SOSEN
LED DRIVER

SOSEN LED Driver, Your Smart Choice

Specifications

SS-40PA Series LED Driver

Model: SS-40PA-54B

Description: 40W LED Driver

Rev.: V03

Release Date: 2022-05-30

SS-40PA Series LED Driver

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—
PA Series

Features:

- Efficiency up to 88%
- Isolated dimming:1-10V,PWM,Timming
- 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

05 CB CE

Description:

The SS-40PA series is a 40W 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-40PA-54B	220-240Vac	40W	20-54V	38-54V	0.35-1.05A	8%	0.99	88%	90℃

Note:

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

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			0.25A	200Vac, Full load
Max Inrush Current(220Vac)			40A	Cold start
No Load Power			3W	220Vac/50Hz, No load
Power Factor	0.97	0.99		220Vac/50Hz, Full load
	0.94			220-240Vac/50Hz, 70-100% load
THD		8%	10%	220Vac/50Hz, Full load
			15%	220-240Vac/50Hz, 70-100% load

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O/P Characteristics:

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	20V		54V	Power derated @20-38V
Rated O/P Voltage	38V		54V	Po=Vo*Io=40W, Full load
Rated O/P Current	0.74A		1.05A	1.05A for 38V,0.74A for 54V
Current Adjustable Range(AOC)	0.35A		1.05A	Programmable adjustable current
No Load Voltage			70V	
Efficiency @220Vac	86.0%	88.0%		Full load
O/P Current Tolerance	-6%		+6%	
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	-5%		+5%	
Temperature Coefficient	-0.1%/℃		+0.1%/℃	Tc:0℃~90℃
OTP	90℃	100℃	110℃	>Tc Typ., Current derating <Tc Min., Current recovery
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+ source current 300-400uA.
	Dim Range	10%Ioset		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℃)		≥100,000 hours			80% load
MTBF		250,000 hours			220Vac,Full load, Ta=25℃ (MIL-HDBK-217F)
IP Grade		IP20			
Tc		90℃			
Warranty		5 years			Tc: 70℃
Net Weight		190g			
Dimension		123mm*79mm*31mm			L x W x H

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

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Environmental Requirements

Parameter	Min.	Typ.	Max.	Remark
Operating Temperature(Tcase)	-40℃	25℃	+90℃	
Storage Temperature	-40℃	25℃	+90℃	
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:

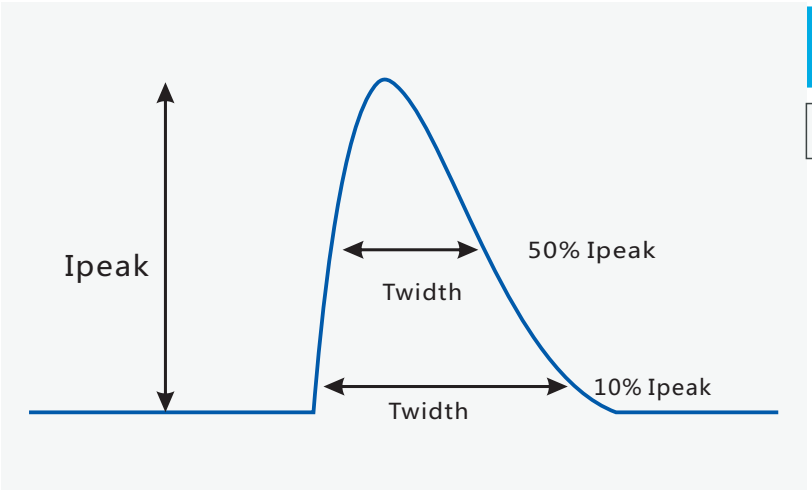
Safety Test Items	Technical Indicators	Remark
Insulation Requirements	ENEC Insulation Requirements	
Input-Output	3000Vac	Reinforced insulation
Input-EQUI	3000Vac	Reinforced insulation
Input-Dim	3000Vac	Reinforced insulation
Output-Dim	1500Vac	Basic insulation
Output-EQUI	1500Vac	Basic insulation
Dim-EQUI	500Vac	Basic insulation
Insulation Resistance	≥10MΩ	Input-Output,Test voltage:500Vdc
Leakage Current	≤0.7mApk	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), (LED+ and LED-), (Dim+ and Dim - and VCC+)when Hi-pot test.

