



SOSEN LED Driver, Your Smart Choice

Specifications

SS-150CNL Series LED Driver

Model: SS-150CNL-260*

Description: 150W LED Driver

Rev.: V03

Release Date: 2020-04-02

SS-150CNL Series LED Driver

SOSEN
LED DRIVER



LED DRIVER

CNL Series



Features:

- Efficiency up to 95%
- Isolated dimming:0-10V,PWM,Resistor
- Optional aux : 12V/0.2A
- IP65
- Protections: SCP/OTP/OVP/OPP
- Surge protection: L/N-PE: 4kV, L-N: 4kV
- Warranty: 5 years



IP65

Description :

SS-150CNL series is a 150W circular non-isolated constant current driver. This series of products is designed for LED lighting. It is specially designed for industrial and mining lamps, high pole lights. It has isolated dimming function. High efficiency, compact housing design, fully potted thermal silica to ensure heat dissipation and waterproof performance, high reliability, high cost performance and so on.

Model List:

| Model | AC Input Range | Max. Pout | Vout Range | Full Power Vo Range | Iout | THD(Typ.) | PF(Typ.) | Eff.(Typ.) | Max.Tc |
|----------------|----------------|-----------|------------|---------------------|------------|-----------|----------|------------|--------|
| SS-150CNL-260* | 90-305Vac | 150W | 180-260V | 240V-260V | 0.52-0.75A | 7% | 0.97 | 95% | 90°C |

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

2.“*”Optional B or space in the place of * means additional function.

- Space is the base model without any optional function;
- Suffix B for model with 3-in-1 dimming (1-10V, PWM, Resistor);
- Suffix BH for model with 3-in-1 dimming (0-10V, PWM, Resistor)+AUX.

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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 | | | 1.8A | 100Vac, Full load |
| Max Input Power | | | 180W | 100Vac, Full load |
| Max Inrush Current(120Vac) | | | 60A | Cold start |
| Max Inrush Current(220Vac) | | | 100A | Cold start |
| Max Inrush Current(277Vac) | | | 130A | Cold start |
| Standby Power | | | 0.5W | 220Vac/50Hz, Dimming off |
| Power Factor | 0.95 | 0.97 | | 220Vac/50Hz, Full load |
| | 0.90 | | | 100-277Vac/50Hz, 70%-100% load |
| THD | | 7% | 10% | 220Vac/50Hz, Full load |
| | | | 20% | 100-277Vac/50Hz,70%-100% load |

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Output Characteristics:

| Parameter | Min. | Typ. | Max. | Remark |
|-------------------------------|-----------|-------|-----------|--|
| Output Voltage Range | 180V | | 260V | |
| Rated Output Voltage | 200V | | 260V | $P_o=V_o \cdot I_o=150W$, Full load |
| Rated Output Current | 0.57A | | 0.75A | 0.75A for 200V, 0.57A for 260V |
| Current Adjustable Range(AOC) | 0.52A | | 0.75A | |
| No Load Voltage | | | 310V | |
| Efficiency @120Vac | 90.0% | 92.0% | | Output 260V/0.57A |
| Efficiency @220Vac | 93.0% | 95.0% | | Output 260V/0.57A |
| Efficiency @277Vac | 93.0% | 95.0% | | Output 260V/0.57A |
| Output Current Tolerance | -5% | | +5% | |
| Output Current Ripple(PK-AV) | | 5% | 10% | |
| Start-up Current Overshoot | | | 10% | Full load |
| Start-up Time | | | 1.0S | 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, Decreases output current, returning to normal after over temperature is removed. |
| Short Circuit Protection | | | 10W | Driver will not be damaged, Hiccup mode |

