



SOSEN LED Driver, Your Smart Choice

Specifications

SS-100VB Series LED Driver

Model: SS-100VB-XXX

Description: 100W LED Driver

Rev.: V01

Release Date: 2019-07-13

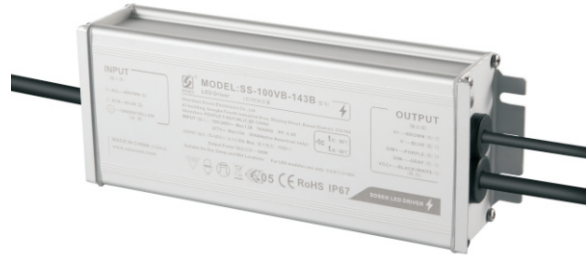
SS-100VB Series LED Driver

SOSEN
LED DRIVER



LED DRIVER

VB Series



Features:

- Efficiency up to 92%
- Isolated dimming: 1-10V, PWM, Resistor
- Computer programmable
- SSA, CLO, ELA
- IP67
- Protections: SCP/OTP/OVP/OPP
- Class P
- TYPE HL, suitable for hazardous locations
- Surge protection: L/N-PE: 10kV, L-N: 6kV
- Warranty: 5 years



IP67 RoHS Class P

Description :

SS-100VB is a rectangular driver with 90-305Vac input, the 100W model are designed for street and area lights with IP67 and 10kV/6kV surge protection. It has UL listed mark with Class P and Type HL rated.

Model List:

| Model | AC Input Range | Max. Pout | Vout Range | Full Power Vo Range | Iout | THD(Typ.) | PF(Typ.) | Eff.(Typ.) | Max.Tc |
|---------------|----------------|-----------|------------|---------------------|-----------|-----------|----------|------------|--------|
| SS-100VB-143B | 90-305Vac | 100W | 72-143V | 95-143V | 0.1-1.05A | 8% | 0.98 | 92% | 90°C |

1.Default tested at 220Vac, full load, Ta 25°C.

SS-100VB Series LED Driver

Input Characteristics:

| Parameter | Min. | Typ. | Max. | Remark |
|----------------------------|--------|---------|--------|-------------------------------|
| Rated AC Input Range | 100Vac | | 277Vac | |
| AC Input Range | 90Vac | | 305Vac | |
| Input Frequency Range | 47Hz | 50/60Hz | 63Hz | |
| Max Input Current | | | 1.2A | 100Vac, Full load |
| Max Input Power | | | 114W | 100Vac, Full load |
| Max Inrush Current(120Vac) | | | 100A | Cold start |
| Max Inrush Current(220Vac) | | | 180A | Cold start |
| Max Inrush Current(277Vac) | | | 220A | Cold start |
| No Load Power | | | 3W | 220Vac/50Hz, No load |
| Power Factor | 0.97 | 0.98 | | 220Vac/50Hz, Full load |
| | 0.92 | | | 100-277Vac/50Hz, 70-100% load |
| THD | | 8% | 10% | 220Vac/50Hz, Full load |
| | | | 20% | 100-277Vac/50Hz, 70-100% load |

SS-100VB Series LED Driver

Output Characteristics:

| Parameter | Min. | Typ. | Max. | Remark |
|-------------------------------|-----------|-------|-----------|--|
| Output Voltage Range | 72V | | 143V | Power derated @72-95V |
| Rated Output Voltage | 95V | | 143V | $P_o=V_o \cdot I_o=100W$, Full load |
| Rated Output Current | 0.7A | | 1.05A | 1.05A for 95V, 0.7A for 143V |
| Current Adjustable Range(AOC) | 0.1A | | 1.05A | AOC by programming |
| No Load Voltage | | | 160V | |
| Efficiency @120Vac | 89.0% | 90.0% | | Output 143V/0.7A |
| Efficiency @220Vac | 91.0% | 92.0% | | Output 143V/0.7A |
| Efficiency @277Vac | 91.0% | 92.0% | | Output 143V/0.7A |
| Output Current Tolerance | -5% | | +5% | |
| Output Current Ripple(PK-AV) | | 5% | 10% | |
| Start-up Current Overshoot | | | 10% | Full load |
| Start-up Time | | | 0.5S | 120Vac |
| | | | 0.5S | 220Vac |
| 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, Decreases output current, returning to normal after over temperature is removed. |
| Short Circuit Protection | | | 15W | Driver will not be damaged, Hiccup mode |

