SOSEN
LED DRIVER

SOSEN LED Driver, Your Smart Choice

Specifications

SS-100VP Series LED Driver

Model: SS-100VP-XX

Description: 100W LED Driver

Rev.: V02

Release Date: 2020-06-01

SS-100VP Series LED Driver

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LED DRIVER
—
VP Series

Features:

- Efficiency up to 92%
- Dimming: DALI-2, 0-10V,PWM,Resistor,Timing
- Dim-to-Off
- Surge Protection: CM: 10kV, DM: 6kV
- AUX Power : 12V/0.2A
- Constant Lumen, Life Warning
- Optional Standby(STB) Function
- External NTC to Protect LED Module
- Standby Power＜0.5W
- IP67
- Communication Function With PC
- TYPE HL, suitable for hazardous locations
- Protections: SCP/OTP/OVP
- Warranty: 8 years

05 CB c UL us LISTED E360758

DALI 2 CE IP67 Class P

Description:

SS-100VP series are 100W constant current LED Driver with wide O/P voltage range and adjustable O/P current by program. LED luminaries manufactures can easily to design luminaries and reduce cost.

Application:

High bay light, Stadium light,Square light, Plant light, Fish light

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Working Voltage	Iout	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-100VP-56*	90-305Vac	96W	22-56V	32-56V	0.35-3.0A	8%	0.95	90%	90℃
SS-100VP-143*	90-305Vac	100W	72-143V	95-143V	0.1-1.05A	8%	0.95	92%	90℃

Note: Default Tested: at 220Vac, full load, Ta 25℃。

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"*" Means Additional Function

"*"	DALI (suffix:D)	AUX 12V (suffix:H)	NTC (suffix:N)	Timing	0-10V/PWM Dim /Resistor (suffix:B)	Remark
BH		✓		✓	✓	
BHN		✓	✓	✓	✓	
DH	✓	✓				
DHN	✓	✓	✓			

Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	100Vac		277Vac	
AC Input Range	90 Vac		305Vac	
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			1.25A	100Vac, full load
Max Input Power			125W	100Vac, full load
Max Input Current(120Vac)			100A	Cold Start
Max Input Current(220Vac)			180A	Cold Start
Max Input Current(277Vac)			220A	Cold Start
Standby Power			0.5W	220Vac/50Hz, Dim to off or Enable STB
Power Factor	0.95	0.97		220Vac/50Hz, full load
	0.90			277Vac, 70% load
THD		8%	10%	220Vac/50Hz, full load
			20%	277Vac, 70% load

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Output Characteristics(SS-100VP-56*):

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	22V		56V	Power Derated @22-32V
Rated O/P Voltage	32V		56V	Po=Vo*Io=96W, full load
Rated O/P Current	1.72A		3A	3A for 32V,1.72A for 56V
Adj. O/P Current (AOC)Range	0.35A		3A	By Programming
No Load Voltage			60V	
Efficiency @120Vac	87.5%	88.5%		Output 56V/1.72A
Efficiency @220Vac	89.5%	90.5%		Output 56V/1.72A
Efficiency @277Vac	89.0%	90.5%		Output 56V/1.72A
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%/℃		+0.03%/℃	Tc:0℃~90℃
OTP	90℃	100℃	110℃	>Tc Typ., Current derating <Tc Min., Current recovery
Short Circuit Protection/OCP			10W	Driver will not be damaged, Hiccup mode

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SS-100VP Series LED Driver

Output Characteristics(SS-100VP-143*):

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	72V		143V	Power Derated @72-95V
Rated O/P Voltage	95V		143V	Po=Vo*Io=100W, full load
Rated O/P Current	0.7A		1.05A	1.05A for 95V,0.7A for 143V
Adj. O/P Current (AOC)Range	0.1A		1.05A	By Programming
No Load Voltage			160V	
Efficiency @120Vac	89.5%	90.5%		Output 143V/0.7A
Efficiency @220Vac	91.5%	92.5%		Output 143V/0.7A
Efficiency @277Vac	91.0%	92.0%		Output 143V/0.7A
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%/℃		+0.03%/℃	Tc:0℃~90℃
OTP	90℃	100℃	110℃	>Tc Typ., Current derating <Tc Min., Current recovery
Short Circuit Protection/OCP			10W	Driver will not be damaged, Hiccup mode

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Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
Aux Power	O/P Voltage	10.8V	12V	13.2V	Peak Power:6W
	O/P Current	0mA	200mA	400mA	
0-10V Dimming (Optional)	Dim Vcc	0V		12V	Negative dimming by programming
	Dim Range	10%Ioset		100%Ioset	DIM+ can output 110uA current.
	Rec.Dim Range	0V		10V	Dimming prohibits reverse connection.
PWM Dimming (Optional)	PWM High	9.8V		10.2V	Negative dimming by programming
	PWM Low	0V		0.3V	DIM+ can output 110uA current.
	Frequency	1KHz		2KHz	Dimming prohibits reverse connection.
	PWM Duty	0%		100%	
Resistor Dimming (Optional)	Resistance	0K		100K	Negative dimming by programming
	Dim Range	10%		100%	DIM+ can output 110uA current.
Dim to Off (Optional)	Dim off	3%	5%	7%	By DC voltage, PWM, resistance dimming ratio
	Dim on	5%	7%	9%	By DC voltage, PWM, resistance dimming ratio
Timing Curve(Optional)		By programming			Set by program
DALI Dimming(Optional)		Meet DALI-2			
Constant Lumen(Optional)		By programming			Set by program
Life Warning(Optional)		By programming			Set by program
Life Time(Tc≤65℃)		100,000 hours			80% Load
Life Time(Tc≤75℃)		71,000 hours			80% Load
MTBF		198,800 hours			220Vac,full load, Ta=25℃ (MIL-HDBK-217F)
IP Grade		IP67			
Tc		90℃			
Warranty		8 years			Tc : 75℃
Net Weight		740g			
Dimension		193mm*66mm*33.5mm 7.56in*2.6in*1.32in			L x W x H

NOTE: 1,All the parameters above are tested Ta 25℃ and LED load, unless specified.
2. When using resistor dimming (parallel connection of dimming wires), if the number of parallels is: N, the dimming resistor should be realized 0-100% dimming range, resistance value: 91KΩ/N.

