SOSEN
LED DRIVER

SOSEN LED Driver, Your Smart Choice

Specifications

SS-200VH-A Series LED Driver

Model: SS-200VH-AXXX*

Description: 200W LED Driver

Rev.: V00

Release Date: 2023-11-13

SS-200VH-A Series LED Driver

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—
VH-A Series

Features:

- Efficiency up to 94.5%
- Output current can be adjusted by NFC(DALI-2)
- Isolated dimming:DALI-2,0-10V,PWM,Resistor
- Communication Function With PC
- Timing and Negative logic programmable
- ELA
- Suitable for Class I /II luminaires
- Protections: SCP/OTP/OVP/OPP/Power automatic derating at AC low line voltage input
- Surge protection: CM: 10kV(For Class I), DM: 6kV
- IP67
- Warranty: 5 years

ENEC 25 CE RoHS IP67

产品概述:

VH-A Series are constant current LED Driver with wide O/P voltage range and adjustable O/P current by program. LED luminaries manufactures can easily design luminaries and reduce cost.

Applications:

High Pole lighting, High bay lighting, Stadium lighting, Plant lighting, Fish lighting, Street lighting, Tunnel lighting , Stage lighting

Model List:

Model	AC Input Range	Full Power Vo Range	Max. Pout	Vout Range	Iout	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-200VH-A286*	100-305Vac	200W	143-286V	190-286V	0.1-1.05A	8%	0.98	94.5%	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-200VH-A Series LED Driver

"*" Means Additional Function

"*"	1-10V/PWM Dim /Resistor Or 10-0V (suffix:B)	DALI (suffix:D)	NFC	Class I	Class II	Remark
B	✓			✓		
BE	✓				✓	
D		✓	✓	✓		
DE		✓	✓		✓	

Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
AC Input Range	100Vac	120-277Vac	305Vac	Reference Derating Curve
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			2.3A	120Vac, Full load
Max Input Power			228W	120Vac, Full load
Max Inrush Current(220Vac)			75A	Cold start
Max Inrush Current(277Vac)			95A	Cold start
No Load Power			7.5W	220Vac/50Hz, No load
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(SS-200VH-A286*):

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	143V		286V	Power derated @143-190V
Rated O/P Voltage	190V		286V	Po=Vo*Io=200W, Full load
Rated O/P Current	0.7A		1.05A	1.05A for 190V,0.7A for 286V
Adj. O/P Current (AOC)Range	0.1A		1.05A	
No Load Voltage			350V	
Efficiency @220Vac	92.0%	94.0%		Output 286V/0.7A, Test after burn-in
Efficiency @277Vac	92.5%	94.5%		Output 286V/0.7A, Test after burn-in
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
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				Driver will not be damaged, Hiccup mode

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Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
0-10V Positive Dimming (Configurable)	Dim Vmax	0V		12V	DIM+ source current 110uA. Dimming prohibits reverse connection Configurable to 0-5V
	Dim Range	10%Iomax		100%Ioset	
	Rec.Dim Range	0V		10V	
10-0V Negative Dimming (Configurable)	Rec.Dim Range	0V		10V	DIM+ sink current Imax 40uA. Dimming prohibits reverse connection Configurable to 5-0V
PWM Dimming (Optional)	PWM High	9.8V		10.2V	DIM+ source current 110uA. Dimming prohibits reverse connection
	PWM Low	0V		0.3V	
	Frequency	1KHz		2KHz	
	PWM Duty	0%		100%	
Resistor Dimming (Optional)	Resistance	0Kohm		100Kohm	Not available with negative logic
	Dim Range	10%Iomax		100%Ioset	DIM+ source current 110uA .
0-10V Dim to Off	Dim off	0.7V	0.8V	0.9V	If the led is less than maximum rated output voltage of 75%,the luminaries may possibly have slight light when dim-to-off. Thus the whole lighting system needs to be tested
	Dim on	0.8V	0.9V	1.0V	
10-0V Dim to Off	Dim off	9.0V	9.2V	9.4V	
	Dim on	8.8V	9.0V	9.2V	
Timing Curve(Optional)		By programming			Set by program
Lifetime(Tc≤80℃)		≥50,000 hours			80% load
MTBF		201,000 hours			220Vac,Full load, Ta=25℃ (MIL-HDBK-217F)
IP Grade		IP67			
Tc		90℃			
Warranty		5 years			Tc：80℃
Net Weight		740g			
Dimension		165mm*66mm*37mm			L x W 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
ENEC	EN 61347-1:2015 EN 61347-2-13:2014 EN 61347-2-13:2014/A1:2017	✓	
UKCA	EN 61347-1:2015+A1:2021 EN 61347-2-13:2014+A1:2017 EN 62493:2015 BS EN 61347-1:2015+A1:2021 BS EN 61347-2-13:2014+A1:2017 BS EN 62493:2015		
EAC	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013 TP TC 004/2011 TP TC 020/2011		
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	EN55015:2013+A1:2015 GB/T 17743	
Radiation Emission	EN55015:2013+A1:2015 GB/T 17743	
Harmonic Current Emissions	IEC/EN 61000-3-2 GB/T 17625.1	Class C
Surge	IEC/EN61000-4-5	DM: 6kV,CM: 8kV,Criterion B
	EN61547	DM: 6kV,CM: 10kV,Criterion B

