SOSEN
LED DRIVER

SOSEN LED Driver, Your Smart Choice

Specifications

SS-150VB Series LED Driver

Model: SS-150VB-XXX

Description: 150W LED Driver

Rev.: V01

Release Date: 2019-07-13

SS-150VB Series LED Driver

SOSEN
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LED DRIVER
—
VB Series

Features:

- Efficiency up to 93.5%
- Isolated dimming:1-10V,PWM,Resistor
- Computer programmable
- SSA,CLO,ELA
- IP67
- Protections: SCP/OTP/OVP/OPP
- Class P
- TYPE HL, suitable for hazardous locations
- Surge protection: L/N-PE: 10kV, L-N: 6kV
- Warranty: 5 years

05 CE

IP67 RoHS Class P

C UL US LISTED E360758

Description:

SS-150VB is a rectangular driver with 90-305Vac input, the 150W model are designed for street and area lights with IP67 and 10kV/6kV surge protection. It has UL listed mark with Class P and Type HL rated.

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-150VB-143B	90-305Vac	150W	70-143V	100-136V	0.35-1.5A	8%	0.98	92.5%	90℃
SS-150VB-215B	90-305Vac	150W	108-215V	143-215V	0.1-1.05A	8%	0.98	93.0%	90℃

1.Default tested at 220Vac, full load, Ta 25℃。

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Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	100Vac		277Vac	
AC Input Range	90Vac		305Vac	
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			1.8A	100Vac, Full load
Max Input Power			168W	100Vac, Full load
Max Inrush Current(120Vac)			60A	Cold start
Max Inrush Current(220Vac)			110A	Cold start
Max Inrush Current(277Vac)			125A	Cold start
No Load Power			5W	277Vac/50Hz, No load
Power Factor	0.95	0.98		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-150VB-143B):

Parameter	Min.	Typ.	Max.	Remark
Output Voltage Range	70V		143V	Power derated @70-100V
Rated Output Voltage	100V		136V	Po=Vo*Io=150W, Full load
Rated Output Current	1.1A		1.5A	1.5A for 100V,1.1A for 136V
Current Adjustable Range(AOC)	0.35A		1.5A	AOC by programming
No Load Voltage			150V	
Efficiency @120Vac	89.5%	90.5%		Output 136V/1.1A
Efficiency @220Vac	91.5%	92.5%		Output 136V/1.1A
Efficiency @277Vac	92.5%	93.5%		Output 136V/1.1A
Output Current Tolerance	-5%		+5%	
Output Current Ripple(PK-AV)		5%	10%	
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%/℃		+0.03%/℃	Tc:0℃~90℃
OTP	90℃	100℃	110℃	Tc, Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection			10W	Driver will not be damaged, Hiccup mode

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Output Characteristics(SS-150VB-215B):

Parameter	Min.	Typ.	Max.	Remark
Output Voltage Range	108V		215V	Power derated @108-143V
Rated Output Voltage	143V		215V	Po=Vo*Io=150W, Full load
Rated Output Current	0.7A		1.05A	1.05A for 143V,0.7A for 215V
Current Adjustable Range(AOC)	0.1A		1.05A	AOC by programming
No Load Voltage			230V	
Efficiency @120Vac	90.0%	91.0%		Output 215V/0.7A
Efficiency @220Vac	92.0%	93.0%		Output 215V/0.7A
Efficiency @277Vac	92.5%	93.5%		Output 215V/0.7A
Output Current Tolerance	-5%		+5%	
Output Current Ripple(PK-AV)		5%	10%	
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%/℃		+0.03%/℃	Tc:0℃~90℃
OTP	90℃	100℃	110℃	Tc, Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection			10W	Driver will not be damaged, Hiccup mode

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Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
1-10V Dimming (Optional)	Dim Vmax	0V		12V	
	Dim Range	10%Iomax		100%Ioset	
	Rec.Dim Range	1V		10V	
PWM Dimming (Optional)	PWM High	9.8V		10.2V	
	PWM Low	0V		0.3V	
	Frequency	1KHz		2KHz	
	PWM Duty	10%		100%	
Resistor Dimming (Optional)	Resistance	10Kohm		90Kohm	Reference dimming curve
	Dim Range	10%Iomax		100%Ioset	
Lifetime(Tc≤74℃)		≥62,000 hours			80% load
MTBF		164,000 hours			220Vac,Full load, Ta=25℃ (MIL-HDBK-217F)
IP Grade		IP67			
Tc		90℃			
Warranty		5 years			Refer to life time drawing
Net Weight		870g			
Dimension		200mm*66mm*39.6mm			L x W x H

NOTE: All the parameters above are tested Ta 25℃, unless specified.