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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	DM: 6kV,CM: 10kV,Criterion B
Ring Wave	IEC/EN 61000-4-12	DM: 6kV,CM: 6kV,Criterion B

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Safety Test Items:

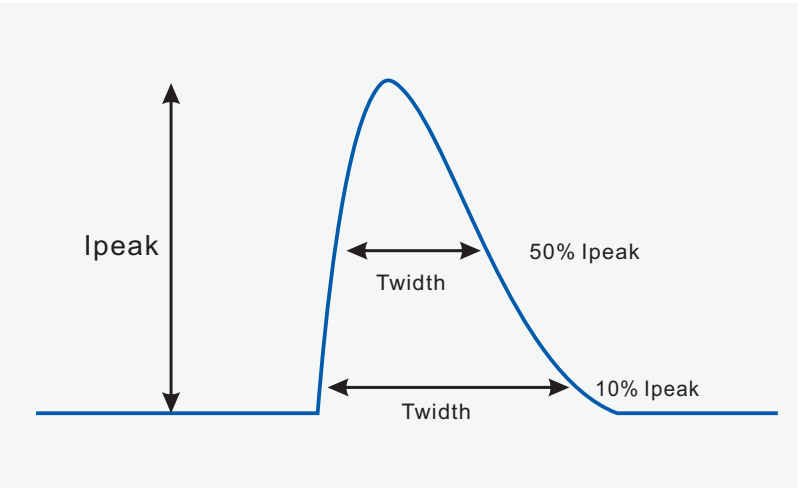
Safety Test Items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	ENEC Insulation Requirements	CCC Insulation Requirements	
Input-O/P	1600Vac	3000Vac	3750Vac	Reinforced insulation
Input-Case	1600Vac	1500Vac	1875Vac	Basic insulation
Input-Dim	1600Vac	3000Vac	3750Vac	Reinforced insulation
O/P-Dim	1600Vac	1000Vac	1000Vac	Basic insulation
O/P-Case	1600Vac	1000Vac	1000Vac	Basic insulation
Dim-Case	500Vac	500Vac	500Vac	Basic insulation
Insulation Resistance	≥10MΩ			Input-O/P,Test voltage:500Vdc
Ground Resistance	≤0.1Ω			25A/1min
Leak 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 as component.
2. Please short (ACL and ACN), (V+ and V- and NTC+ and NTC-), (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	100A	220uS	
220Vac	180A		150uS
277Vac	220A	220uS	

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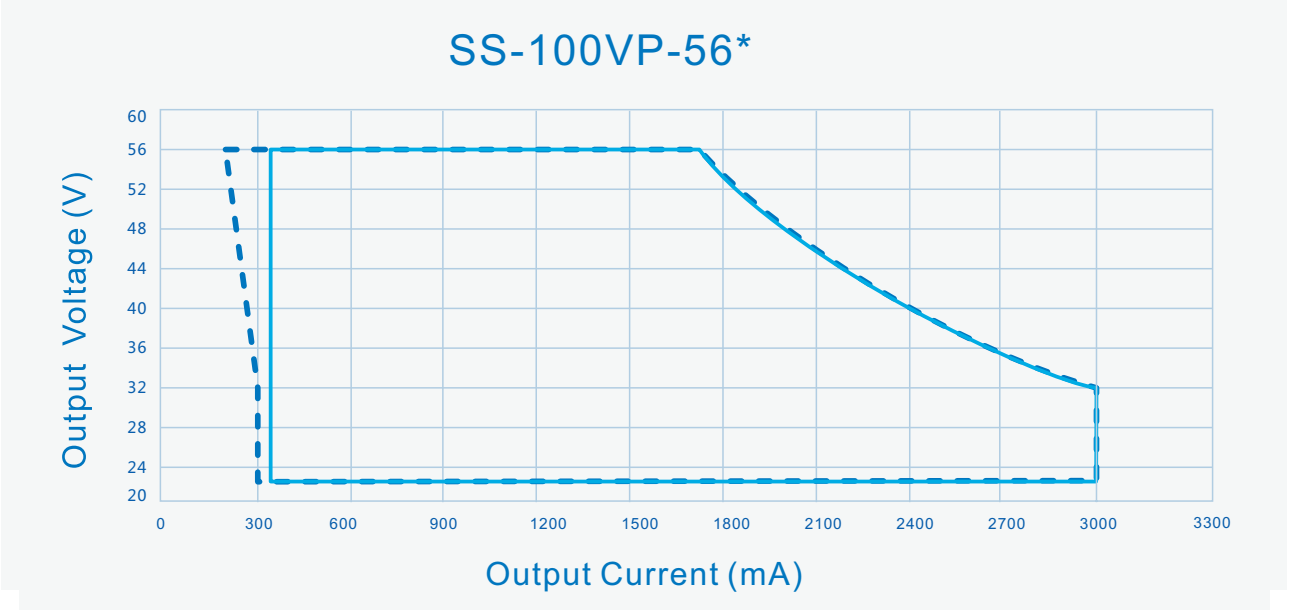
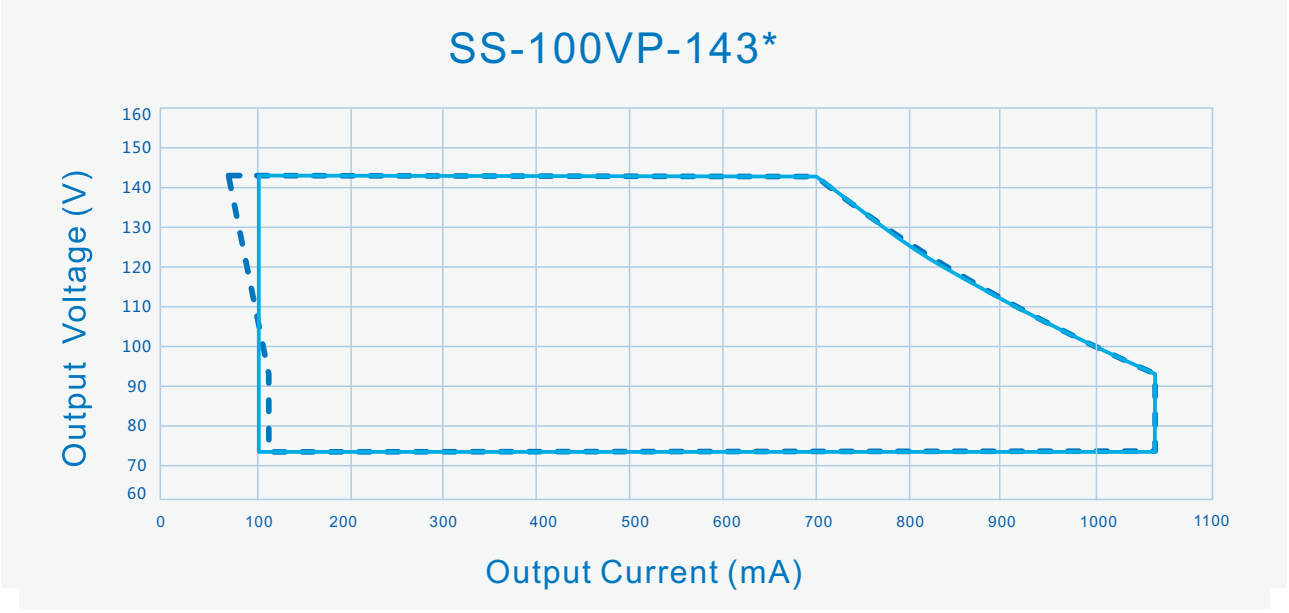
Performance Curves:

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



Dimming Window — AOC Window

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



Dimming Window — AOC Window

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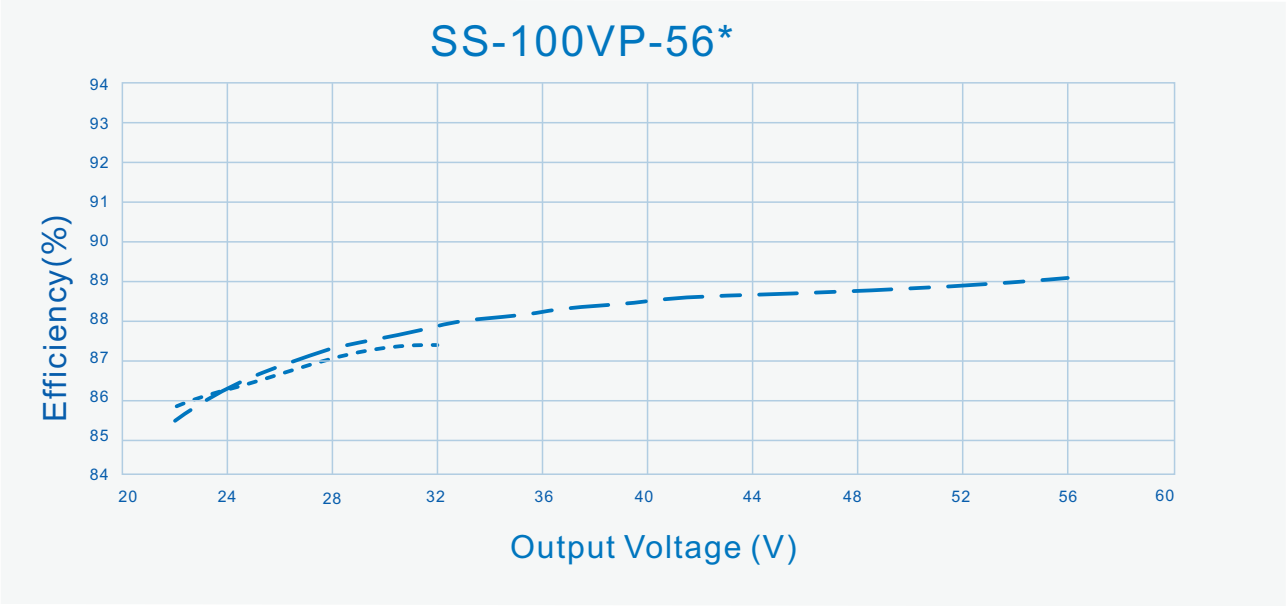
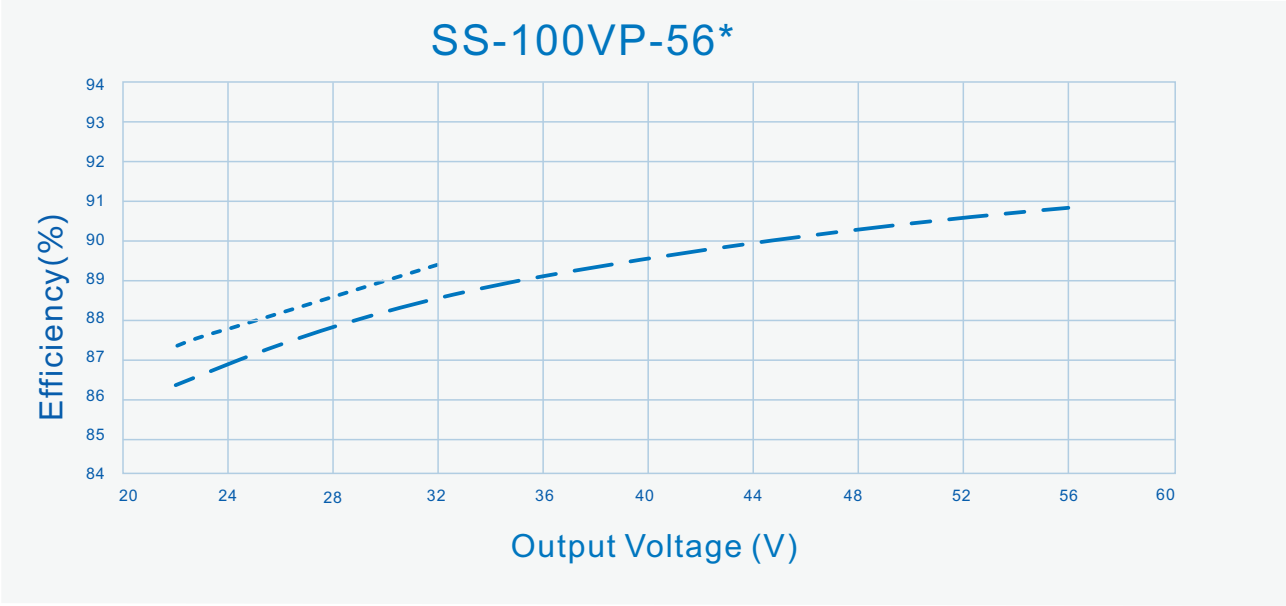
Performance Curves:

Efficiency Vs. Output Voltage (Vin=120Vac)



------- Io=3000mA — — — Io=1700mA

Efficiency Vs. Output Voltage (Vin=220Vac)



------- Io=3000mA — — — Io=1700mA

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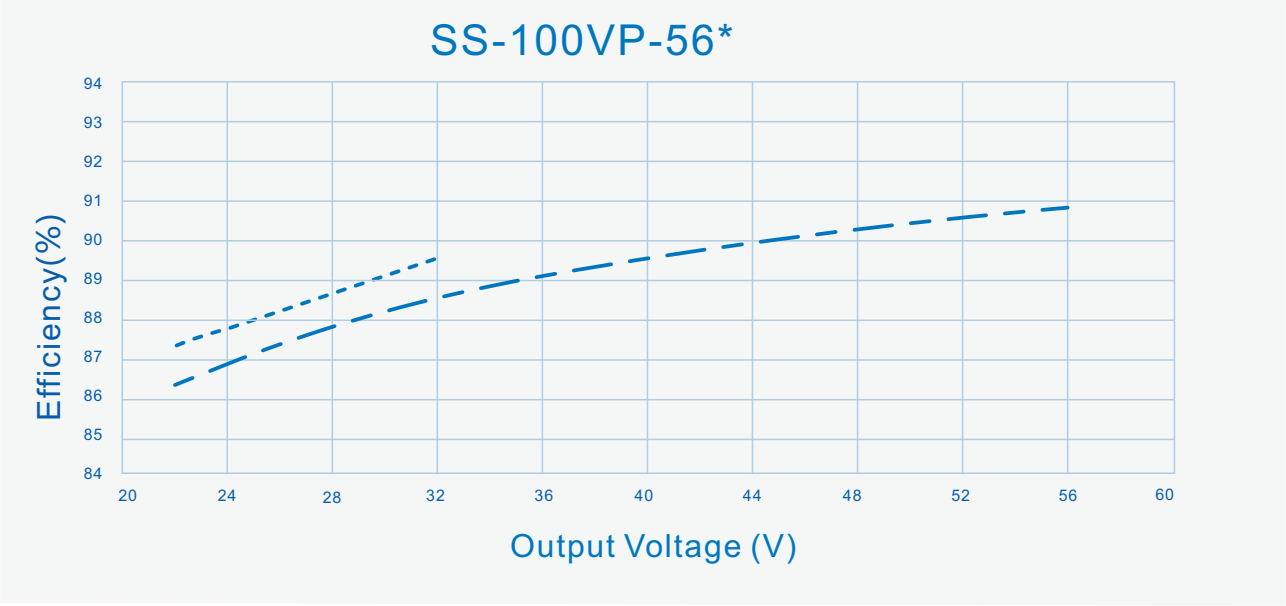
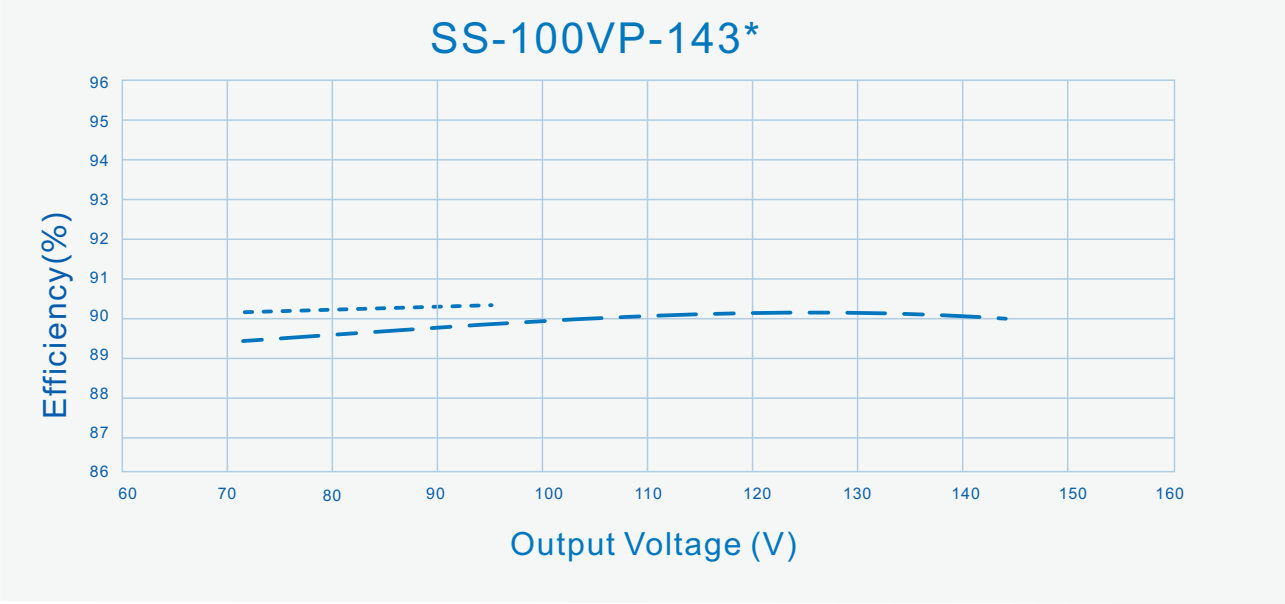
Performance Curves:

Efficiency Vs. Output Voltage (Vin=277Vac)



Io=3000mA Io=1700mA

Efficiency Vs. Output Voltage (Vin=120Vac)



Io=1050mA Io=700mA

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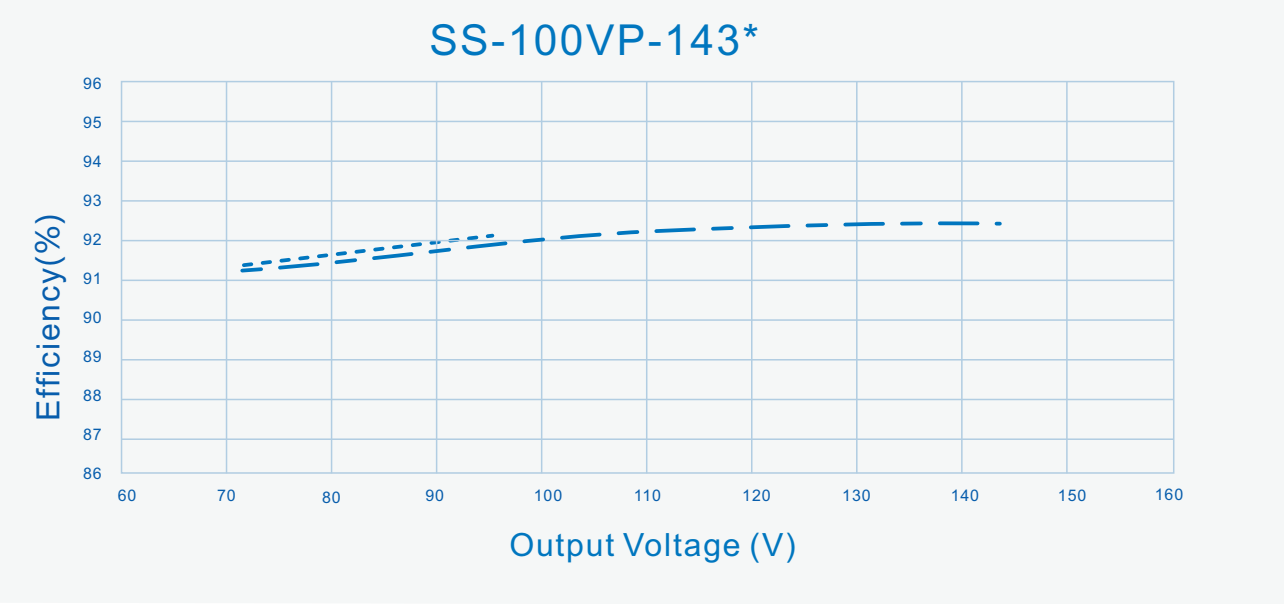
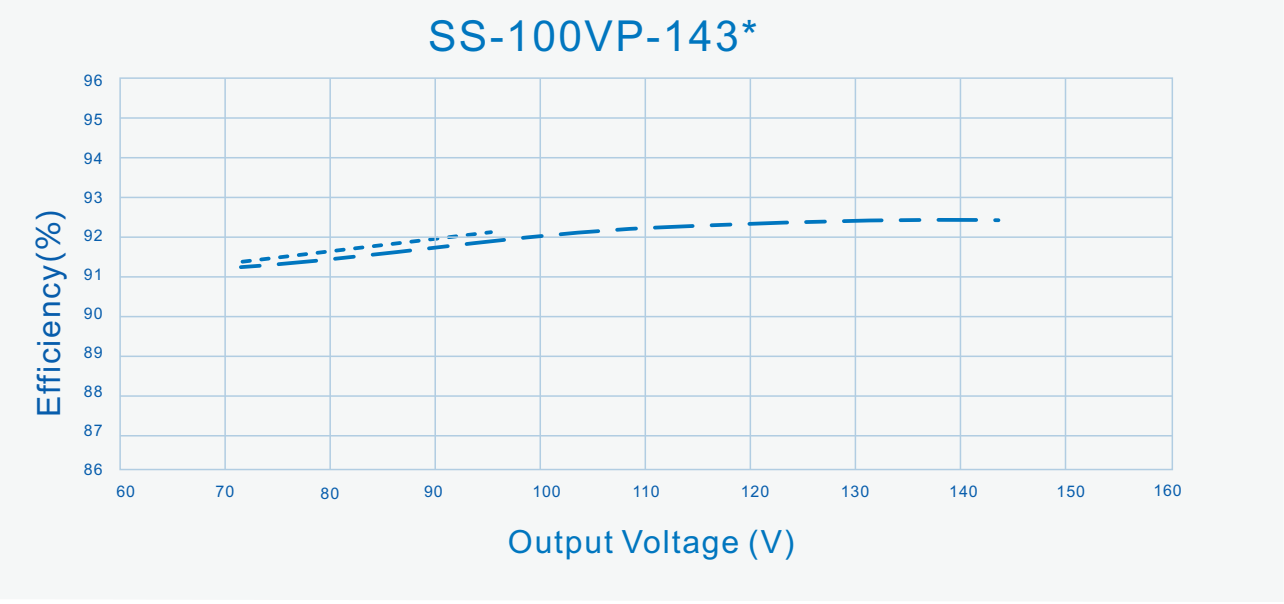
Performance Curves:

Efficiency Vs. Output Voltage (Vin=220Vac)



------- Io=1050mA — — — Io=700mA

Efficiency Vs. Output Voltage (Vin=277Vac)



------- Io=1050mA — — — Io=700mA

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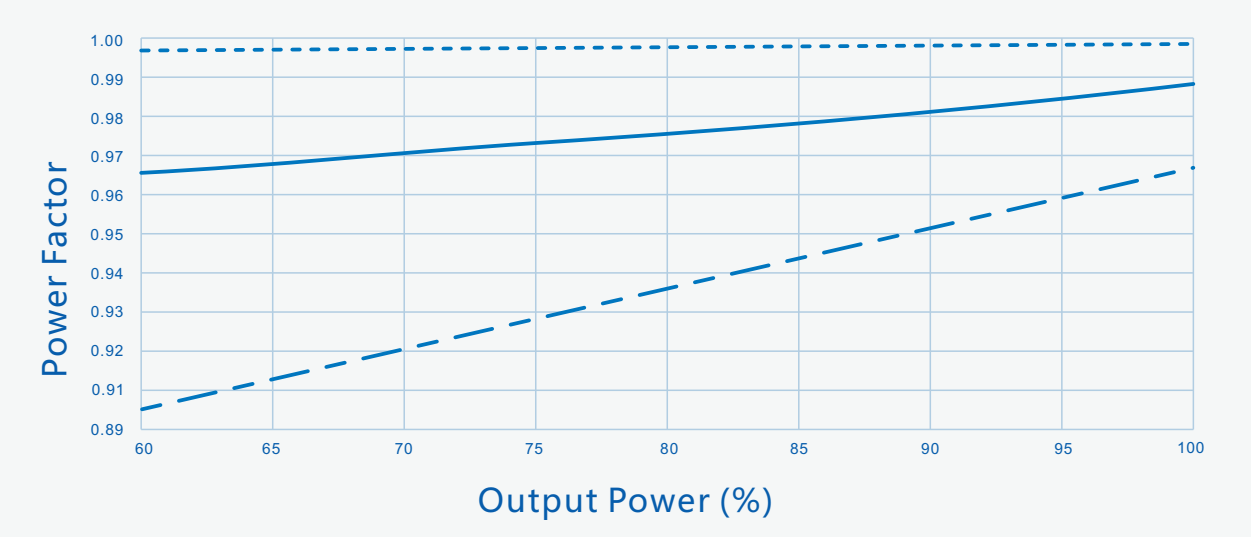
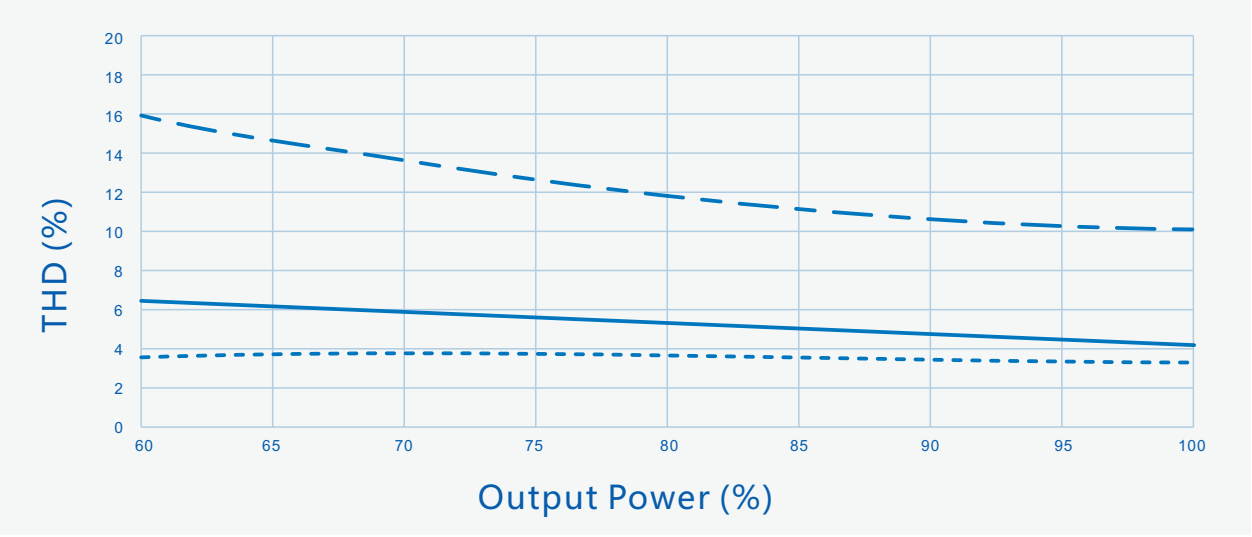
Performance Curves:

Power Factor Vs. Output Power



Vin=120Vac Vin=220Vac Vin=277Vac

THD Vs. Output Power



Vin=120Vac Vin=220Vac Vin=277Vac

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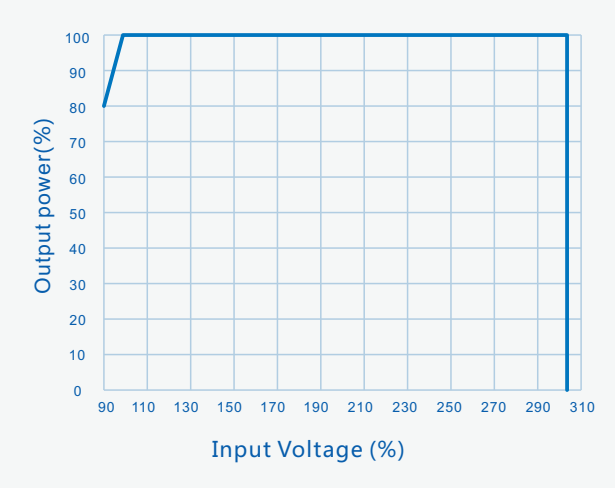
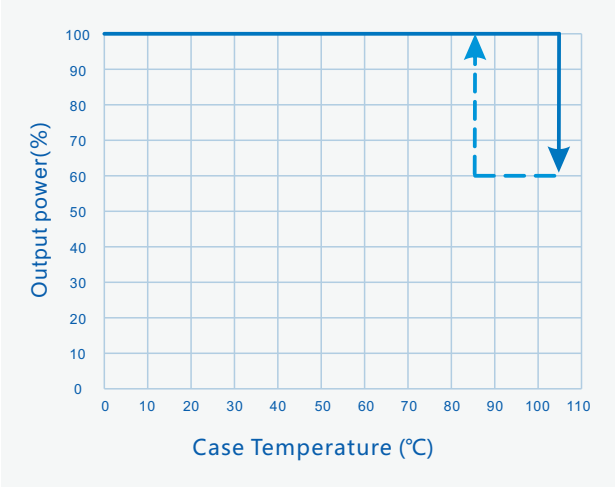
Performance Curves:

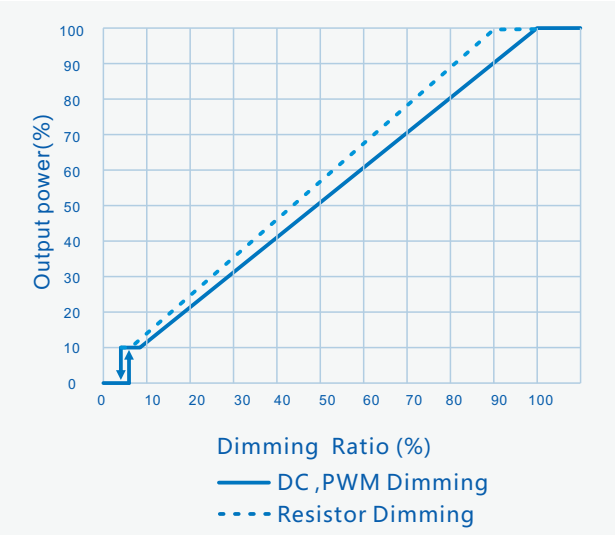
Output Power Vs. Input Voltage



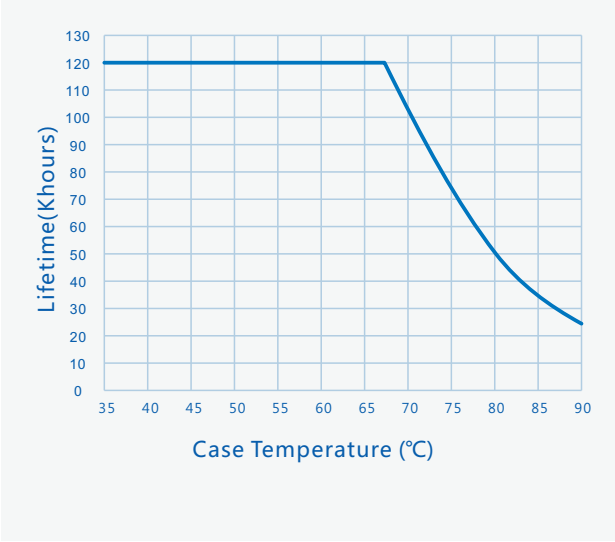
Output Power Vs. Case Temperature



Output Power Vs. Dimming



Life Time Vs. Case Temperature



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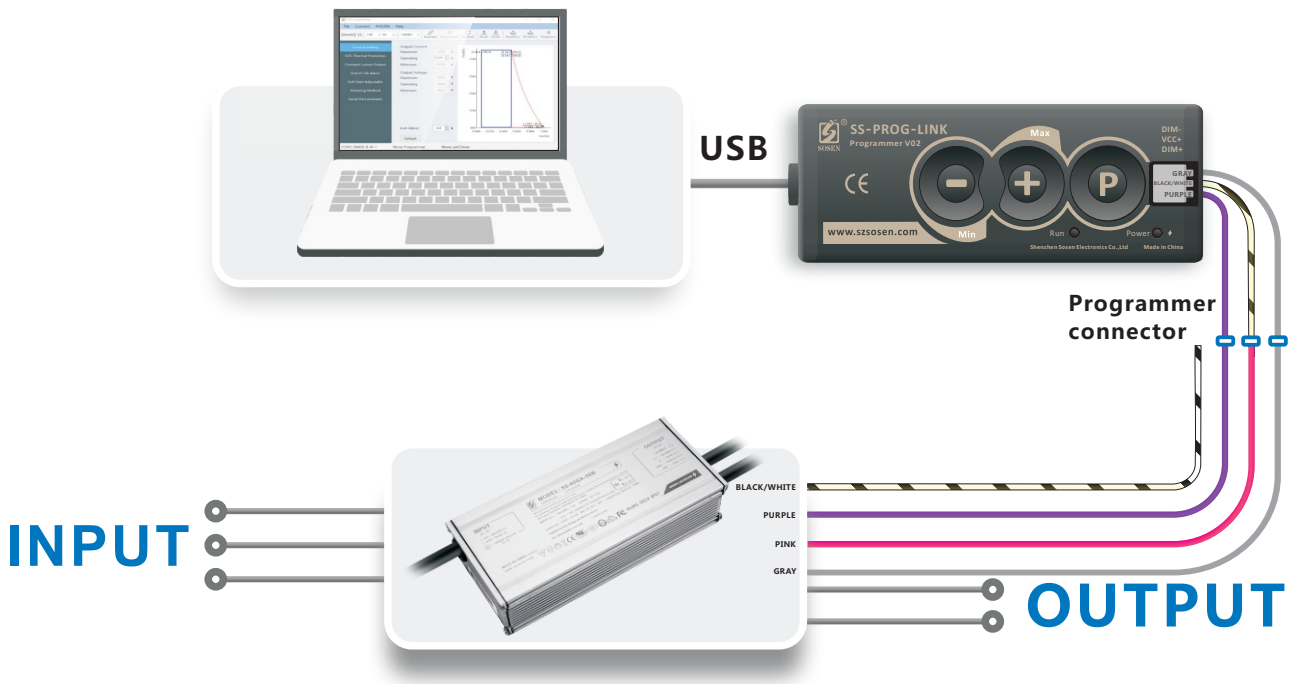
Constant Lumen Output