Performance Curves:

Input Inrush Current



Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
220Vac	40A		300uS

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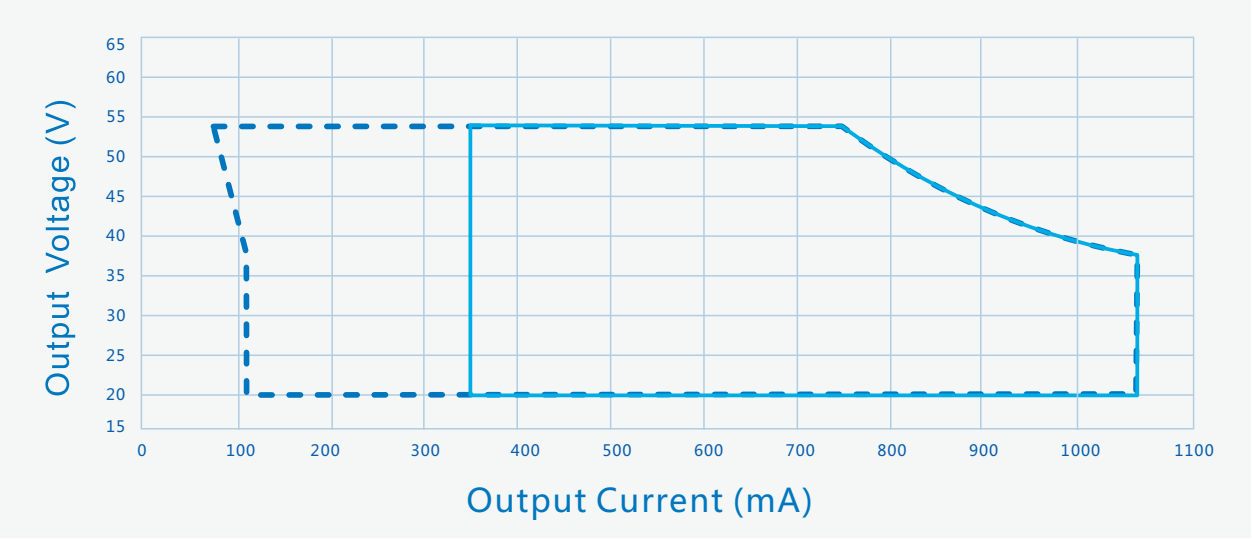
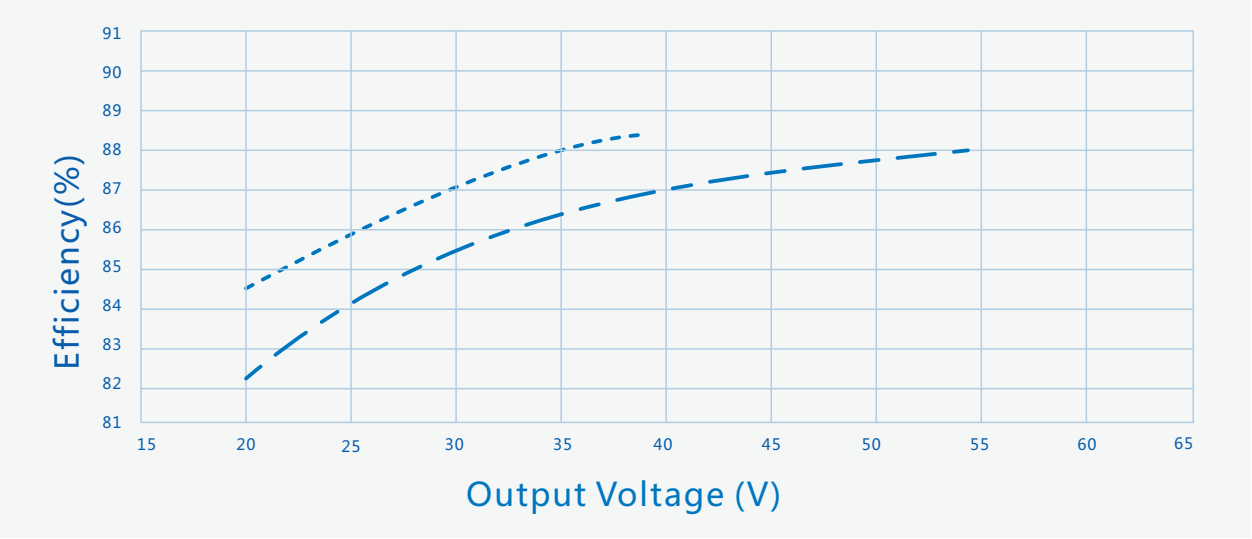
Performance Curves:

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



Dimming Window — AOC Window

Efficiency Vs. O/P Voltage (Vin=230Vac)



Io=1050mA — Io=740mA

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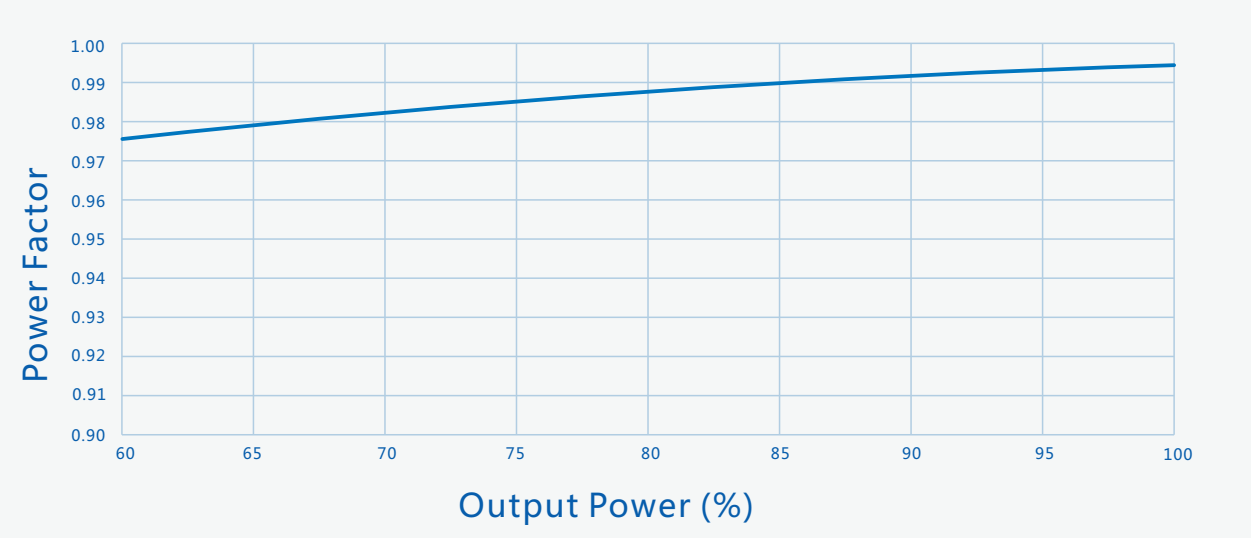
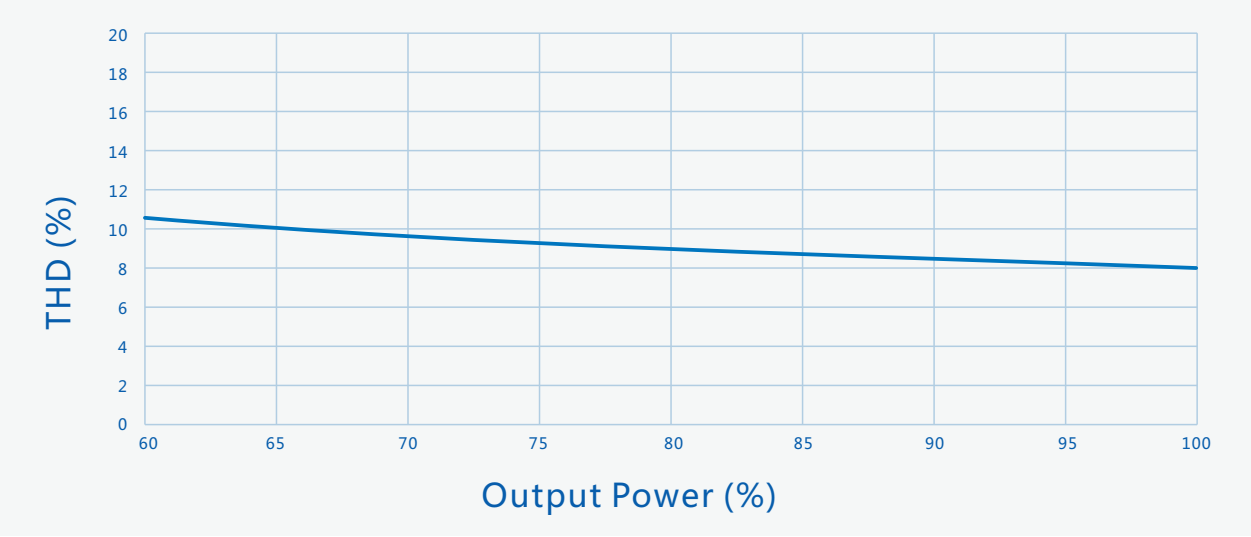
Performance Curves:

Power Factor Vs. O/P Power



Vin=220Vac

THD Vs. O/P Power



Vin=220Vac

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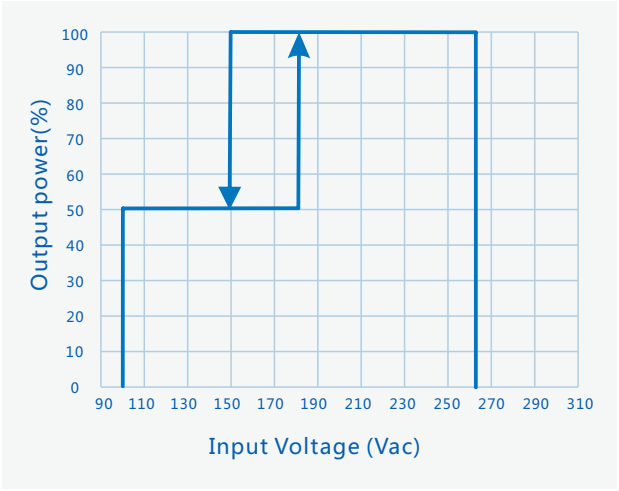
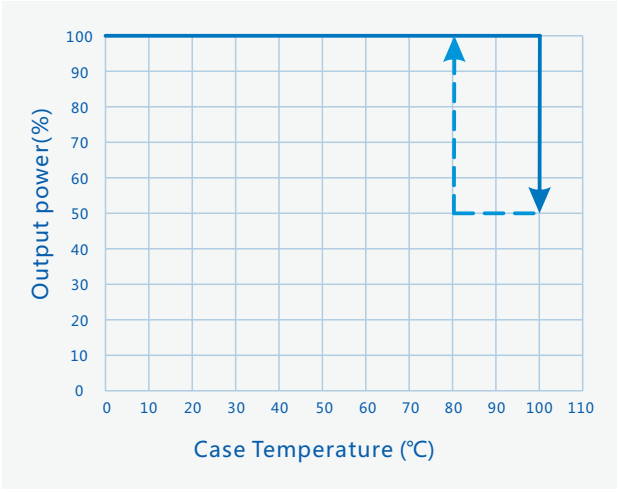
Performance Curves:

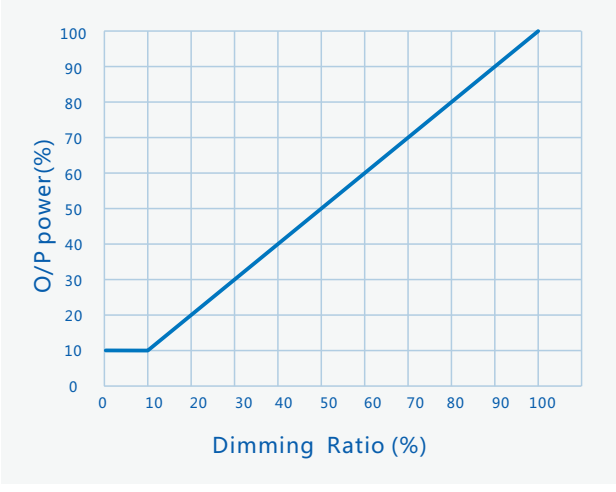
O/P Power Vs. Input Voltage (Ta Max.55℃)



