SOSEN LED DRIVER

# SOSEN LED Driver, Your Smart Choice

# Specifications

## SS-40VA-T50B LED Driver

Model: SS-40VA-T50B

Description: 40W LED Driver

Rev.: V00

Release Date: 2021-12-6

# SS-40VA-T50B LED Driver


## Features:

- Efficiency up to 89%
- Programmable isolation dimming: voltage(positive or negative logic) , PWM, Resistor, Timing
- Surge protection: CM: 10kV, DM: 6kV
- Communication Function With PC
- CLO, ELA, SSA
- IP67
- Protections: SCP/OVP
- Warranty: 5 years

IP67 RoHS

## Description :

SS-40VA-T50B is 40W constant current LED Driver. It has ultra high efficiency, compact housing design and fully potted thermally conductive silicon ensure LED Driver cooling and waterproof , high reliability, high cost performance and many more.

**Applications:**

Tunnel lighting, Wall washer lighting, Street lighting, Stage lighting, Plant lighting, Venue 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-40VA-T50B | 90-305Vac | 40W | 28-50V | 36-50V | 0.64-1.1A | 12% | 0.97 | 89.0% | 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;

SHENZHEN SOSEN ELECTRONICS CO.,LTD

: A3 Building,Gonghe Fourth Industrial Area, Shajing Street, Bao' an District, Shenzhen, China 518104

: 86-755-29358800

: 86-755-29358816

: info@sosen.com

: www.sosen.com

# SS-40VA-T50B LED Driver

## Input Characteristics:

| Parameter | Min. | Typ. | Max. | Remark |
|---|---|---|---|---|
| Rated AC Input Range | 100Vac | | 277Vac | |
| AC Input Range | 90Vac | | 305Vac | Reference derating curve |
| Input Frequency Range | 47Hz | 50/60Hz | 63Hz | |
| Max Input Current | | | 0.5A | 100Vac, Full load |
| | | | 0.18A | 277Vac, Full load |
| Max Input Power | | | 50W | 100Vac, Full load |
| Max Inrush Current(120Vac) | | | 50A | Cold start |
| Max Inrush Current(220Vac) | | | 65A | Cold start |
| Max Inrush Current(277Vac) | | | 75A | Cold start |
| No Load Power | | | 3W | 220Vac/50Hz |
| Power Factor | 0.95 | 0.97 | | 220Vac/50Hz, Full load |
| | 0.90 | | | 100-277Vac/50Hz, 80-100% load |
| THD | | 12% | 15% | 220Vac/50Hz, Full load |
| | | | 20% | 100-277Vac/50Hz, 80-100% load |

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# SS-40VA-T50B LED Driver

## O/P Characteristics:

| Parameter | Min. | Typ. | Max. | Remark |
|---|---|---|---|---|
| O/P Voltage Range | 28V | | 50V | Power derated @28-36V |
| Rated O/P Voltage | 36V | | 50V | Po=Vo*Io=40W, Full load |
| Rated O/P Current | 0.8A | | 1.1A | 1.1A for 36V,0.8A for 50V |
| Adj. O/P Current (AOC)Range | 0.64A | | 1.1A | |
| No Load Voltage | | | 60V | |
| Efficiency @120Vac | 85.0% | 87.0% | | O/P 50V/0.8A |
| Efficiency @220Vac | 87.0% | 89.0% | | O/P 50V/0.8A |
| Efficiency @277Vac | 86.0% | 88.0% | | O/P 50V/0.8A |
| O/P Current Tolerance | -8% | | +8% | |
| O/P Current Ripple(PK-AV) | | 100% | 150% | Full load |
| Start-up Current Overshoot | | | 10% | Full load |
| Start-up Time | | | 1.0S | 120Vac,Full load |
| | | | 0.5S | 220Vac,Full load |
| Line Regulation | -8% | | +8% | Full load |
| Load Regulation | -8% | | +8% | |
| Temperature Coefficient | -0.07%/℃ | | +0.07%/℃ | Tc:0℃~90℃ |
| Short Circuit Protection | | | 5W | Driver will not be damaged,Hiccup mode |