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Environmental Requirements

Parameter	Min.	Typ.	Max.	Remark
Operating Temperature(Tcase)	-40℃	25℃	+90℃	
Storage Temperature	-40℃	25℃	+85℃	
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	IEC 61347-2-13:2014/AMD1:2016 used in conjunction with IEC 61347-1:2015	✓	
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	
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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Safety Test Items:

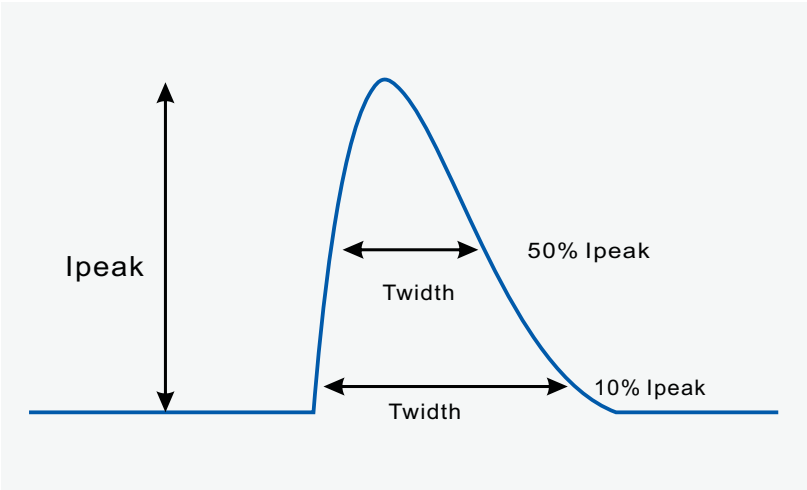
Safety test items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	TUV Insulation Requirements	CCC Insulation Requirements	
Input-Output	1600Vac	3000Vac	3750Vac	Reinforced insulation
Input-Case	1600Vac	1500Vac	1875Vac	Basic insulation
Input-Dim	1600Vac	3000Vac	3750Vac	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.
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	60A	430uS	
220Vac	110A		150uS
277Vac	125A	370uS	

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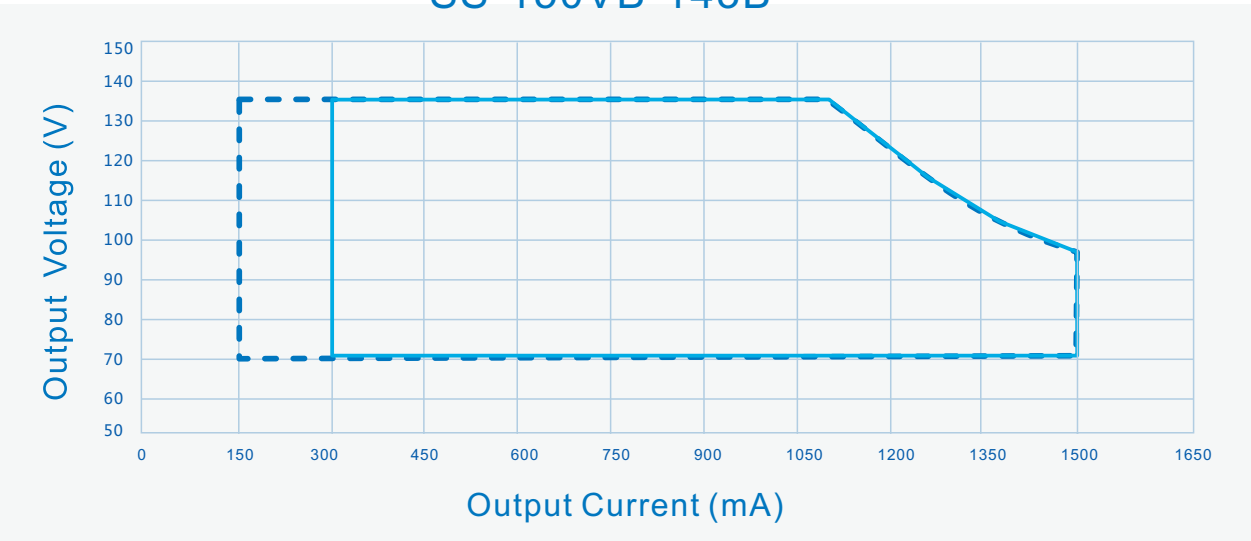
Performance Curves:

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

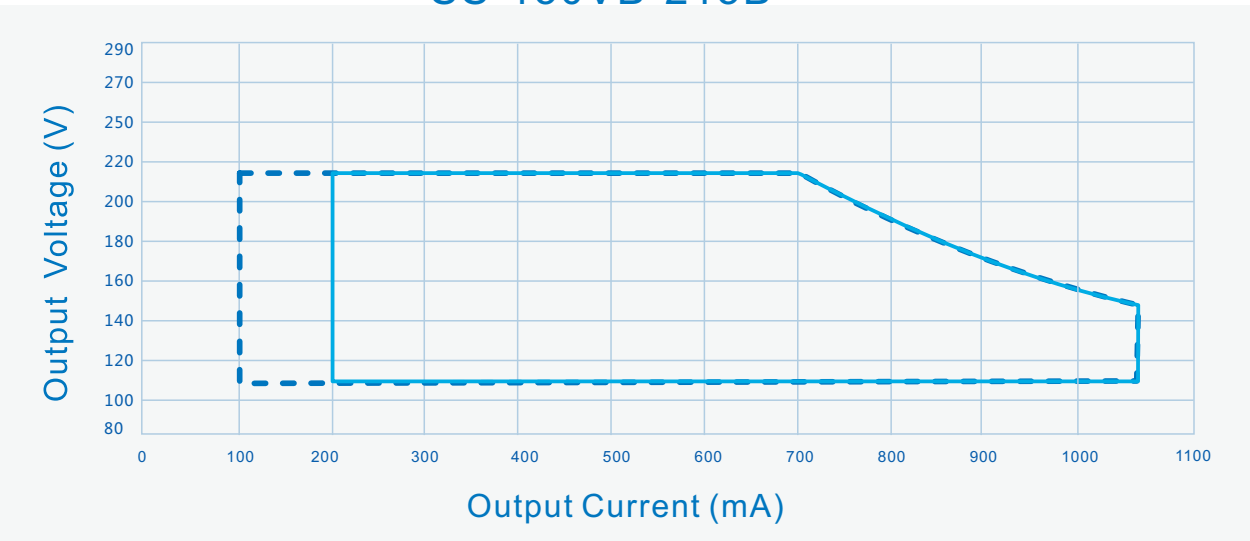
SS-150VB-143B



Diming Window — AOC Window

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

SS-150VB-215B



Diming Window — AOC Window

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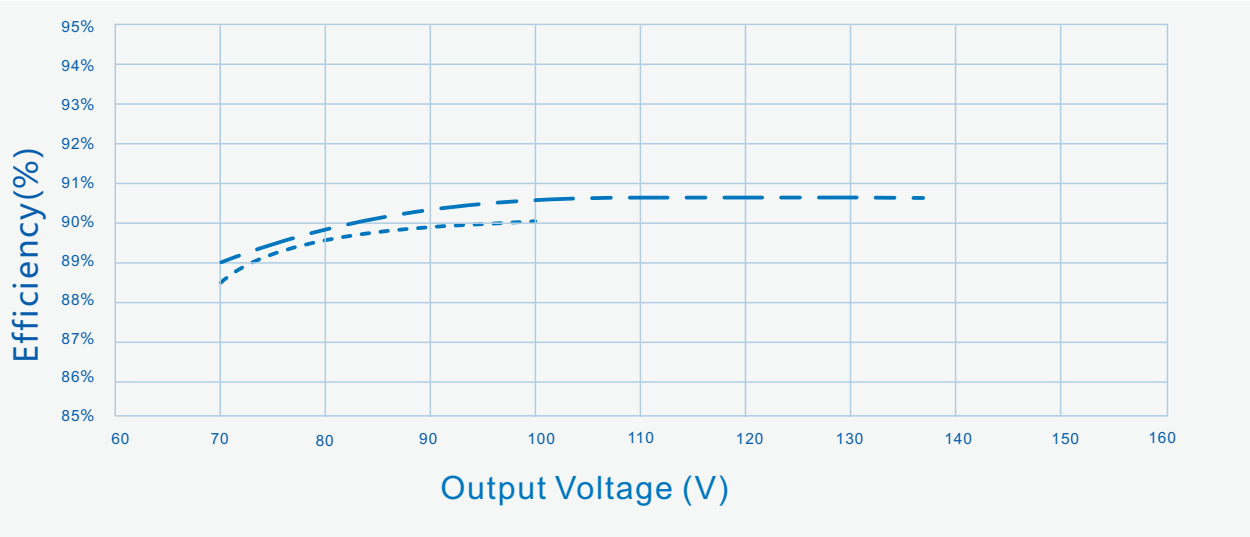
Performance Curves:

Efficiency Vs. Output Voltage (Vin=120Vac)

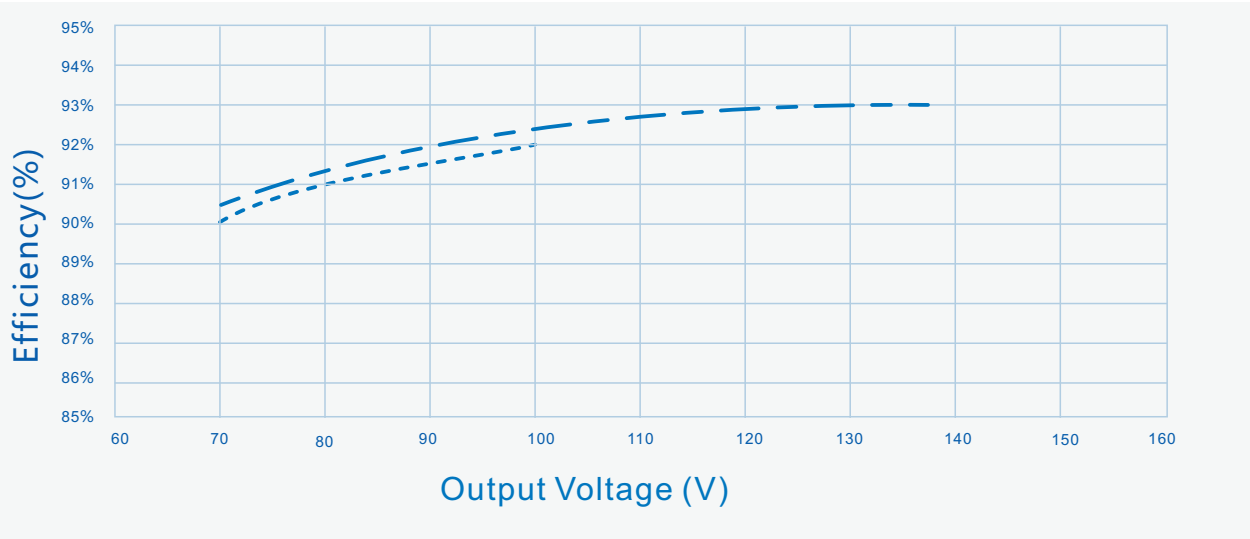
SS-150VB-143B



------- Io=1500mA — — — Io=1100mA

Efficiency Vs. Output Voltage (Vin=220Vac)

