

SPECIFICATION

SS-150EL Series LED Driver

Model: SS-150EL-XX

Description: 150W LED DRIVER

Rev.: V03

Release Date: 2019-03-30

SHENZHEN SOSEN ELECTRONICS CO.,LTD

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Features

- Efficiency up to 93.5 %
- Optional dimming function: 1-10V, PWM, Resistor, Timing
- 440Vac input 48 hours no damage
- Input UVP, OVP design
- IP67 rated
- Protections: SCP, OTP, OVP
- Metal case with full potted for hazardous scenarios
- Surge Protection: L/N-PE: 6kV, L-N: 4kV
- 5 years warranty



Description

SS-150EL series are constant current LED driver with universal input voltage 120-277Vac and high power factor. They are specifically designed for LED luminaries such as high bay, high mast and street lights with low standby power, high efficiency, compact housing and good thermal management, which greatly enhance the reliability and lifespan. Comprehensive protections, including input Over Voltage Protection, Short Circuit Protection and Over Temperature Protection, ensure proper functioning.

Model List

Model	O/P Voltage	O/P Current	Max. O/P Power	O/P Current Tolerance	THD (Typ.)	PF (Typ.)	Efficiency (Typ.)
SS-150EL-143*	72-143V	1.05A	150W	±5%	8%	0.98	93%
SS-150EL-215*	108-215V	0.7A	150W	±5%	8%	0.98	93.5%

Note:

1. Default Tested at 230Vac, full load, Ta 25°C.
 2. Optional B, Tor space in the place of * means additional function.
- Space is the base model without any optional function;
- Suffix B for model with 3-in-1 dimming (1-10V, PWM, Resistor);
 - Suffix T for model with timing control.

Input Characteristics

Parameter		Min	Typ.	Max	Remarks
Rated AC input range		220Vac		240Vac	
AC input range		120Vac		277Vac	Derated@ 120-140Vac, see Fig. 1
Input frequency range		47Hz		63Hz	
Max input current				0.9A	200Vac, full load
Inrush current				60A	Cold start, 230Vac/50Hz , Twidth=650us measured at 50% Ipeak
No load power			1W	2W	230Vac/50Hz, No load
AC input OVP	Cut-off voltage threshold	320Vac	330Vac	340Vac	
	Turn-on voltage threshold	305Vac	315Vac	330Vac	
	Max input voltage			440Vac	48 hours without damage
Power factor		0.95	0.98		230Vac/50Hz, full load
		0.90			140-277Vac/50Hz, 70-100% Load
THD			8%	10%	230Vac/50Hz, full load
				20%	140-277Vac/50Hz, 70-100% Load

Output Characteristics

Parameter		Min	Typ.	Max	Remarks
Rated output voltage	SS-150EL-143*	72V		143V	
	SS-150EL-215*	108V		215V	
Rated output current	SS-150EL-143*	1.0A	1.05A	1.1A	
	SS-150EL-215*	0.665A	0.7A	0.735A	
No load voltage	SS-150EL-143*			160V	
	SS-150EL-215*			230V	
Efficiency @230Vac	SS-150EL-143*	91.5%	93.0%		Output 143V/1.05A , see Fig. 5
	SS-150EL-215*	92.0%	93.5%		Output 215V/0.7A , see Fig. 5
Output current tolerance		-5%		+5%	
Output voltage ripple (PK-PK)			1%	2%	Full load
Output current ripple (PK-PK)			10%	15%	Full load
Start-up current overshoot				10%	
Start-up time			0.7S	1S	230Vac
Line Regulation		-1%		+1%	Full load
Load Regulation		-2%		+2%	

Other Characteristics

Parameter		Min	Typ.	Max	Remarks
1-10V Dimming (Optional)	Dim Vmax	0V		14V	3 in 1 Dimming; 1-5V Dimming Optional; Negative Logic Dim Optional
	Dim Range	10%Iomax		100%Ioset	
	Voltage	1V		10V	
PWM Dimming (Optional)	High	5V		10V	
	Low	-0.3V		-0.6V	
	Frequency	200Hz		2KHz	
	PWM Duty	1%		99%	
Resistor Dimming (Optional)	Resistance	10K ohm		100K ohm	
	Dimming	10%Iomax		100%Ioset	
Timing Curve (Optional)	IC Control	By programming			Typically 3-4 sections
	Timing	5H/6H/7H/8H per section			Default Mode: 24Hour/Circle with 50% load
Protection	OTP	90°C	100°C	110°C	Tc, Self-recovery
	Short Circuit Protection	Driver will not damaged with short-circuit power <10W			Hiccup mode
Max. Driver number on MCB 16A (Type B)				12PCS	
Life time			55,000hrs		230Vac, full load, Tc 75°C, See Fig. 6
MTBF			200,000hrs		230Vac, full load, Ta= 25°C, (MIL-HDBK-217F)
Temperature Coefficient		-0.03%/°C		+0.03%/°C	Tc: 0°C ~ 90°C
Tc				90°C	
Warranty			5 years		Tc: 75°C
Net Weight			700g		
Dimension		178mm*66mm*35.5mm			L x W x H

