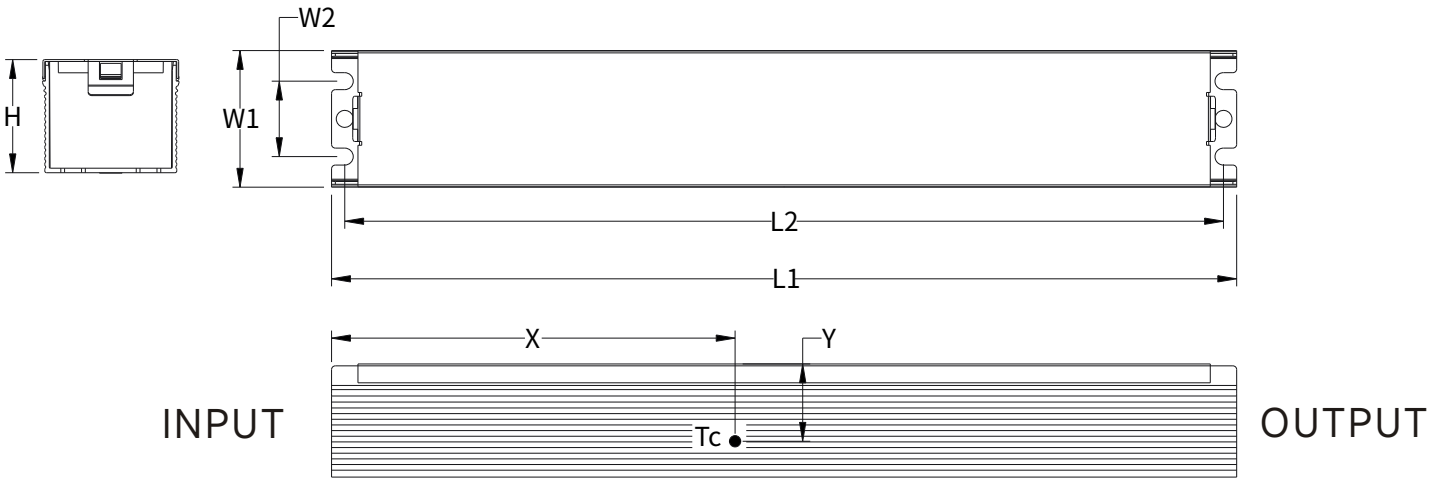
UL/EU model: 18AWG 105°C 600V O.D: 2.77mm,Red:V+ Black:V-

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

UL/EU model: 22AWG 105°C 300V O.D: 1.52mm Purple DIM+, Pink: DIM-/Vaux- Black/White: Vaux+

Name Description	Standard Code	mm(In.)
Overall Length	L1	250(9.84)
Mounting Hole Length	L2	239(9.41)
Case Width	W1	36(1.42)
Mounting Hole Width	W2	20(0.79)
Case Height	H	30.5(1.20)
TC Point Position	X	112(4.41)
TC Point Position	Y	20(0.79)

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 Cable:Tinned length of wire:10±2mm
3.The dimensional characteristics of the shell height:
(unit: mm (In.), tolerance +1 mm (0.039 In.), -0.5 mm (-0.019 In.)



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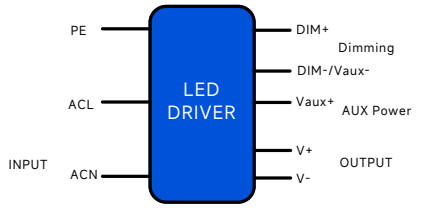
Mechanical Characteristics(120NH-EW300BHC)



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

UL model: SJTW,3*18AWG O.D: 7.8mm,Black:L,White:N,Green:⏚

DC Output Cable(Exposed Length 250±10mm):