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SS-200VH-A Series LED Driver

Safety Test Items(B/D Model):

Safety Test Items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	ENEC Insulation Requirements	CCC Insulation Requirements	
Input-Output	/	3000Vac	3750Vac	Reinforced insulation
Input-Case	/	1500Vac	1875Vac	Basic insulation
Input-Dim	/	3000Vac	3750Vac	Reinforced insulation
Output-Dim	/	1000Vac	1000Vac	Basic insulation
Output-Case	/	1000Vac	1000Vac	Basic insulation
Dim-Case	/	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 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 -)when Hi-pot test.

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SS-200VH-A Series LED Driver

Safety Test Items(BE/DE Model):

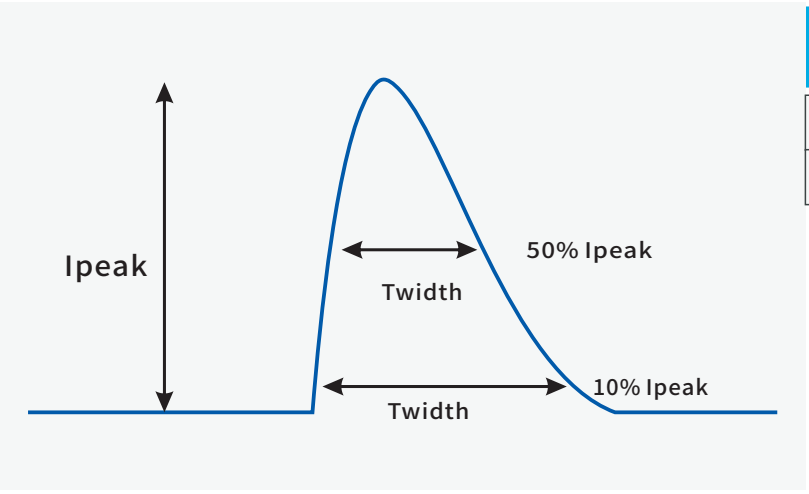
Safety Test Items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	ENEC Insulation Requirements	CCC Insulation Requirements	
Input-Output	/	3000Vac	3750Vac	Reinforced insulation
Input-Case	/	3000Vac	3750Vac	Reinforced insulation
Input-Dim	/	3000Vac	3750Vac	Reinforced insulation
Output-Dim	/	1000Vac	1000Vac	Basic insulation
Output-Case	/	1000Vac	1000Vac	Basic insulation
Dim-Case	/	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 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 -)when Hi-pot test.

Performance Curves:

Input Inrush Current



Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
220Vac	75A		300uS
277Vac	95A		260uS

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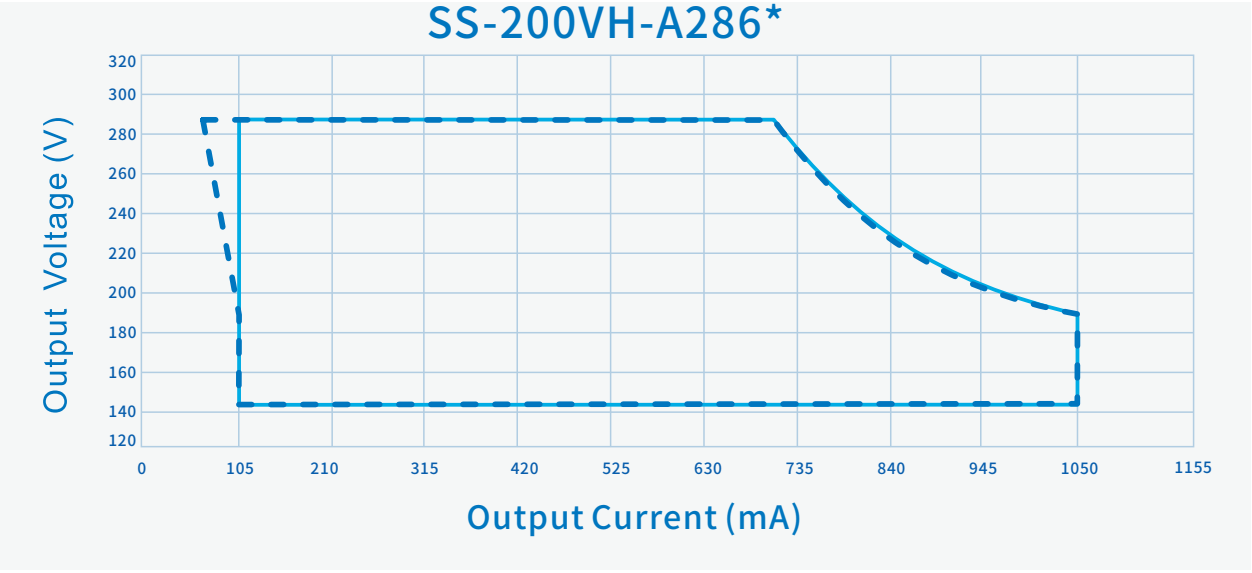
Performance Curves:

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



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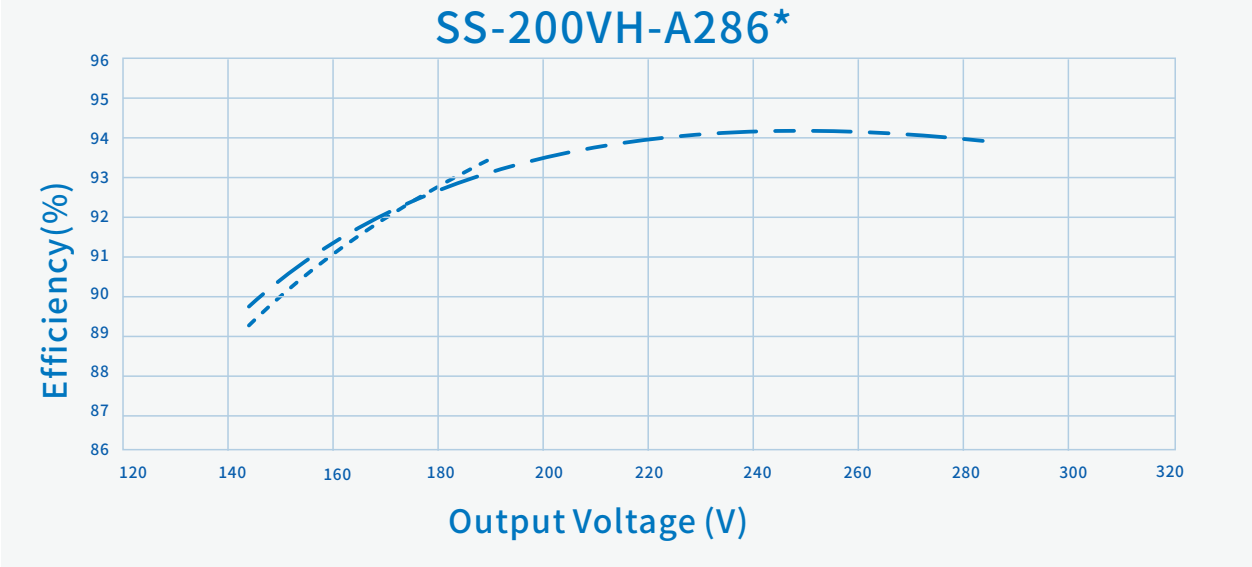
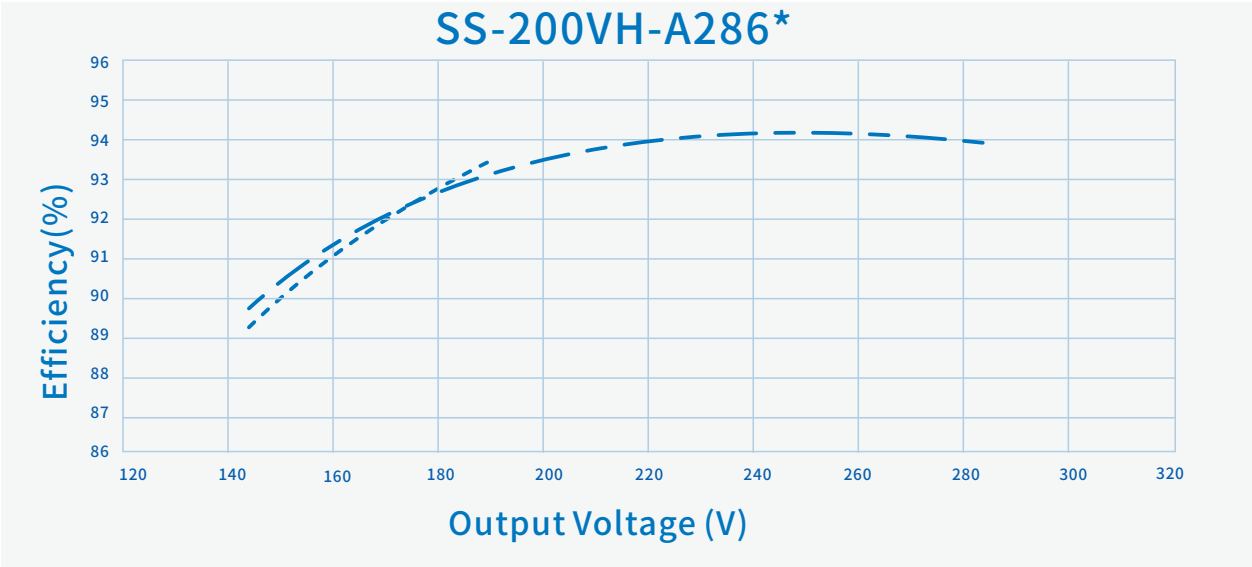
Performance Curves:

Efficiency Vs. Output Voltage (Vin=220Vac)



-------- Io=1050mA　　– — – - Io=700mA

Efficiency Vs. Output Voltage (Vin=277Vac)



-------- Io=1050mA　　– — – - Io=700mA

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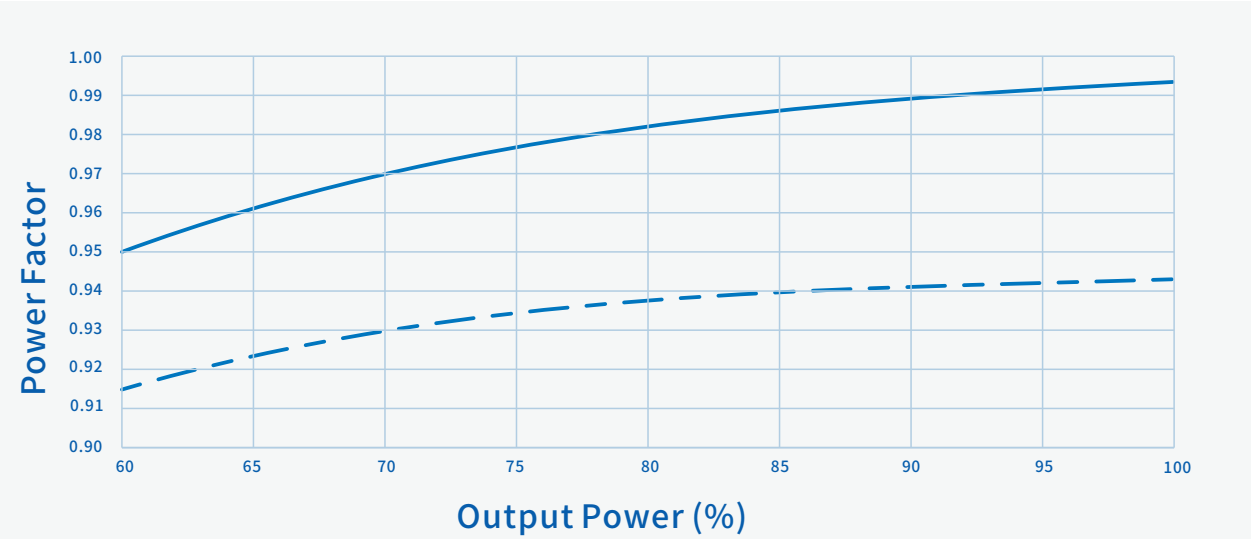
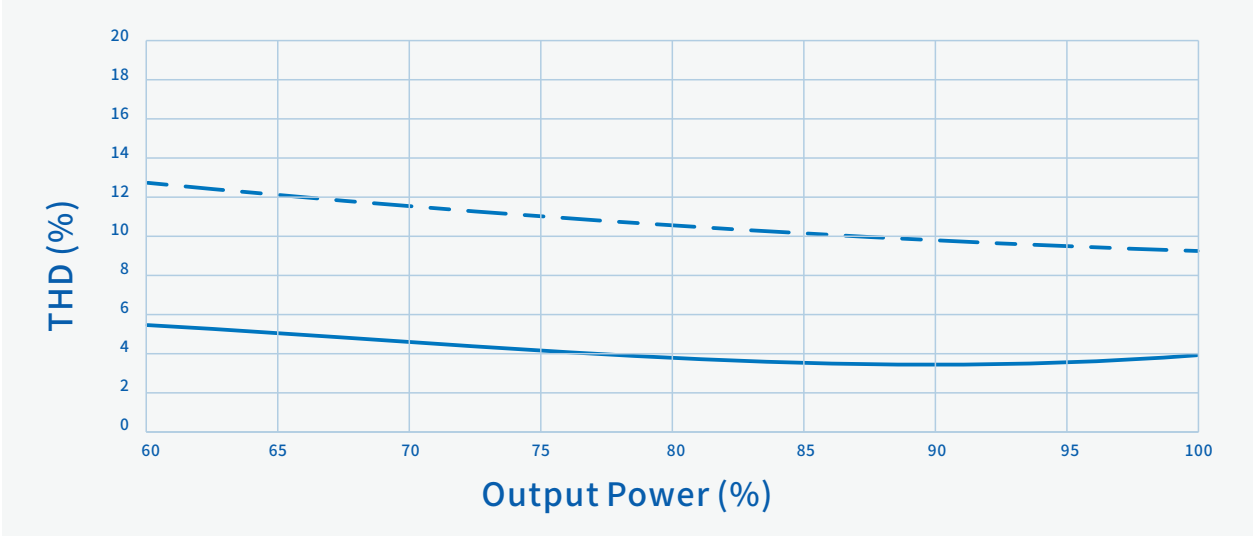
Performance Curves:

Power Factor Vs. Output Power



Vin=220Vac Vin=277Vac

THD Vs. Output Power



Vin=220Vac Vin=277Vac

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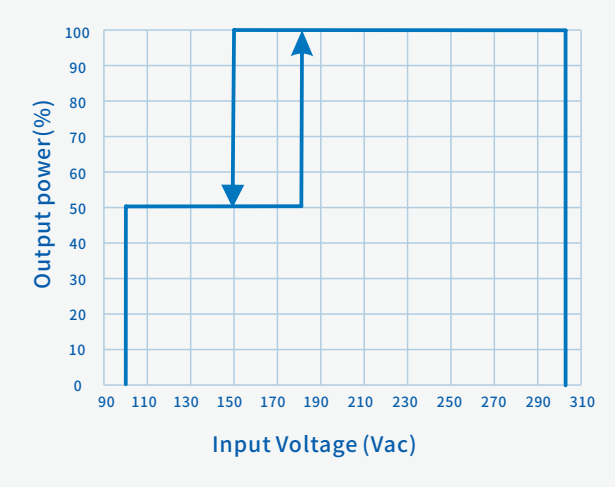
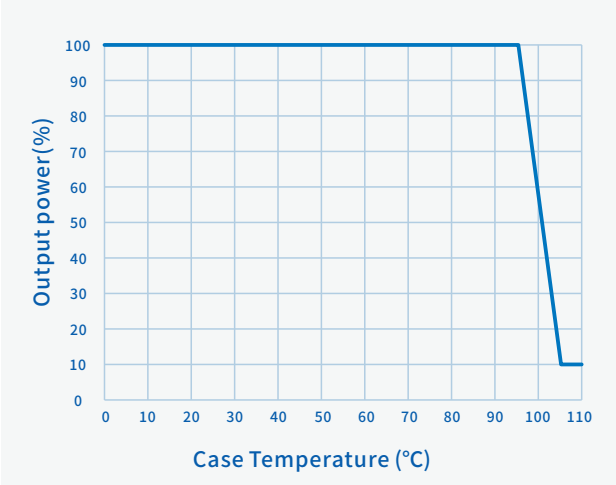
SS-200VH-A Series LED Driver

Performance Curves:

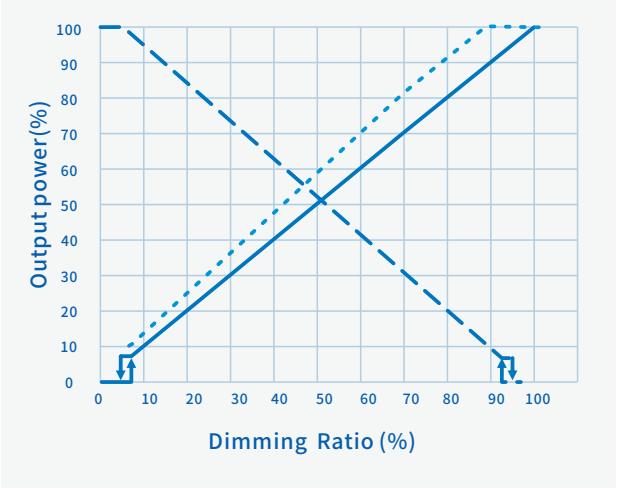
Output power Vs. Input Voltage



Output power Vs. Case Temperature



O/P Power Vs. Dimming

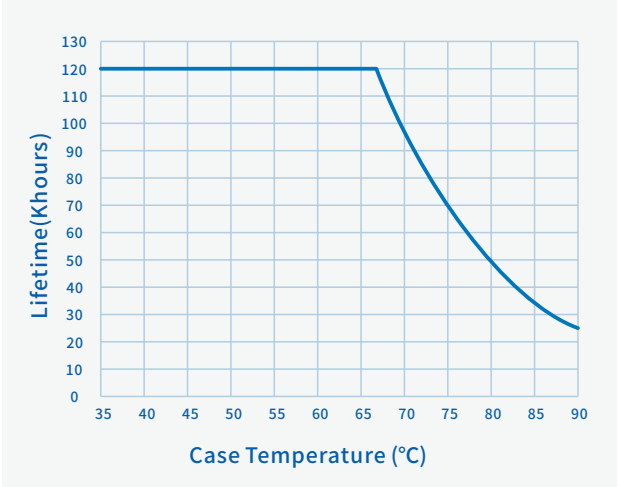


——— 0-10V,0-5V,PWM

– – – 10-0V,5-0V

- - - - Resistor Dimming(100KΩ)