SS-100VB Series LED Driver

Other Characteristics:

| Parameter | Min. | Typ. | Max. | Remark | |
|-----------------------------|-------------------|----------|------|--|-------------------------|
| 1-10V Dimming (Optional) | Dim Vmax | 0V | | 12V | |
| | Dim Range | 10%Iomax | | 100%Ioset | |
| | Rec.Dim Range | 1V | | 10V | |
| PWM Dimming (Optional) | PWM High | 9.8V | | 10.2V | |
| | PWM Low | 0V | | 0.3V | |
| | Frequency | 1KHz | | 2KHz | |
| | PWM Duty | 10% | | 100% | |
| Resistor Dimming (Optional) | Resistance | 10Kohm | | 90Kohm | Reference dimming curve |
| | Dim Range | 10%Iomax | | 100%Ioset | |
| Lifetime(Tc≤75°C) | ≥62,000 hours | | | 80% load | |
| MTBF | 166,000 hours | | | 220Vac, Full load, Ta=25°C (MIL-HDBK-217F) | |
| IP Grade | IP67 | | | | |
| Tc | 90°C | | | | |
| Warranty | 5 years | | | Refer to life time drawing | |
| Net Weight | 680g | | | | |
| Dimension | 179mm*66mm*35.5mm | | | L x W x H | |

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

SS-100VB 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 | +85°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 | ✓ | |
| ENEC | IEC 61347-2-13:2014/AMD1:2016 used in conjunction with IEC 61347-1:2015 | ✓ | |
| 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 | EN55015:2013+A1:2015 | |
| Radiation Emission | EN55015:2013+A1:2015 | |
| Harmonic Current Emissions | IEC/EN 61000-3-2 | Class C |
| Surge | IEC/EN 61000-4-5 | Difference mode 6kV, Common mode 10kV,Criterion B |
| Ring Wave | IEC/EN 61000-4-12 | Difference mode 6kV, Common mode 6kV,Criterion B |

SS-100VB Series LED Driver

Safety Test Items:

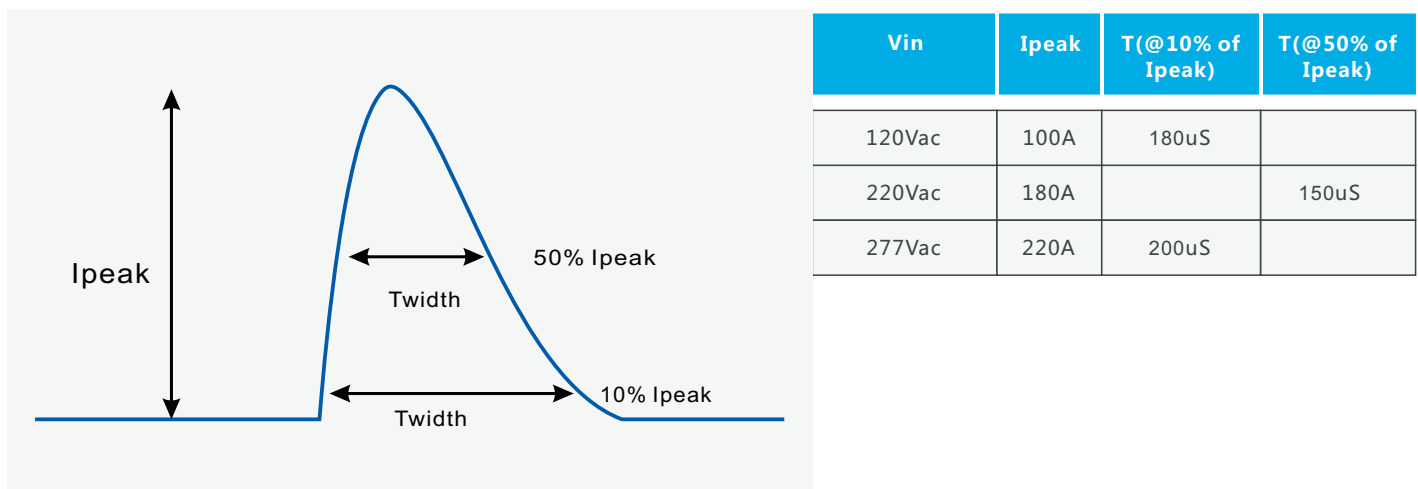
| Safety test items | Technical Indicators | | | Remark |
|-------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------------|
| Insulation Requirements | UL Insulation Requirements | TUV Insulation Requirements | CCC Insulation Requirements | |
| Input-Output | 1600Vac | 3000Vac | 3750Vac | Reinforced insulation |
| Input-Case | 1600Vac | 1500Vac | 1875Vac | Basic insulation |
| Input-Dim | 1600Vac | 3000Vac | 3750Vac | Reinforced insulation |
| Output-Dim | 1600Vac | 1000Vac | 1000Vac | Additional insulation |
| Output-Case | 1600Vac | 1000Vac | 1000Vac | Function insulation |
| Dim-Case | 1600Vac | 250Vac | 250Vac | |
| Insulation Resistance | ≥10MΩ | | | Input-Output, Test voltage:500Vdc |
| Ground Resistance | ≤0.1Ω | | | 25A/1min |
| Leak Current | ≤0.75mA | | | 277Vac |

