

SOSEN LED Driver, Your Smart Choice

Specifications

SS-100L-E Series LED Driver

Model: SS-100L-EXXX

Description: 100W LED Driver

Rev.: V01

Release Date: 2024-06-24

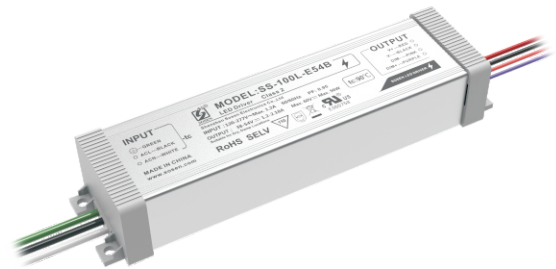
SS-100L-E Series LED Driver

SOSEN
LED DRIVER



LED DRIVER

L-E Series



Features:

- Efficiency up to 89%
- Isolated dimming: 0-10V, PWM, Resistor
- Protections: SCP/OTP/OVP
- Class 2
- Type HL, suitable for hazardous locations
- Surge protection: CM: 6kV, DM: 4kV
- Warranty: 5 years



RoHS

Description:

SS-100L-E series are 96W LED Driver for indoor applications with 108-305Vac input. The compact design, high efficiency and good thermal management guarantee the Driver's reliability and lifetime. LED luminaries manufactures can easily design luminaries and reduce cost.

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-100L-E42B	108-305Vac	96W	28-42V	36-42V	1.5-2.67A	8%	0.97	88%	90°C
SS-100L-E54B	108-305Vac	96W	38-54V	44-54V	1.2-2.18A	8%	0.97	89%	90°C

Note:

1. Default Tested: at 220Vac, full load, Ta 25°C.
2. The performance of the LED Driver can be guaranteed within the full power Vo range. The voltage lower than full power Vo range, it is need to test the performance with the LED module;
3. Suffix B for model with 3-in-1 dimming (0-10V, PWM, Resistor).

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Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	120Vac		277Vac	
AC Input Range	108Vac		305Vac	
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			1.2A	120Vac, Full load
Max Input Power			120W	120Vac, Full load
Max Inrush Current(120Vac)			80A	Cold start
Max Inrush Current(220Vac)			120A	Cold start
Max Inrush Current(277Vac)			160A	Cold start
Standby Power			1W	220Vac/50Hz, Dim to off
Power Factor	0.95	0.97		220Vac/50Hz, Full load
	0.90			120-277Vac/50Hz, 70-100% load
THD		8%	12%	220Vac/50Hz, Full load
			20%	120-277Vac/50Hz, 70-100% load

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O/P Characteristics(SS-100L-E42B):

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	28V		42V	
Rated O/P Voltage	36V		42V	$P_o = V_o \cdot I_o = 96W$, Full load
Rated O/P Current	2.3A		2.67A	2.3A for 42V, 2.67A for 36V
No Load Voltage			54V	
Efficiency @120Vac	85.0%	86.5%		O/P 42V/2.3A
Efficiency @220Vac	87.0%	88.5%		O/P 42V/2.3A
Efficiency @277Vac	87.0%	89.0%		O/P 42V/2.3A
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)			10%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			1.0S	120Vac, Full load
			0.75S	220Vac, Full load
Line Regulation	-2%		+2%	Full load
Load Regulation	-3%		+3%	
Temperature Coefficient	-0.1%/°C		+0.1%/°C	Tc:0°C~90°C
OTP	90°C	100°C	110°C	Drop current when OTP, and it can be automatically restored after the abnormality is removed.
Short Circuit Protection				Driver will not be damaged, Hiccup mode

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O/P Characteristics(SS-100L-E54B):

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	38V		54V	
Rated O/P Voltage	44V		54V	Po=Vo*Io=96W, Full load
Rated O/P Current	1.78A		2.18A	1.78A for 54V, 2.18A for 44V
No Load Voltage			60V	
Efficiency @120Vac	86.0%	87.5%		O/P 54V/1.78A
Efficiency @220Vac	88.0%	89.5%		O/P 54V/1.78A
Efficiency @277Vac	88.0%	89.5%		O/P 54V/1.78A
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)			10%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			1.0S	120Vac, Full load
			0.75S	220Vac, Full load
Line Regulation	-2%		+2%	Full load
Load Regulation	-3%		+3%	
Temperature Coefficient	-0.1%/°C		+0.1%/°C	Tc:0°C~90°C
OTP	90°C	100°C	110°C	Drop current when OTP, and it can be automatically restored after the abnormality is removed.
Short Circuit Protection				Driver will not be damaged, Hiccup mode