SS-150VB-143B



------- Io=1500mA — — — Io=1100mA

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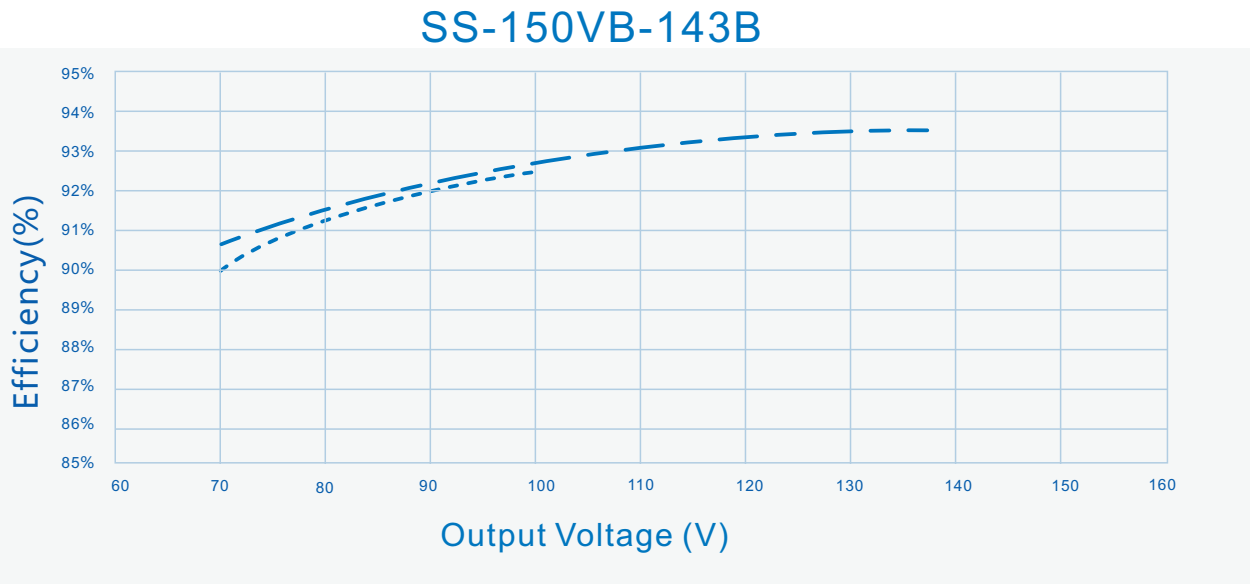
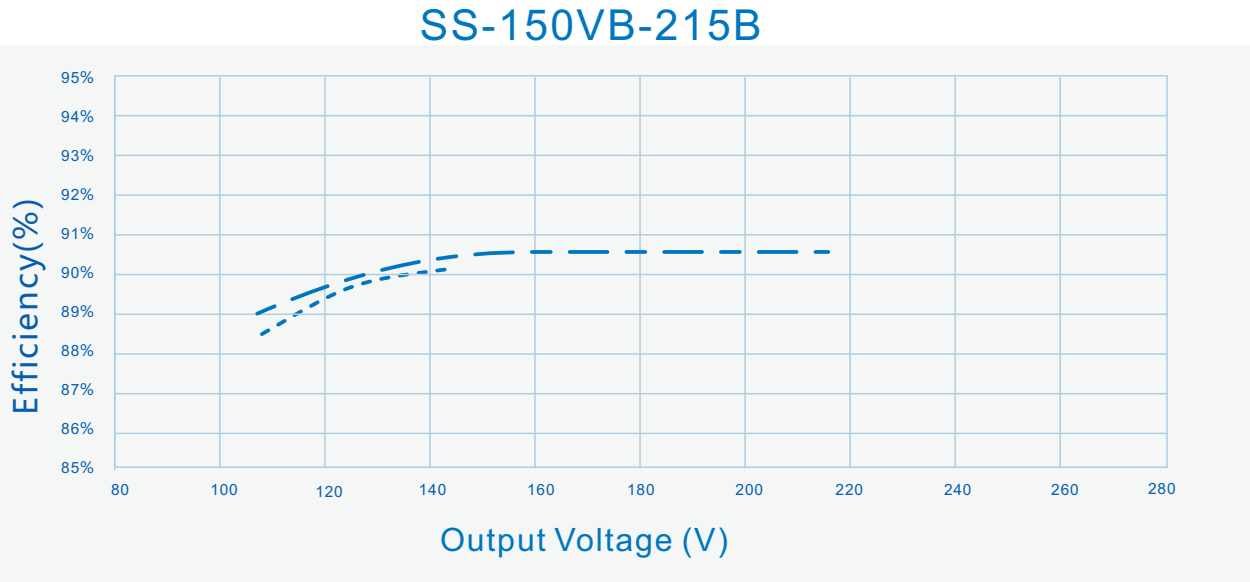
Performance Curves:

Efficiency Vs. Output Voltage (Vin=277Vac)



------- Io=1500mA — — — Io=1100mA

Efficiency Vs. Output Voltage (Vin=120Vac)