NOTE:

1. SOSEN warrants the LED Driver itself meets with EMC standard. However, LED Driver's EMC should be re-checked when integrated into lighting systems due to unexpected interference as component.
2. Please short Line and Neutral, LED+ and LED-, Dim+ and Dim - 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:

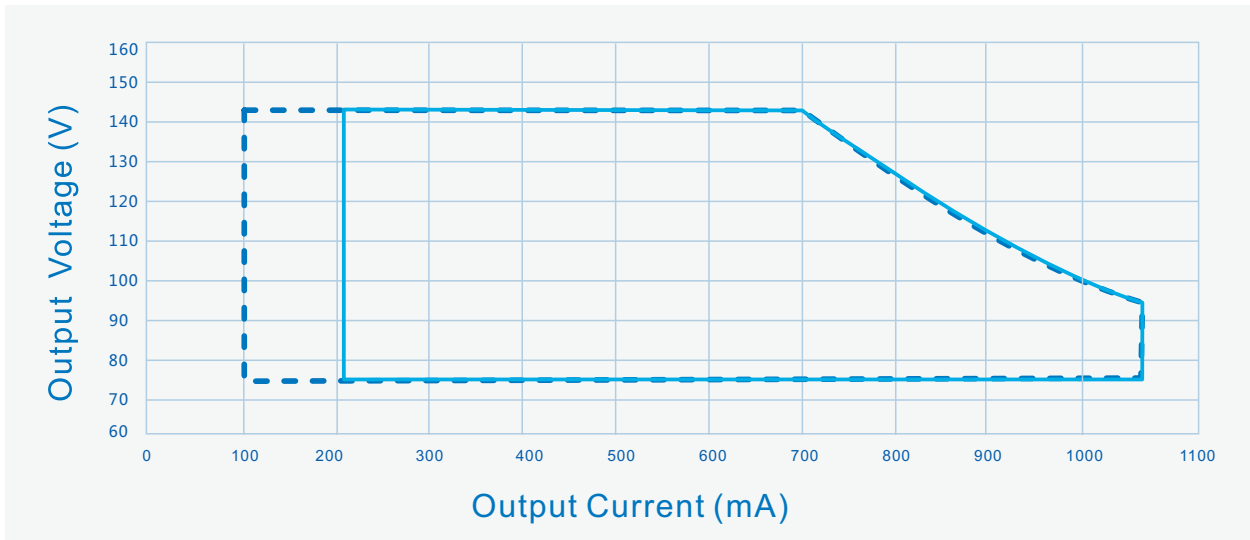
Input Inrush Current



SS-100VB Series LED Driver

Performance Curves:

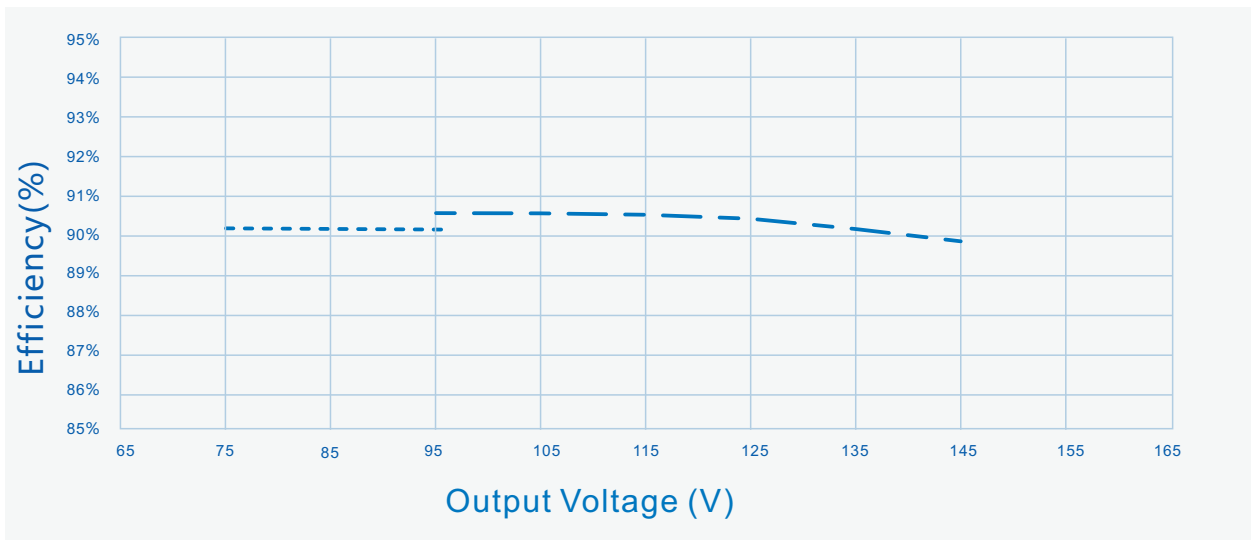
Output Voltage Vs. Output Current(Dim/AOC Window)



