



SOSEN LED Driver, Your Smart Choice

Specifications

SS-240VP Series LED Driver

Model: SS-240VP-XXX

Description: 240W LED Driver

Rev.: V00

Release Date: 2019-07-26

SS-240VP Series LED Driver



Features:

- ▣ Efficiency up to 93.5%
- ▣ Dimming: DALI, 0-10V,PWM,Resistor, Timming
- ▣ Dim to Off
- ▣ Surge protection: L/N-PE: 10kV, L-N: 6kV
- ▣ Optional aux : 12V/0.2A
- ▣ Constant lumen, life warning
- ▣ PS-ON signal(optional)
- ▣ External NTC to protect LED module(optional)
- ▣ Standby power<0.5W
- ▣ IP67
- ▣ Communication function with PC
- ▣ TYPE HL, suitable for hazard locations
- ▣ Protections: SCP/OTP
- ▣ Warranty: 8 years



Description:

SS-240VP series are constant current driver for outdoor LED . With wide operating windows and current adjustability. LED luminaries manufactures can easily to design luminaries and reduce luminaries manufactures cost.

Application:

High bay light, stadium 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-240VP-56*	90-305Vac	240W	22-56V	36-56V	4.28-6.67A	10%	0.95	92%	90°C
SS-240VP-228*	90-305Vac	240W	114-218V	160-218V	1.1-1.5A	10%	0.95	93%	90°C
SS-240VP-343*	90-305Vac	240W	171-343V	228-343V	0.7-1.05A	10%	0.95	93.5%	90°C

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“*” Means Additional Function

“*”	DALI (suffix D)	AUX 12V (suffix H)	NTC (suffix N)	0-10V/PWM Dim /Timing (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			2.8A	100Vac, full load
Max Input Power			280W	100Vac, full load
Max Input Current(120Vac)			70A	Cold Start
Max Input Current(220Vac)			150A	Cold Start
Max Input Current(277Vac)			200A	Cold Start
Standby Power			0.5W	220Vac/50Hz, Light short circuit
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(SS-240VP-56*):

Parameter	Min.	Typ.	Max.	Remark
Output Voltage Range	22V		56V	Power Derated @22-36V
Rated Output Voltage	36V		56V	$P_o=V_o \cdot I_o=240W$, full load
Rated Output Current	4.28A		6.67A	6.67A for 36V,4.28A for 56V
Current Adjustable Range(AOC)	0.7A		6.67A	By Programming
No Load Voltage			60V	
Efficiency @120Vac	89.5%	90.5%		Output 56V/4.28A
Efficiency @220Vac	91.5%	92.0%		Output 56V/4.28A
Efficiency @277Vac	92.0%	92.5%		Output 56V/4.28A
Output Current Tolerance	-5%		+5%	
Output Current Ripple(PK-AV)		5%	10%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			0.5S	120Vac
			0.5S	220Vac
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, Self-recovery, o/p power decreases when the Tc increases.
Short Circuit Protection/OCP			10W	Driver will not be damaged, Hiccup mode

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Output Characteristics(SS-240VP-228*):

Parameter	Min.	Typ.	Max.	Remark
Output Voltage Range	114V		228V	Power Derated @114-160V
Rated Output Voltage	160V		218V	$P_o=V_o \cdot I_o=240W$, full load
Rated Output Current	1.1A		1.5A	1.5A for 160V, 1.1A for 218V
Current Adjustable Range(AOC)	0.35A		1.5A	By Programming
No Load Voltage			250V	
Efficiency @120Vac	89.5%	90.0%		Output 218V/1.1A
Efficiency @220Vac	91.5%	92.5%		Output 218V/1.1A
Efficiency @277Vac	92.0%	93.0%		Output 218V/1.1A
Output Current Tolerance	-5%		+5%	
Output Current Ripple(PK-AV)		5%	10%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			0.5S	120Vac
			0.5S	220Vac
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, Self-recovery, o/p power decreases when the Tc increases.
Short Circuit Protection/OCP			10W	Driver will not be damaged, Hiccup mode

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Output Characteristics(SS-240VP-343*):

Parameter	Min.	Typ.	Max.	Remark
Output Voltage Range	171V		343V	Power Derated @171-228V
Rated Output Voltage	228V		343V	$P_o=V_o \cdot I_o=240W$, full load
Rated Output Current	0.7A		1.05A	1.05A for 228V,0.7A for 343V
Current Adjustable Range(AOC)	0.1A		1.05A	By Programming
No Load Voltage			370V	
Efficiency @120Vac	90.0%	91.0%		Output 343V/0.7A
Efficiency @220Vac	92.0%	93.0%		Output 343V/0.7A
Efficiency @277Vac	92.5%	93.5%		Output 343V/0.7A
Output Current Tolerance	-5%		+5%	
Output Current Ripple(PK-AV)		5%	10%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			0.5S	120Vac
			0.5S	220Vac
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, Self-recovery, o/p power decreases when the Tc increases.
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	12V	10.8V	12V	13.2V	
	12V	0mA		200mA	
0-10V Dimming (Optional)	Dim Vmax	0V		12V	Negative dimming by programming
	Dim Range	10% I _{omax}		100% I _{oSet}	
	Rec. Dim Range	1V		10V	
PWM Dimming (Optional)	PWM High	9.8V		10.2V	Negative dimming by programming
	PWM Low	0V		0.3V	
	Frequency	1KHz		2KHz	
	PWM Duty	10%		100%	
Resistor Dimming (Optional)	Resistance	10Kohm		100Kohm	Negative dimming by programming
	Dim Range	10% I _{omax}		100% I _{oSet}	
Dim to Off (Optional)	Dim-off	3%	5%	7%	By DC voltage, PWM, resistance dimming ratio
	Dim Turn on	5%	7%	9%	By DC voltage, PWM, resistance dimming ratio
Timing Curve(Optional)		By programming			Typically 3-4 sections
DALI Dimming(Optional)		Meet DALI2.0			
Constant Lumen(Optional)		By programming			Set by program
Life Warning(Optional)		By programming			Set by program
Life Time(T _c ≤65°C)		100,000 hours			80% Load
Life Time(T _c ≤75°C)		71,000 hours			80% Load
MTBF		198,200 hours			220Vac, full load, T _a =25°C (MIL-HDBK-217F)
IP Grade		IP67			
T _c		90°C			
Warranty		8 years			T _c : 75°C, 80% Load
Net Weight		1300g			
Dimension		254mm*71mm*39.6mm 10in*2.8in*1.56in			L x W x H