Lifetime Vs. Case Temperature



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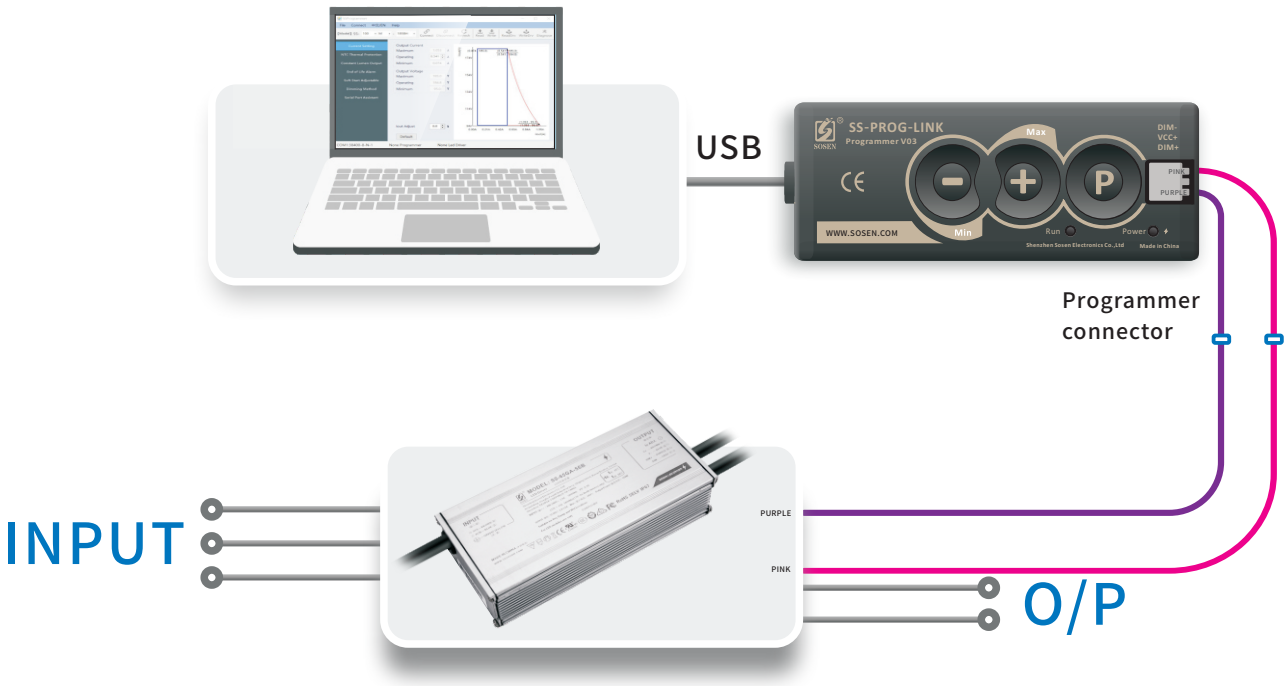
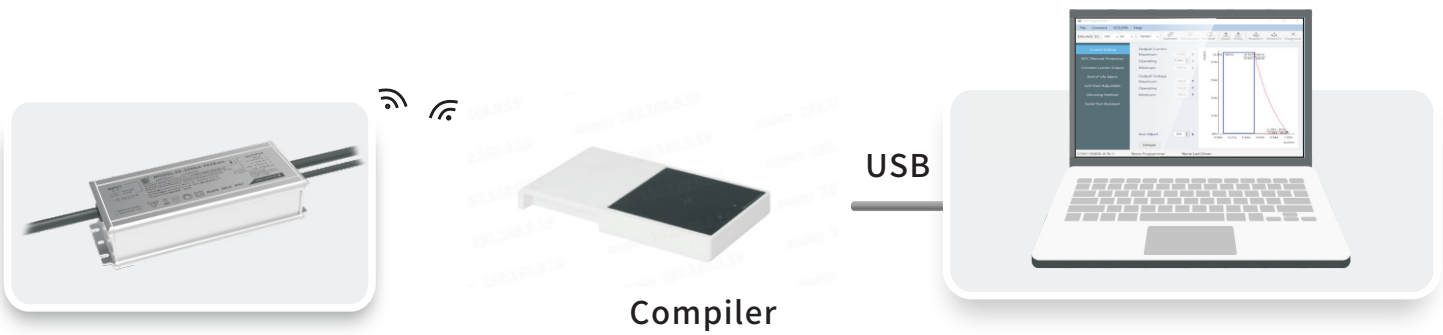
Programming connection diagram(B/BE Model):

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.