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# SS-40VA-T50B LED Driver

## Other Characteristics:

| Parameter | | Min. | Typ. | Max. | Remark |
|---|---|---|---|---|---|
| 1-10V Dimming (Optional) | Dim Vmax | 0V | | 12V | Set by program |
| | Dim Range | 10%Iomax | | 100%Ioset | DIM+ source current 150uA. |
| | Rec.Dim Range | 1V | | 10V | |
| 10-0V Dimming (Optional) | Dim Vmax | 0V | | 12V | Set by program |
| | Dim Range | 100%Iomax | | 10%Ioset | DIM+ sink current 60uA. |
| | Rec.Dim Range | 1V | | 10V | |
| 0.5-5V Dimming (Optional) | Dim Vmax | 0V | | 5V | Set by program |
| | Dim Range | 10%Iomax | | 100%Ioset | DIM+ source current 150uA. |
| | Rec.Dim Range | 0.5V | | 5V | |
| 5-0V Dimming (Optional) | Dim Vmax | 0V | | 5V | Set by program |
| | Dim Range | 100%Iomax | | 10%Ioset | DIM+ sink current 60uA. |
| | Rec.Dim Range | 0.5V | | 5V | |
| PWM Dimming (Optional) | PWM High | 9.8V | | 10.2V | Set by program |
| | PWM Low | 0V | | 0.3V | |
| | Frequency | 1KHz | | 2KHz | |
| | PWM Duty | 10% | | 100% | |
| Resistor Dimming (Optional) | Resistance | 10Kohm | | 100Kohm | DIM+ source current 150uA. |
| | Dim Range | 10%Iomax | | 100%Ioset | |
| Timing Curve(Optional) | | By programming | | | |
| Constant Lumen(Optional) | | By programming | | | |
| Life Warning(Optional) | | By programming | | | |
| Lifetime(Tc≤78℃) | | ≥62,000 hours | | | 80% load |
| MTBF | | 262,000 hours | | | 220Vac,Full load, Ta=25℃ (MIL-HDBK-217F) |
| IP Grade | | IP67 | | | |
| Tc | | 90℃ | | | |
| Warranty | | 5 years | | | Tc : 78℃ |
| Net Weight | | 415g | | | |
| Dimension | | 132mm*50mm*31mm | | | L x W x H |

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

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# SS-40VA-T50B LED Driver

## 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 |
|---|---|---|---|
| UL/cUL | UL8750 | | |
| ENEC | EN 61347-1:2015<br>EN 61347-2-13:2014<br>EN 61347-2-13:2014/A1:2017 | | |
| RCM | AS/NZS61347.2.13 | | |
| CCC | GB 19510.14-2009 | ✓ | |
| CE | EN 61347-2-13:2014<br>EN61347-1:2008+A1:2011+A2:2013 | | |

| EMI/EMS | Criterion | Remark |
|---|---|---|
| Conduction Emission | EN55015:2013+A1:2015<br>FCC Part 15 Subpart B; ANSI C63.4:2014 | Class B |
| Radiation Emission | EN55015:2013+A1:2015<br>FCC Part 15 Subpart B; ANSI C63.4:2014 | Class B |
| Harmonic Current Emissions | IEC/EN 61000-3-2 | Class C |
| Surge | IEC/EN61000-4-5 | DM: 6kV,CM: 10kV,Criterion B |
| Ring Wave | IEC/EN 61000-4-12 | DM: 6kV,CM: 6kV,Criterion B |

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# SS-40VA-T50B LED Driver

## Safety Test Items:

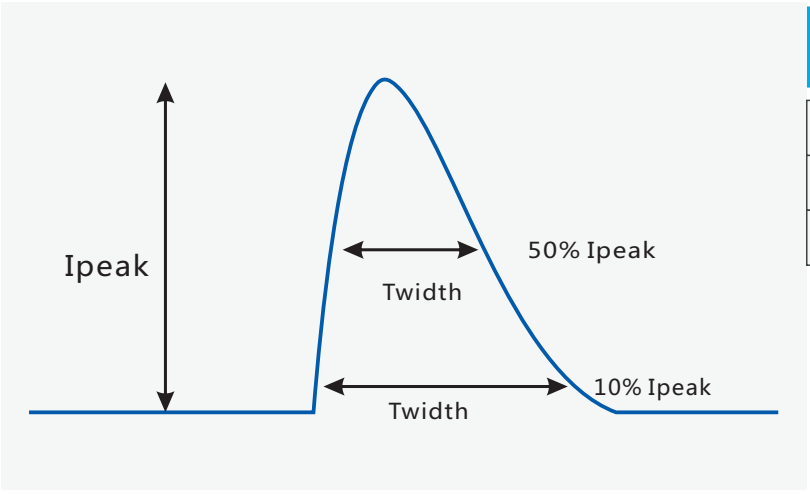
| Safety Test Items | Technical Indicators | | | Remark |
|---|---|---|---|---|
| Insulation Requirements | UL Insulation Requirements | ENEC Insulation Requirements | CCC Insulation Requirements | |
| Input-O/P | / | / | 3750Vac | Reinforced insulation |
| Input-Case | / | / | 1875Vac | Basic insulation |
| Input-Dim | / | / | 3750Vac | Reinforced insulation |
| O/P-Dim | / | / | 1000Vac | Basic insulation |
| O/P-Case | / | / | 1000Vac | Basic insulation |
| Dim-Case | / | / | 500Vac | Basic insulation |
| Insulation Resistance | ≥10MΩ | | | Input-O/P,Test voltage:500Vdc |
| Ground Resistance | ≤0.1Ω | | | 25A/1min |
| Leakage Current | ≤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 - and VPP+ )when Hi-pot test.
3. The CCC withstand voltage test needs to disconnect the built-in lightning protection tube.According to the IEC 60598-1:14 standard section 10.2, the "built-in lightning protection tube" can be marked on the nameplate to disconnect the discharge tube on testing.