------- Io=1050mA — — — Io=700mA

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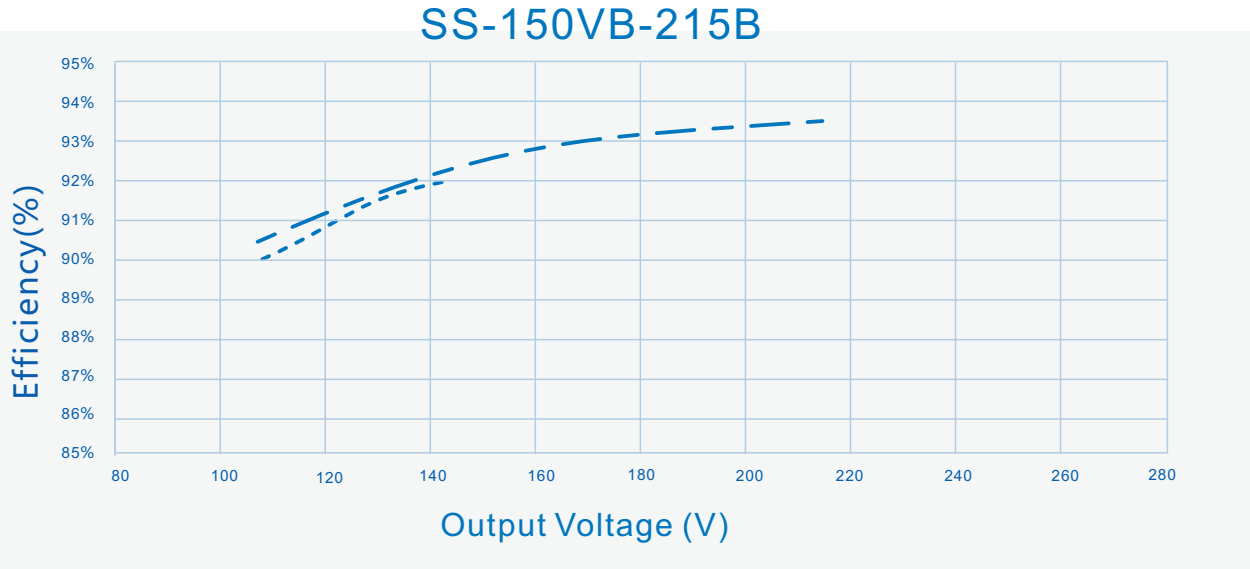
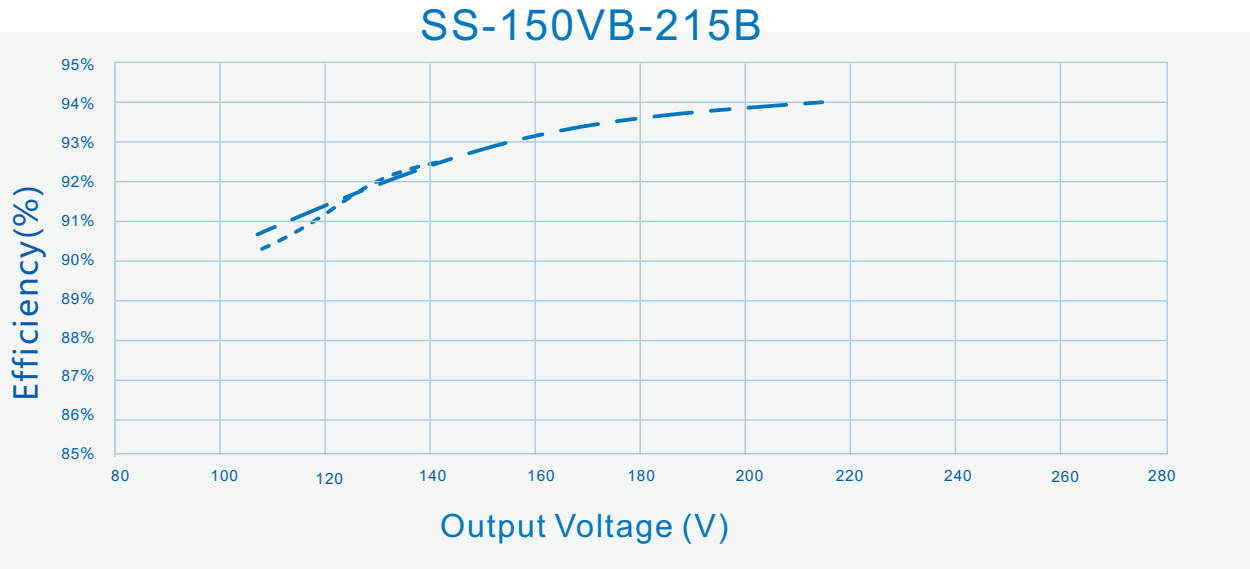
Performance Curves:

Efficiency Vs. Output Voltage (Vin=220Vac)



------- Io=1050mA — — — Io=700mA

Efficiency Vs. Output Voltage (Vin=277Vac)



