

### Features

- Efficiency up to 93%
- IP67 rated; Suitable for Dry, Damp and Wet Locations
- Protections: OVP, SCP, OTP, OCP,
- Metal case with full potted for hazardous scenarios
- Surge Protection: L/N-PE: 6kV, L-N 4kV
- 5 years warranty



### Description

SS-320A series are constant voltage LED driver with universal input voltage 90-305Vac and high power factor. They are specifically designed for LED strips, LED sign, billboard and landscape lighting with low standby power, high efficiency, compact housing and good thermal management, which greatly enhance the reliability and lifespan. Comprehensive protections, including Over Voltage Protection, Short Circuit Protection ensure proper functioning.

### Model List

Model	O/P Voltage	O/P Current	Max. O/P Power	O/P Voltage Tolerance	THD (Typ.)	PF (Typ.)	Efficiency (Typ.)
SS-320A-12	12V	22A	264W	±5%	8%	0.97	91%
SS-320A-24	24V	13.34A	320W	±5%	8%	0.97	93%
SS-320A-36	36V	8.9A	320W	±5%	8%	0.97	93%
SS-320A-42	42V	7.65A	321W	±5%	8%	0.97	93%
SS-320A-48	48V	6.7A	321W	±5%	8%	0.97	93%

**Note:** Default Tested at 230Vac, full load, Ta 25°C.



### Input Characteristics

Parameter	Min	Typ.	Max	Remarks
Rated AC input range	100Vac		277Vac	Derated@ 90-100Vac, see Fig. 1
AC input range	90Vac		305Vac	
Input frequency range	47Hz		63Hz	
Max input current			4.3A	90Vac, full load
Inrush current			80A	Cold start, 230Vac/50Hz , Twidth=650us measured at 50% Ipeak
No load power		0.8W	1.0W	277Vac/50Hz, No load
Power factor	0.95	0.97		230Vac/50Hz, full load
	0.90	0.92		100-277Vac/50Hz, 75-100% Load
THD		8%	10%	230Vac/50Hz, full load
			20%	100-277Vac/50Hz, 75-100% Load

### Output Characteristics

Parameter	Min	Typ.	Max	Remarks	
Output voltage range	SS-320A-12	11.40V	12.0V	12.60V	full load
	SS-320A-24	22.80V	24.0V	25.20V	
	SS-320A-36	34.20V	36.0V	37.80V	
	SS-320A-42	39.90V	42.0V	44.10V	
	SS-320A-48	45.60V	48.0V	50.40V	
Output current range	SS-320A-12	0		22A	Output 12V/22A, see Fig. 5 Output 24V/13.34A , see Fig. 5
	SS-320A-24	0		13.34A	
	SS-320A-36	0		8.9A	
	SS-320A-42	0		7.65A	
	SS-320A-48	0		6.7A	
Efficiency @230Vac	SS-320A-12	90%	91%		Output 12V/22A, see Fig. 5 Output 24V/13.34A , see Fig. 5
	SS-320A-24	92%	93%		
	SS-320A-36	92%	93%		
	SS-320A-42	92%	93%		
	SS-320A-48	92%	93%		
Output voltage tolerance	-5%		+5%	full load	
Output voltage ripple (PK-PK)		1%	2%	Oscilloscope/20MHz, output with a 0.1uf ceramic capacitor and a 10uf electrolytic capacitor	

Start-up time		0.75S	1.0S	115Vac
		0.5S	1.0S	230Vac
Output overshoot/undershoot	-10%		+10%	When the driver on or off
Line Regulation	-1%		+1%	Full load
Load Regulation	-3%		+3%	
Transient response	Overshoot amplitude	-10%	+10%	di/dt=1A/μs, 25%-50%-25%
	Recover time		10ms	