NOTE: 1, All the parameters above are tested T_a 25°C, 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°C	25°C	+90°C	
Storage Temperature	-40°C	25°C	+85°C	
Operation Humidity	10%RH		90%RH	
Storage Humidity	5%RH		95%RH	
Altitude	-65m		4000m	

Safety and EMI/EMS Standards

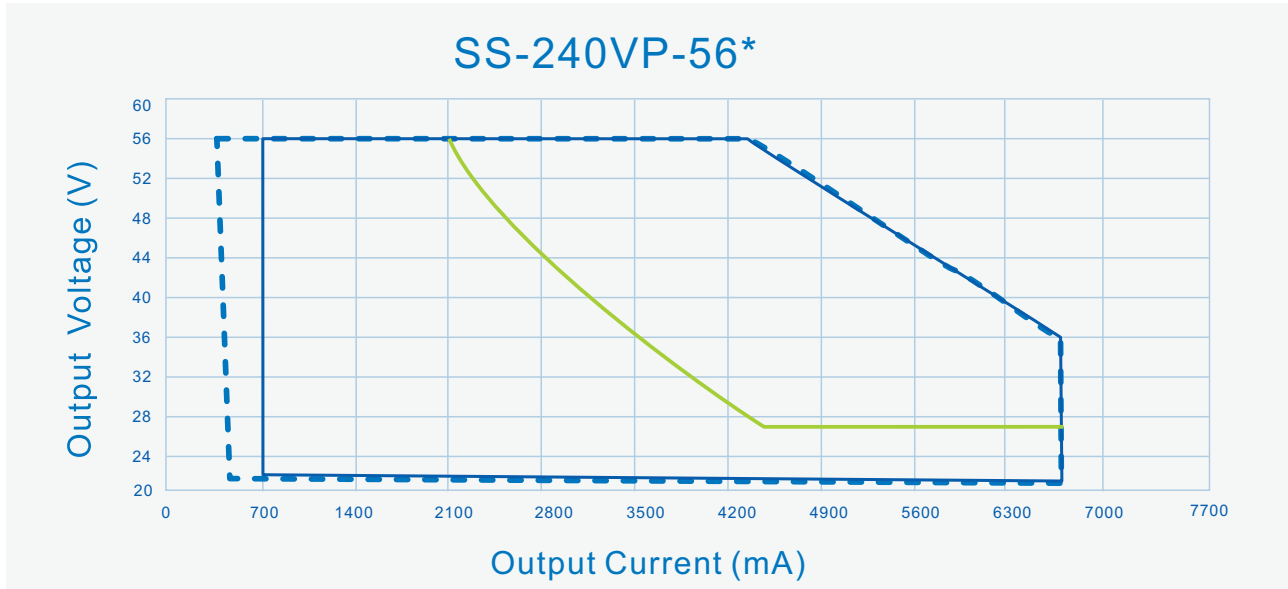
Certification	Standard	Status	Remark
UL/CUL	UL8750	✓	
ENEC/TUV	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013 EN62493:2015		
RCM	AS/NZS61347.2.13		
CCC	GB 19510.14-2009		
CE	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013	✓	
KC	K61347-1,K61347-2-13		

EMI/EMS	Criterion	Remark
Conduction Emission	EN55015:2013+A1:2015	
Radiation Emission	EN55015:2013+A1:2015	
Harmonic Current Emissions	IEC/EN 61000-3-2	Class C
Surge	IEC/EN61000-4-5	Difference mode 6kV, Common mode 10kV,Criterion B
Ring Wave	IEC/EN 61000-4-12	Difference mode 6kV, Common mode 6kV,Criterion B

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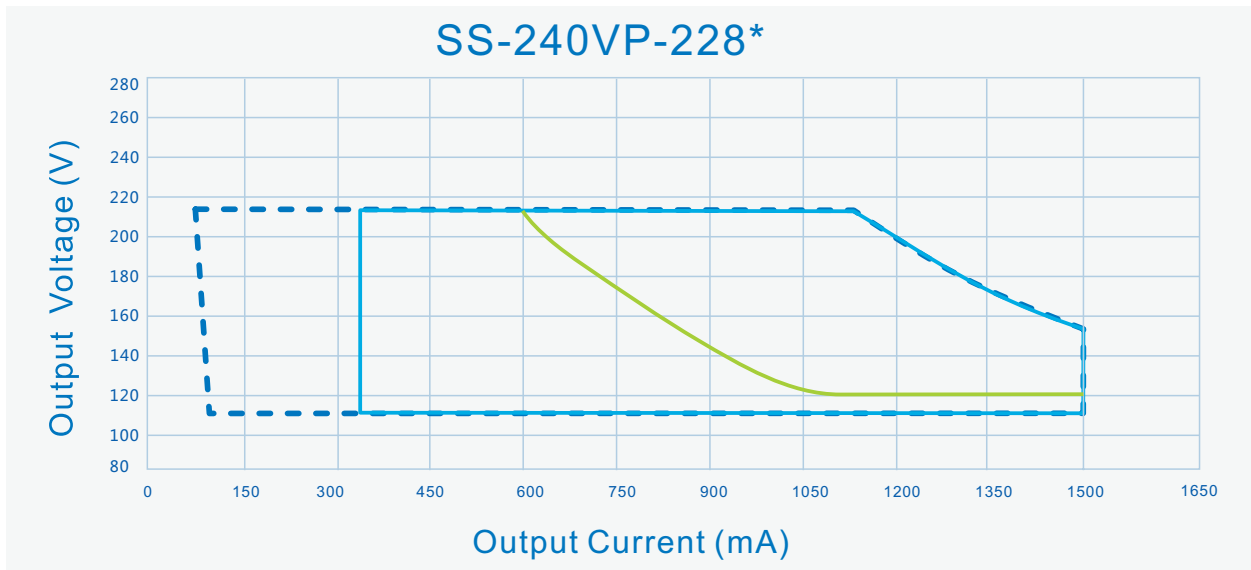
Performance Curves:

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



-- DIM Window — AOC Window — (PF>0.9, THD<20% at 277Vac)

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

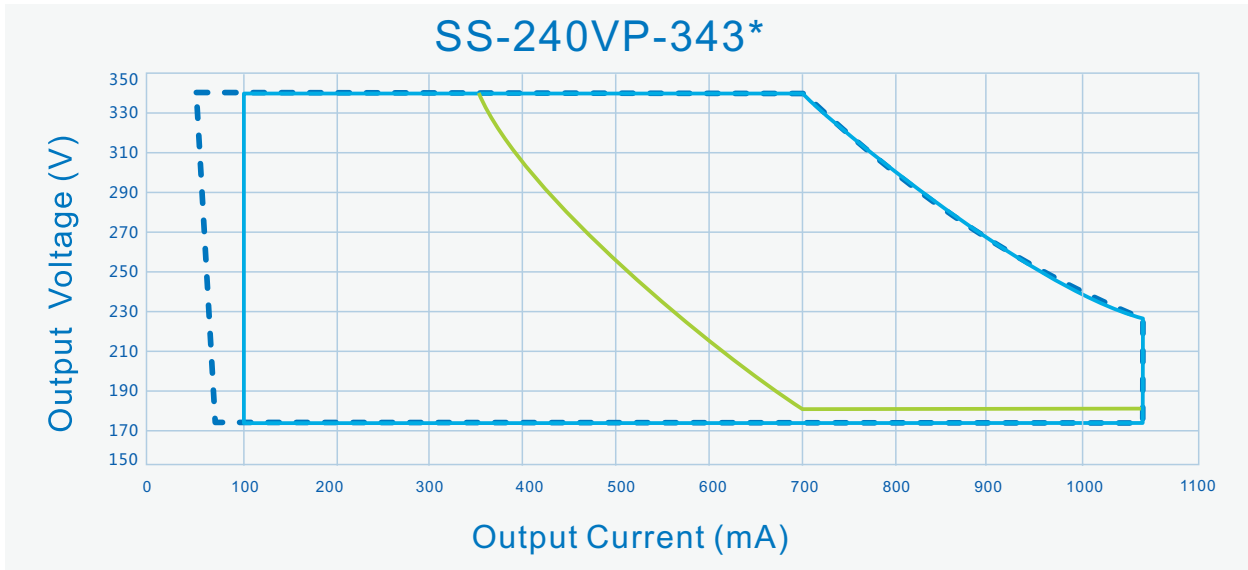


-- DIM Window — AOC Window — (PF>0.9, THD<20% at 277Vac)

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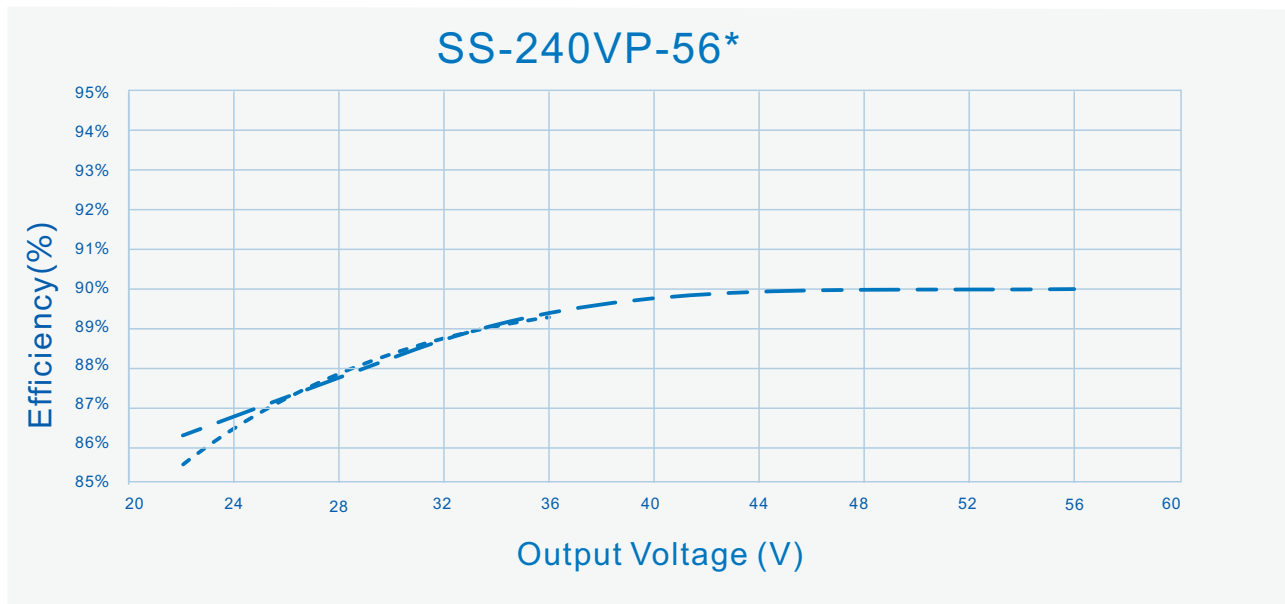
Performance Curves:

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



-- DIM Window — AOC Window — (PF>0.9, THD<20% at 277Vac)

Efficiency Vs. Output Voltage (Vin=120Vac)