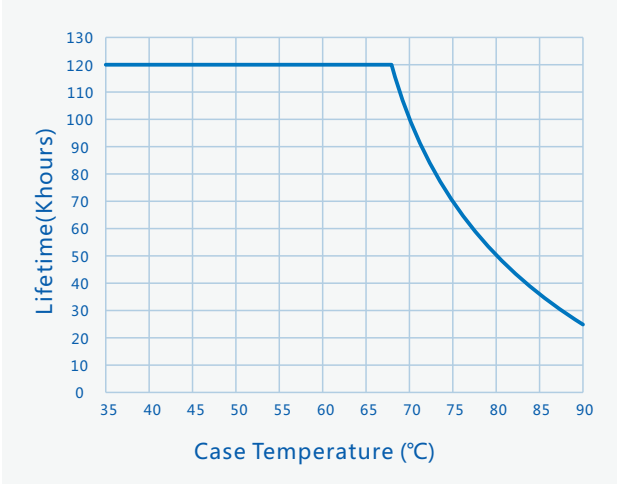
O/P Power Vs. Case Temperature



O/P Power Vs. Dimming



Lifetime Vs. Case Temperature



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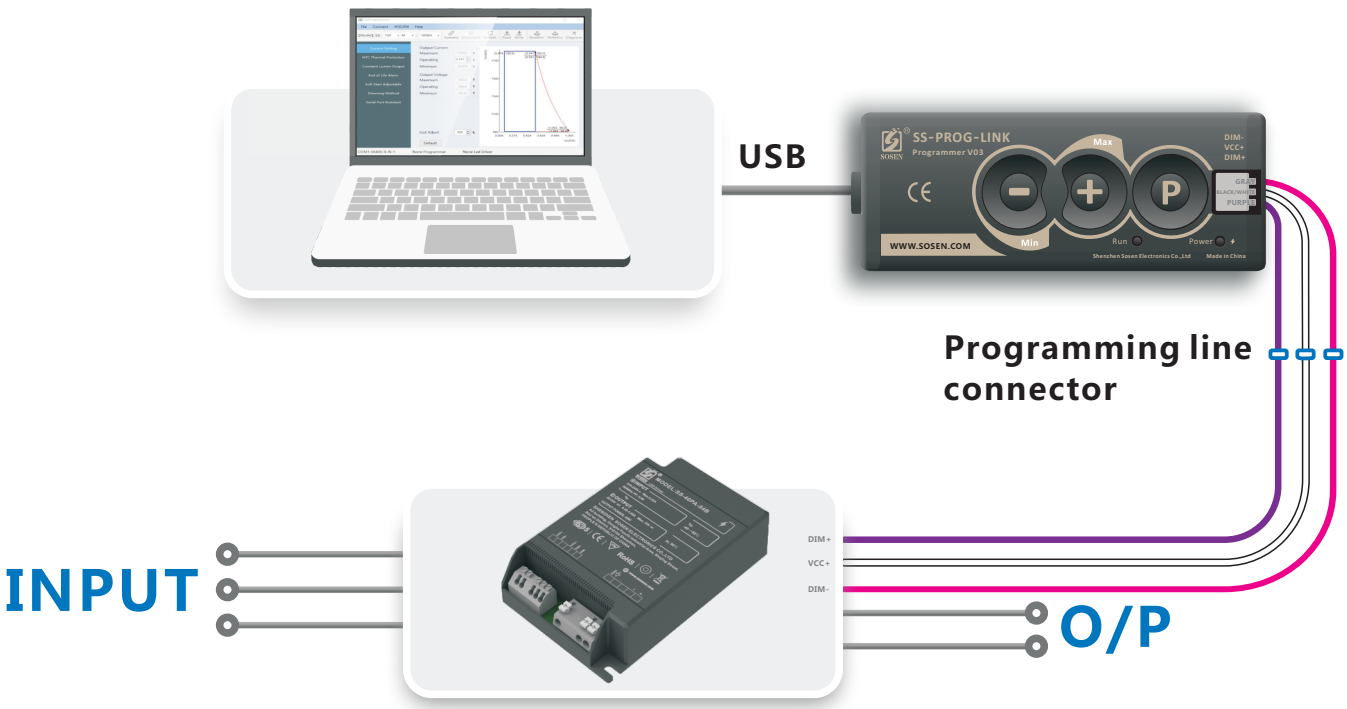
Constant Lumen Output :

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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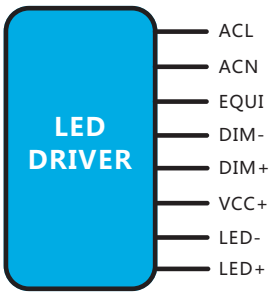
Mechanical Characteristics