----- Diming Window

———— AOC Window

Efficiency Vs. Output Voltage (Vin=120Vac)



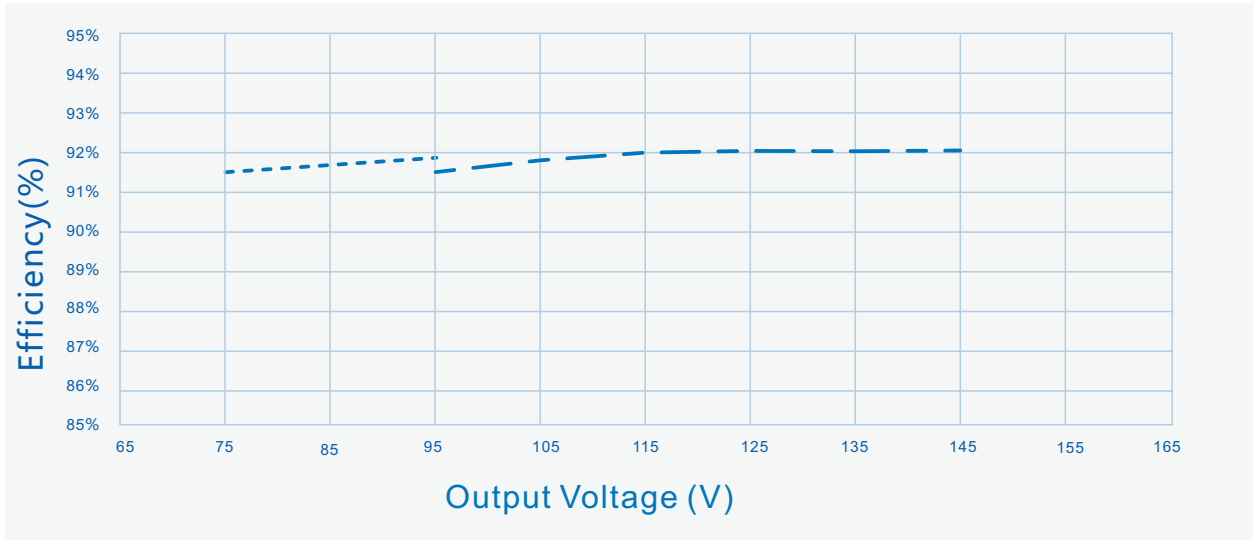
----- Io=1050mA

- . - . Io=700mA

SS-100VB Series LED Driver

Performance Curves:

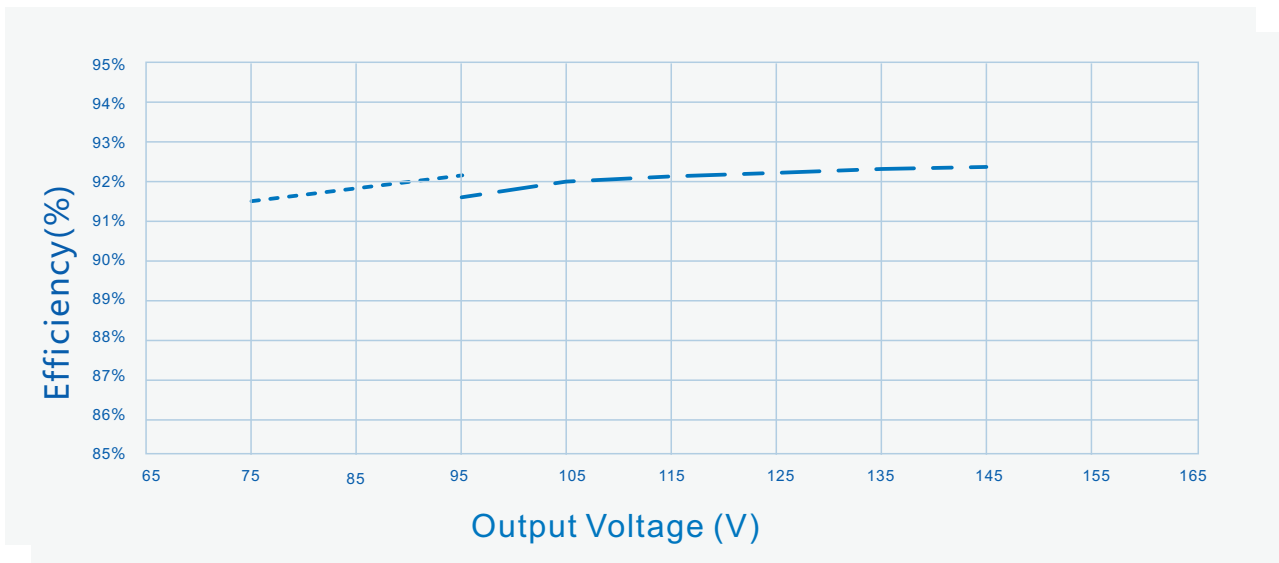
Efficiency Vs. Output Voltage ($V_{in}=220V_{ac}$)