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

Environmental Requirements

Parameter	Min	Typ.	Max	Remarks
Operating Temperature	-40°C	25°C	+60°C	See Fig. 2
Storage Temperature	-40°C	25°C	+85°C	
Operation Humidity	10%RH		90%RH	
Storage Humidity	5%RH		95%RH	
Altitude	-65m		4,000m	
Cooling Method	Air Cooling			

Safety and EMI/EMS Standards

Certification		Standard	Status	Remark
BIS		IS15885:2012 Part 2 Sec 13	√	
Item		Standard	Remark	
Insulation strength	Input-output	3750Vac/10mA Max/60s	Reinforced insulation	
	Primary-Earth	1875Vac/10mA Max/60s	Basic insulation	
	Sec.- Earth	1000Vac/10mA Max/60s	Function insulation	
Insulation resistance	Input-output	≥10MΩ	Testing Voltage: 500Vdc	
Ground resistor		≤0.1Ω	25A/1min	
Leakage current		≤0.75mA	230Vac	
Item		Criterion	Remark	
Conduction Emission		EN55015:2013+A1:2015;CISPR15	Conducted EMI:9KHz-30MHz	
Harmonic Current Emissions		IEC/EN 61000-3-2	Class C	
Surge		IEC/EN61000-4-5	Difference mode 4kV, Common mode 6kV Criterion C	

NOTE: 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.