## Performance Curves:

### Input Inrush Current




| Vin | Ipeak | T(@10% of Ipeak) | T(@50% of Ipeak) |
|---|---|---|---|
| 120Vac | 50A | 150uS | |
| 220Vac | 65A | | 80uS |
| 277Vac | 75A | 150uS | |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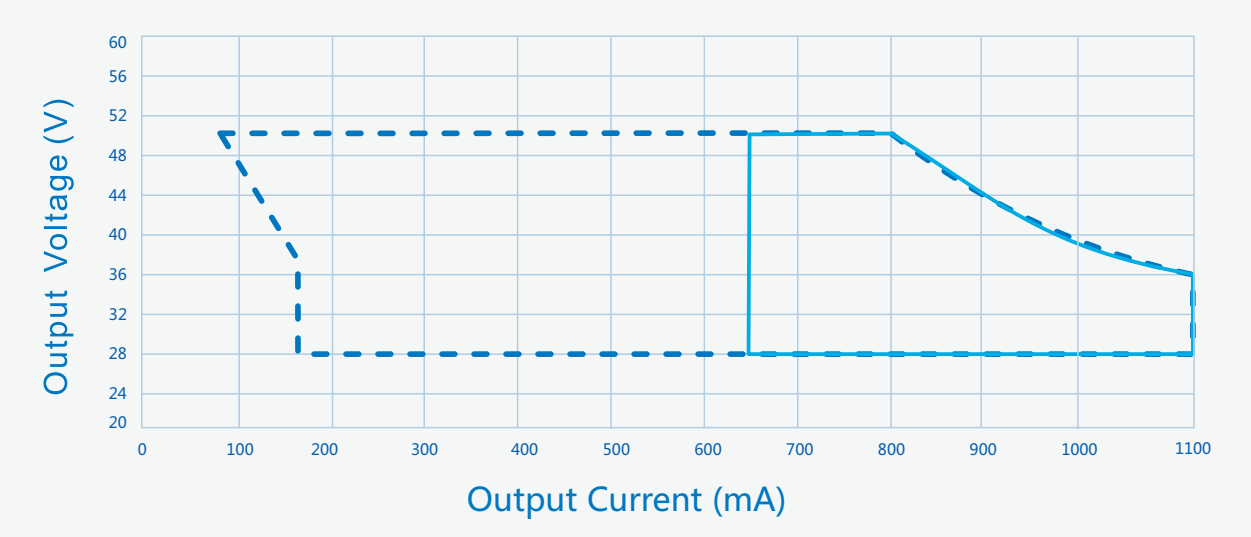
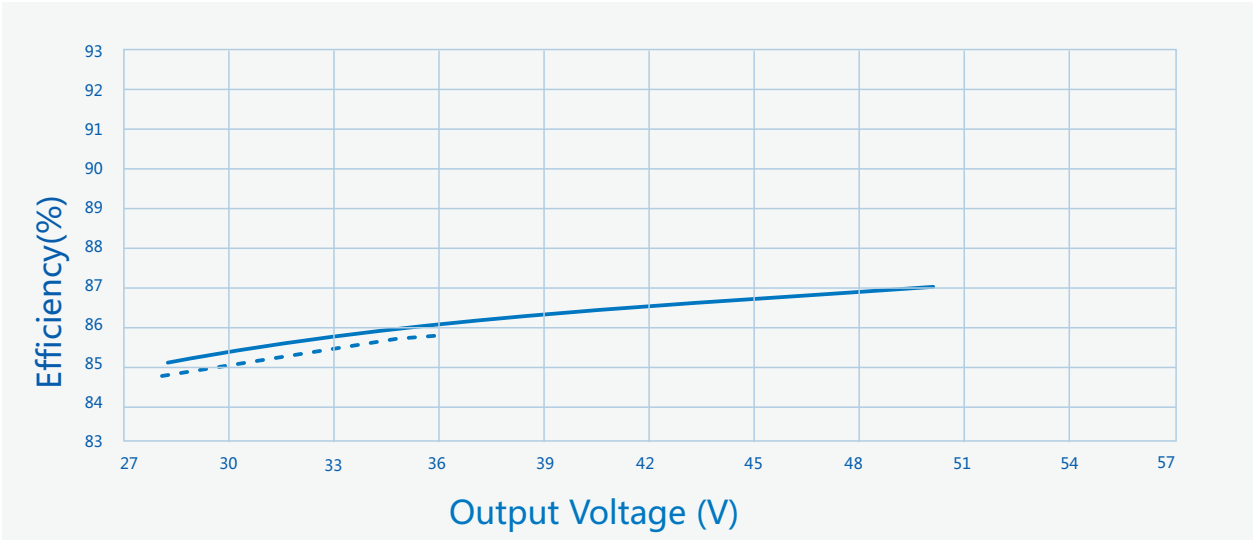
## Performance Curves:

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




Dimming Window  AOC Window

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




Io=1100mA  Io=800mA

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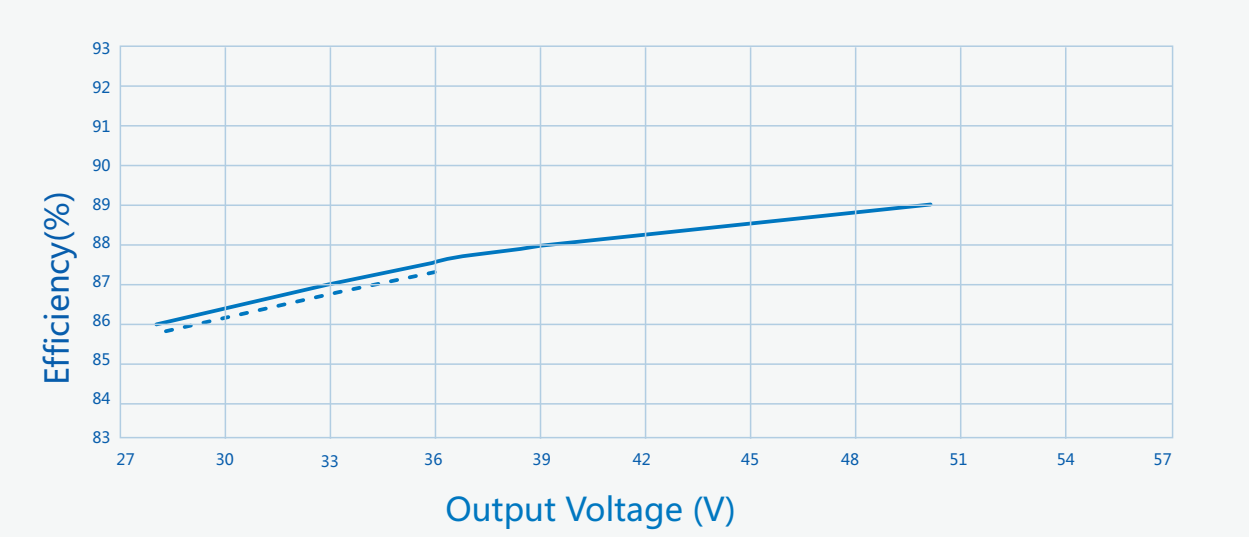
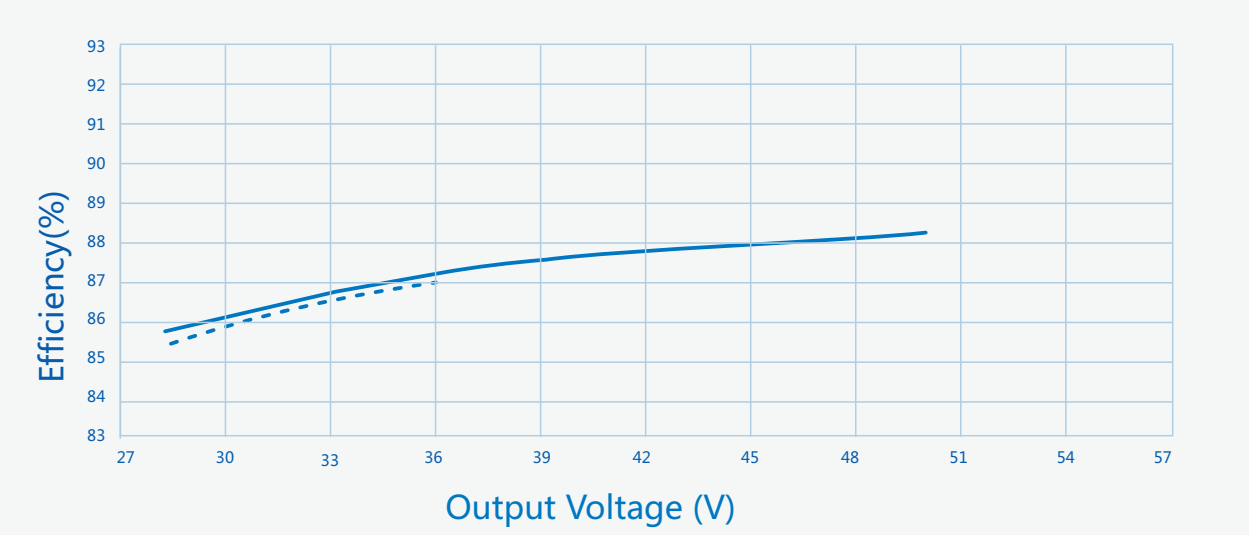
## Performance Curves:

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




------- Io=1100mA ——— Io=800mA

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




------- Io=1100mA ——— Io=800mA

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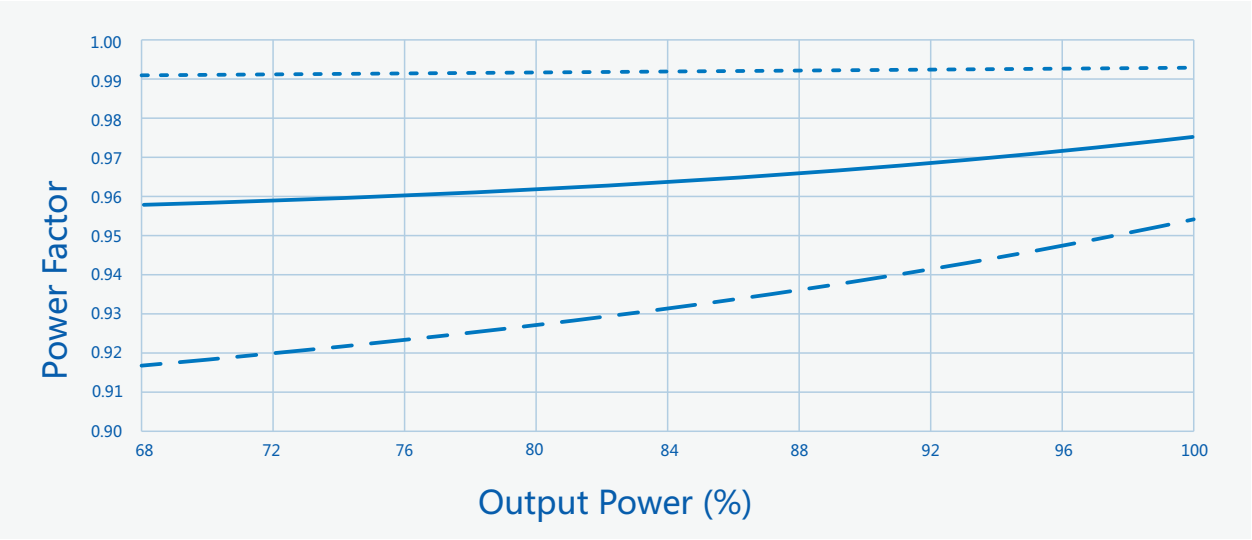
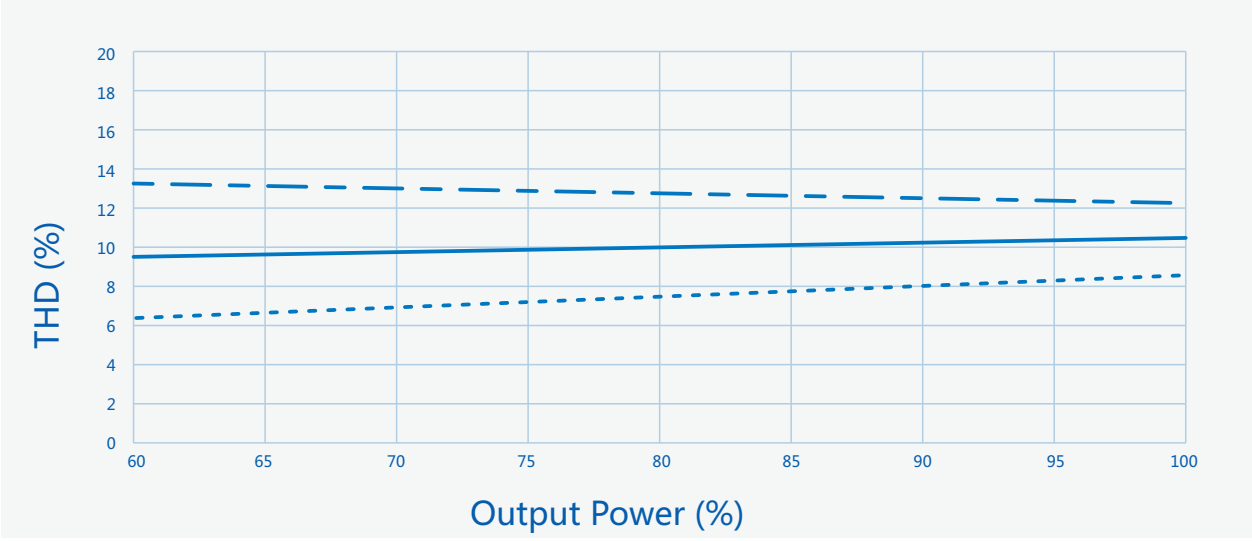
## Performance Curves:

### Power Factor Vs. O/P Power




Vin=120Vac Vin=220Vac Vin=277Vac

### THD Vs. O/P Power




Vin=120Vac Vin=220Vac Vin=277Vac

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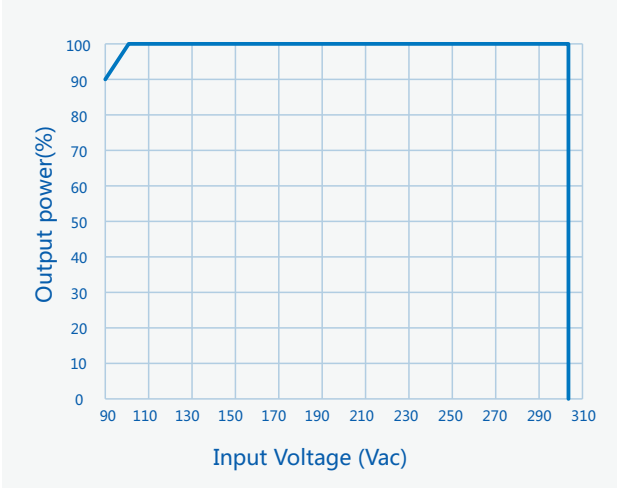
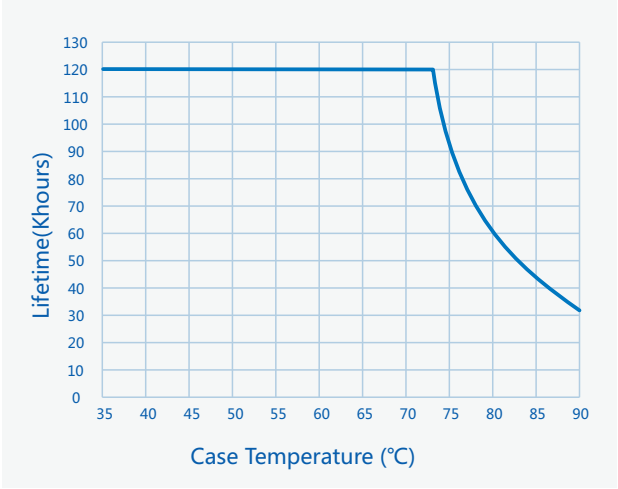
# SS-40VA-T50B LED Driver

## Performance Curves:

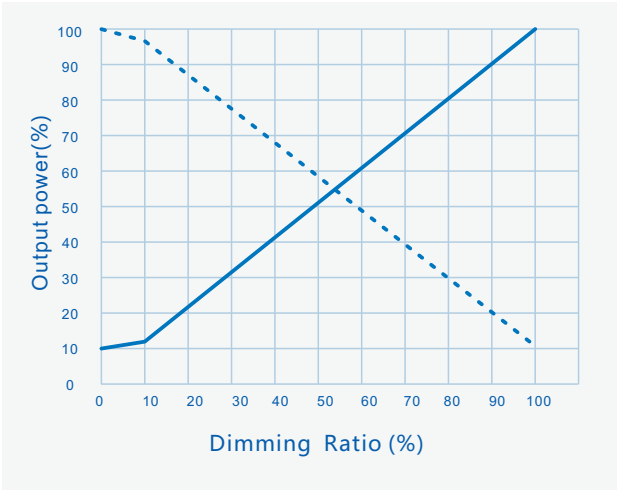
### O/P Power Vs. Input Voltage (Ta Max.60℃)



