



SOSEN LED Driver, Your Smart Choice

Specifications

SS-200EP-56B LED Driver

Model: SS-200EP-56B

Description: 200W LED Driver

Rev.: V01

Release Date: 2020-10-10

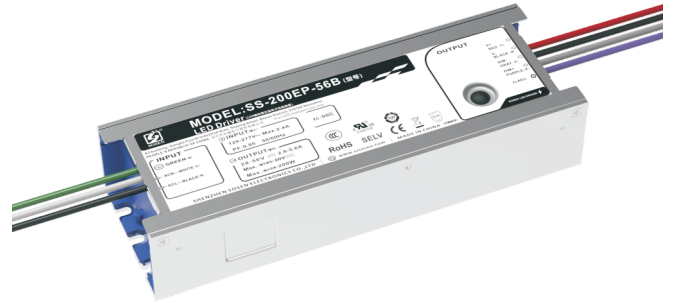
SS-200EP-56B LED Driver

SOSEN
LED DRIVER



LED DRIVER

EP Series



Features:

- Efficiency up to 93%
- Isolated dimming: 1-10V, PWM, Resistor
- Protections: SCP/OTP/OVP/OPP
- Surge protection: CM: 10kV, DM: 6kV
- Warranty: 5 years



RoHS

Description :

SS-200EP-56B are 200W constant current LED Driver with wide O/P voltage and adjustable O/P current. It has high efficiency, compact housing, good cooling, all-around protections. LED luminaries manufacturers can design luminaries easily and reduce cost.

Applications:

High Pole lighting, Wall washer lighting, Flood lighting

Model List:

| Model | AC Input Range | Max. Pout | Vout Range | Full Power Vo Range | Iout | Default Current | THD(Typ.) | PF(Typ.) | Eff.(Typ.) | Max.Tc |
|--------------|----------------|-----------|------------|---------------------|----------|-----------------|-----------|----------|------------|--------|
| SS-200EP-56B | 108-305Vac | 200W | 28-56V | 36-56V | 2.8-5.6A | 4.8A | 8% | 0.97 | 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 | 120Vac | | 277Vac | Ref. derating curve |
| AC Input Range | 108Vac | | 305Vac | Ref. derating curve |
| Input Frequency Range | 47Hz | 50/60Hz | 63Hz | |
| Max Input Current | | | 2.4A | 120Vac, Full load |
| Max Input Power | | | 240W | 120Vac, Full load |
| Max Inrush Current(120Vac) | | | 70A | Cold start |
| Max Inrush Current(220Vac) | | | 110A | Cold start |
| Max Inrush Current(277Vac) | | | 140A | Cold start |
| No Load Power | | | 3W | 220Vac/50Hz, No load |
| Power Factor | 0.95 | 0.97 | | 220Vac/50Hz, Full load |
| | 0.90 | | | 120-277Vac/50Hz, 70%-100% load |
| THD | | 8% | 10% | 220Vac/50Hz, Full load |
| | | | 20% | 120-277Vac/50Hz, 70%-100% load |

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O/P Characteristics:

| Parameter | Min. | Typ. | Max. | Remark |
|------------------------------|-----------|-------|-----------|--|
| O/P Voltage Range | 28V | | 56V | Power derated @28-36V |
| Rated O/P Voltage | 36V | | 56V | $P_o=V_o \cdot I_o=200W$, Full load |
| Rated O/P Current | 3.6A | | 5.6A | 5.6A for 36V, 3.6A for 56V |
| Adj. O/P Current (AOC) Range | 2.8A | | 5.6A | |
| No Load Voltage | | | 60V | |
| Efficiency @120Vac | 88.0% | 89.0% | | O/P 46V/4.35A |
| Efficiency @220Vac | 91.0% | 92.0% | | O/P 46V/4.35A |
| Efficiency @277Vac | 91.0% | 92.0% | | O/P 46V/4.35A |
| 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 | 120Vac, Full load |
| | | | 0.5S | 220Vac, 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 | | | 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 110uA. |
| | Dim Range | 10%Iomax | | 100%Ioset | Dimming prohibits reverse connection |
| | Rec.Dim Range | 1V | | 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 | 10% | | 100% | |
| Resistor Dimming (Optional) | Resistance | 10Kohm | | 100Kohm | DIM+ source current 110uA. |
| | Dim Range | 10%Iomax | | 100%Ioset | |
| Lifetime(Tc≤72°C) | ≥62,000 hours | | | 80% load,220Vac | |
| MTBF | 205,000 hours | | | 220Vac,Full load, Ta=25°C (MIL-HDBK-217F) | |
| Tc | 90°C | | | | |
| Warranty | 5 years | | | Tc : 72°C | |
| Net Weight | 850g | | | | |