Performance Curves

Fig. 1 Output Power VS Input Voltage

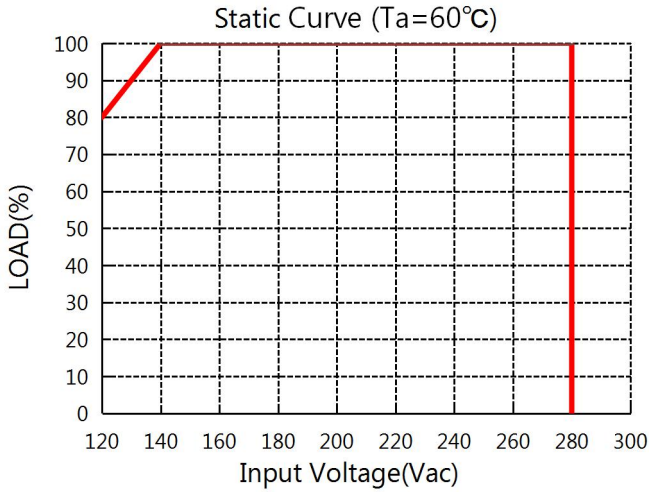


Fig. 2 O/P Power VS Ambient Temperature

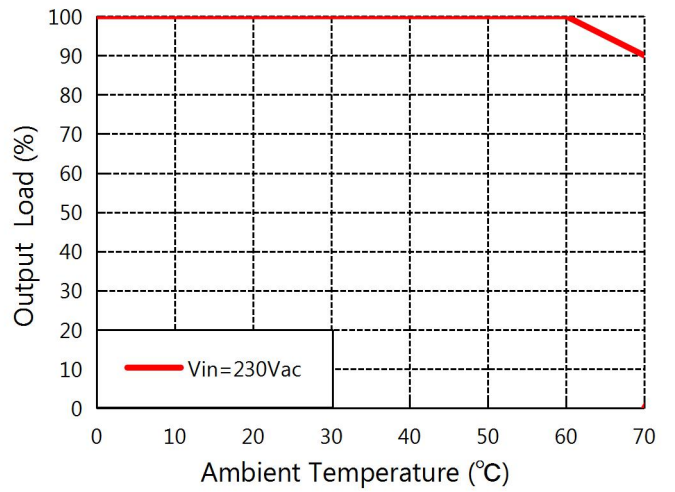


Fig. 3 Power Factor VS Output Power

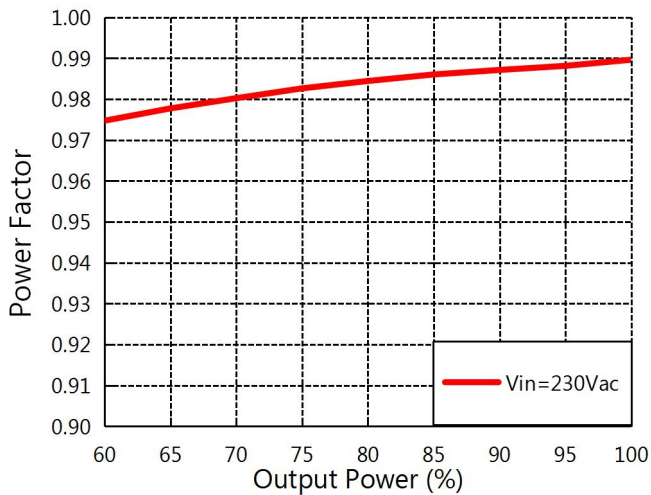


Fig. 4 THD VS Output Power

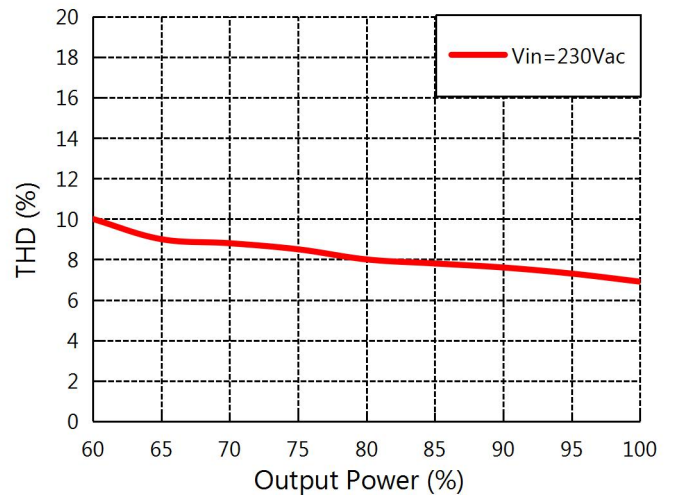


Fig. 5 Efficiency VS Output Power