----- $I_o=1050mA$

- . - . - $I_o=700mA$

Efficiency Vs. Output Voltage ($V_{in}=277V_{ac}$)



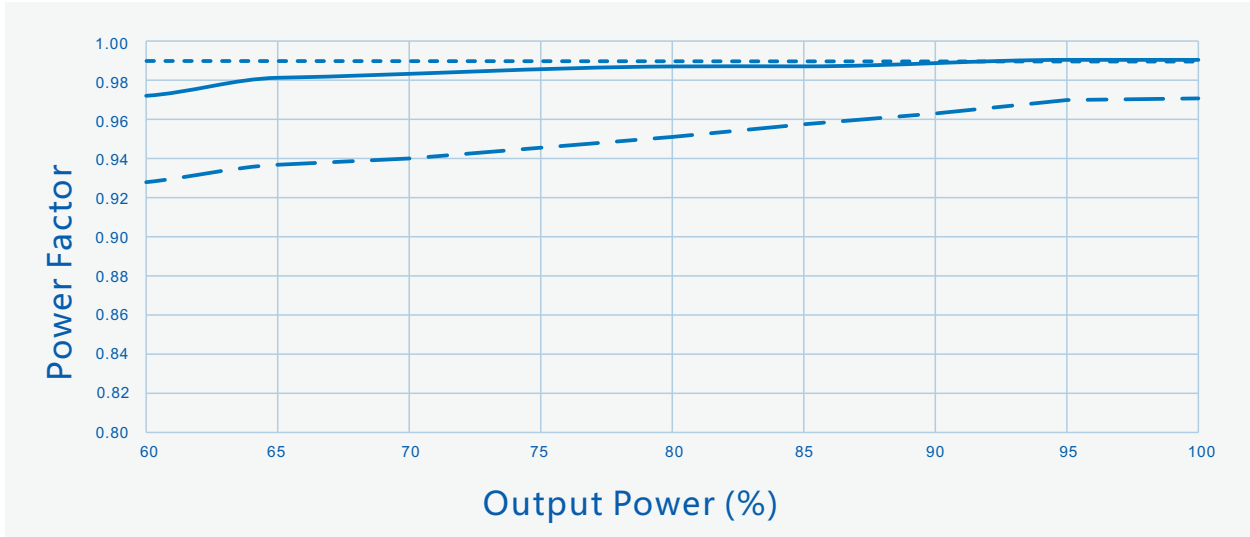
----- $I_o=1050mA$

- . - . - $I_o=700mA$

SS-100VB Series LED Driver

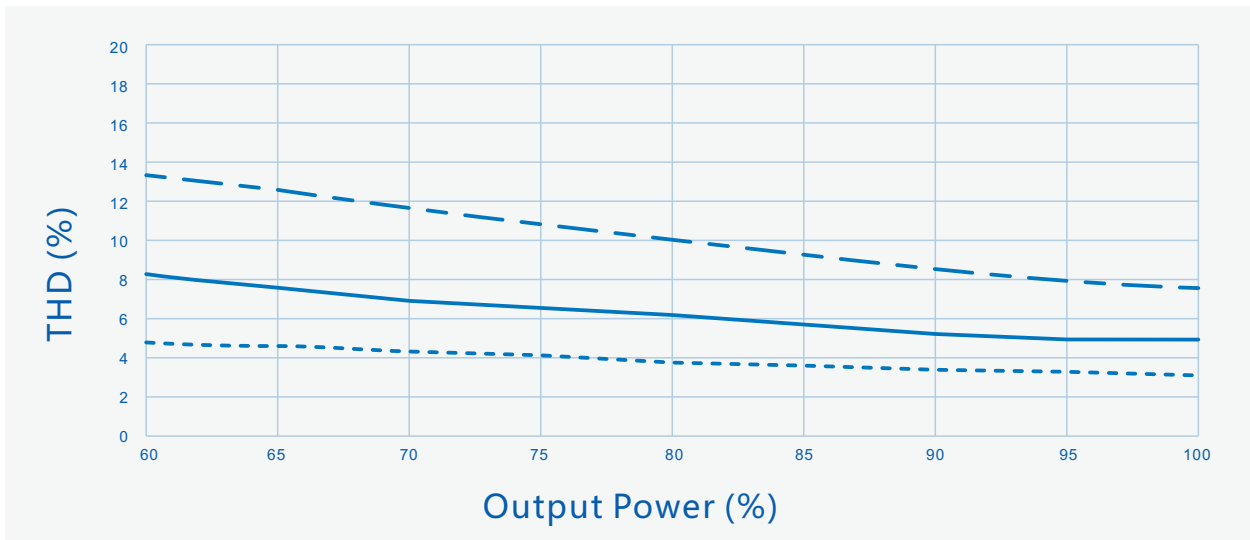
Performance Curves:

Power Factor Vs. Output Power



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

THD Vs. Output Power

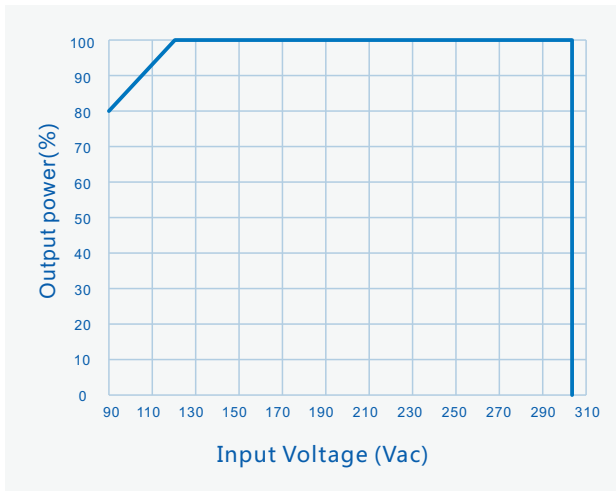


----- Vin=120Vac ————— Vin=220Vac - - - - Vin=277Vac

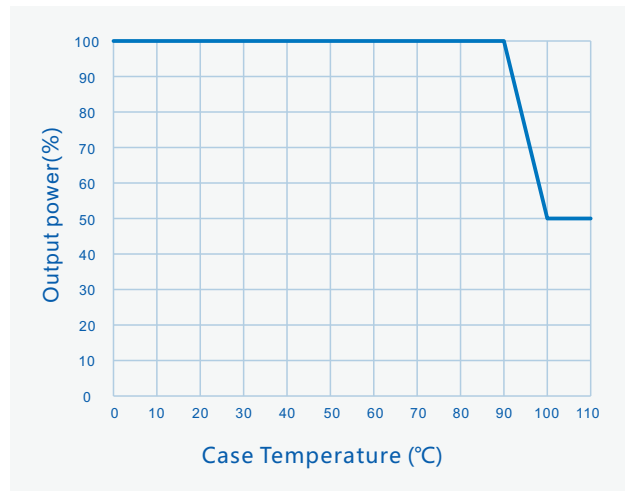
SS-100VB Series LED Driver

Performance Curves:

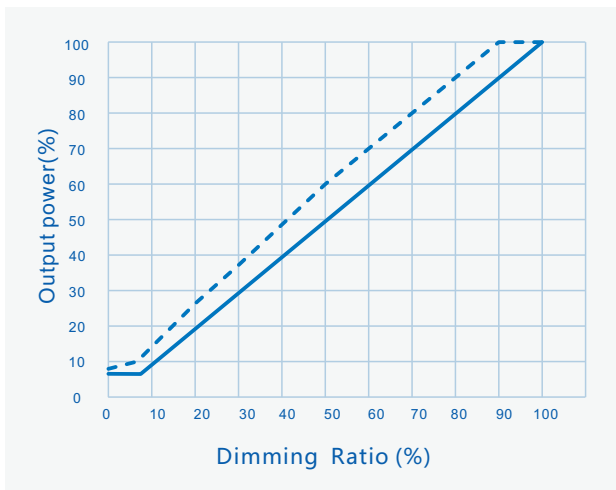
Output power Vs. Input Voltage (Ta Max.60°C)