NFC Programming connection diagram(D/DE Model):



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.

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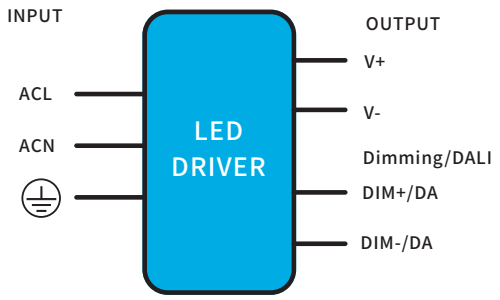
Mechanical Characteristics(B/D Model)



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

EU model: H05RN-F,3*1.0mm², O.D:7.3mm,Brown:L, Blue:N,Yellow/Green: ⏚

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

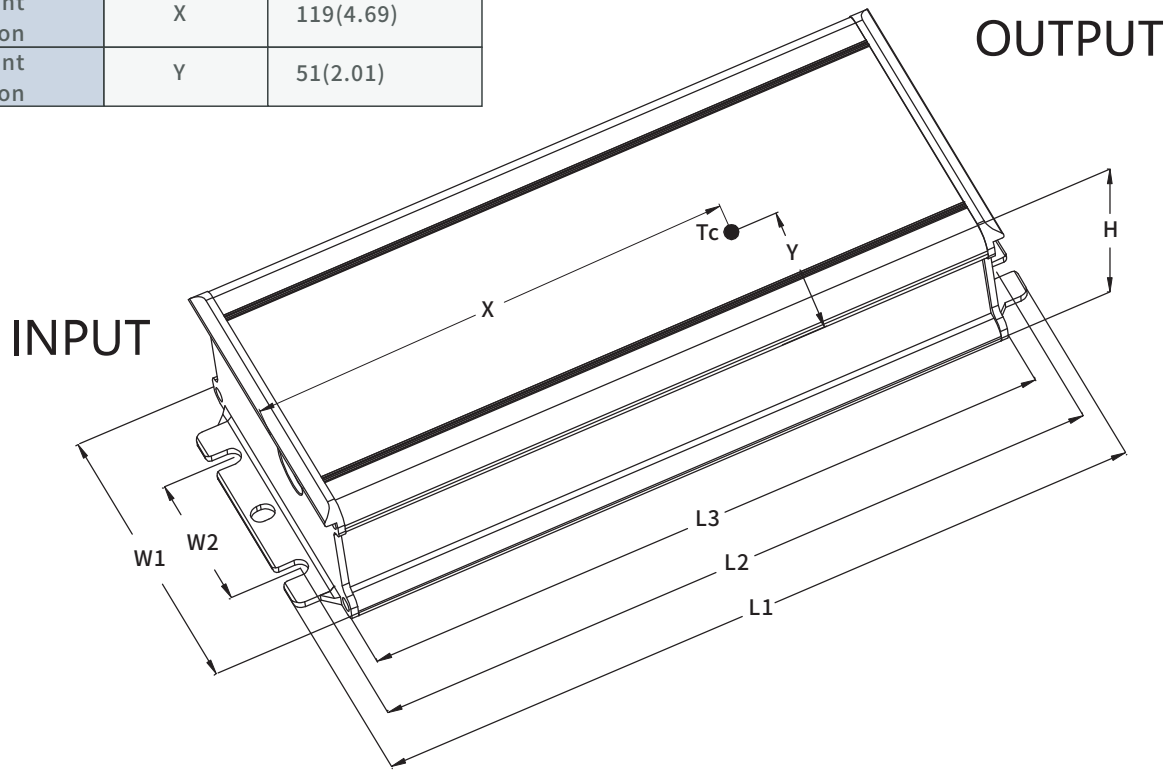
EU model: H05RN-F,2*1.0mm², O.D:7.0mm, Brown:V+, Blue:V-

DIM Cable(Exposed Length 220±10mm):

UL model: STYLE 21996 2*22AWG , O.D: 4.9mm，Purple：DIM+/DA, Pink: DIM-/DA

Name Description	Standard Code	mm(In.)
Case Length	L3	149(5.87)
Case Width	W1	66(2.6)
Case Height	H	37(1.46)
Overall Length	L1	165(6.5)
Mounting Hole Length	L2	158(6.22)
Mounting Hole Width	W2	32(1.26)
TC Point Position	X	119(4.69)
TC Point Position	Y	51(2.01)