| Dimension | 183mm*63.5mm*37mm | | | L x Wx 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 |
|---------------|--|--------|--------|
| 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 | EN55015:2013+A1:2015 | |
| Radiation Emission | EN55015:2013+A1:2015 | |
| Harmonic Current Emissions | IEC/EN 61000-3-2 | Class C |
| Surge | IEC/EN61000-4-5 | DM: 6kV,CM: 10kV,Criterion B |
| | ANSI/C82.77-5-2017 | DM: 6kV,CM: 6kV,Criterion B |
| Ring Wave | IEC/EN 61000-4-12 | DM: 6kV,CM: 6kV,Criterion B |

SS-200EP-56B LED Driver

Safety Test Items:

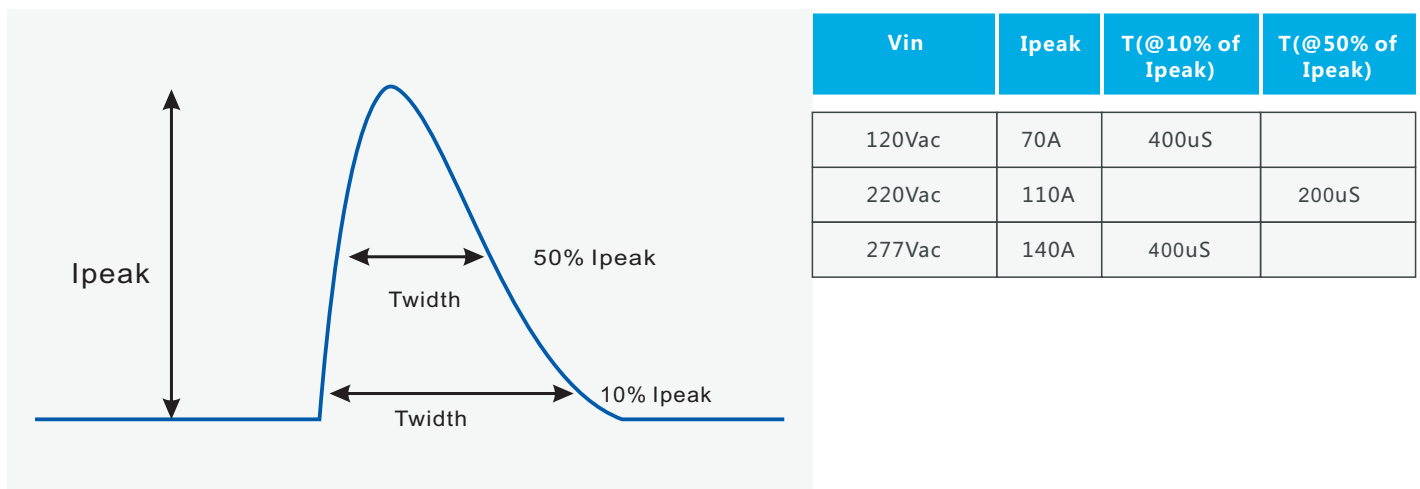
| Safety Test Items | Technical Indicators | | | Remark |
|-------------------------|----------------------------|-----------------------------|-----------------------------|--------------------------------|
| Insulation Requirements | UL Insulation Requirements | TUV Insulation Requirements | CCC Insulation Requirements | |
| Input-O/P | 1600Vac | 3000Vac | 3750Vac | Reinforced insulation |
| Input-Case | 1600Vac | 1500Vac | 1875Vac | Basic insulation |
| Input-Dim | 1600Vac | 3000Vac | 3750Vac | Reinforced insulation |
| O/P-Dim | 1600Vac | 1000Vac | 1000Vac | Basic insulation |
| O/P-Case | 500Vac | 1000Vac | 1000Vac | Basic insulation |
| Dim-Case | 500Vac | 250Vac | 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 -) 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:

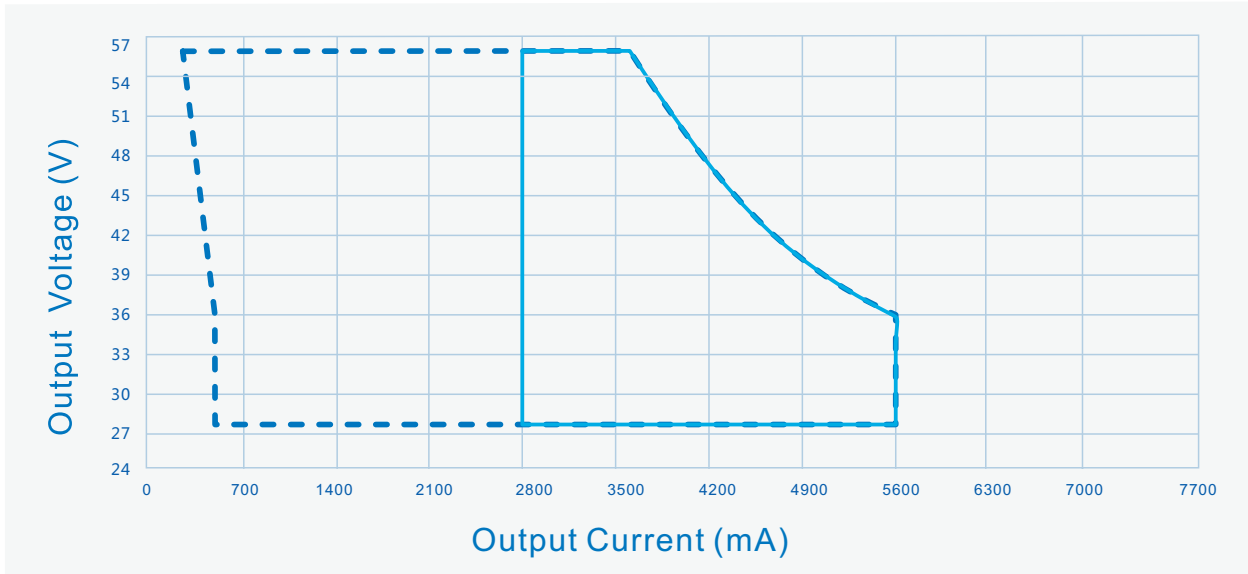
Input Inrush Current



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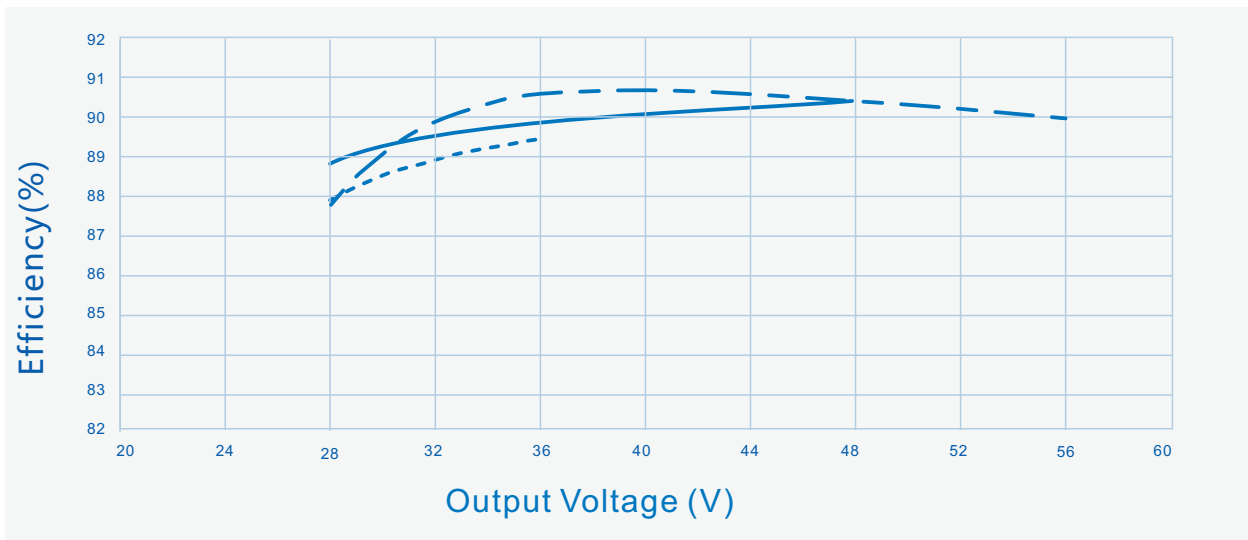
Performance Curves:

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



----- Dimming Window ————— AOC Window

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

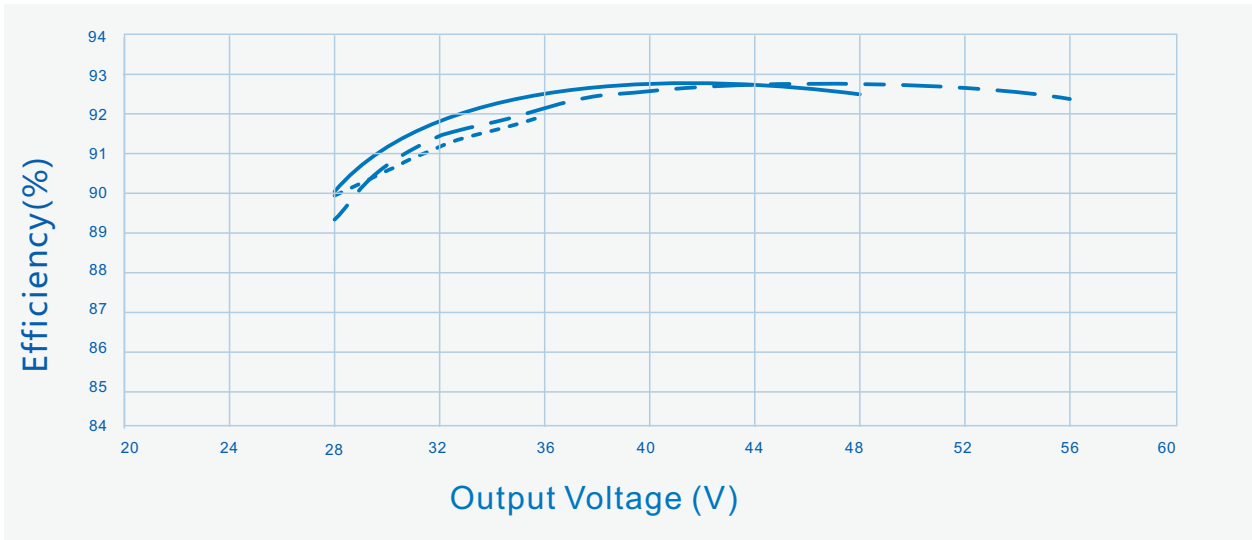


----- Io=5600mA ————— Io=4200mA - . - . Io=3600mA

SS-200EP-56B LED Driver

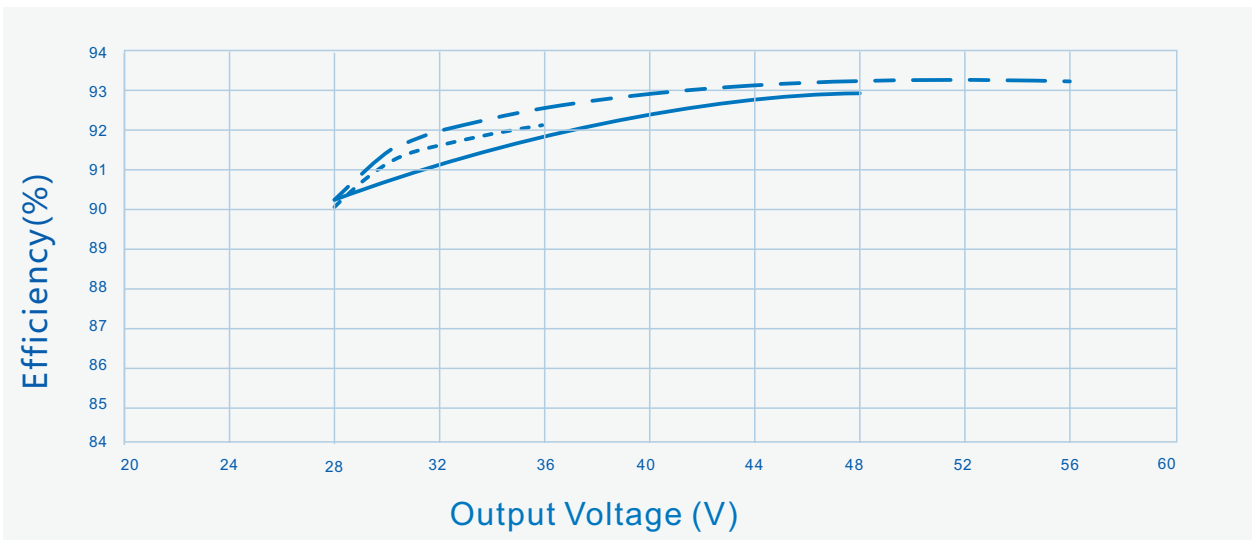
Performance Curves:

Efficiency Vs. O/P Voltage ($V_{in}=220V_{ac}$)