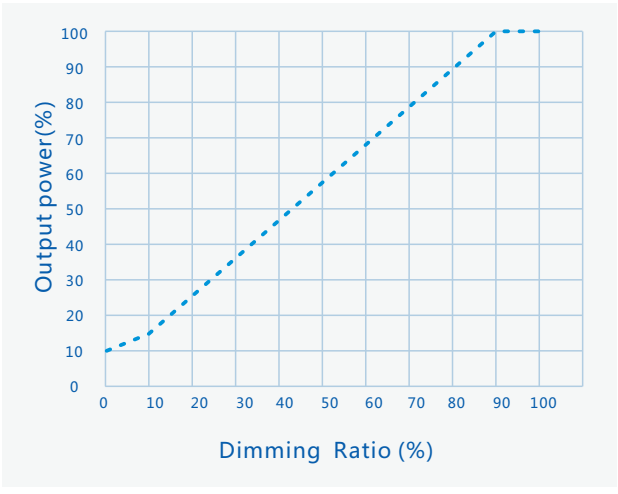

### Lifetime Vs. Case Temperature




### O/P Power Vs. Dimming




### O/P Power Vs. Resistor Dimming




—— 1-10V,0.5-5V,PWM

---- 10-0V,5-0V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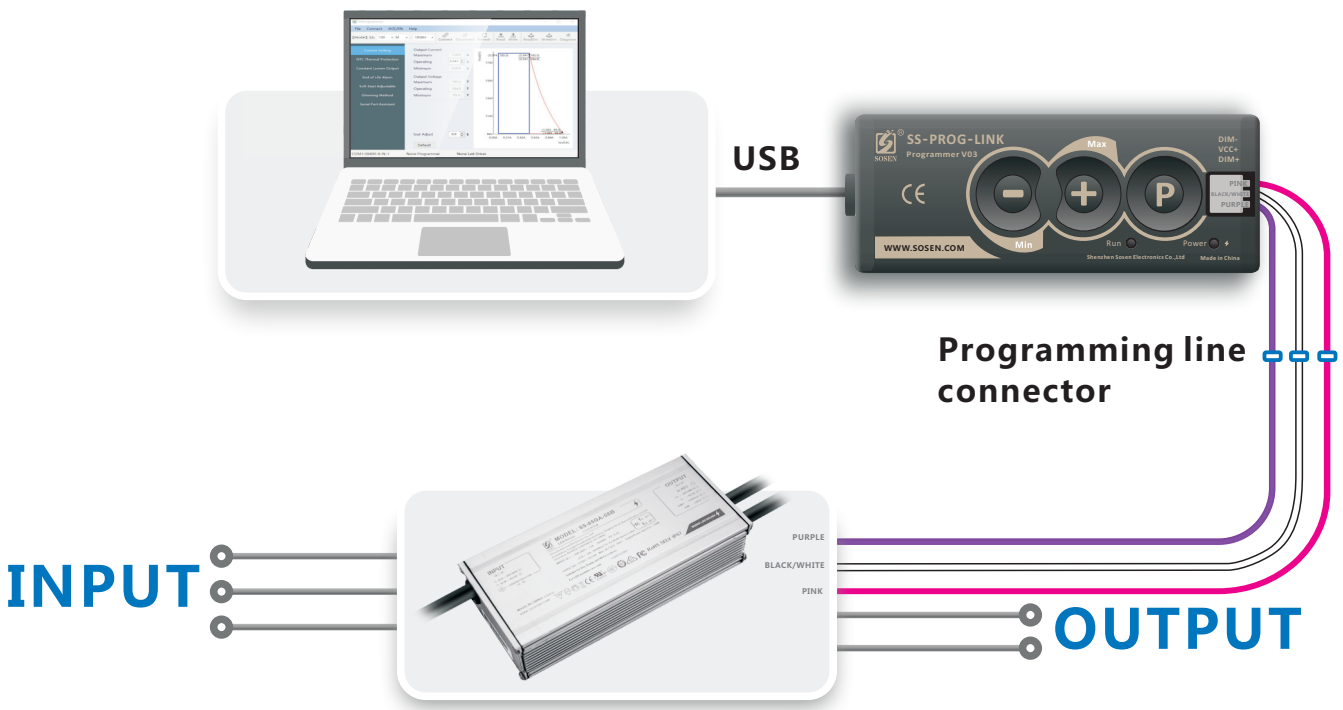
# SS-40VA-T50B LED Driver