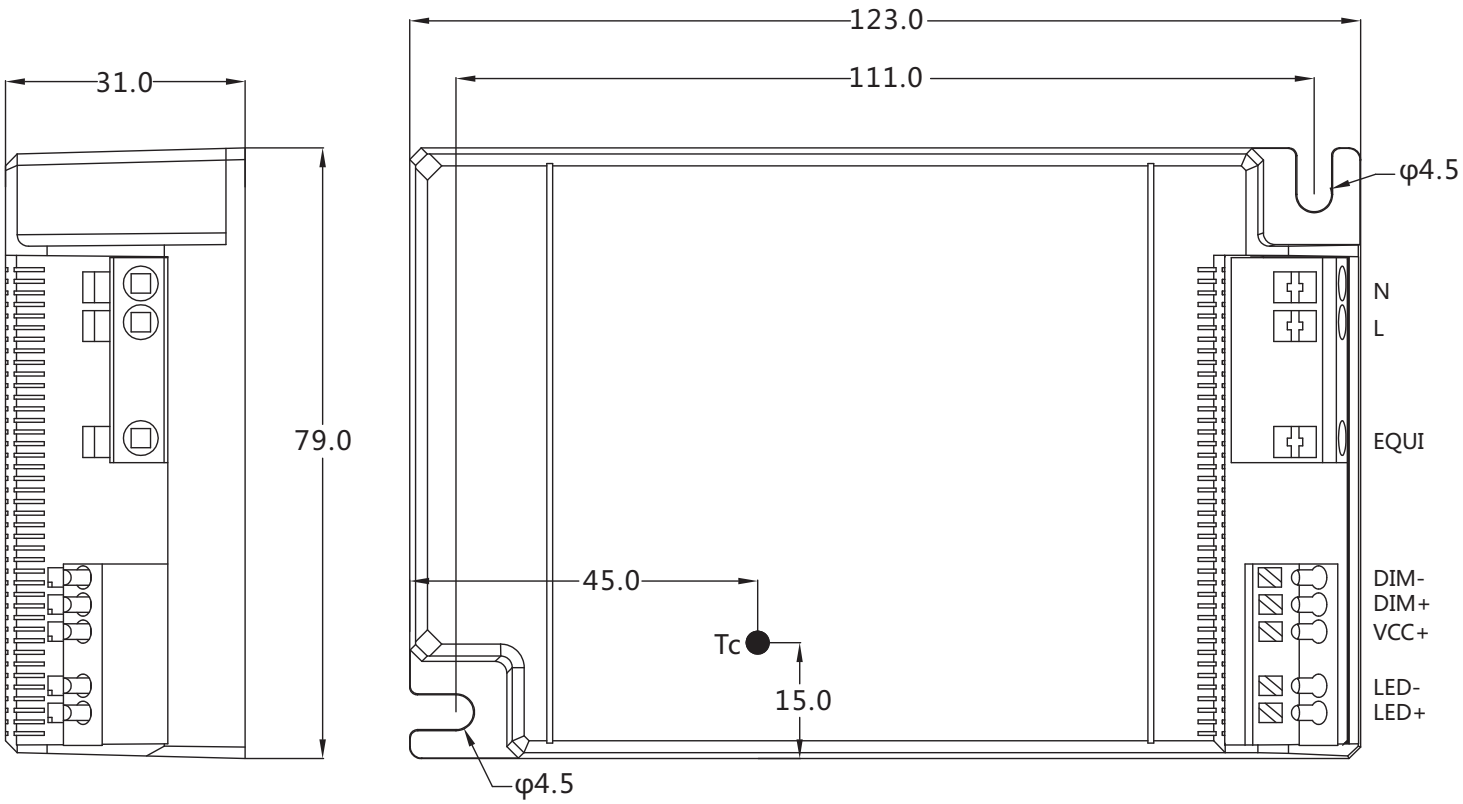


AC Input Cable:
0.2-1.5mm²,16-24AWG,WAGO250(3.5mm),Solid/Stranded Wire
Strip length 8.5-9.5mm

DC Output 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.



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SS-40PA Series LED Driver

Package

- Outside carton dimension: L×W×H =439mm×268mm×175mm;
- 40PCS/Carton;
- Net weight/Piece: 0.19kg;Gross weight/Carton: 9.3kg;
- 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.

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Revision History

Version	Description of Update	Updated Date	Remark
V00	Original release	2020/11/20	
V01	Update Certification	2021/08/30	
V02	Update Features	2022/01/15	
V03	Update Technical Indicators	2022/05/30	

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