### Other Characteristics

Parameter		Min	Typ.	Max	Remarks
Protection	OCP	115% I <sub>o</sub>		130% I <sub>o</sub>	Hiccup mode
	OVP	105% V <sub>o</sub>		130% V <sub>o</sub>	The output voltage will be limited at the design range
	OTP	100℃	110℃	120℃	Shut down, when temperature is decreased, it will auto recover
	Short Circuit Protection	Driver will not damaged with short-circuit power <20W			Hiccup mode
Life time			55,000hrs		230Vac, full load, T <sub>c</sub> 75℃, See Fig. 6
MTBF			200,000hrs		230Vac, full load, T <sub>a</sub> = 25℃, (MIL-HDBK-217F)
Temperature Coefficient		-0.03%/℃		+0.03%/℃	T <sub>c</sub> : 0℃~90℃
T <sub>c</sub>				90℃	
Warranty			5 years		T <sub>c</sub> : 75℃
Net Weight			1840g		
Dimension		252mm*90mm*45mm			L x W x H

**NOTE:** All the parameters above are tested T<sub>a</sub> 25℃, 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

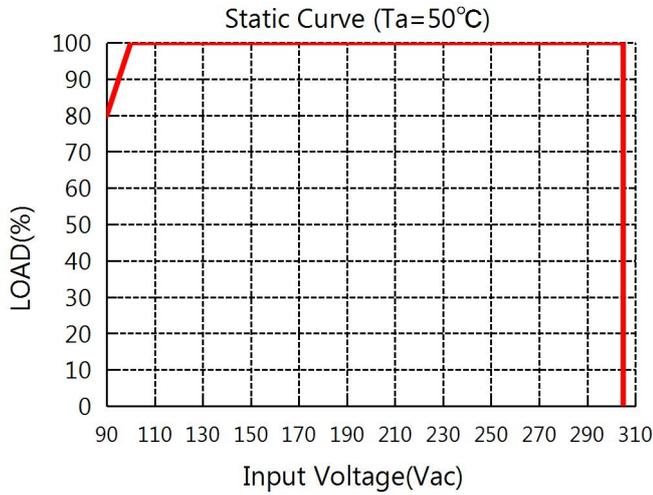
Certification	Standard	Status	Remark
UL/CUL	UL8750	✓	
TUV	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013 EN62493:2015	✓	
SAA	AS/NZS61347.2.13	✓	
CE	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013	✓	

Item	Standard	Remark
Insulation strength	Input-output	3750Vac/10mA Max/60s
	Primary-Earth	1875Vac/10mA Max/60s
	Sec.- Earth	1000Vac/10mA Max/60s
Insulation resistance	Input-output	≥10MΩ
	Ground resistor	≤0.1Ω
Leakage current	≤0.75mA	25A/1min
		277Vac

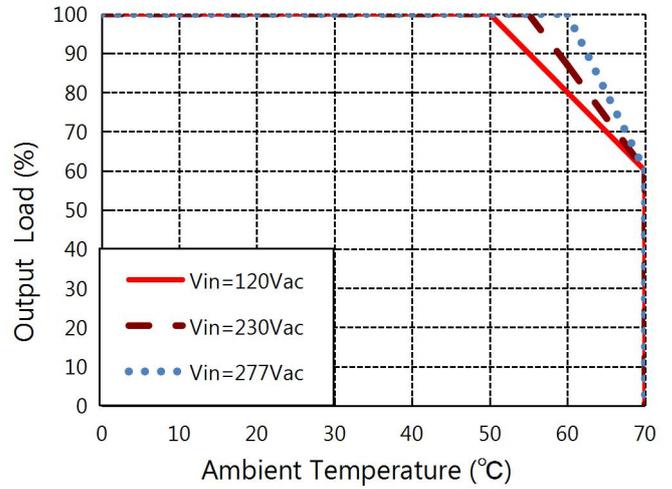
Item	Criterion	Remark
Conduction Emission	EN55015:2013+A1:2015	
Radiation Emission	EN55015:2013+A1:2015	
Harmonic Current Emissions	IEC/EN 61000-3-2	Class C
Surge	IEC/EN61000-4-5	Difference mode 4kV, Common mode 6kV Criterion B