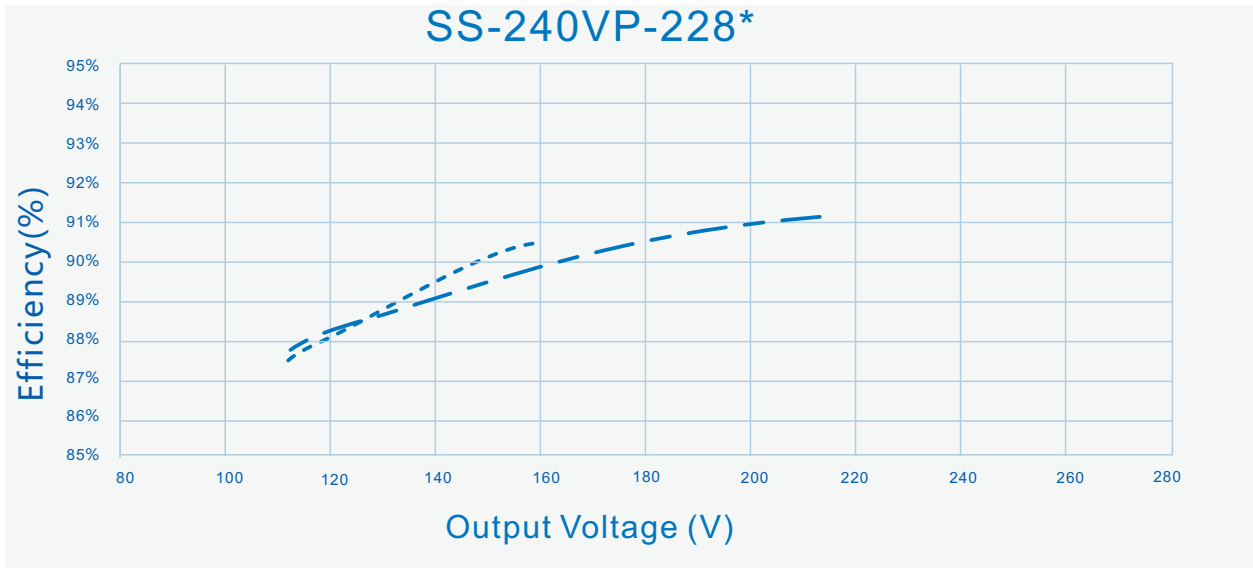
----- $I_o = 6670\text{mA}$

- - - - $I_o = 4280\text{mA}$

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Performance Curves:

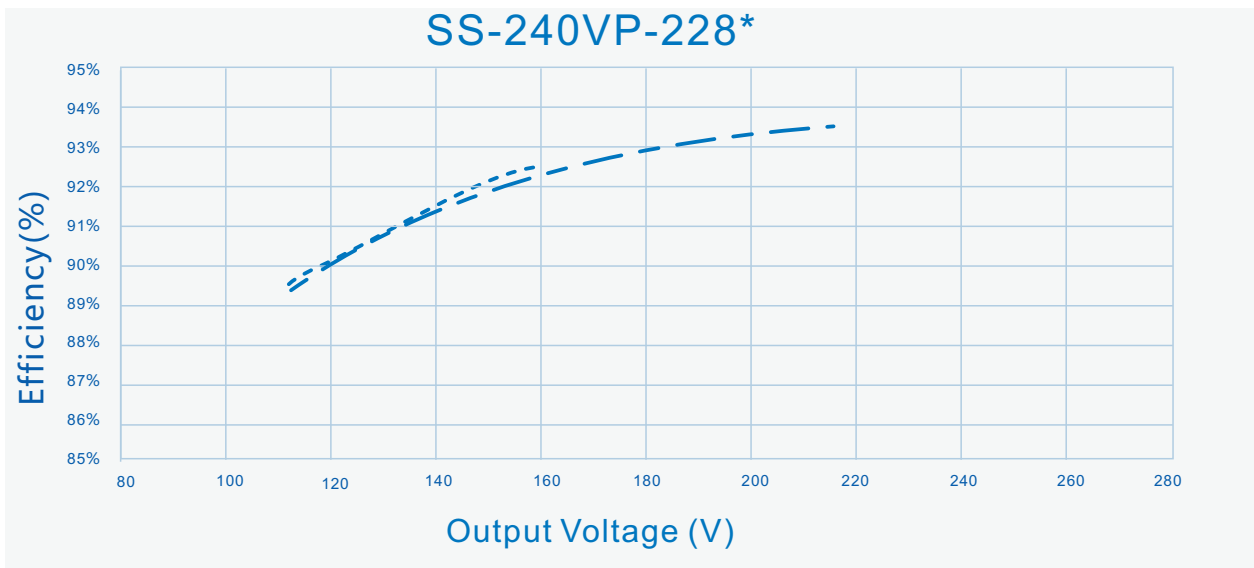
Efficiency Vs. Output Voltage ($V_{in}=120V_{ac}$)



----- $I_o=1500mA$

- . - . - $I_o=1100mA$

Efficiency Vs. Output Voltage ($V_{in}=220V_{ac}$)