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Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
0-10V Dimming (Optional)	Dim Vmax	0V		12V	DIM+ source current 110uA.
	Dim Range	10%Iomax		100%Ioset	Dimming prohibits reverse connection
	Rec.Dim Range	0V		10V	
PWM Dimming (Optional)	PWM High	9.8V		10.2V	DIM+ source current 110uA.
	PWM Low	0V		0.3V	Dimming prohibits reverse connection
	Frequency	1KHz		2KHz	
	PWM Duty	0%		100%	
Resistor Dimming (Optional)	Resistance	0Kohm		100Kohm	DIM+ source current 110uA.
	Dim Range	10%Iomax		100%Ioset	
Dim to Off	Dim off	0.6V	0.7V	0.8V	If the led is less than maximum rated output voltage of 75%,the luminaries may possibly have slight light when dim-to-off. Thus the whole lighting system needs to be tested
	Dim on	0.8V	0.9V	1.0V	
Lifetime($T_c \leq 72^\circ\text{C}$)		$\geq 50,000$ hours			80% load
MTBF		236,000 hours			220Vac, Full load, $T_a = 25^\circ\text{C}$ (MIL-HDBK-217F)
T_c		90°C			
Warranty		5 years			$T_c: 72^\circ\text{C}$
Net Weight		450g			
Dimension		179.5mm*45.5mm*31.5mm			L x W x H

NOTE: All the parameters above are tested $T_a 25^\circ\text{C}$ and LED load, unless specified.

SS-100L-E Series LED Driver

Environmental Requirements

Parameter	Min.	Typ.	Max.	Remark
Operating Temperature(Tcase)	-40°C	25°C	+90°C	
Storage Temperature	-40°C	25°C	+90°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	✓	
TUV	EN 61347-2-13:2014/A1:2017 EN 61347-1:2015 EN 62493:2015		
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	FCC Part15: Subpart A ANSI 63.4:2014	Class A
Radiation Emission	FCC Part15: Subpart A ANSI 63.4:2014	Class A
Harmonic Current Emissions	IEC/EN 61000-3-2	Class C
Surge	IEC/EN61000-4-5	DM: 6kV,CM: 6kV,Criterion B
Ring Wave	IEC/EN 61000-4-12	DM: 4kV,CM: 4kV,Criterion B

SS-100L-E Series LED Driver

Safety Test Items:

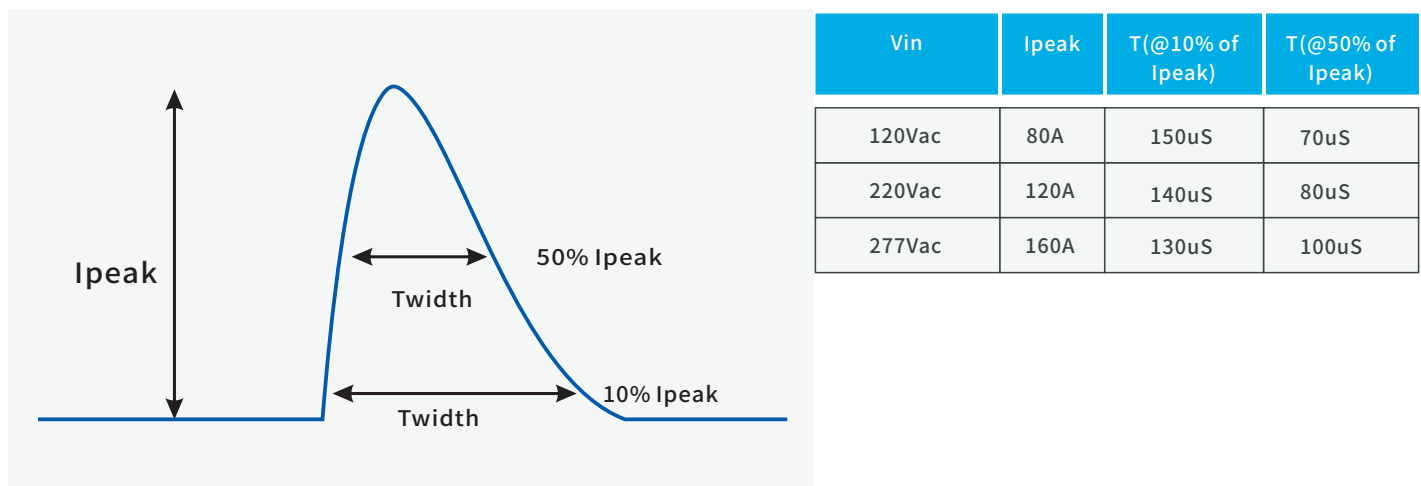
Safety test items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	TUV Insulation Requirements	CCC Insulation Requirements	
Input-Case	2U+1000Vac	/	/	Basic insulation
Input-Dim	2U+1000Vac	/	/	Reinforced insulation
Dim-Case	500Vac	/	/	Basic insulation
Insulation Resistance	$\geq 10M\Omega$			Input-Output, Test voltage: 500Vdc
Ground Resistance	$\leq 0.1\Omega$			25A/1min
Leakage Current	$\leq 0.75mA$			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 of components.
2. Please short (ACL and ACN), (V+ and V-), (Dim+ and Dim -) when Hi-pot test.