------- Io=1050mA — — — Io=700mA

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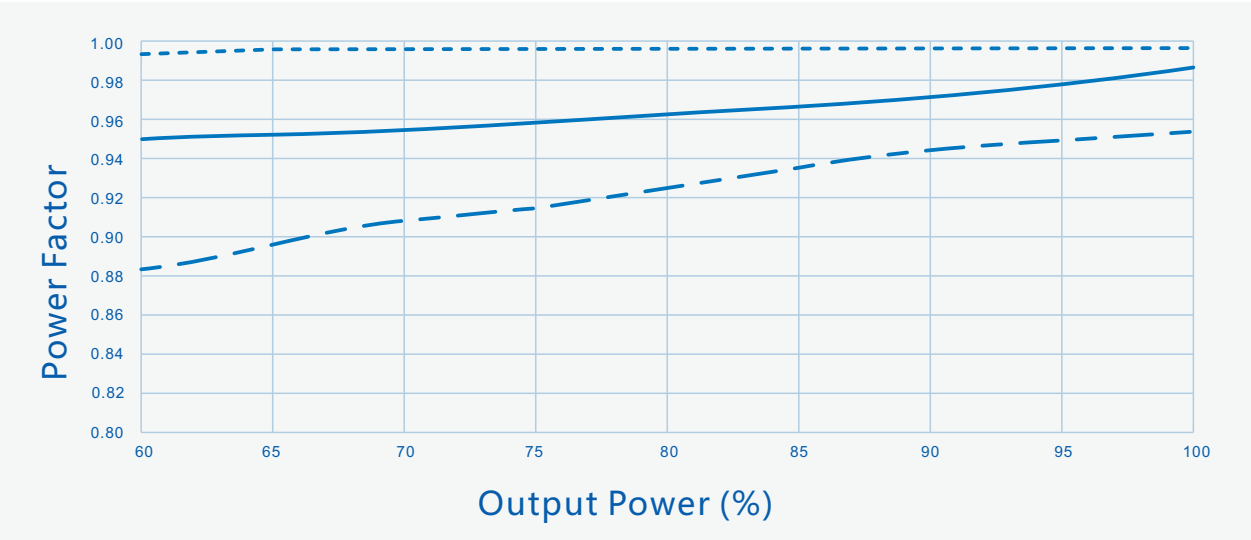
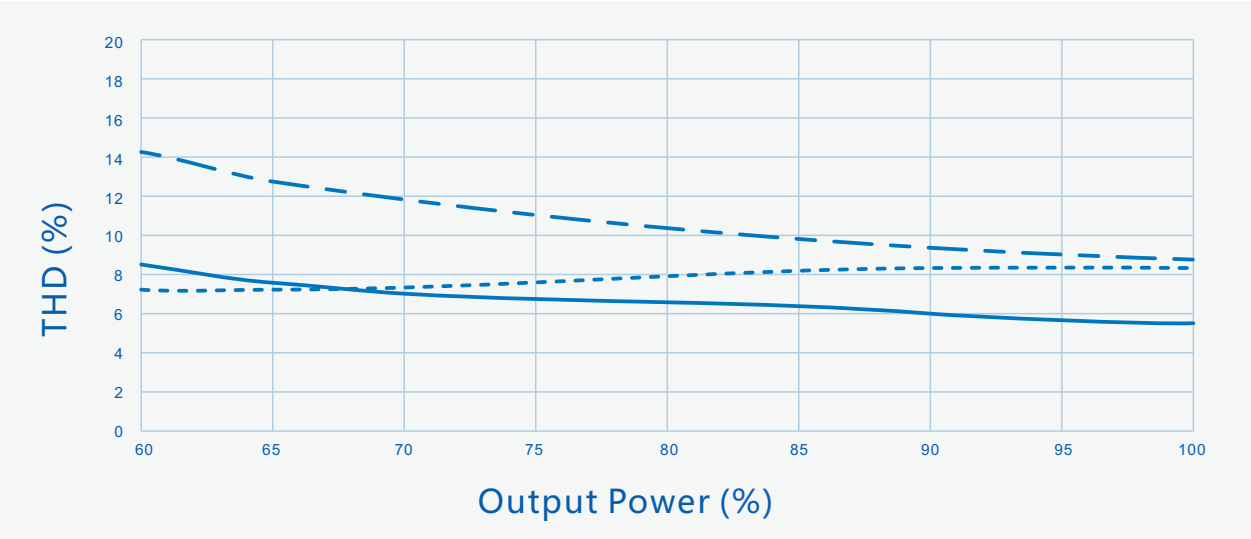
Performance Curves:

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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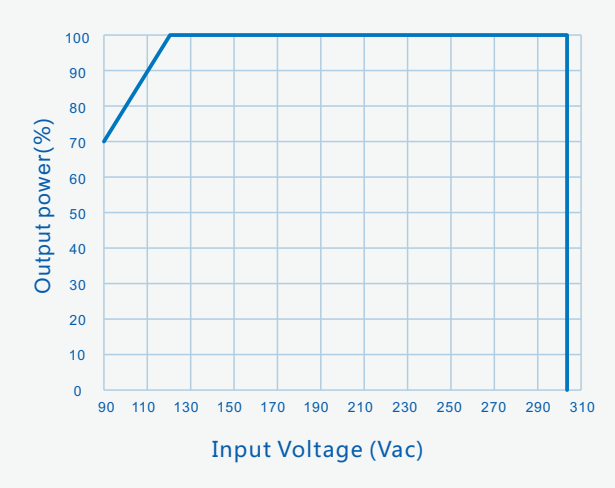
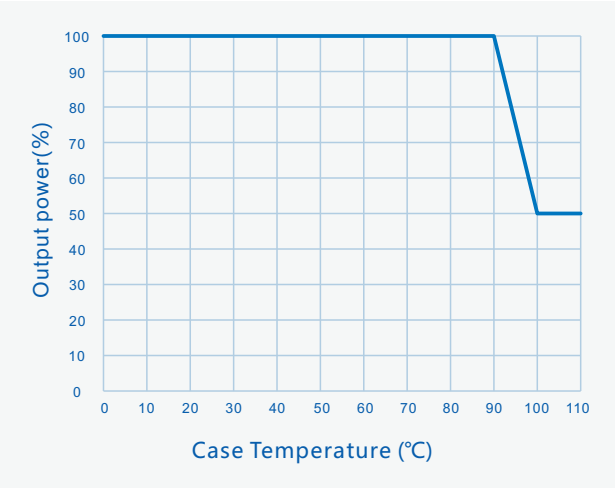
Performance Curves:

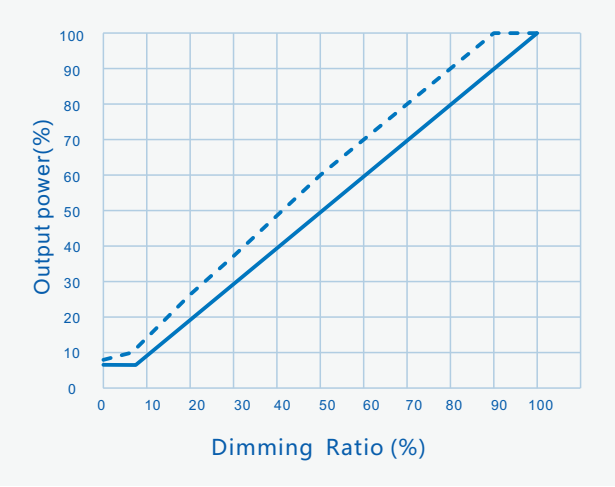
Output power Vs. Input Voltage (Ta Max.60℃)



Output power Vs. Case Temperature



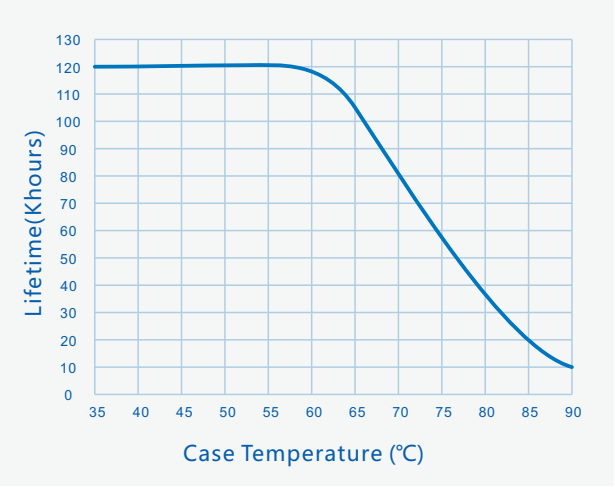
Output Power Vs. Dimming



- - - - - - Resistance Dimming

——— PWM/1-10V Dimming

Lifetime Vs. Case Temperature



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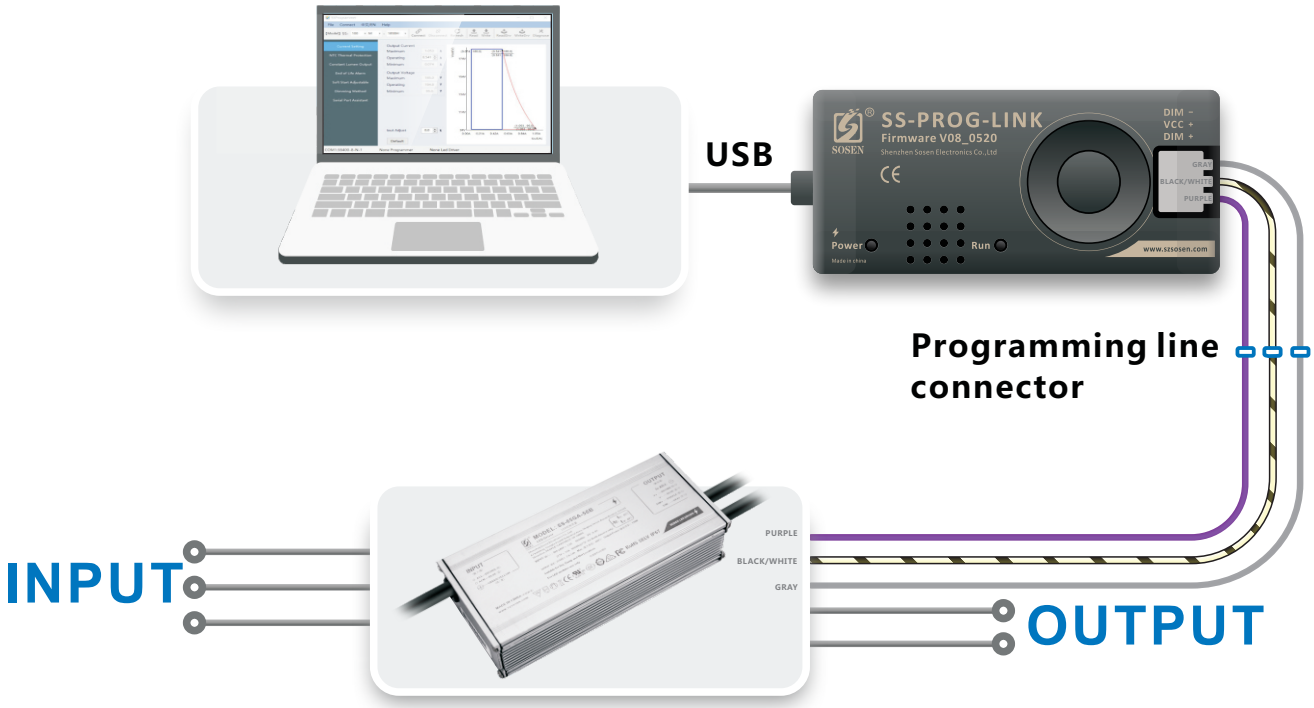
Constant Lumen Output

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:
For details, please refer to the Sosen SS-PORG-LINK Programmer Manual.