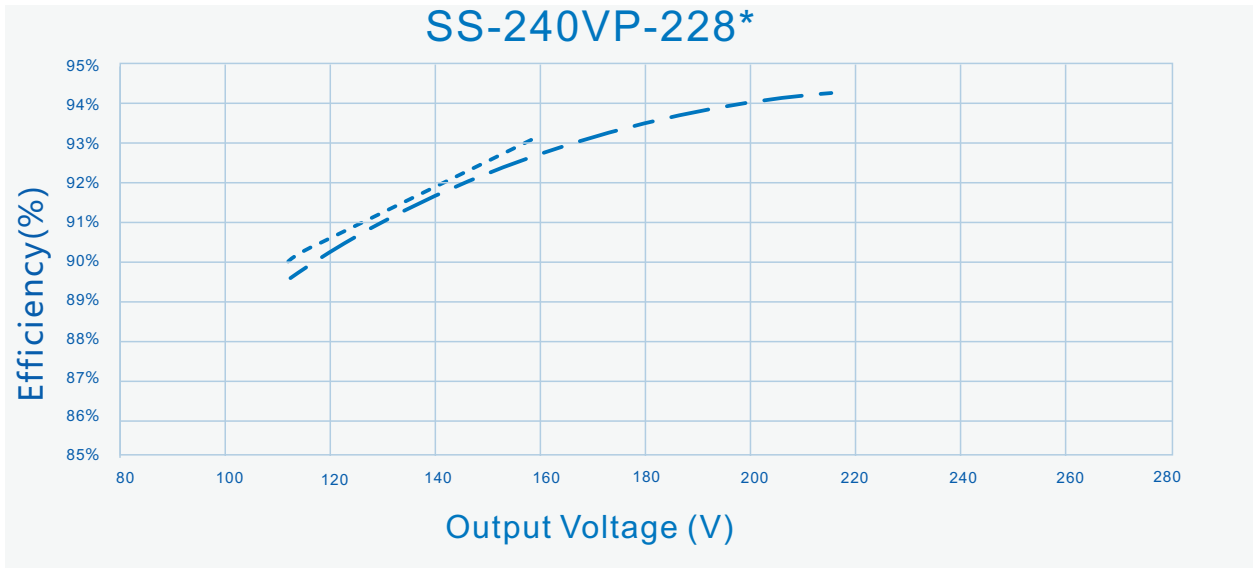
----- $I_o=1500mA$

- . - . - $I_o=1100mA$

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Performance Curves:

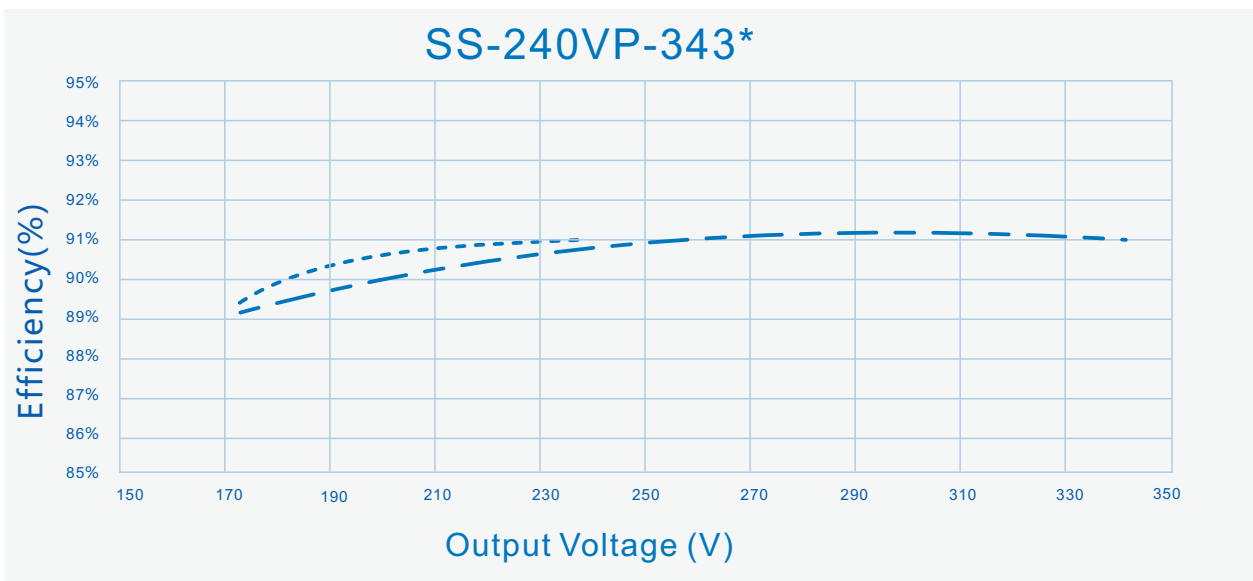
Efficiency Vs. Output Voltage ($V_{in}=277V_{ac}$)



----- $I_o=1500mA$

- . - . - $I_o=1100mA$

Efficiency Vs. Output Voltage ($V_{in}=120V_{ac}$)