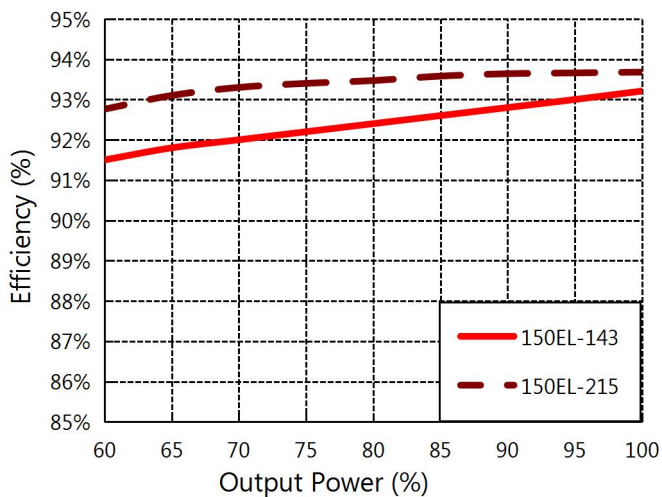
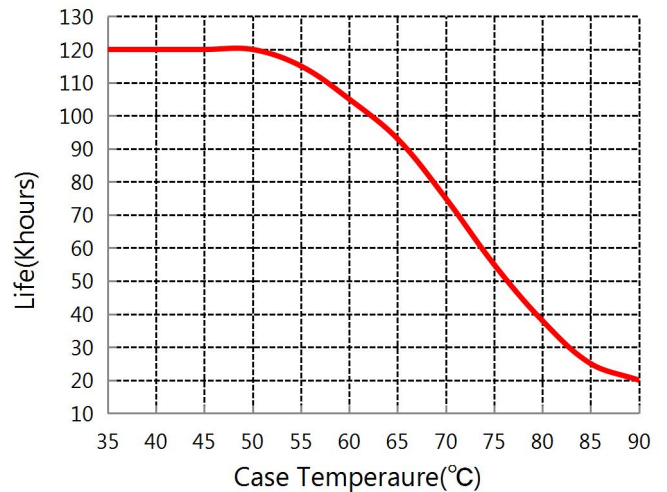
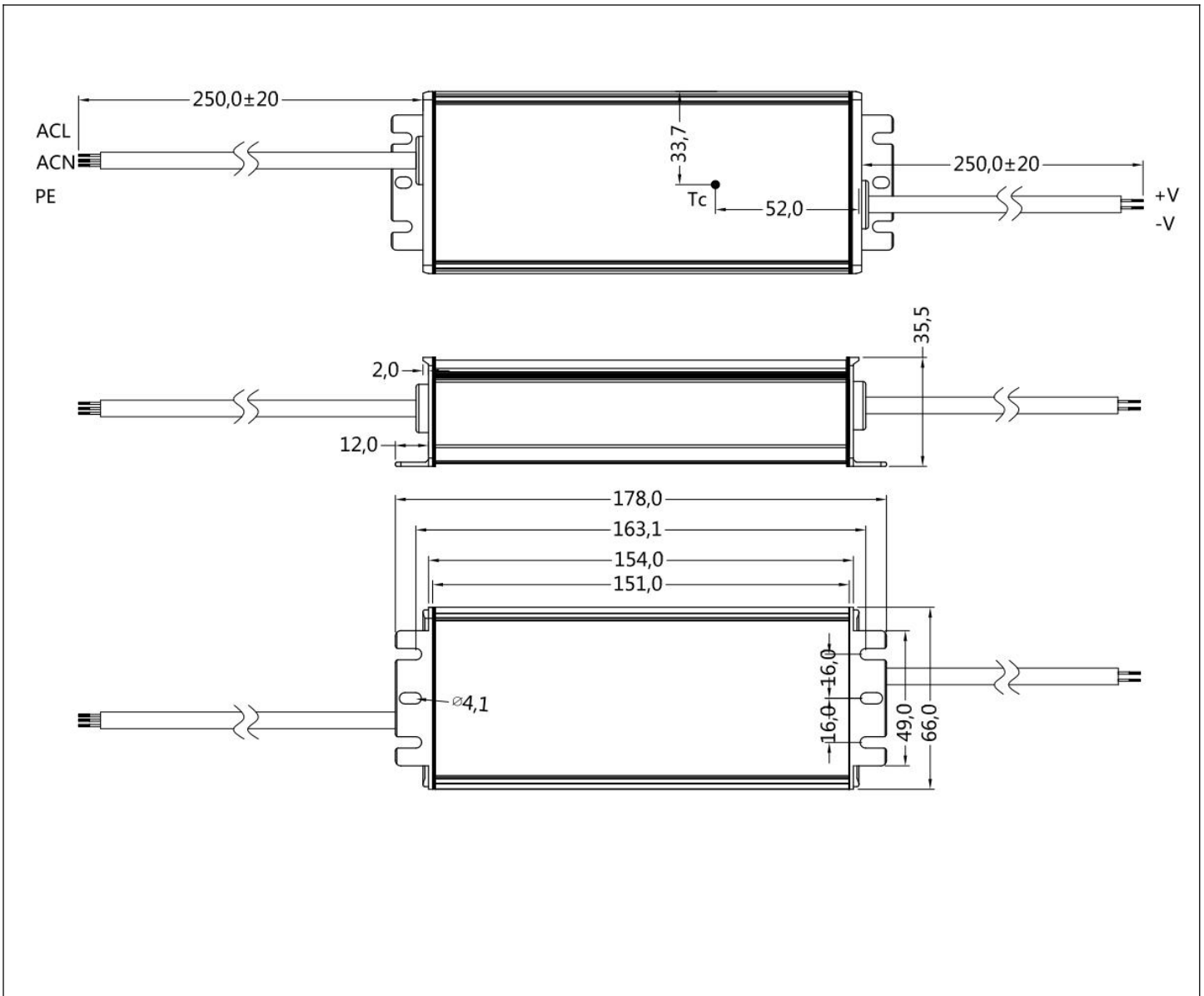


Fig. 6 Lifespan VS Case Temperature



Mechanical characteristics(Unit: mm)












NOTE:

Input Wire	PVC 3*0.75 mm ² , O.D: 6.8mm, RED: L, BLACK: N, YELLOW/GREEN: PE
Output Wire	PVC 2*0.75 mm ² , O.D: 6.4mm, RED: V+, BLACK: V-

