



SOSEN LED Driver, Your Smart Choice

Specifications

SS-110PA Series LED Driver

Model: SS-110PA-160B

Description: 110W LED Driver

Rev.: V02

Release Date: 2022-05-30

SS-110PA Series LED Driver

SOSEN
LED DRIVER



LED DRIVER

PA Series



Features:

- Efficiency up to 92%
- Isolated dimming:1-10V,PWM,Trimming
- Computer programmable
- SSA,CLO,ELA,Virtual Midnight
- Surge protection: CM: 10kV(For Class I), DM: 6kV
- Protections: SCP/OTP/OVP/OPP
- Class I Or II
- IP20
- Installation dimensions conform to Zhaga standards
- Warranty: 5 years



Description:

The SS-110PA series is a 110W outdoor constant current LED Driver. It has built-in surge protection, programmable function, ultra high efficiency, compact shell, good heat dissipation, isolation dimming, OTP and so on . It can automatically reduce output power at the low AC line input .All-round protection greatly improves the safety and reliability of the series of products.

Applications:

Street lighting, Tunnel lighting, High-bay lighting

Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-110PA-160B	220-240Vac	110W	55-160V	105-157V	0.35-1.05A	8%	0.98	92%	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;

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Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	220Vac		240Vac	
Performance Input Voltage Range	200Vac		264Vac	
AC Input Range	100Vac		264Vac	100-200Vac Survived @48hrs
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			0.7A	200Vac, Full load
Max Inrush Current(220Vac)			70A	Cold start
No Load Power			5W	220Vac/50Hz, No load
Power Factor	0.96	0.98		220Vac/50Hz, Full load
	0.92			220-240Vac/50Hz, 70-100% load
THD		8%	10%	220Vac/50Hz, Full load
			20%	220-240Vac/50Hz, 70-100% load

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O/P Characteristics:

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	55V		160V	Power derated @55-105V
Rated O/P Voltage	105V		160V	$P_o = V_o \cdot I_o = 110W$, Full load
Rated O/P Current	0.7A		1.05A	1.05A for 105V, 0.7A for 160V
Adj. O/P Current (AOC) Range	0.35A		1.05A	Programmable adjustable current
No Load Voltage			180V	
Efficiency @220Vac	90.0%	92.0%		O/P 160V/0.7A
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)		5%	10%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			0.5S	230Vac, Full load
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 Typ., Current derating <Tc Min., Current recovery
Short Circuit Protection			15W	Driver will not be damaged, CC mode

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Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark
1-10V Dimming (Optional)	Dim Vmax	0V		12V	DIM+ source current 300-400uA.
	Dim Range	10%Iomax		100%Ioset	Dimming prohibits reverse connection
	Rec.Dim Range	1V		10V	Negative dimming by programming
PWM Dimming (Optional)	PWM High	9.8V		10.2V	DIM+ source current 300-400uA.
	PWM Low	0V		0.3V	Dimming prohibits reverse connection
	Frequency	1KHz		2KHz	Negative dimming by programming
	PWM Duty	10%		100%	
Timing Curve(Optional)	By programming			Set by program	
Constant Lumen(Optional)	By programming			Set by program	
Life Warning(Optional)	By programming			Set by program	
Lifetime(Tc≤70°C)	≥100,000 hours			80% load	
MTBF	250,000 hours			220Vac, Full load, Ta=25°C (MIL-HDBK-217F)	
IP Grade	IP20				
Tc	90°C				
Warranty	5 years			Tc: 70°C	
Net Weight	510g				
Dimension	134mm*77mm*37mm			L x W x H	

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

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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	+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
ENEC	EN 61347-1:2015 EN 61347-2-13:2014 EN 61347-2-13:2014/A1:2017 EN 62384:2006 EN 62384:2006/A1:2009	✓	
CE	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013	✓	

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

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Safety Test Items:

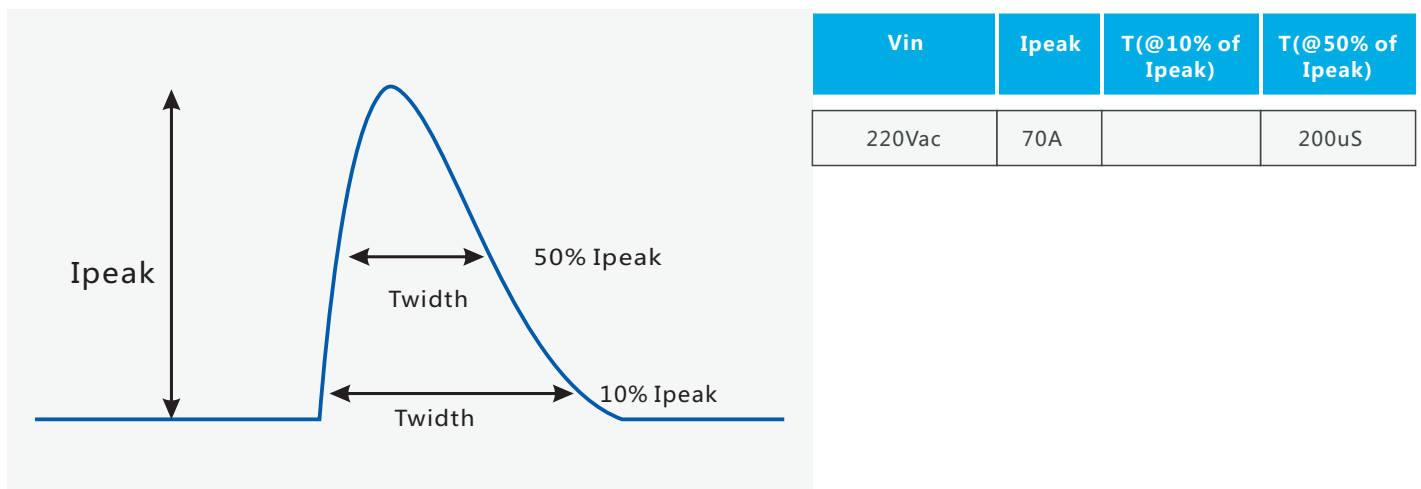
Safety Test Items	Technical Indicators	Remark
Insulation Requirements	ENEC Insulation Requirements	
Input-Output	3000Vac	Reinforced insulation
Input-Case	3000Vac	Reinforced insulation
Input-Dim	3000Vac	Reinforced insulation
Output-Dim	1500Vac	Basic insulation
Output-Case	1500Vac	Basic insulation
Dim-Case	500Vac	Basic insulation
Insulation Resistance	$\geq 10M\Omega$	Input-Output, Test voltage: 500Vdc
Leakage Current	$\leq 0.7mA_{pk}$	240Vac

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 - and Vaux+ and Vaux- and STB) when Hi-pot test.

Performance Curves:

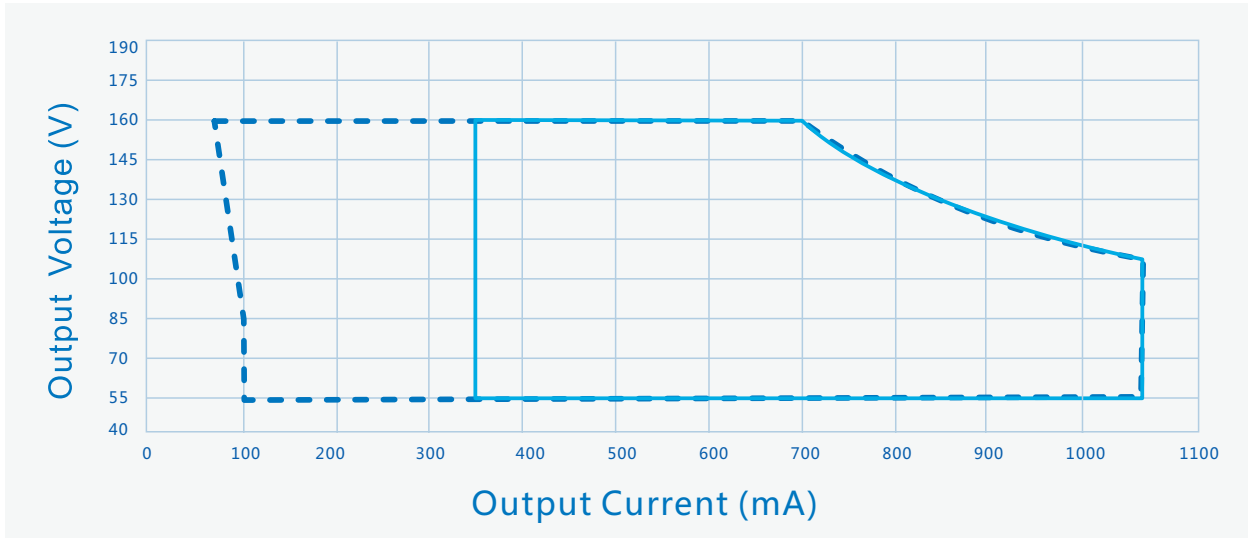
Input Inrush Current



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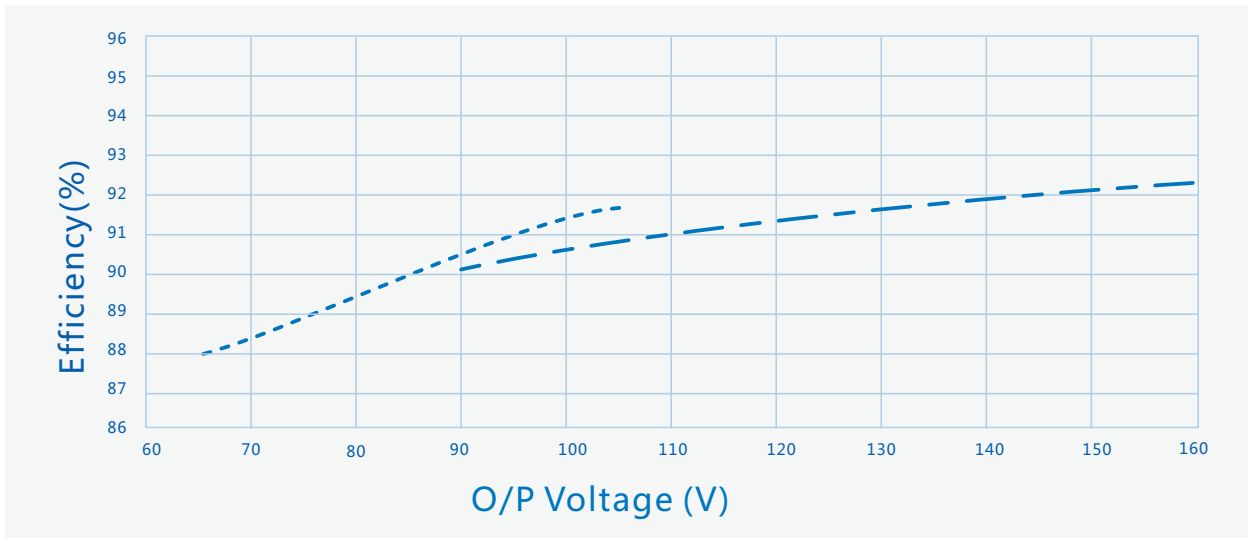
Performance Curves:

O/P Voltage Vs. O/P Current(Dim/AOC Window)



----- Dimming Window ————— AOC Window

Efficiency Vs. O/P Voltage ($V_{in}=230V_{ac}$)