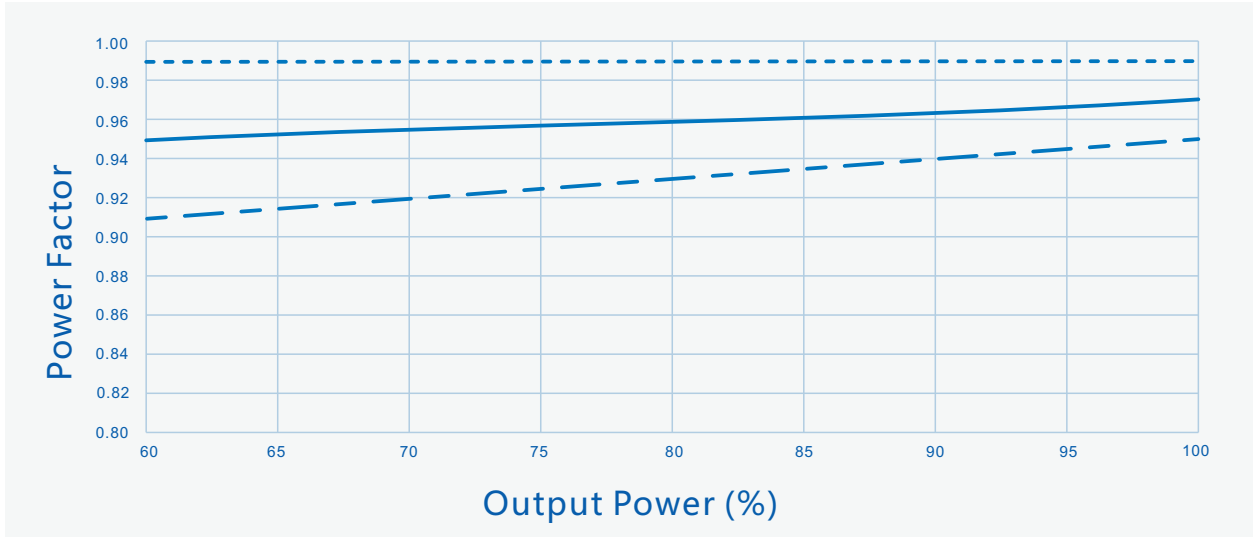
----- $I_o=1050mA$

- . - . - $I_o=700mA$

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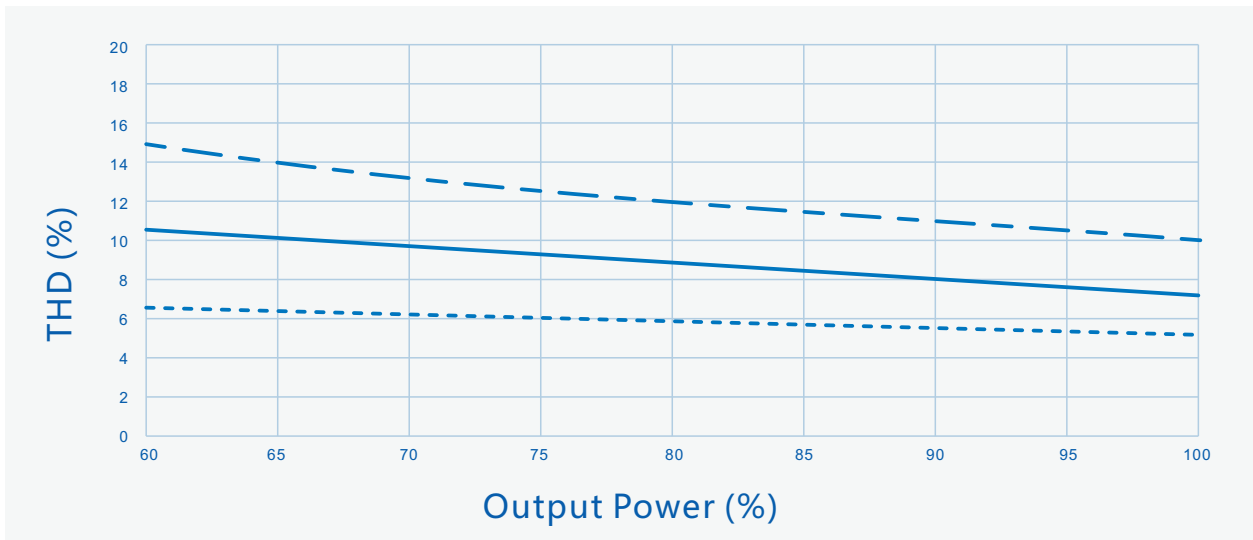
Performance Curves:

Power Factor Vs. Output Power



----- Vin=120Vac ——— Vin=220Vac - · - · Vin=277Vac

THD Vs. Output Power

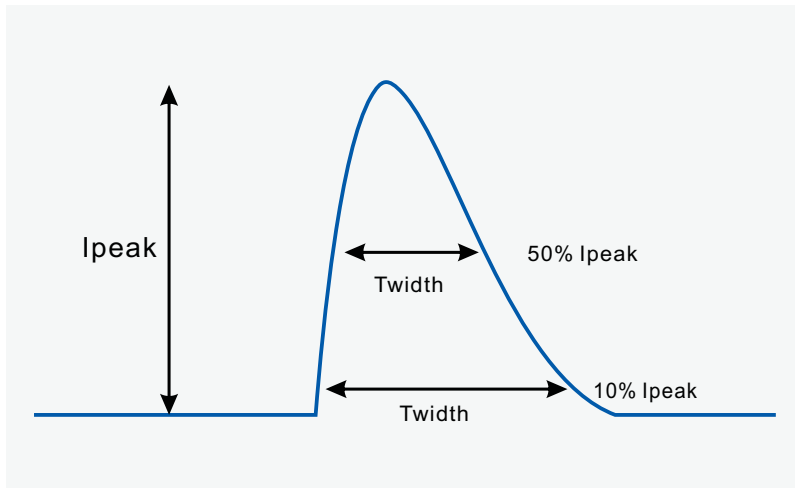


----- Vin=120Vac ——— Vin=220Vac - · - · Vin=277Vac

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Performance Curves:

Input inrush Current



Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
120Vac	70A	650uS	
220Vac	150A		300uS
277Vac	200A	500uS	

Safety Test Items:

Safety test items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	TUV Insulation Requirements	CCC Insulation Requirements	
Input-Output	1600Vac	3000Vac	3750Vac	Reinforced insulation
Input-Case	1600Vac	1500Vac	1875Vac	Basic insulation
Input-Dim	1600Vac	3000Vac	3750Vac	Reinforced insulation
Output-Dim	1600Vac	1000Vac	1000Vac	Additional insulation
Output-Case	1600Vac	1000Vac	1000Vac	Function insulation
Dim-Case	1600Vac	250Vac	250Vac	
Insulation Resistance	≥10MΩ			Input-Output, Test voltage:500Vdc
Ground Resistance	≤0.1Ω			25A/1min
Leak Current	≤0.75mA			277Vac

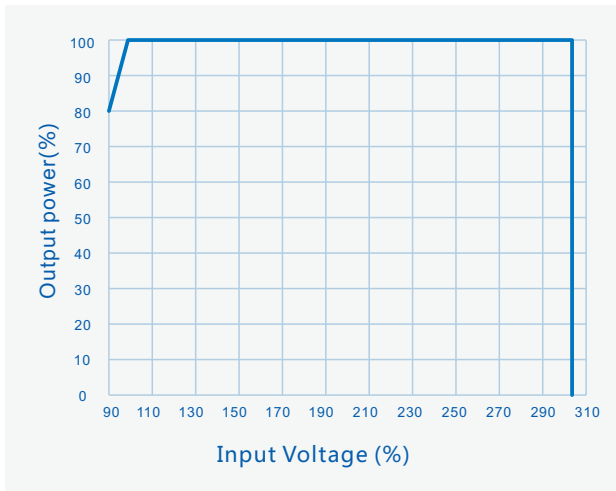
NOTE:

1. SOSEN warrants the LED Driver itself meets 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 Line and Neutral, LED+ and LED-, Dim+ and Dim - when Hi-pot test.