----- $I_o=5600mA$ ————— $I_o=4200mA$ - - - - $I_o=3600mA$

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

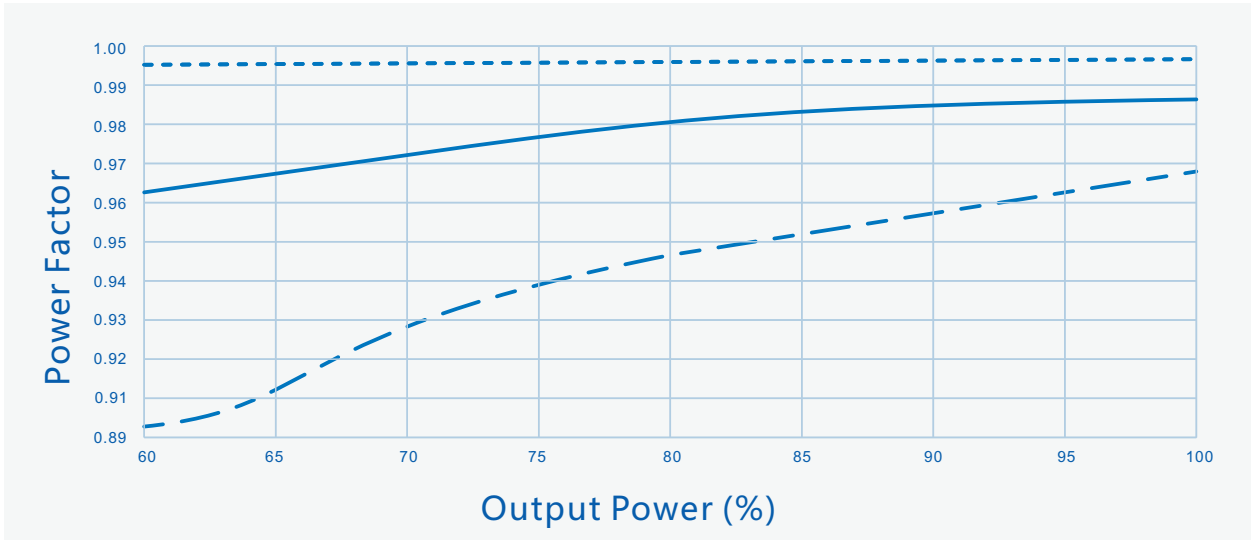


----- $I_o=5600mA$ ————— $I_o=4200mA$ - - - - $I_o=3600mA$

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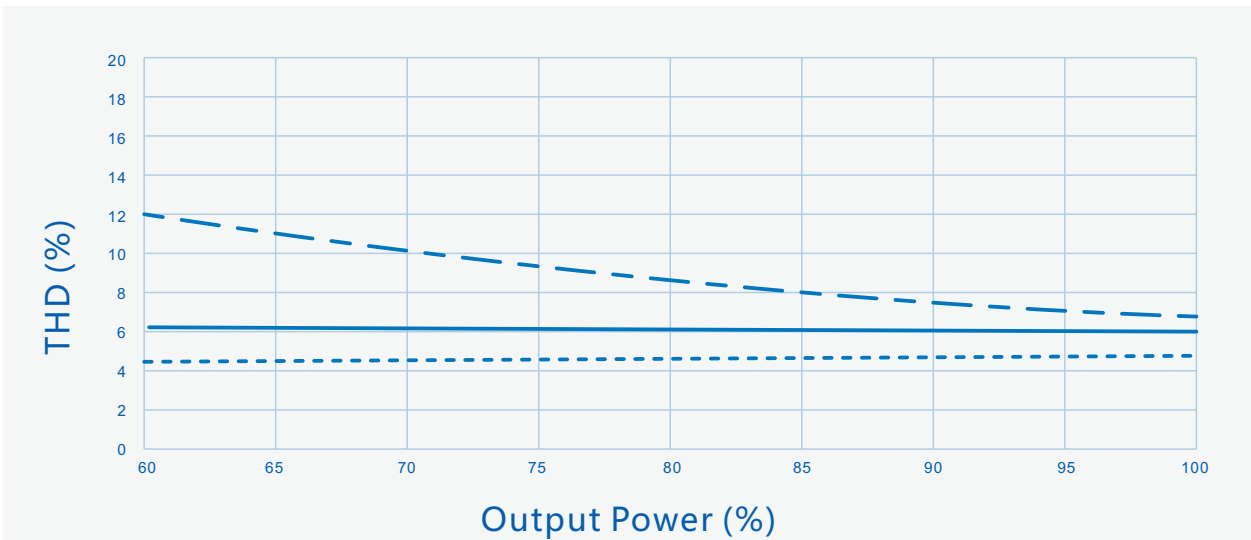
Performance Curves:

Power Factor Vs. O/P Power



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

THD Vs. O/P Power

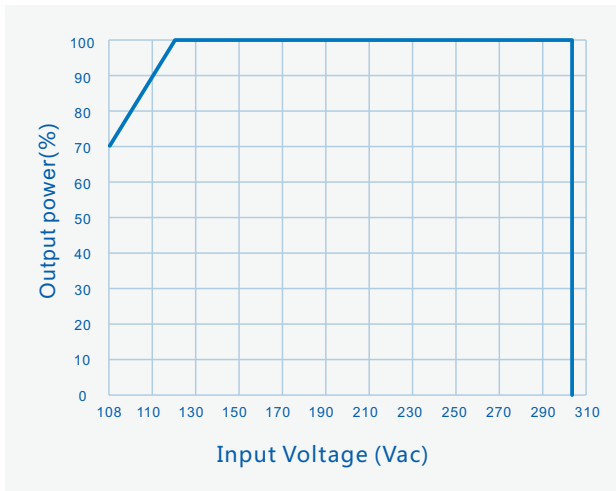


----- Vin=120Vac ————— Vin=220Vac - . - . Vin=277Vac

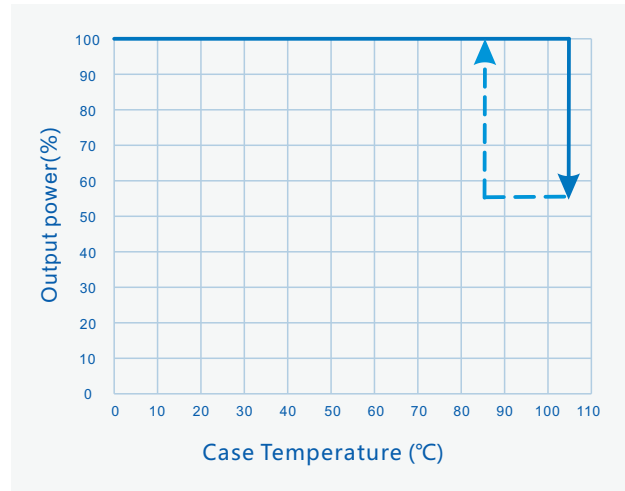
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Performance Curves:

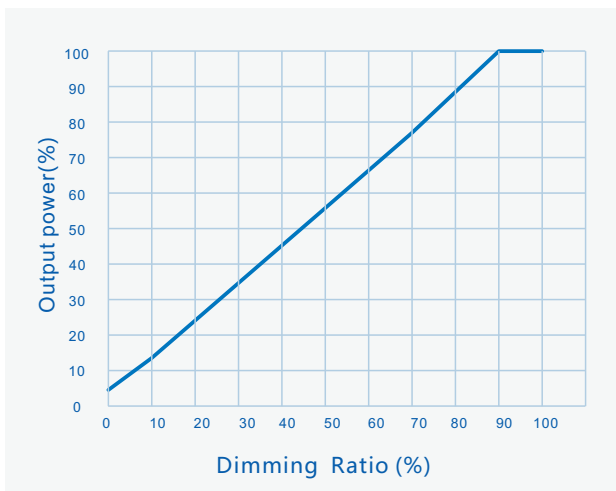
O/P Power Vs. Input Voltage
(Ta Max.60°C)



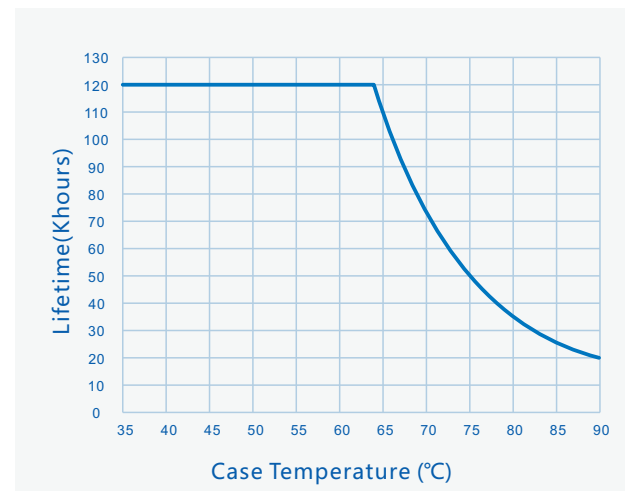
O/P Power Vs. Case Temperature



O/P Power Vs. Dimming

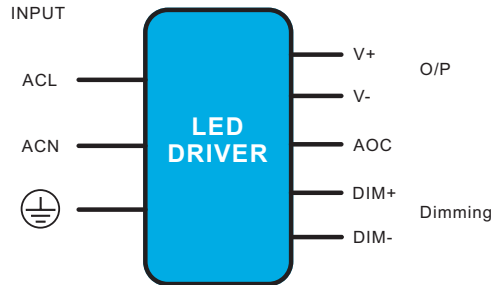


Lifetime Vs. Case Temperature



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Mechanical Characteristics



AC Input Cable(Exposed Length 300±10mm):

UL model: 1672,18AWG , O.D: 2.7mm,Black:L,White:N
1015,18AWG , O.D: 2.7mm,Green:⊕

DC O/P Cable(Exposed Length 300±10mm):