Performance Curves:

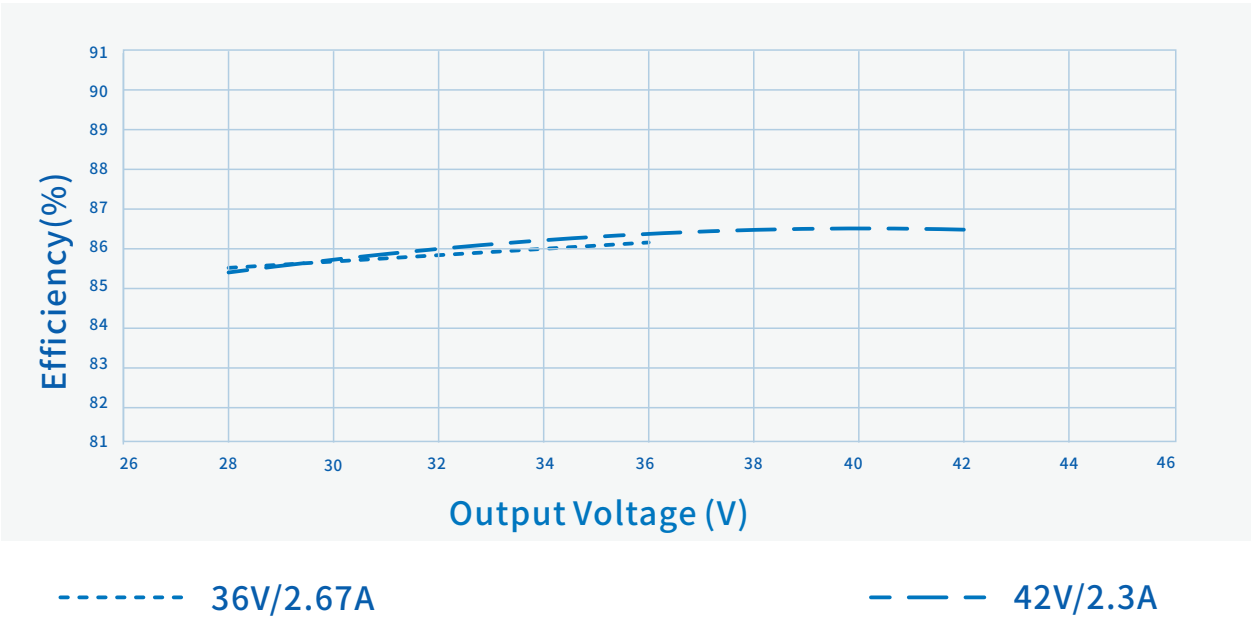
Input Inrush Current



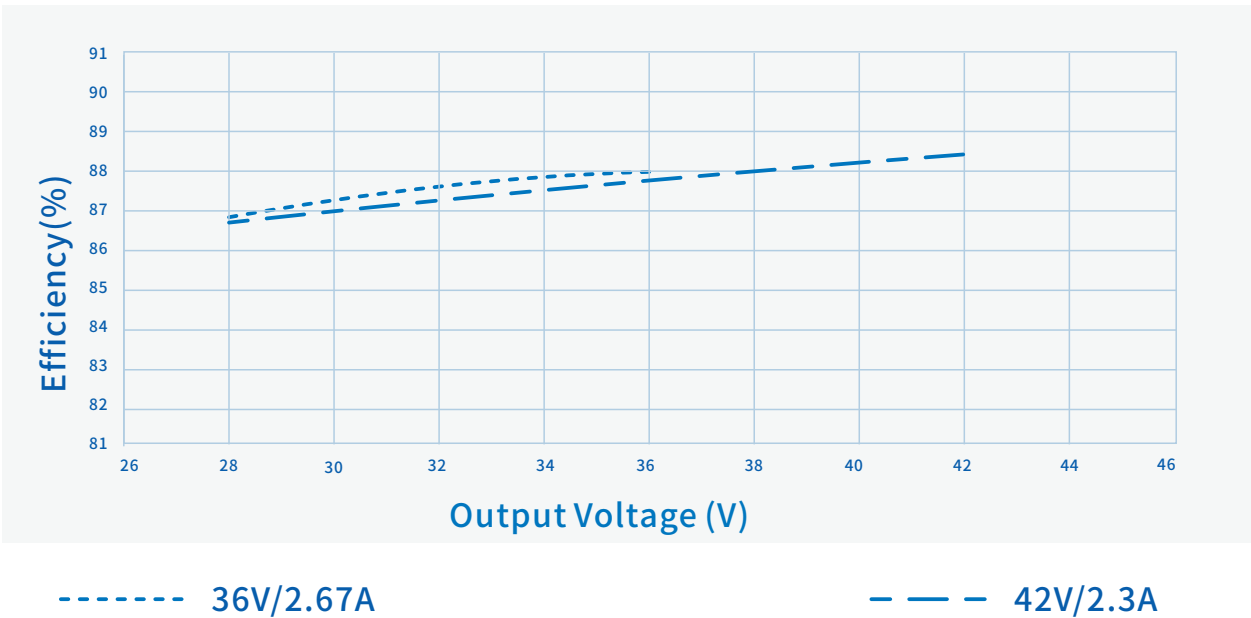
SS-100L-E Series LED Driver

Performance Curves:

Efficiency Vs. O/P Voltage (Vin=120Vac)



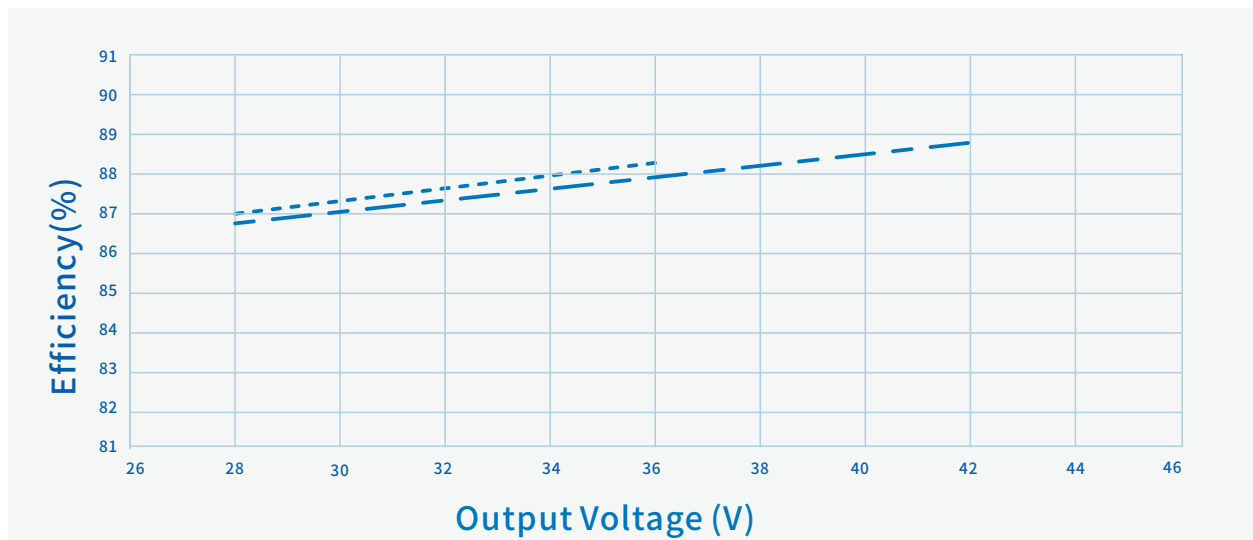
Efficiency Vs. O/P Voltage (Vin=220Vac)



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Performance Curves:

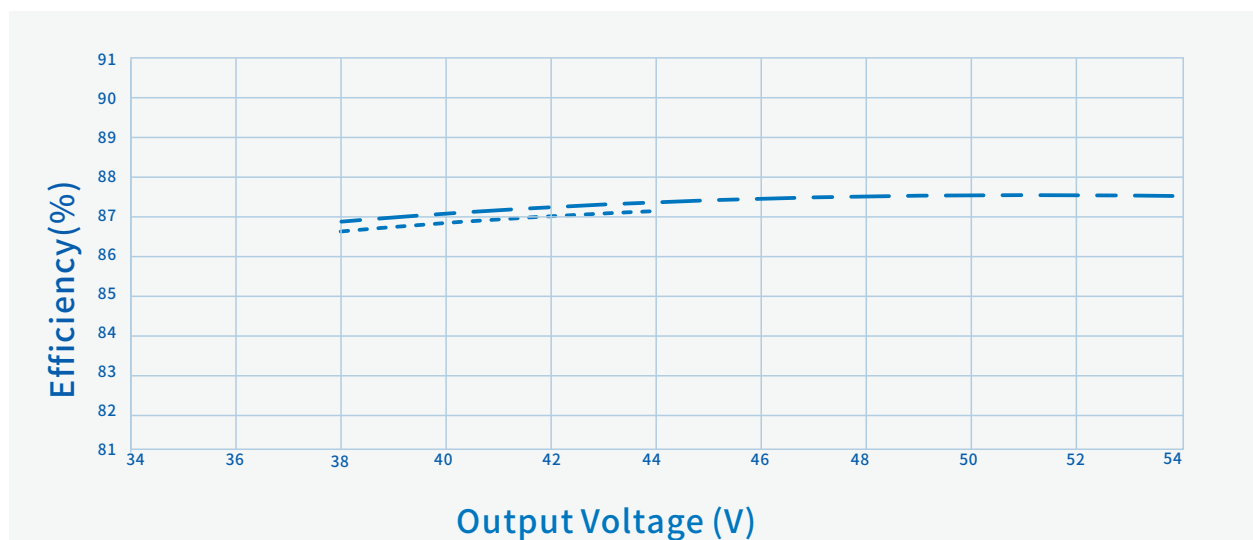
Efficiency Vs. O/P Voltage ($V_{in}=277V_{ac}$)