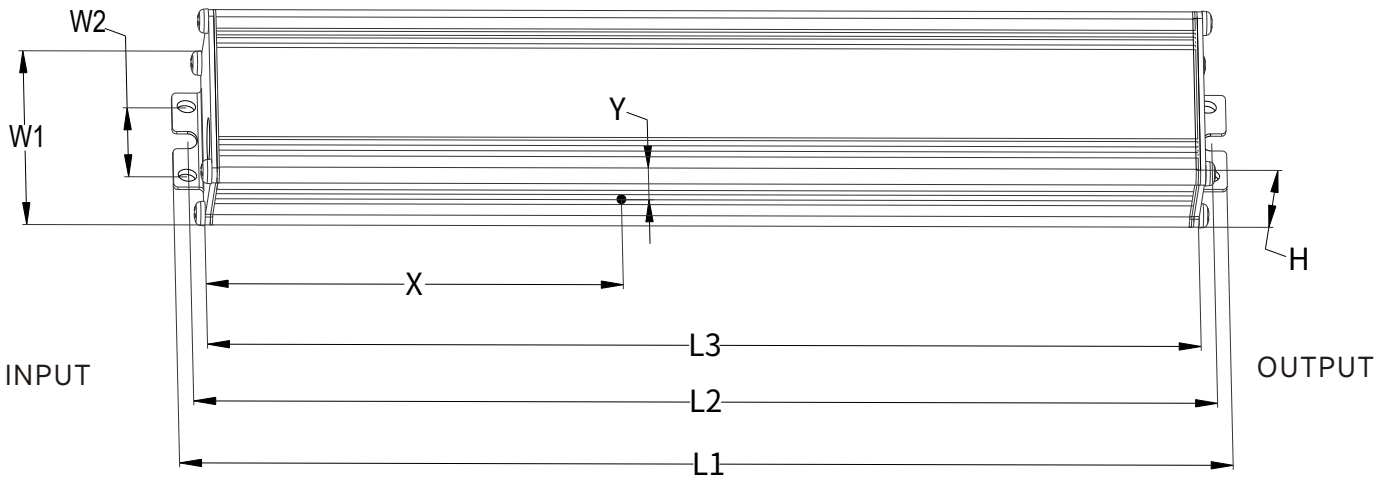
UL model:SJTW,2*18AWG O.D: 7.3mm,Red:V+ Black:V-

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

UL model: UL21996,3x22AWG O.D: 4.9mm Purple DIM+, Pink: DIM-/Vaux-
Black/White: Vaux+

Name Description	Standard Code	mm(In.)
Overall Length	L1	250(9.84)
Mounting Hole Length	L2	243(9.57)
Case Length	L3	236.5(9.31)
Case Width	W1	42(1.65)
Mounting Hole Width	W2	18.5(0.73)
Case Height	H	31(1.22)
TC Point Position	X	105(4.13)
TC Point Position	Y	17(0.67)

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 Cable:
Peeled length of cable:43±5mm, Tinned length of wire:10±2mm



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Assembly Tips

1. Dimming or AUX Power tinned connectors should be capped if not used to avoid dimming or AUX Power parts damage from external signals.
2. The trace routing on aluminum substrates is designed in compliance with creepage distance requirements specified by relevant certification regulations.
3. The creepage distance between LED+ and LED- on the aluminum substrate is designed in compliance with the relevant certification regulations.
4. Minimize the copper area on the aluminum PCB to reduce parasitic capacitance and leakage current.
5. It is recommended to design LED beads in parllel first and then in series.
6. The insulation level of LED light panels should meet the reliability design requirements.
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 =495mm×385mm×162mm; 16PCS/Carton;(120NH-EL300BHC)
- Outside carton dimension: L×W×H =577mm×385mm×162mm; 24PCS/Carton;(120NH-EW300BHC)
- Net weight/Piece: 0.5kg;Gross weight/Carton: 10kg; (120NH-EL300BHC)
- Net weight/Piece: 0.65kg;Gross weight/Carton: 17.0kg; (120NH-EW300BHC)
- 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	2026/02/06	
V01	Update Size data	2026/04/28	
V02	Delete "Type HL" from the NH-EL model	2026/07/27	

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