UL model: 1015,18AWG , O.D: 2.7mm,Red:V+ , Black:V-

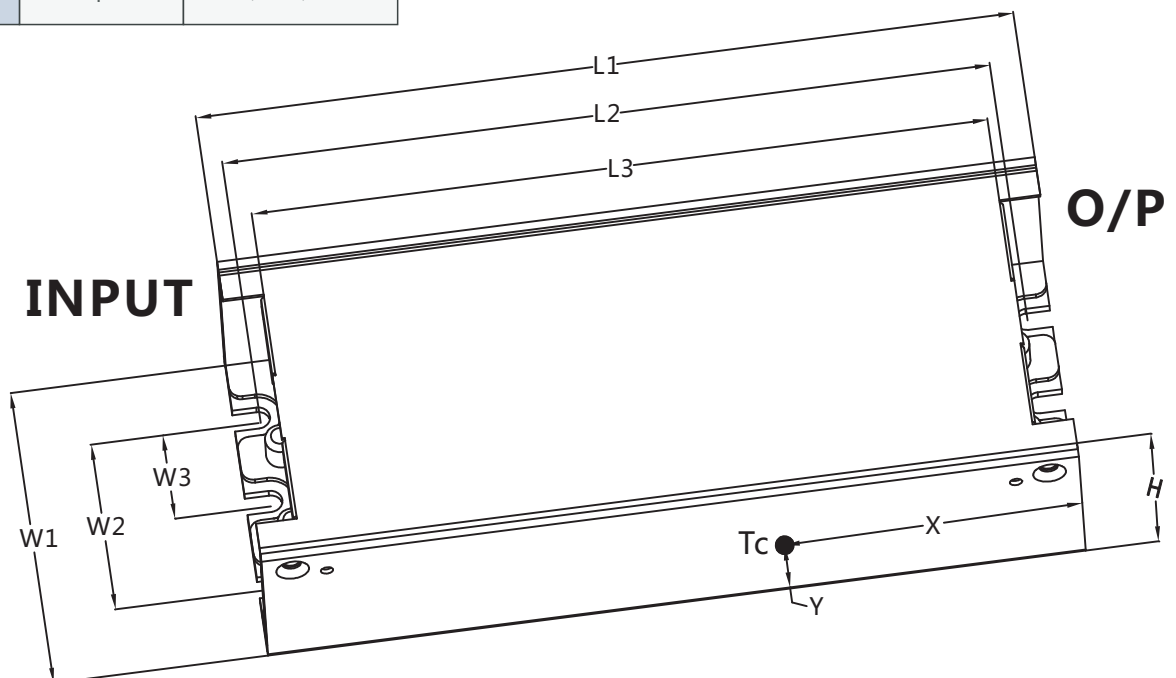
DIM Power Cable(Exposed Length 220±10mm):

UL model: 1015,18AWG,O.D: 2.7mm , Purple : DIM+, Gray: DIM-

| Name Description | Standard Code | mm(In.) |
|----------------------|---------------|-------------|
| Case Width | W1 | 63.5(2.5) |
| Case Height | H | 37(1.46) |
| Overall Length | L1 | 183 (7.20) |
| Mounting Hole Length | L2 | 175(6.89) |
| Case Length | L3 | 163.5(6.44) |
| Mounting Hole Width | W2 | 32(1.26) |
| Mounting Hole Width | W3 | 16(0.63) |
| TC point position | X | 67(2.64) |
| TC point position | Y | 19(0.75) |

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:
Tinned length of wire:10±1mm



SS-200EP-56B 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.
3. In order to meet the requirements of the power derating and the maximum ambient temperature of 60°, an auxiliary heat sink must be added to the SS-200EP. It is recommended that the heat sink has a heat dissipation area of 750cm² and volume of 225cm³. Thermal grease should be applied between led driver and the auxiliary heat sink to ensure the bottom of housing is in close contact with the heat sink.

Package

- Outside carton dimension: L×W×H =495mm×385mm×162mm;
- 20PCS/Carton;
- Net weight/Piece: 0.85kg;Gross weight/Carton: 18.5kg;
- 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 | 2020/06/18 | |
| V01 | Increase Default Current | 2020/10/10 | |
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