----- 36V/2.67A

- . - . 42V/2.3A

Efficiency Vs. O/P Voltage ($V_{in}=120V_{ac}$)



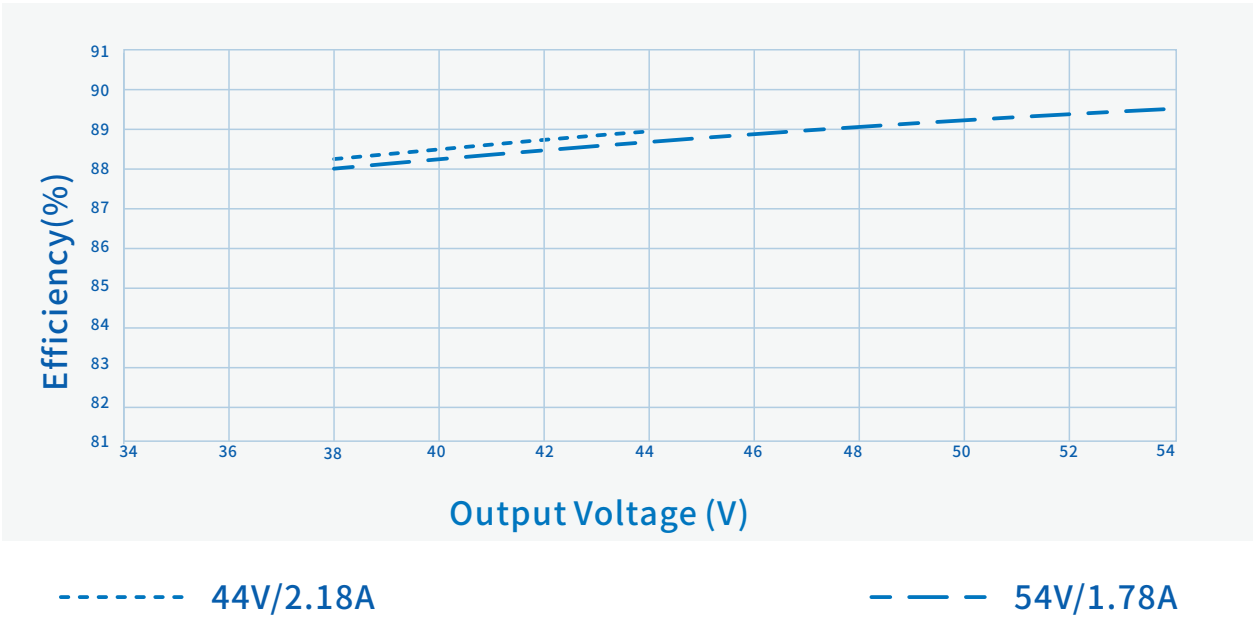
----- 44V/2.18A

- . - . 54V/1.78A

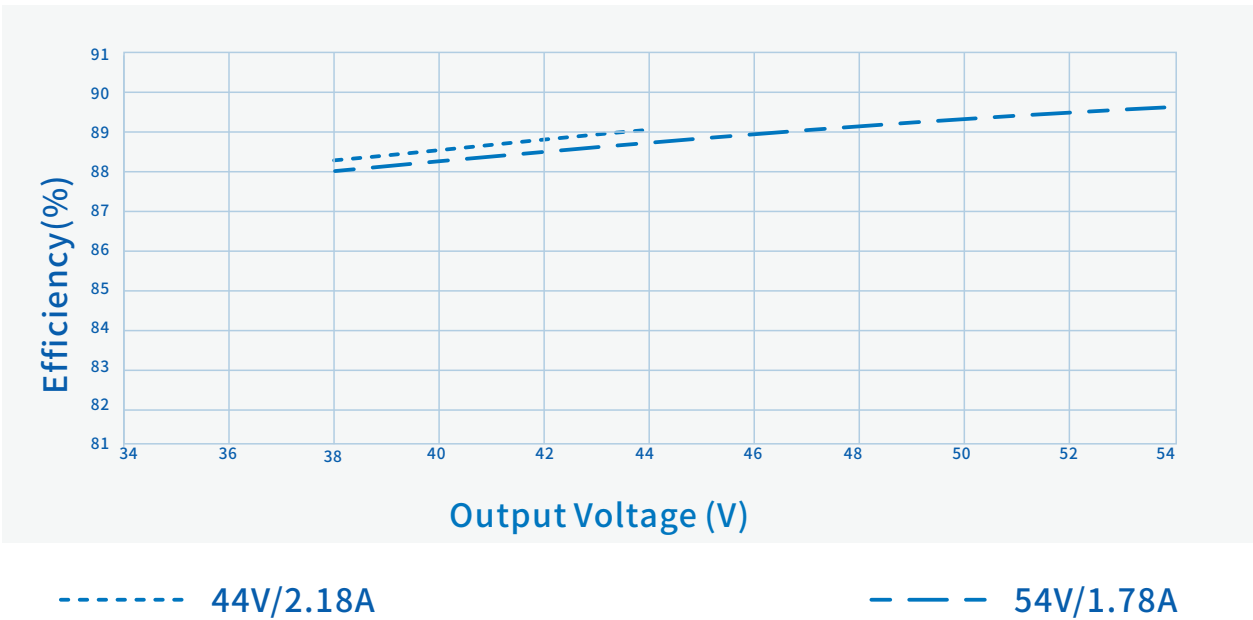
SS-100L-E Series LED Driver

Performance Curves:

Efficiency Vs. O/P Voltage (Vin=220Vac)



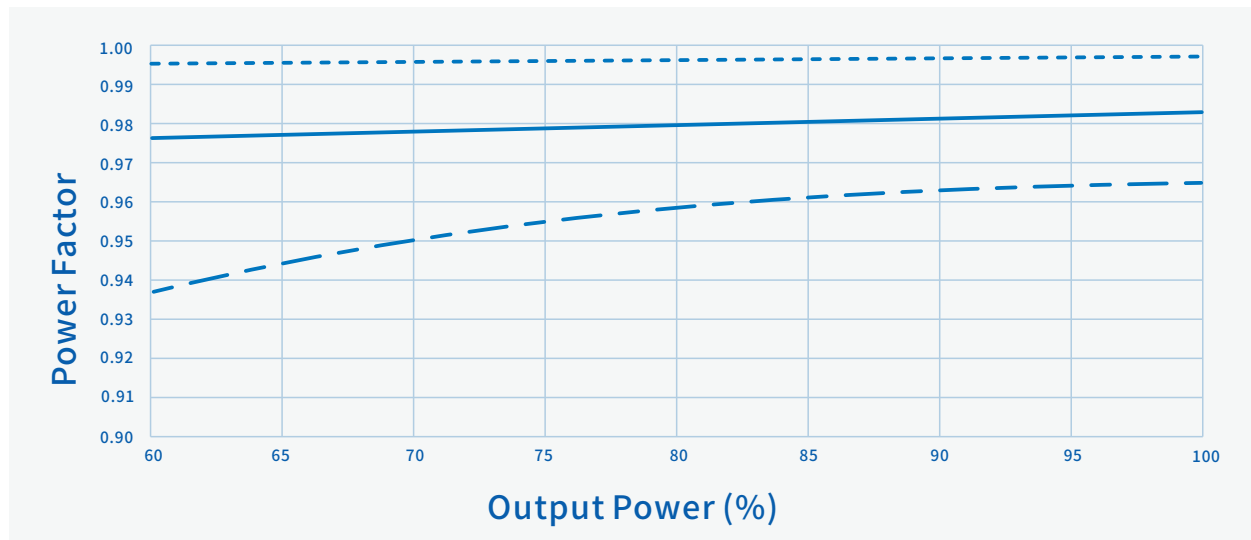
Efficiency Vs. O/P Voltage (Vin=277Vac)



SS-100L-E Series LED Driver

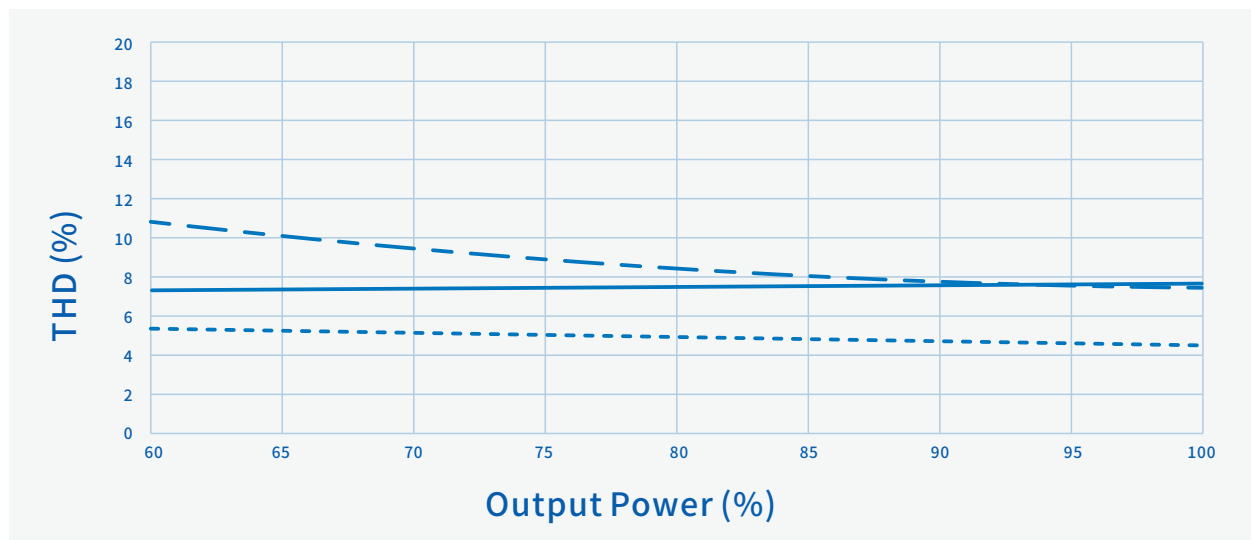
Performance Curves:

Power Factor Vs. O/P Power



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

THD Vs. O/P Power

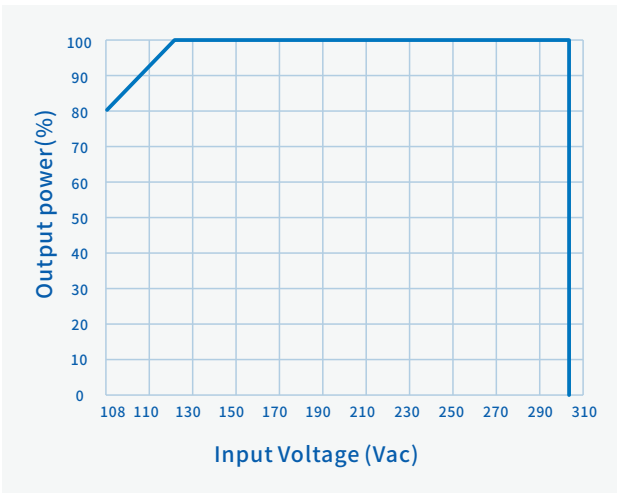


----- Vin=120Vac ————— Vin=220Vac - . - . Vin=277Vac

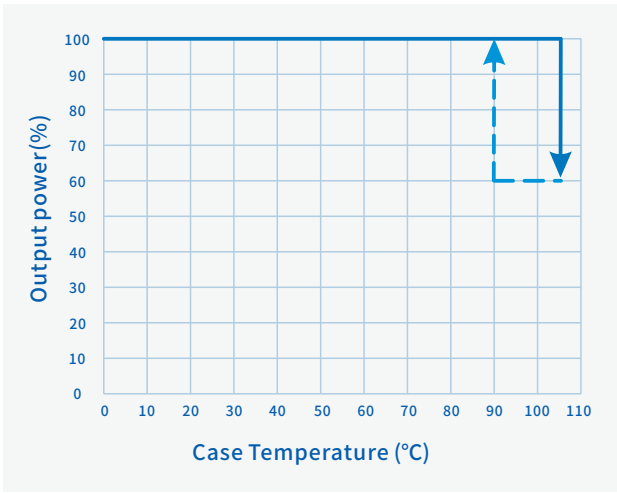
SS-100L-E Series LED Driver

Performance Curves:

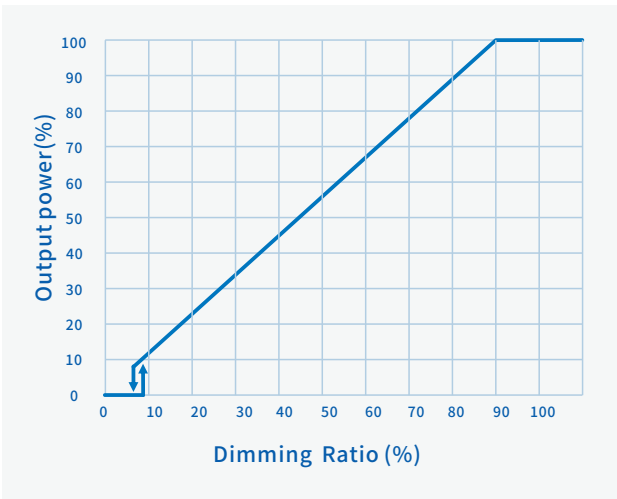
O/P Power Vs. Input Voltage



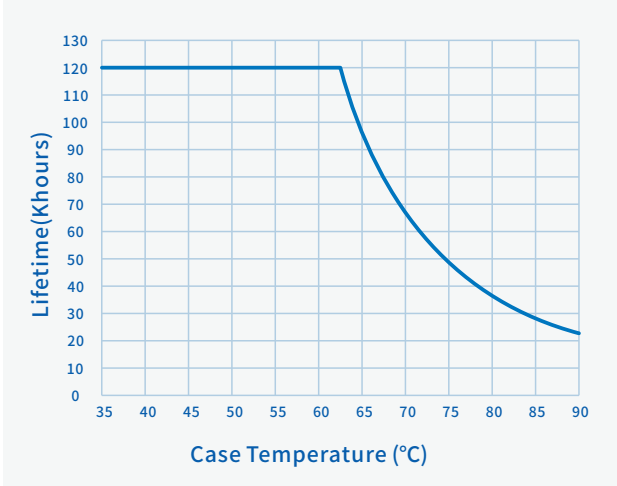
O/P Power Vs. Case Temperature



O/P Power Vs. Dimming



Lifetime Vs. Case Temperature



SS-100L-E Series LED Driver

Mechanical Characteristics

INPUT

ACL

ACN



LED DRIVER

V+

V-

DIM+

DIM-

OUTPUT

Dimming

AC Input Cable(Exposed Length $300\pm10\text{mm}$):