## Performance Curves

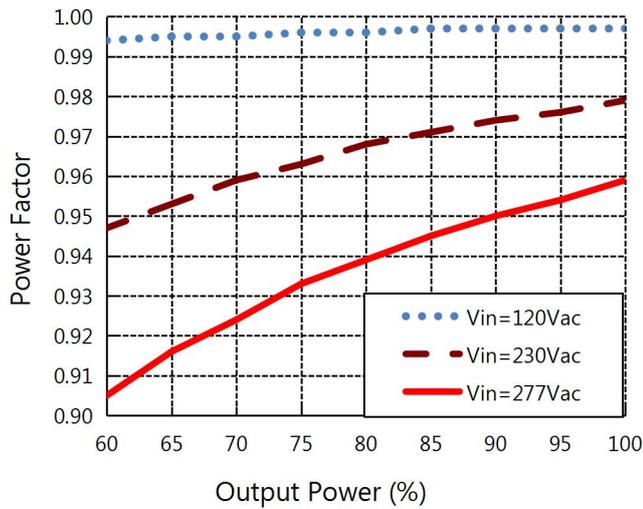
**Fig. 1 Output Power VS Input Voltage**



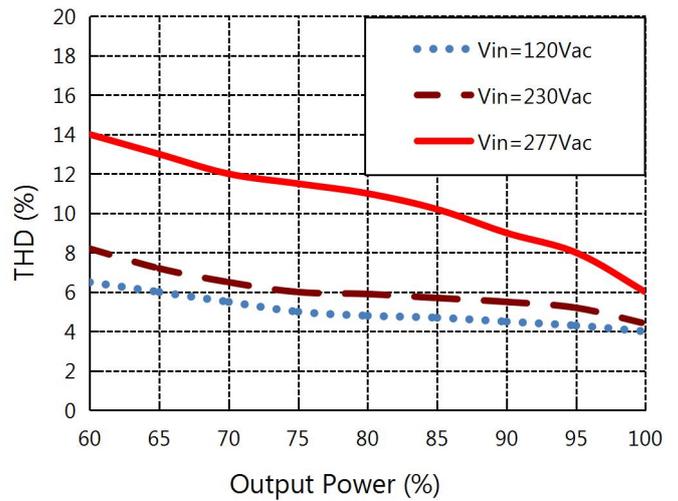
**Fig. 2 O/P Power VS Ambient Temperature**