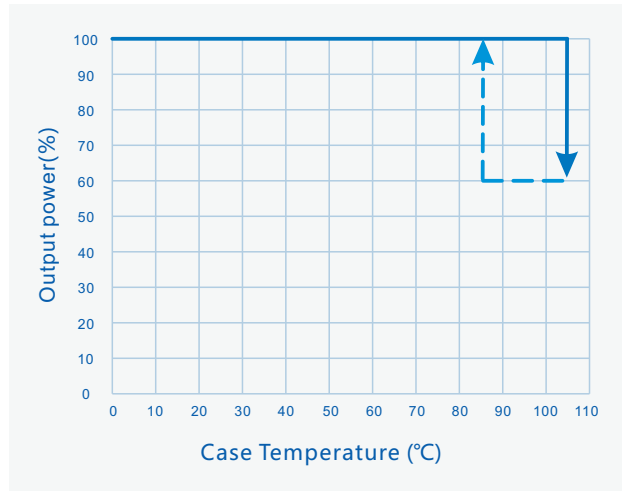
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Performance Curves:

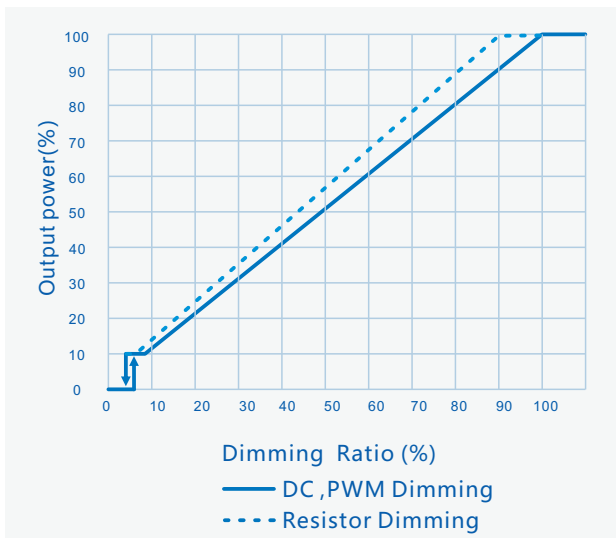
Output Power Vs. Input Voltage



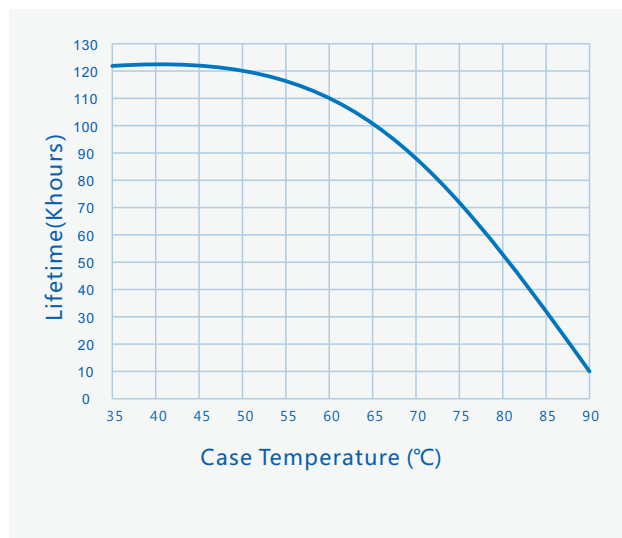
Output Power Vs. Case Temperature



Output Power Vs. Dimming



Life Time Vs. Case Temperature



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Constant Lumen Output

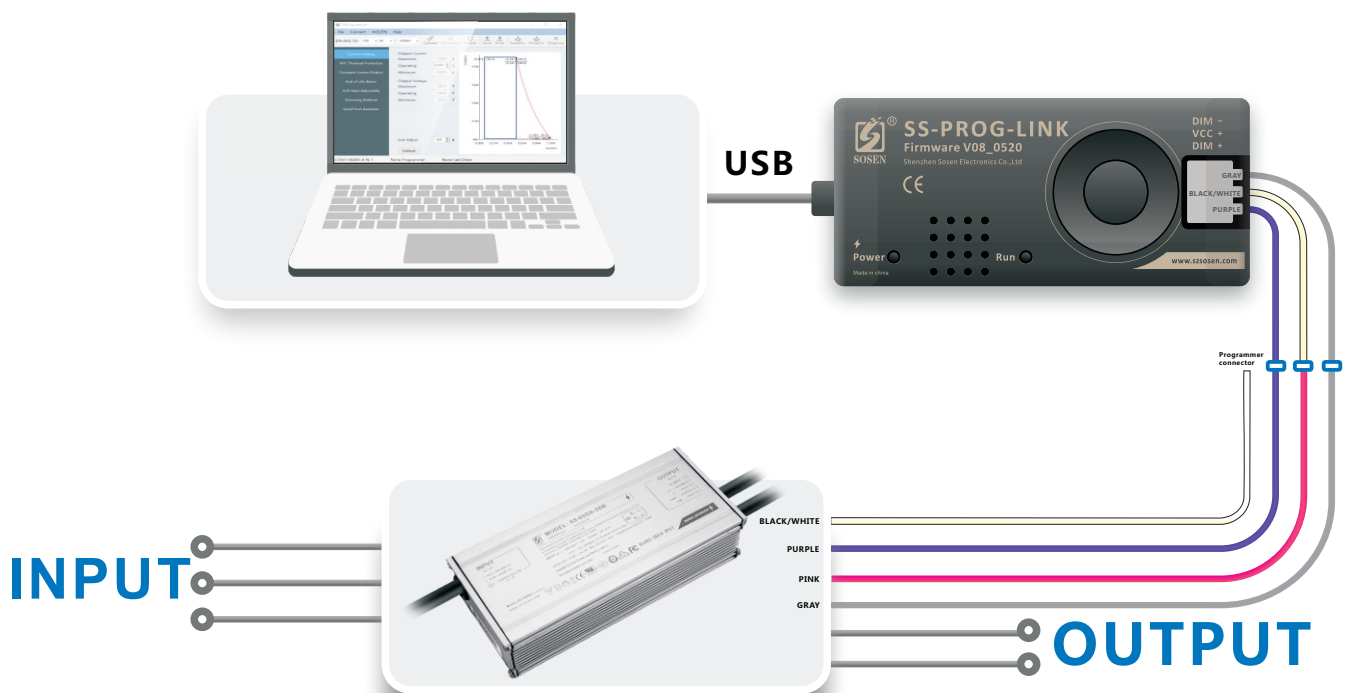
Constant Lumen Output are design to maintain fixture's stable output lumen by increasing driver's output current within driver's life span to counteract LED lumen degradation.