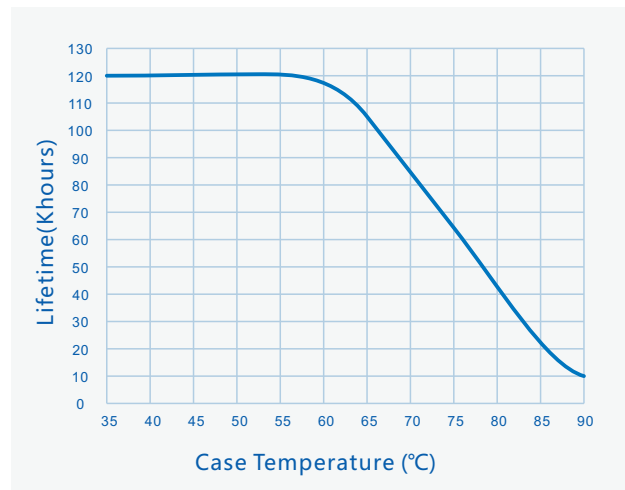
Output power Vs. Case Temperature



Output Power Vs. Dimming



Lifetime Vs. Case Temperature



----- Resistance Dimming
———— PWM/1-10V Dimming

SS-100VB Series LED Driver

Constant Lumen Output

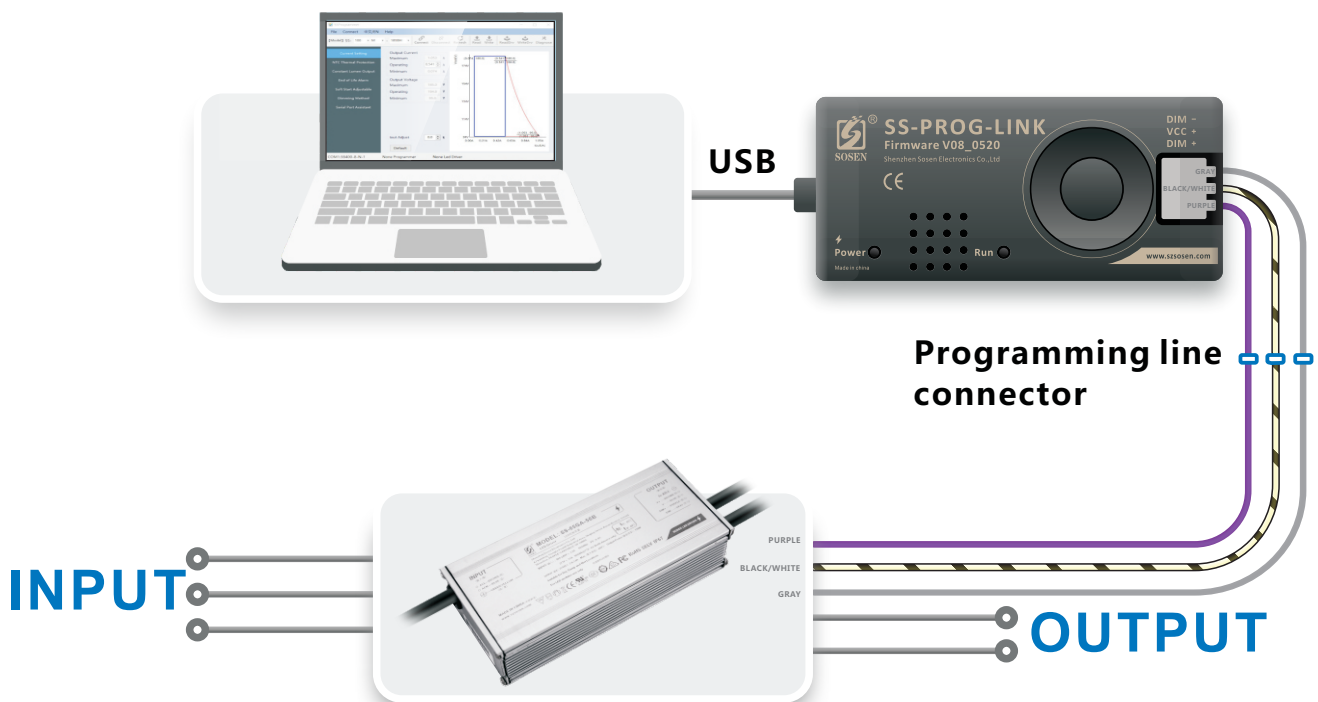
Constant Lumen Output are design to maintain fixture's stable output lumen by increasing driver's output current within driver's life span to counteract LED lumen degradation.

Programming connection diagram :

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

Auto-Adjust by Percentage: Driver's output 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 output 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-PORG-LINK Programmer Manual.