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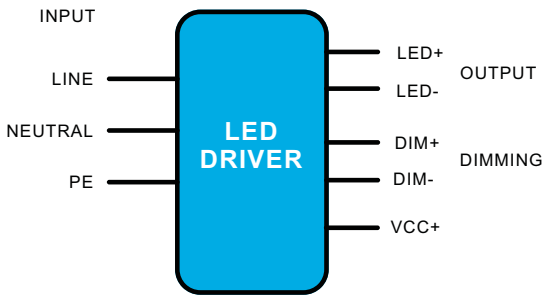
Mechanical characteristics(Unit: mm)



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

UL model: SJTW,3*0.824mm^2,O.D: 7.8mm,Black:L,White:N,Green:PE
Euro model: H05RN-F,3*1.0mm^2, ,O.D:7.4mm,Brown:L, Blue:N,Yellow/Green:PE

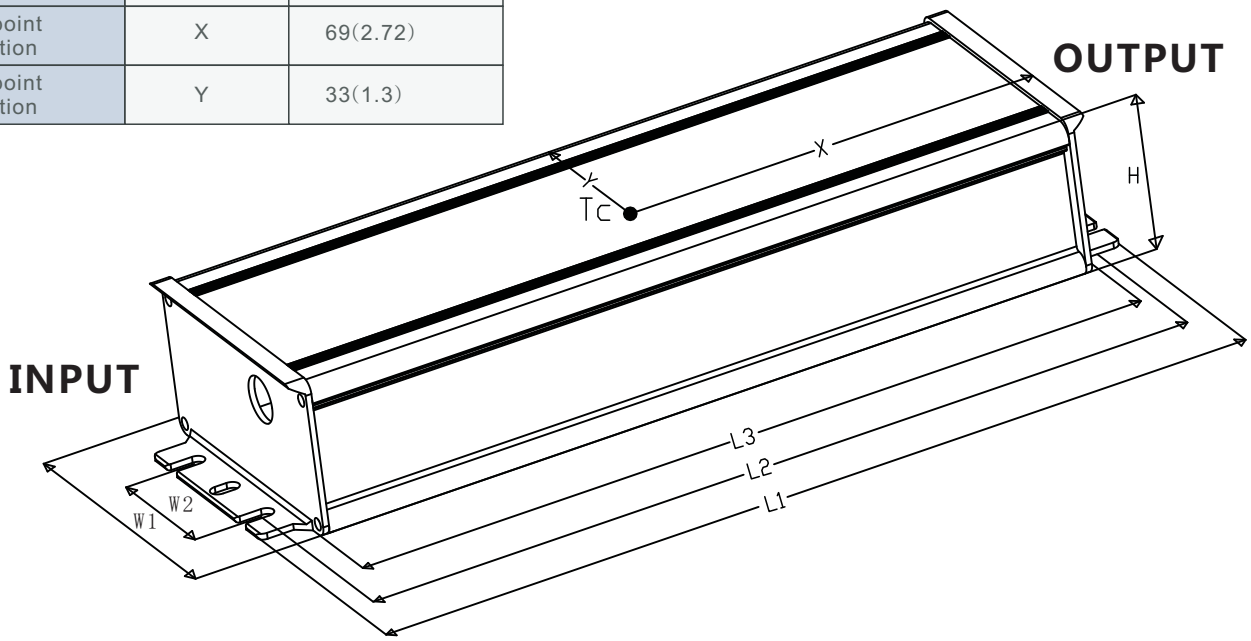
DC Output Cable(Lead Length outside enclosure 250±10mm):

UL model: SJTW,2*0.824mm^2,O.D: 7.6mm,Red:LED+ , Black:LED-
Euro model: H05RN-F,2*1.0mm^2, O.D:7.0mm, Brown:V+, Blue:V-

DIM Cable(Lead Length outside enclosure 220±10mm):

UL/Euro model: STYLE 21996#22AWG, O.D: 4.9mm , Purple : DIM+, Gray: DIM-
Black/White: VCC+

Name Description	Standard Code	mm(In.)
Case Length	L3	176(6.9)
Case Width	W1	66(2.6)
Case Height	H	39.6(1.56)
Overall Length	L1	200(7.87)
Mounting Hole Length	L2	185(7.28)
Mounting Hole Width	W2	32(1.26)
TC point position	X	69(2.72)
TC point position	Y	33(1.3)



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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 =500mm×390mm×170mm;
- 14PCS/Carton;
- Net weight/PC: 0.87kg;Gross weight/Carton: 13.2kg;
- Please refer to the product name, model number, manufacturer identification, quality inspection certifi-cate, 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.

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REVISION HISTORY

Version	Description of Change	Changed Date	Remark
V00	Original release	2019/03/28	
V01	Update programming connection diagram	2019/07/13	

Shenzhen SOSEN Electronics Co Ltd
Controlled chapter
DCC

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