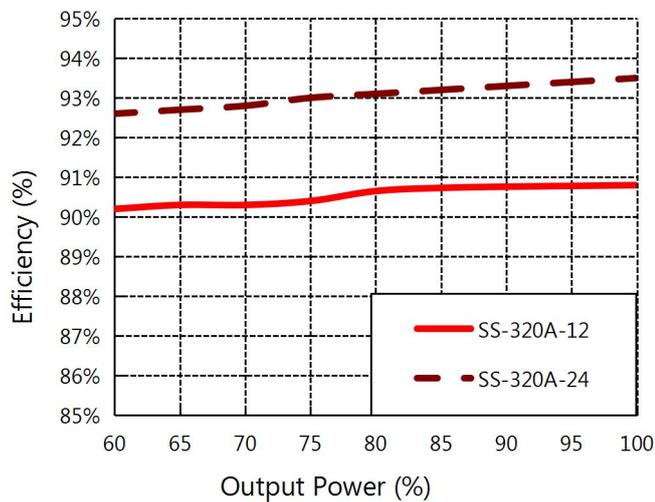
**Fig. 3 Power Factor VS Output Power**



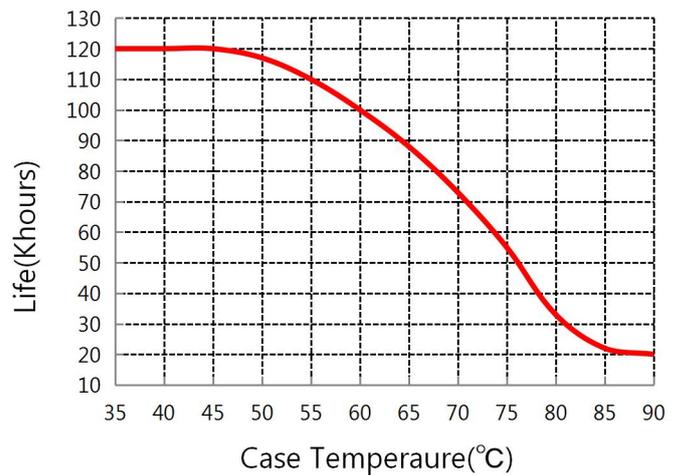
**Fig. 4 THD VS Output Power**



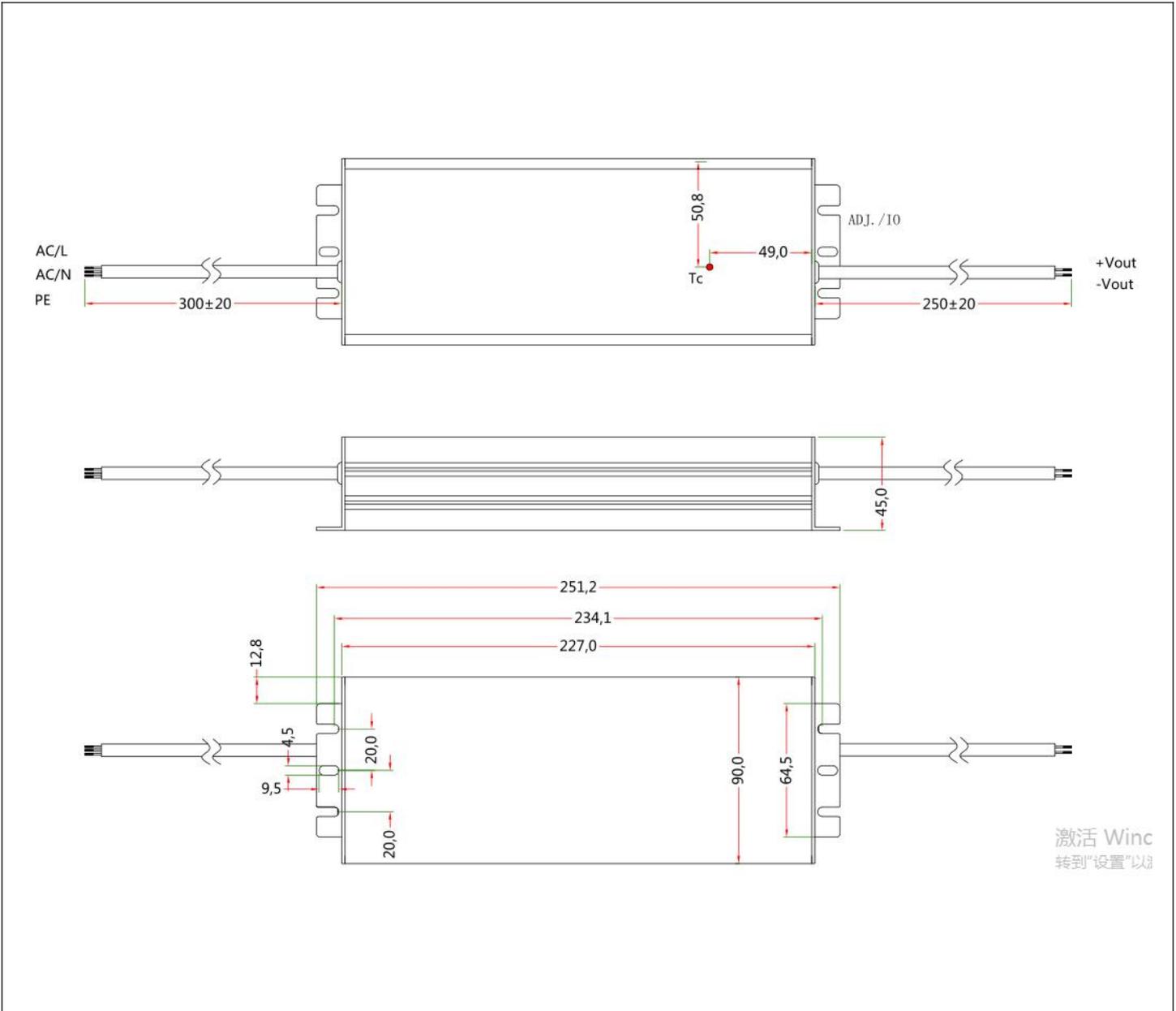
**Fig. 5 Efficiency VS Output Power**



**Fig. 6 Lifespan VS Case Temperature**



## Mechanical Characteristics(Unit: mm)



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**NOTE:**

Input Wire	UL model: UL SJTW #18AWG 3*0.824 mm <sup>2</sup> , O.D: 7.8mm, GREEN: PE, BLACK: L, WHITE: N Euro model: VDE H05RN-F 3*1.0 mm <sup>2</sup> , O.D: 7.4mm, BROWN: L, BLUE: N, YELLOW/GREEN: PE
Output Wire	UL model: UL SJTW #14AWG 2*2.08mm <sup>2</sup> , O.D: 9.0mm, RED: V+, BLACK: V- Euro model: VDE H05RR-F 2*1.5mm <sup>2</sup> , O.D: 8.7mm, BROWN:V+, BLUE: V-

## Labels

### UL

<p><b>INPUT</b></p> <p>○ ACL --- BLACK</p> <p>○ ACN --- WHITE</p> <p>○  --- GREEN</p> <p><b>MADE IN CHINA</b></p> <p>www.szsofen.com</p>	 <p><b>MODEL:SS-320A-12</b> LED Driver</p> <p>Manufacturer: Shenzhen Sosen Electronics Co.,Ltd</p> <p>INPUT : 100-277V~ Max.4.3A 50/60Hz PF&gt;0.95</p> <p>OUTPUT : 12V = 22A 264W</p> <p>Suitable