## Constant Lumen O/P

Constant Lumen O/P are design to maintain fixture's stable O/P lumen by increasing driver's O/P 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:
Programming could be completed by off-line mode either without turn on the driver or without PC, other than the traditional on-line mode.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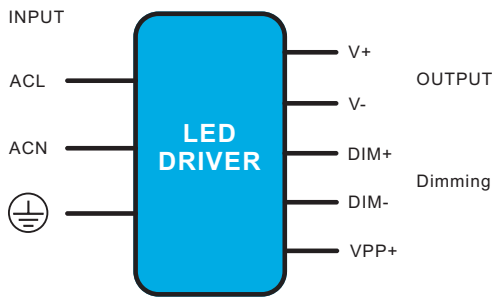
# SS-40VA-T50B LED Driver

## Mechanical Characteristics




**AC Input Cable(Exposed Length 450±10mm):**

EU model: H05RN-F, 3*1.0mm²,O.D: 7.3mm,Brown:L,Blue:N,Yellow/Green:⏚

**DC O/P Cable(Exposed Length 250±10mm):**

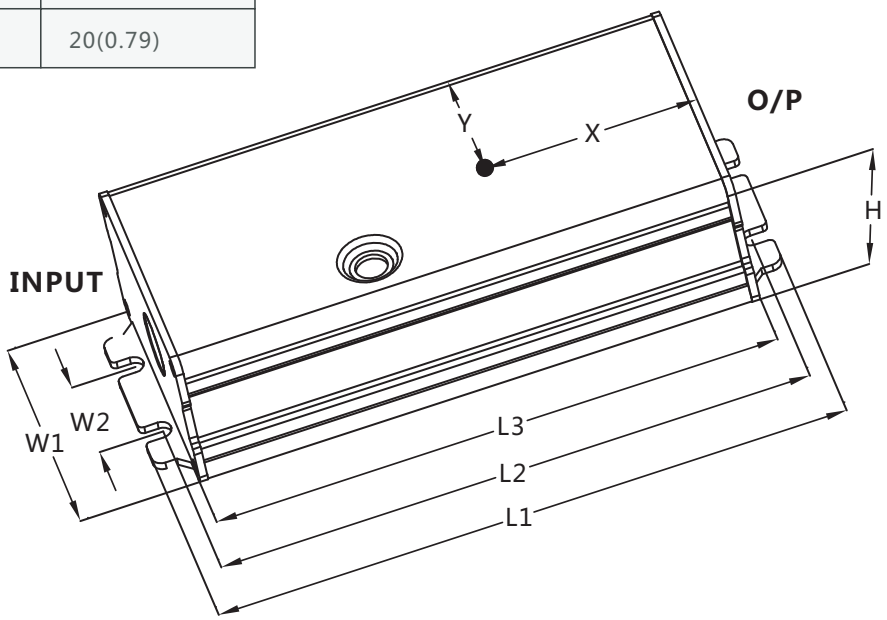
EU model: H05RN-F, 2*1.0mm²,O.D: 7.0mm,Red:V+ , Black:V-

**DIM/Timing Cable(Exposed Length 220±10mm):**

UL model: UL 21996, 3*22AWG , O.D: 4.7mm , Purple : DIM+, Pink: DIM-, Black/White: VPP+

| Name Description | Standard Code | mm(In.) |
|---|---|---|
| Case Length | L3 | 119(4.69) |
| Case Width | W1 | 50(1.97) |
| Case Height | H | 31(1.22) |
| Overall Length | L1 | 132(5.2) |
| Mounting Hole Length | L2 | 125.1(4.93) |
| Mounting Hole Width | W2 | 18.2(0.72) |
| TC Point Position | X | 36(1.42) |
| TC Point Position | Y | 20(0.79) |

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/AUX Power/Programming Cable: Peeled length of cable:43±5mm, Tinned length of wire:10±2mm

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# SS-40VA-T50B 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. Torsion with proper strength to avoid permanent damage to the potentiometer inside.
2. Please take isolation and waterproof measures if the dimming cable is not in use.

## Package

- Outside carton dimension: L×W×H =495mm×385mm×162mm;
- 42PCS/Carton;
- Net weight/Piece: 0.415kg;Gross weight/Carton: 18.9kg;
- 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 | 2021/12/06 | |
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