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.

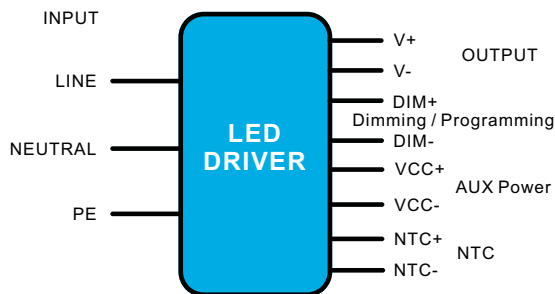


Note:

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

SS-240VP Series LED Driver

Mechanical Characteristics(Unit: mm/inch)



AC Input Cable(Lead Length outside enclosure 450±10mm):

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

DC Output Cable(Lead Length outside enclosure 250±10mm):

Global model: SJOW,2*17AWG,O.D: 7.7mm,Brown:V+ , Blue:V-
 UL model: SJTW,2*16AWG,O.D: 8.0mm,Red: V+ , Black: V-

DIM/AUX Power/Programming Cable

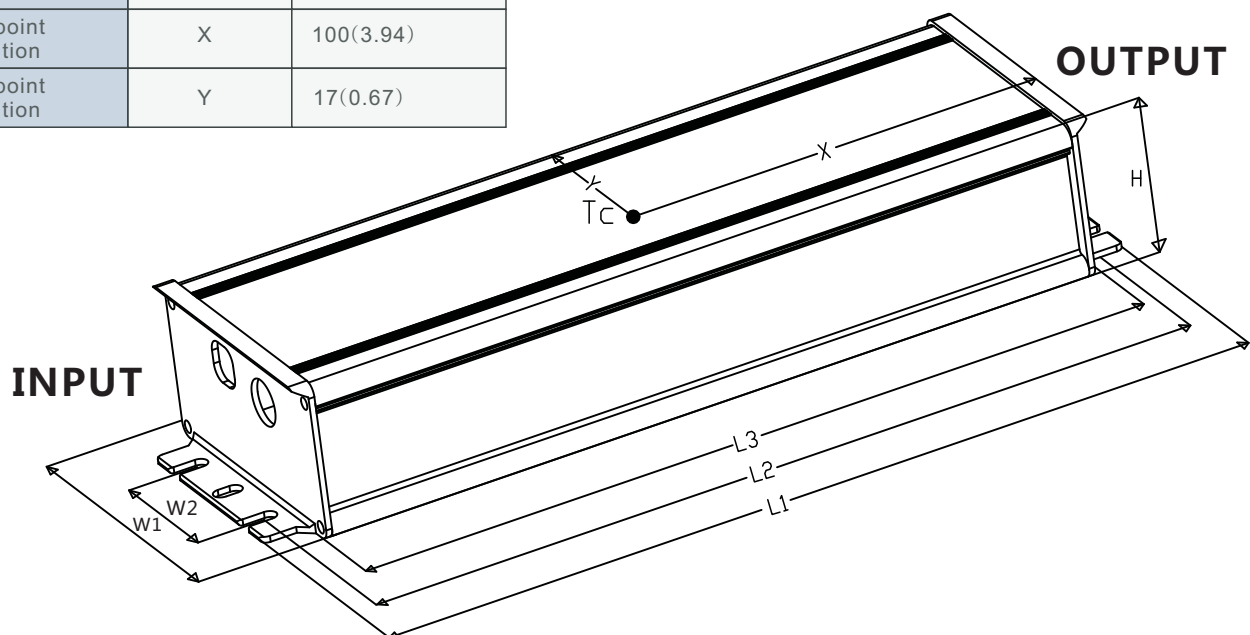
(Lead Length outside enclosure 220±10mm):

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

NTC Cable(Lead Length outside enclosure 300±10mm):

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

Name Description	Standard Code	mm(In.)
Case Length	L3	230(9.06)
Case Width	W1	71(2.8)
Case Height	H	39.6(1.56)
Overall Length	L1	254(10)
Mounting Hole Length	L2	241(9.49)
Mounting Hole Width	W2	34(1.34)
TC point position	X	100(3.94)
TC point position	Y	17(0.67)



SS-240VP Series LED Driver



Installation Tips

1. Dimming leads should be capped if not in use to avoid dimming circuit damage caused by external signals.

Package

- Outside carton dimension: L×W×H =495mm×385mm×162mm;
- 7PCS/Carton;
- Net weight/PC: 1.3kg;Gross weight/Carton: 10kg;
- Please refer to the product name, model number, manufacturer identification, quality inspection certificate, manufacturing date Etc. on the package. and LED power supply instruction manual in the package.

Transportation

Packaging is designed suitable for transportation by trucks, vessels and flights. The products should be shielded from direct sunshine, loaded/unloaded with caution.

Storage

The product storage meets the standard of the GB 3873 - 83.
Products should be rechecked if stock for over 1 year before installation.

RoHS

Products comply with European directive 2011/65/EC.

REVISION HISTORY

Version	Description of Change	Changed Date	Remark
V00	Original release	2019/07/26	