Label

BIS

<p>INPUT</p> <ul style="list-style-type: none"> ○ ACL---RED ○ ACN---BLACK ⊕---GREEN/YELLOW 	<div style="display: flex; justify-content: space-between; align-items: center;">  <div style="text-align: center;"> <p>MODEL:SS-150EL-143B</p> <p>LED Driver</p> </div>  </div> <p>Shenzhen Sosen Electronics Co.,Ltd</p> <p>INPUT : 220-240V ~ 0.9A 50/60Hz PF:0.95</p> <p>OUTPUT : 72-143V 1.05A Max.150W</p> <p>Input Over Voltage Protection</p> <p>Operating range:120-277Vac</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px auto;"> tc: 90°C ta: 60°C </div>	<p>OUTPUT</p> <ul style="list-style-type: none"> V+ ---RED ○ V- ---BLACK ○ DIM+ ---PURPLE ○ DIM- ---GRAY ○ 	
<p>MADE IN CHINA</p> <p>www.szsosen.com</p>	     <p>RoHS IP67</p>	<p style="font-size: 8px;">IS15885(Part 2/Sec 13)</p>  <p>R-41041440</p>	<div style="background-color: black; color: white; padding: 5px; display: inline-block;"> SOSEN LED DRIVER  </div>

Dimming Diagram



- Output current could be adjusted by connecting 0-10V or PWM signal between DIM+ and DIM-
- DO **NOT** connect DIM- and V- to avoid abnormal output

1-10V Dimming (Typ.) , See Fig. 7

Voltage Range	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Rated current percentage	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%-108%

10V PWM frequency range(Typ.): 200Hz-2KHz, See Fig. 8

PWM duty	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Rated current percentage	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%-108%

Resistor(Typ.), N represents the number of power supplies

Resistor	10KΩ /N	20KΩ /N	30KΩ /N	40KΩ /N	50KΩ /N	60KΩ /N	70KΩ /N	80KΩ /N	90KΩ /N	100KΩ /N	OPEN
Rated current percentage	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%-108%

Fig. 7 1-10V Dimming Curve

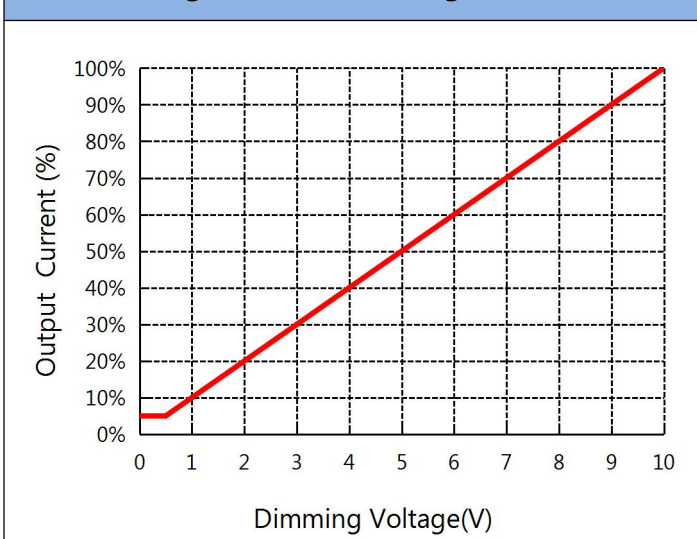
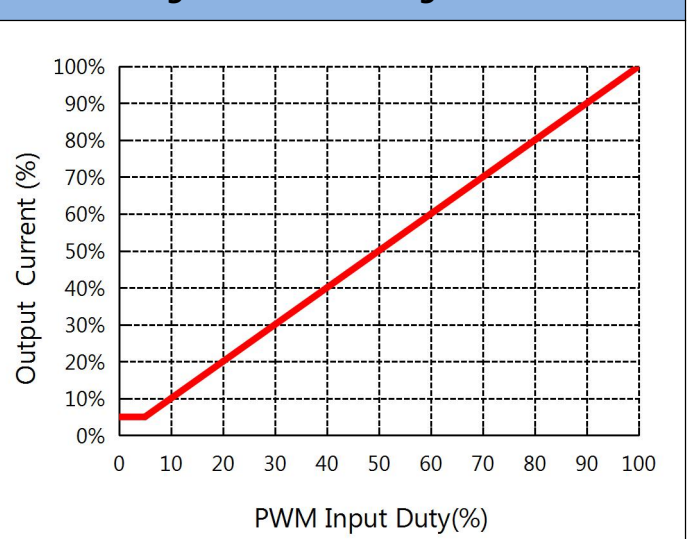


Fig. 8 PWM Dimming Curve





Package, Transportation & Storage

1. Package

- Outside carton dimension: L×W×H =500mm×390mm×170mm;
- 14PCS/Carton;
- Net weight/PC: 0.7kg
- Gross weight/Carton: 11kg

2. Transportation

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

3. Storage

The product storage meets the standard of the GB 3873—83.

Products should be rechecked if stock for over 1 year before installation.