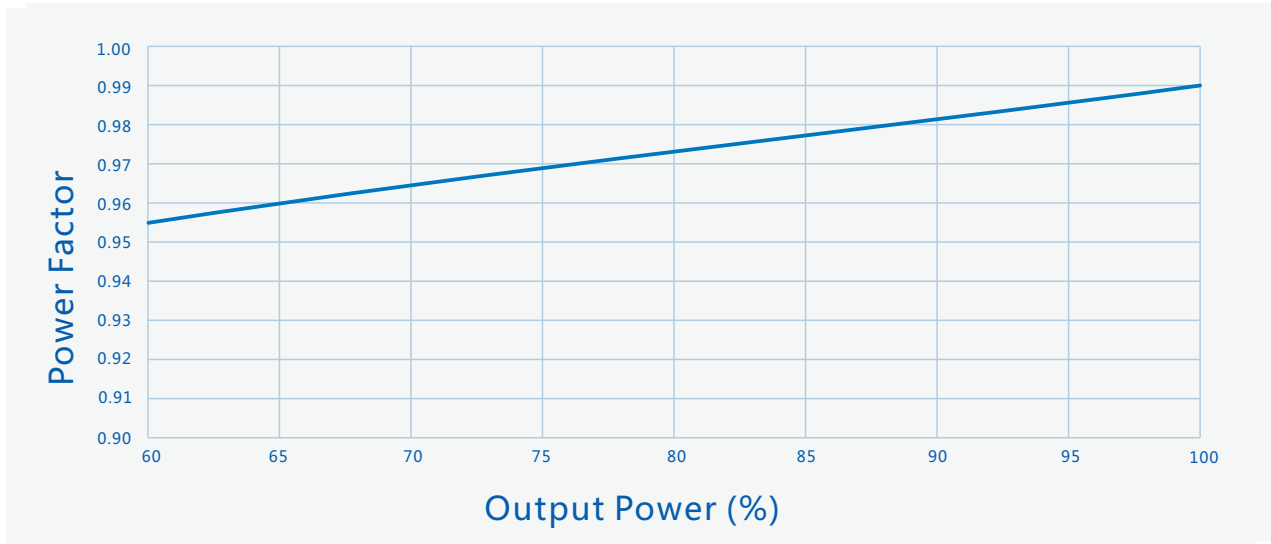
----- $I_o=1050mA$

- . - . $I_o=700mA$

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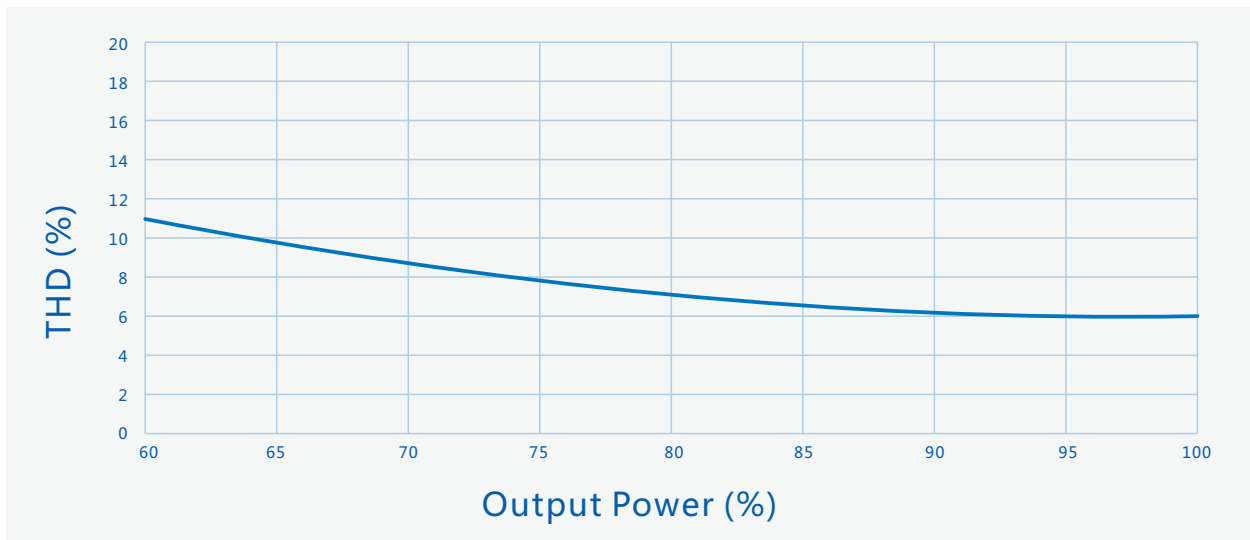
Performance Curves:

Power Factor Vs. O/P Power



———— Vin=230Vac

THD Vs. O/P Power

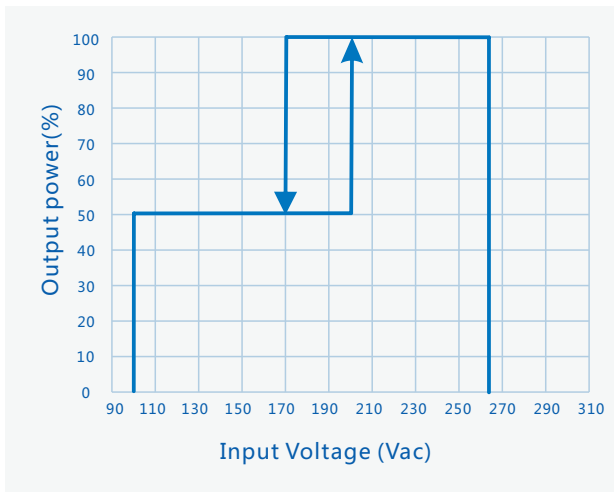


———— Vin=230Vac

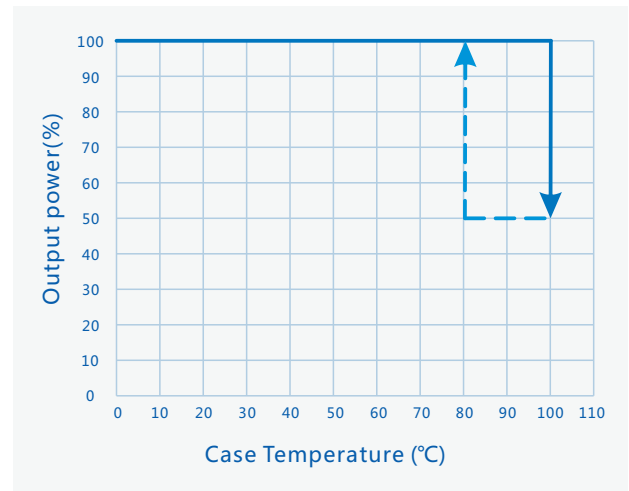
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Performance Curves:

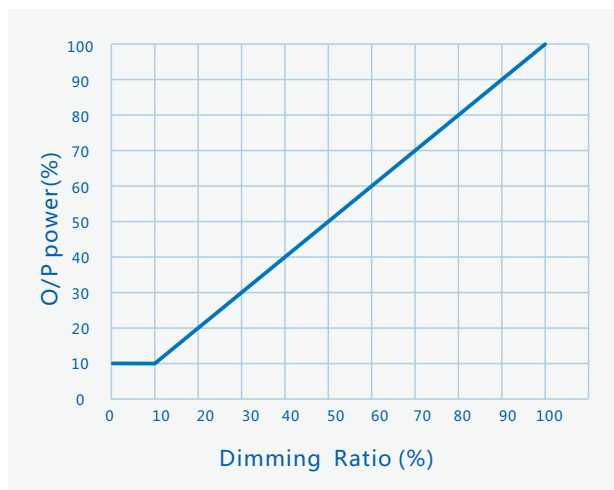
O/P power Vs. Input Voltage (Ta Max.55°C)



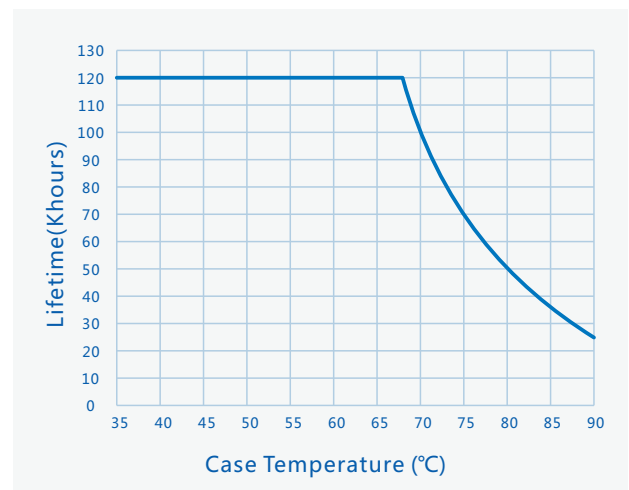
O/P power Vs. Case Temperature



O/P Power Vs. Dimming



Lifetime Vs. Case Temperature



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Constant Lumen Output :