UL model: 18AWG, 105°C 600V, O.D: 2.77mm, Black:ACL,White:ACN, Green: 

DC O/P Cable(Exposed Length $300\pm10\text{mm}$):

UL model: 18AWG, 105°C 300V,O.D: 1.95mm, Red:V+, Black:V-

DIM Cable(Exposed Length $220\pm10\text{mm}$):

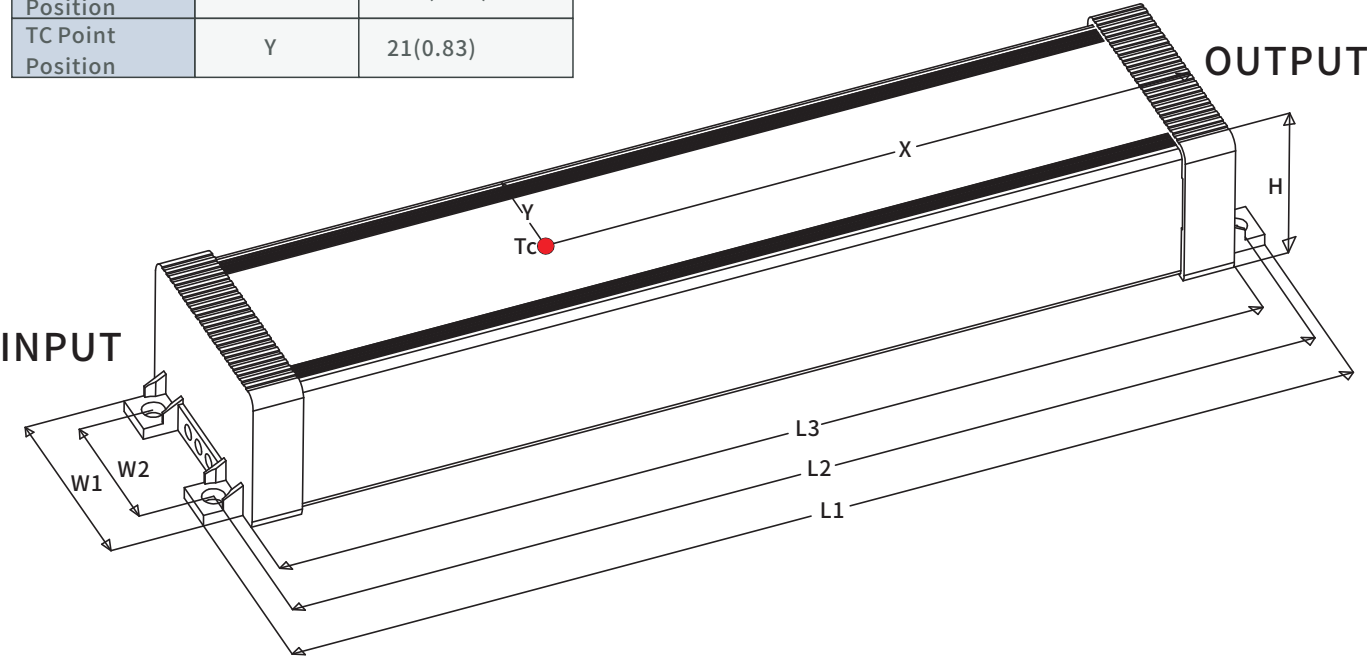
UL model: 22AWG, 105°C 300V,O.D: 1.52mm, Purple: DIM+, Pink: DIM-

Name Description	Standard Code	mm(In.)
Case Length	L3	163(6.42)
Case Width	W1	45.5(1.79)
Case Height	H	31.5(1.24)
Overall Length	L1	179.5(7.07)
Mounting Hole Length	L2	171(6.73)
Mounting Hole Width	W2	28(1.1)
TC Point Position	X	125(4.92)
TC Point Position	Y	21(0.83)

Note:

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

2,AC Input Cable,DC O/P Cable,DIM Cable:
Tinned length of wire: $10\pm2\text{mm}$



SS-100L-E Series LED Driver



Assembly Tips

1. Highly recommended to seal the adjustable hole with silicon glue(#704 preferred) after adjusting the Driver's O/P current. Avoid permanent damage to adjust the potentiometer with suitable strength.
2. Dimming tinned connectors should be capped if not used to avoid dimming parts damage from external signals.

Package

- Outside carton dimension: $L \times W \times H = 495\text{mm} \times 385\text{mm} \times 162\text{mm}$;
- 28PCS/Carton;
- Net weight/Piece: 0.45kg;Gross weight/Carton: 14.5kg;
- 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 RoHS Directive (2011/65/EU) and amendment 2015/863/EU.

Revision History

Version	Description of Update	Updated Date	Remark
V00	Original Release	2023/02/27	
V01	Update Environmental Requirements Dimmer Off Add Remarks	2024/06/24	