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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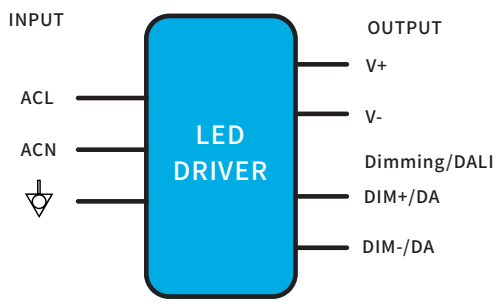
Mechanical Characteristics(BE/DE Model)



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

EU model: H05RN-F,3*1.0mm², O.D:7.3mm,Brown:L, Blue:N,Black: ⏚
EU model: H05RN-F,2*1.0mm², O.D:7.0mm, Brown:L, Blue:N

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

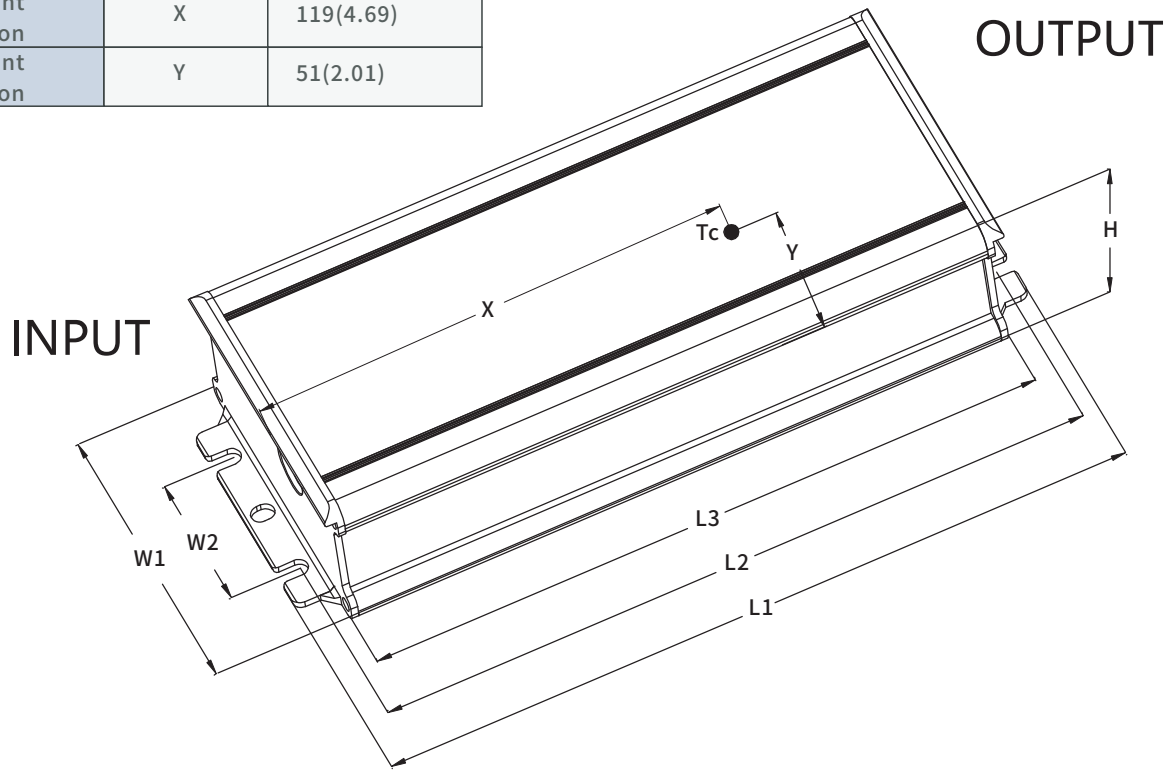
EU model: H05RN-F,2*1.0mm², O.D:7.0mm, Brown:V+, Blue:V-

DIM Cable(Exposed Length 220±10mm):

UL model: STYLE 21996 2*22AWG , O.D: 4.9mm，Purple：DIM+/DA,
Pink: DIM-/DA

Name Description	Standard Code	mm(In.)
Case Length	L3	149(5.87)
Case Width	W1	66(2.6)
Case Height	H	37(1.46)
Overall Length	L1	165(6.5)
Mounting Hole Length	L2	158(6.22)
Mounting Hole Width	W2	32(1.26)
TC Point Position	X	119(4.69)
TC Point Position	Y	51(2.01)

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. Please take isolation and waterproof measures if the dimming cable is not in use.

Package

- Outside carton dimension: L×W×H =495mm×385mm×162mm;
- 14PCS/Carton;
- Net weight/Piece: 0.74kg;Gross weight/Carton: 11.9kg;
- 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 installation.

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	2023/11/13	

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