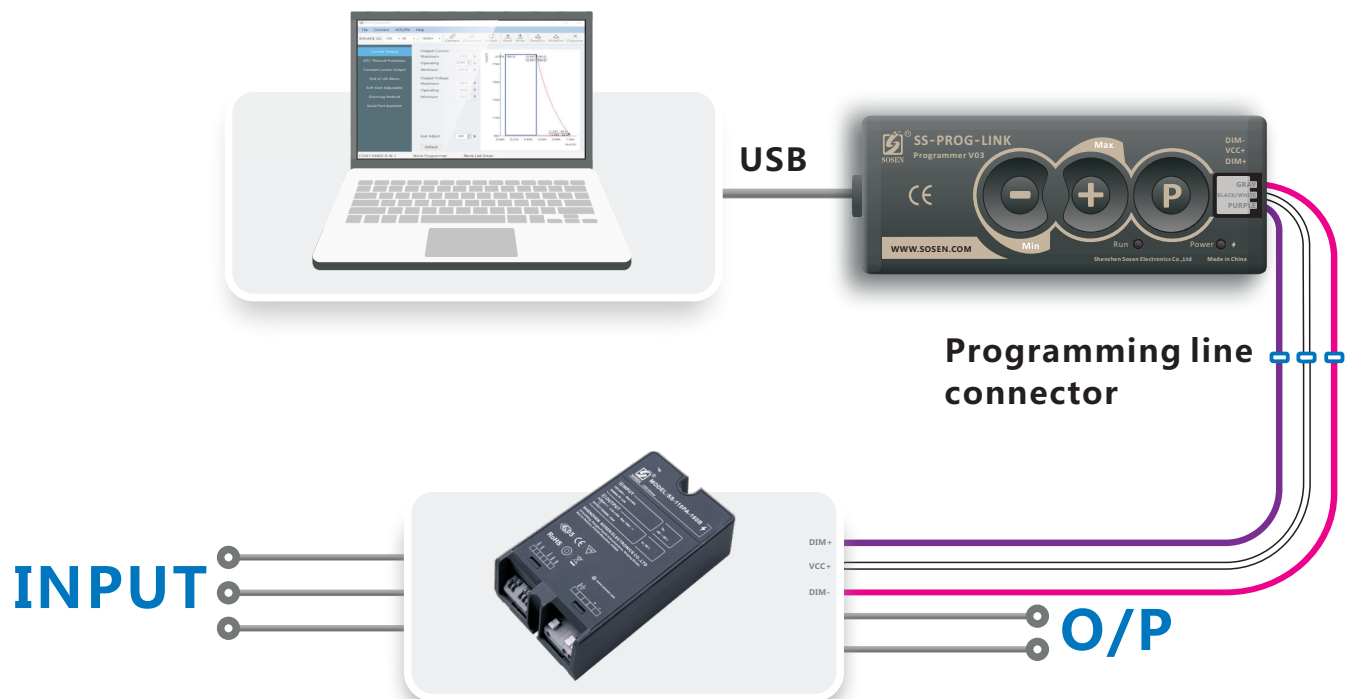
Constant Lumen Output are design to maintain fixture's stable output lumen by increasing driver's output current within driver's life span to counteract LED lumen degradation.

Programming connection diagram :

Legacy Timer: Driver's O/P follows the pre-programmed timing curve after turn-on.

Auto-Adjust by Percentage: Driver's O/P 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 O/P will be adjusted by automatically changed dimming curve by mid-point based on the latest 5 dimming curve.