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 output follows the pre-programmed timing curve after turn-on.
Auto-Adjust by Percentage: Driver's output 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 output will be adjusted by automatically changed dimming curve by mid-point based on the latest 5 dimming curve.



Note:
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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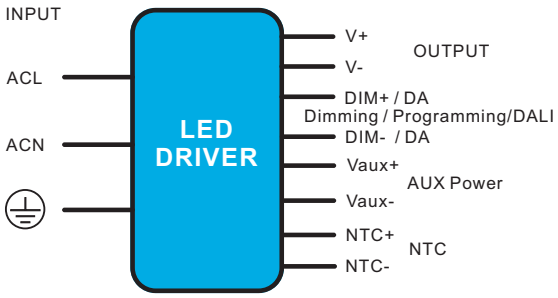
Mechanical Characteristics



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

Global model: SJOW,3*17AWG,O.D: 8.2mm,Brown:L,Blue:N,Yellow/Green:⏚
UL model: SJTW,3*18AWG,O.D: 7.8mm,Black:L,White:N,Green:⏚

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

Global model: SJOW,2*17AWG,O.D: 7.7mm,Brown:V+ , Blue:V-
UL model: SJTW,2*18AWG,O.D: 7.3mm,Red: V+ , Black: V-

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

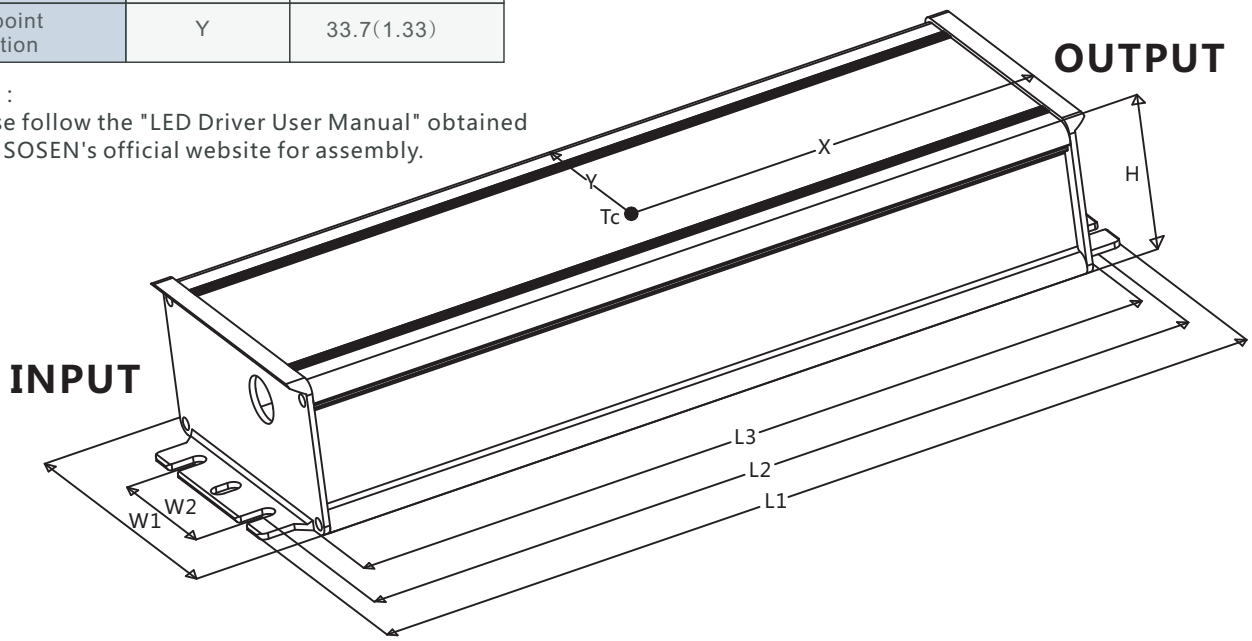
UL model: STYLE 21996#22AWG , O.D: 5.6mm , Purple : DIM+, Gray: DIM-, Pink: Vaux+, Black/White: Vaux-

NTC Cable(Exposed Length 300±10mm):

UL model:STYLE 21996#22AWG , O.D: 4.7mm, Blue: NTC+, White: NTC-

Name Description	Standard Code	mm(In.)
Case Length	L3	169(6.65)
Case Width	W1	66(2.6)
Case Height	H	35.5(1.4)
Overall Length	L1	193(7.6)
Mounting Hole Length	L2	178(7.0)
Mounting Hole Width	W2	32(1.26)
TC point position	X	57(2.24)
TC point position	Y	33.7(1.33)

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



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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.

Package

- Outside carton dimension: L×W×H =500mm×390mm×170mm;
- 14PCS/Carton;
- Net weight/Piece: 0.74kg;Gross weight/Carton: 11.6kg;
- 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 European Directive 2011/65/EC.

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Revision History

Version	Description of Update	Updated Date	Remark
V00	Original Release	2019/07/26	
V01	Update Programming Diagram	2020/03/21	
V02	Update Lifetime Curve	2020/06/01	

Shenzhen SOSEN Electronics Co Ltd
Controlled chapter
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