SS-100VB Series LED Driver

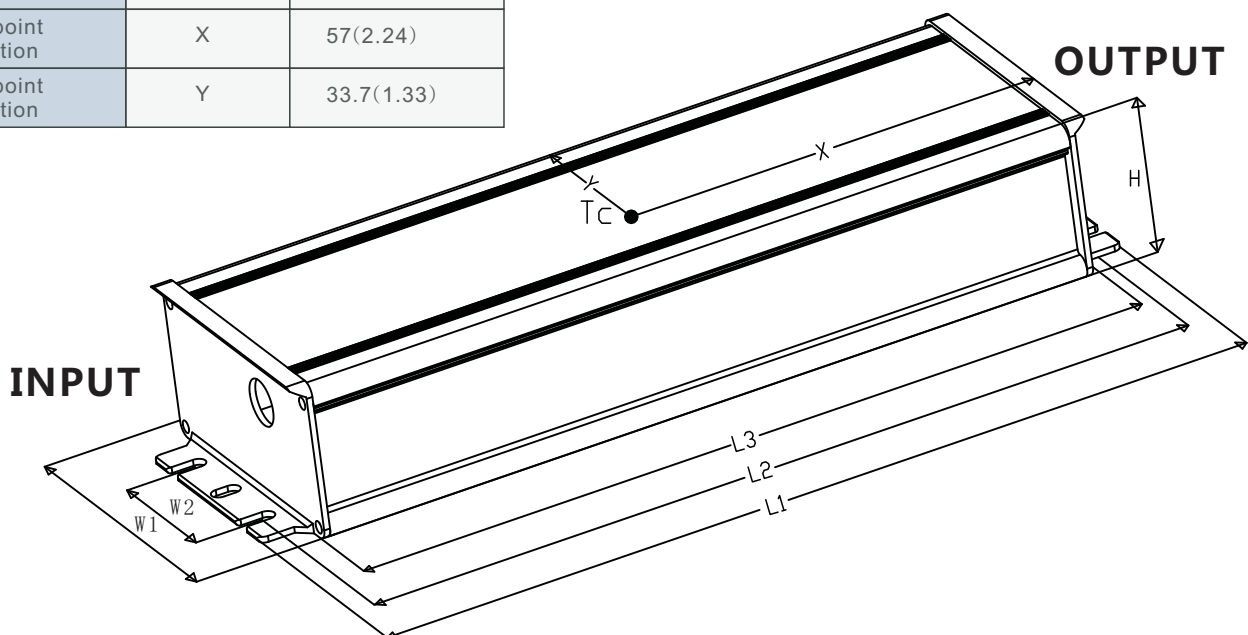
Mechanical characteristics(Unit: mm)

AC Input Cable(Lead Length outside enclosure 450±10mm):
 UL model: SJTW,3*0.824mm²,O.D: 7.8mm,Black:L,White:N,Green:PE
 Euro model: H05RN-F,3*1.0mm², ,O.D:7.4mm,Brown:L, Blue:N, Yellow/Green:PE

DC Output Cable(Lead Length outside enclosure 250±10mm):
 UL model: SJTW,2*0.824mm²,O.D: 7.6mm,Red:LED+ , Black:LED-
 Euro model: H05RN-R,2*1.0mm², O.D:7.0mm, Brown:V+, Blue:V-

DIM Cable(Lead Length outside enclosure 220±10mm):
 UL/Euro model: STYLE 21996#22AWG , O.D: 4.9mm , Purple : DIM+, Gray: DIM-
 Black/White: VCC+

| Name Description | Standard Code | mm(In.) |
|----------------------|---------------|------------|
| Case Length | L3 | 154(6.06) |
| Case Width | W1 | 66(2.6) |
| Case Height | H | 35.5(1.4) |
| Overall Length | L1 | 179(7.05) |
| Mounting Hole Length | L2 | 164(6.46) |
| Mounting Hole Width | W2 | 32(1.26) |
| TC point position | X | 57(2.24) |
| TC point position | Y | 33.7(1.33) |



SS-100VB Series LED Driver



Installation Tips

1. Dimming leads should be capped if not in use to avoid dimming circuit damage caused by external signals.

Package

- Outside carton dimension: L×W×H =500mm×390mm×170mm;
- 14PCS/Carton;
- Net weight/PC: 0.68kg;Gross weight/Carton: 11.5kg;
- Please refer to the product name, model number, manufacturer identification, quality inspection certificate, manufacturing date Etc. on the package. and LED power supply instruction manual in the package.

Transportation

Packaging is designed suitable for transportation by trucks, vessels and flights. The products should be shielded from direct sunshine, loaded/unloaded with caution.

Storage

The product storage meets the standard of the GB 3873 - 83.
Products should be rechecked if stock for over 1 year before installation.

RoHS

Products comply with European directive 2011/65/EC.

REVISION HISTORY

| Version | Description of Change | Changed Date | Remark |
|---------|---------------------------------------|--------------|--------|
| V00 | Original release | 2019/03/28 | |
| V01 | Update programming connection diagram | 2019/07/13 | |
| | | | |
| | | | |
| | | | |