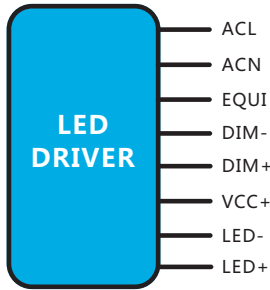


Note:

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

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Mechanical Characteristics



AC Input Cable:

0.2-1.5mm²,16-24AWG,WAGO250(3.5mm),Solid/Stranded Wire
Strip length 8.5-9.5mm

DC O/P Cable:

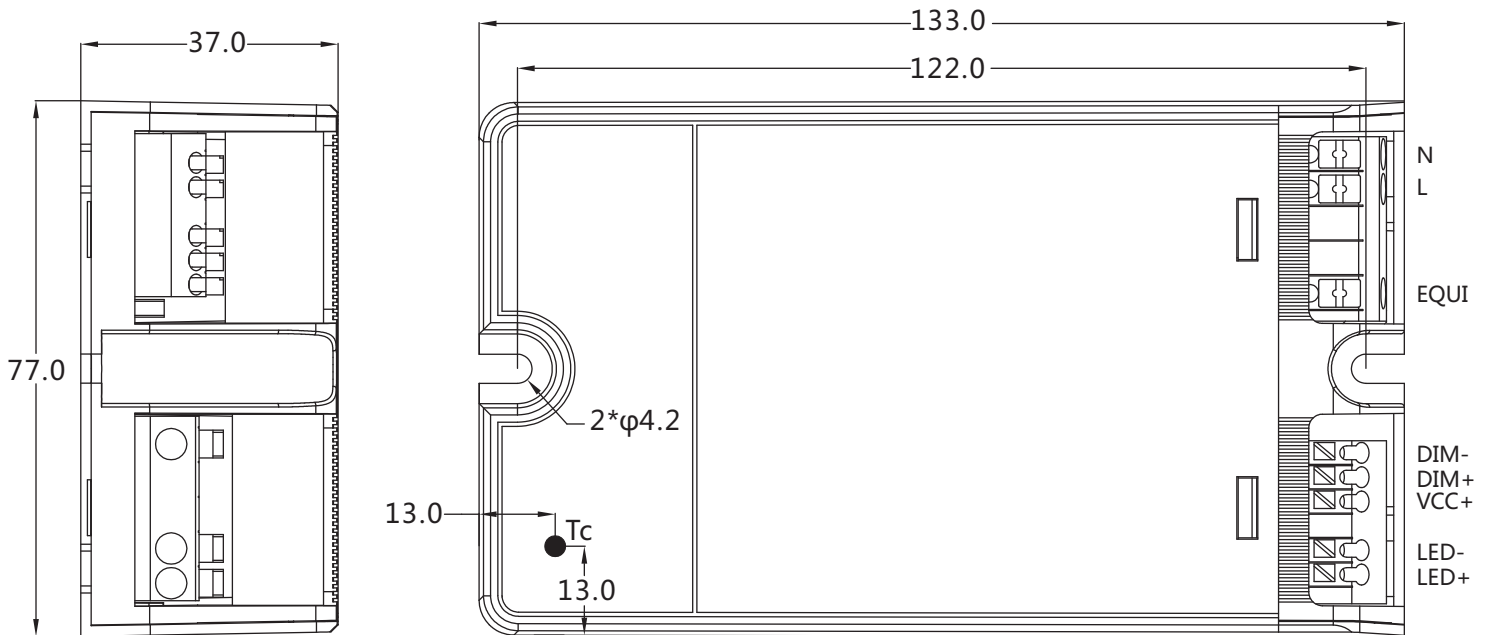
0.2-1.5mm²,16-24AWG,WAGO250(3.5mm),Solid/Stranded Wire
Strip length 8.5-9.5mm

DIM Cable:

0.2-1.5mm²,16-24AWG,WAGO250(3.5mm),Solid/Stranded Wire
Strip length 8.5-9.5mm

Note :

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



SS-110PA Series LED Driver



Package

- Outside carton dimension: L×W×H =435mm×285mm×155mm;
- 30PCS/Carton;
- Net weight/Piece: 0.51kg;Gross weight/Carton: 16.3kg;
- 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	2020/10/13	
V01	Update Features	2022/01/15	
V02	Update Technical Indicators	2022/05/30	