for Dry, Damp and Wet Locations</p> <p><b>RoHS SELV</b>    <b>IP67</b>  </p>	<p><b>OUTPUT</b></p> <p>V+ ---RED ○</p> <p>V- ---BLACK ○</p> <p><b>-tc</b>    <b>t<sub>c</sub>:90 °C</b> <b>ta:50 °C</b></p>
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### TUV/SAA/CE

<p><b>INPUT</b></p> <p>○ ACL --- BROWN</p> <p>○ ACN --- BLUE</p> <p>○  --- GREEN/YELLOW</p> <p><b>MADE IN CHINA</b></p> <p>www.szsofen.com</p>	 <p><b>MODEL:SS-320A-12</b> LED Driver</p> <p>Manufacturer: Shenzhen Sosen Electronics Co.,Ltd</p> <p>INPUT : 100-277V~ Max.4.3A 50/60Hz PF&gt;0.95</p> <p>OUTPUT : 12V = 22A 264W</p> <p>Suitable for Dry, Damp and Wet Locations</p> <p><b>RoHS SELV</b>    <b>IP67</b>    </p>	<p><b>OUTPUT</b></p> <p>V+ ---BROWN ○</p> <p>V- ---BLUE ○</p> <p><b>-tc</b>    <b>t<sub>c</sub>:90 °C</b> <b>ta:50 °C</b></p>
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## **Package, Transportation & Storage**

### **1. Package**

- Outside carton dimension: L×W×H =493mm×385mm×116mm;
- 7PCS/Carton;
- Net weight/PC: 1.84kg;
- Gross weight/Carton: 13kg.

### **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.