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Other Characteristics:

| Parameter | | Min. | Typ. | Max. | Remark |
|-----------------------------|---------------|-----------------|------|---|--------|
| Aux Power | 12V | 10.8V | 12V | 13.2V | |
| | 12V | | | 200mA | |
| 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 | | 100Kohm | |
| | Dim Range | 10%Iomax | | 100%Ioset | |
| Dim to Off (Optional) | Dim-off | 0.5V | 0.7V | 0.9V | |
| | Dim Turn on | 0.7V | 0.9V | 1.0V | |
| Lifetime(Tc≤72°C) | | ≥62,000 hours | | 80% load,220Vac | |
| MTBF | | 200,000 hours | | 220Vac,Full load, Ta=25°C (MIL-HDBK-217F) | |
| IP Grade | | IP65 | | | |
| Tc | | 90°C | | | |
| Warranty | | 5 years | | Refer to life time drawing | |
| Net Weight | | 920g | | | |
| Dimension | | Φ130.2mm*61.8mm | | D x H | |

NOTE: All the parameters above are tested Ta 25°C, 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 | +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 | ✓ | |
| TUV | EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013 EN62493:2015 | ✓ | |
| RCM | AS/NZS61347.2.13 | ✓ | |
| BIS | IS15885:2012 Part 2 Sec 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 | Difference mode 4kV, Common mode 4kV,Criterion B |
| Ring Wave | IEC/EN 61000-4-12 | Difference mode 4kV, Common mode 4kV,Criterion B |

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Safety Test Items:

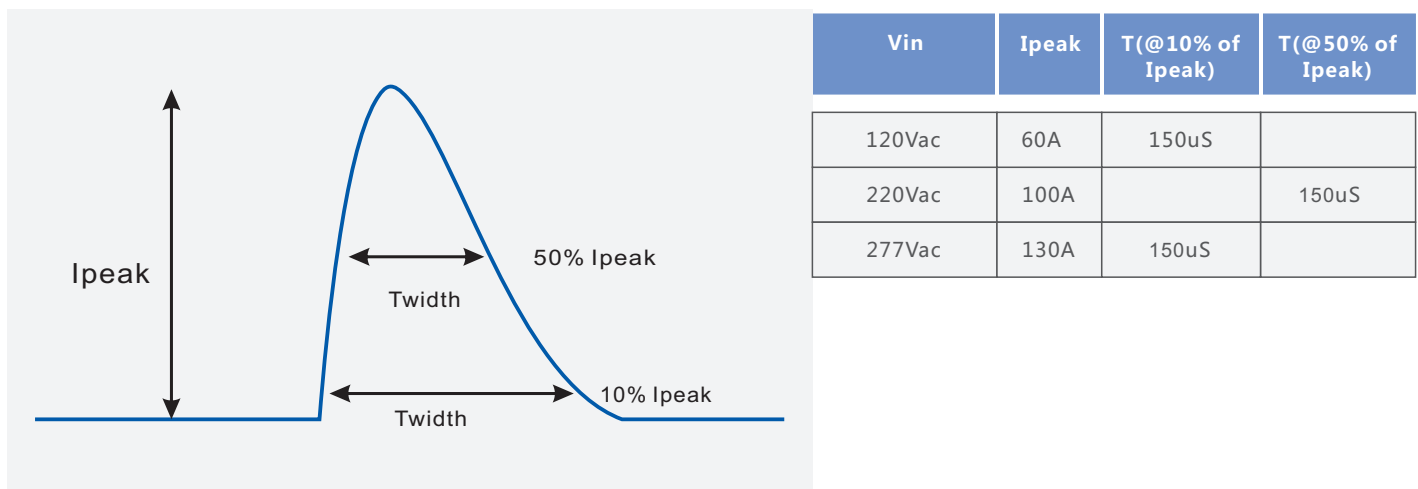
| Safety test items | Technical Indicators | | | Remark |
|-------------------------|----------------------------|-----------------------------|-----------------------------|--------------------------------|
| Insulation Requirements | UL Insulation Requirements | TUV Insulation Requirements | CCC Insulation Requirements | |
| Input-Case | 1600Vac | 1500Vac | 1875Vac | Basic insulation |
| Input-Dim | 1600Vac | 3000Vac | 3750Vac | Reinforced insulation |
| Output-Dim | 1600Vac | 3000Vac | 3750Vac | Reinforced insulation |
| Dim-Case | 500Vac | 500Vac | 500Vac | |
| Insulation Resistance | $\geq 10M\Omega$ | | | Input-Dim, Test voltage:500Vdc |
| Ground Resistance | $\leq 0.1\Omega$ | | | 25A/1min |
| Leak Current | $\leq 0.75mA$ | | | 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:

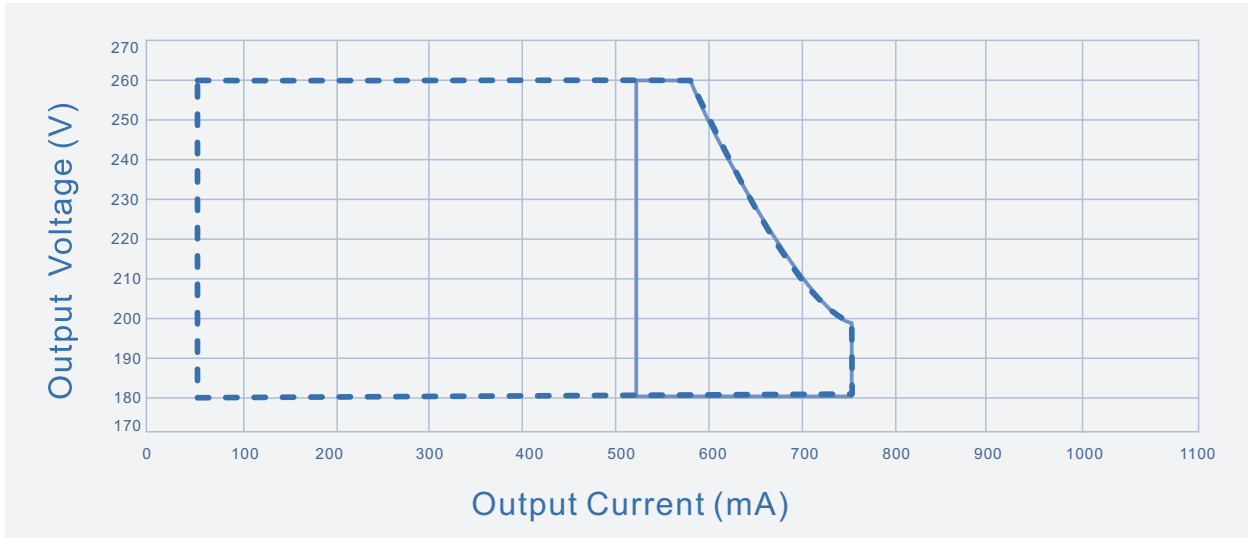
Input Inrush Current



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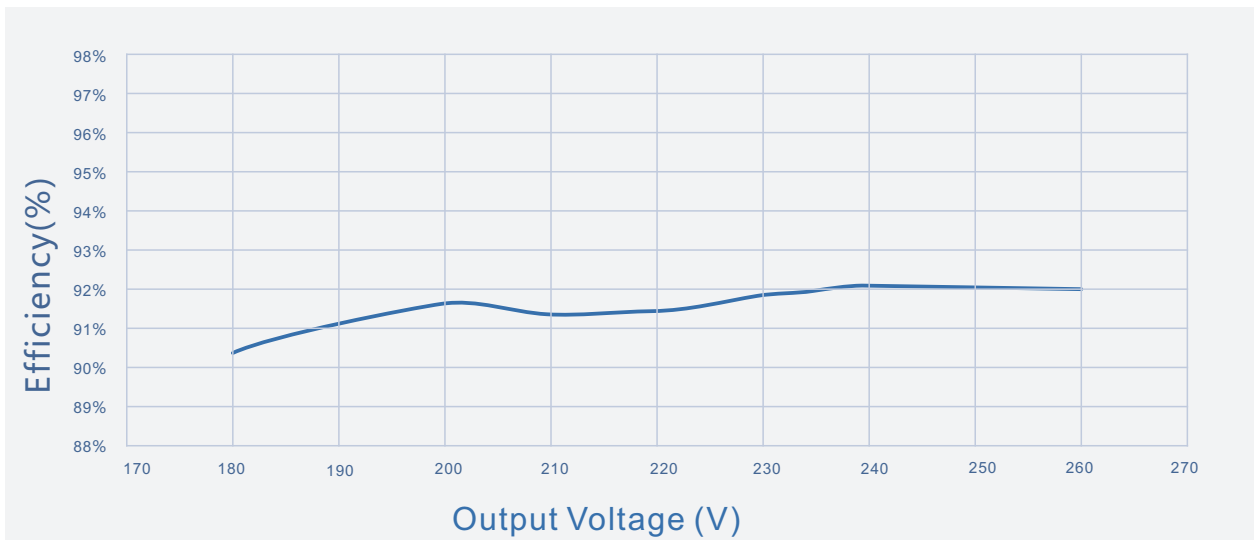
Performance Curves:

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



----- Dimming Window ————— AOC Window

Efficiency Vs. Output Voltage (Vin=120Vac)

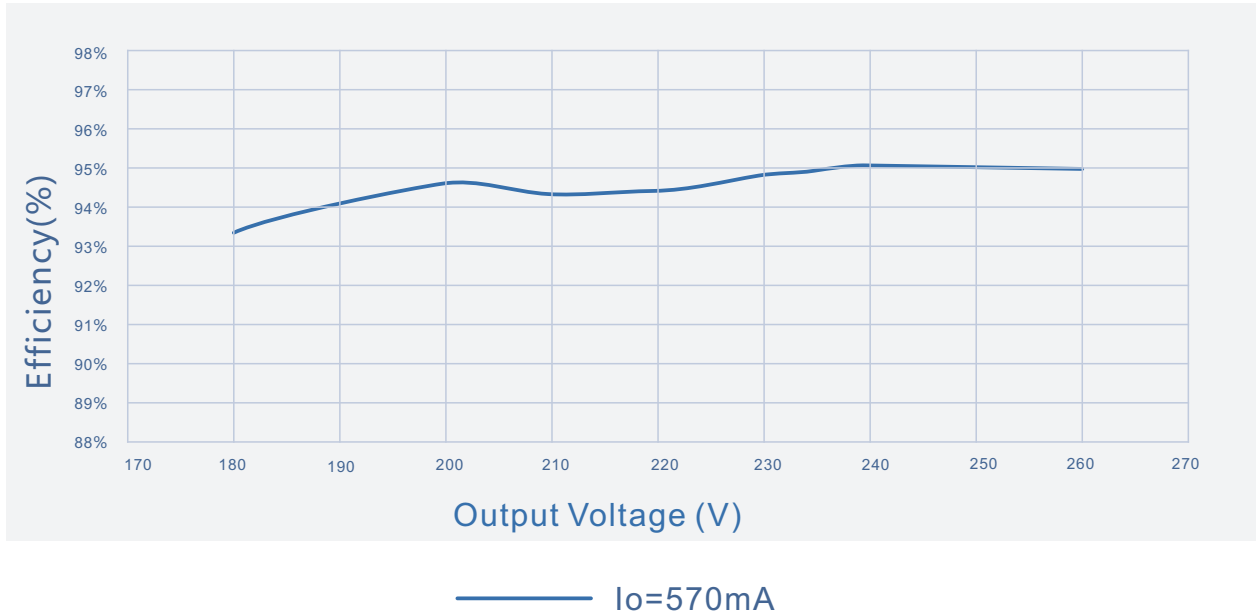


————— Io=570mA

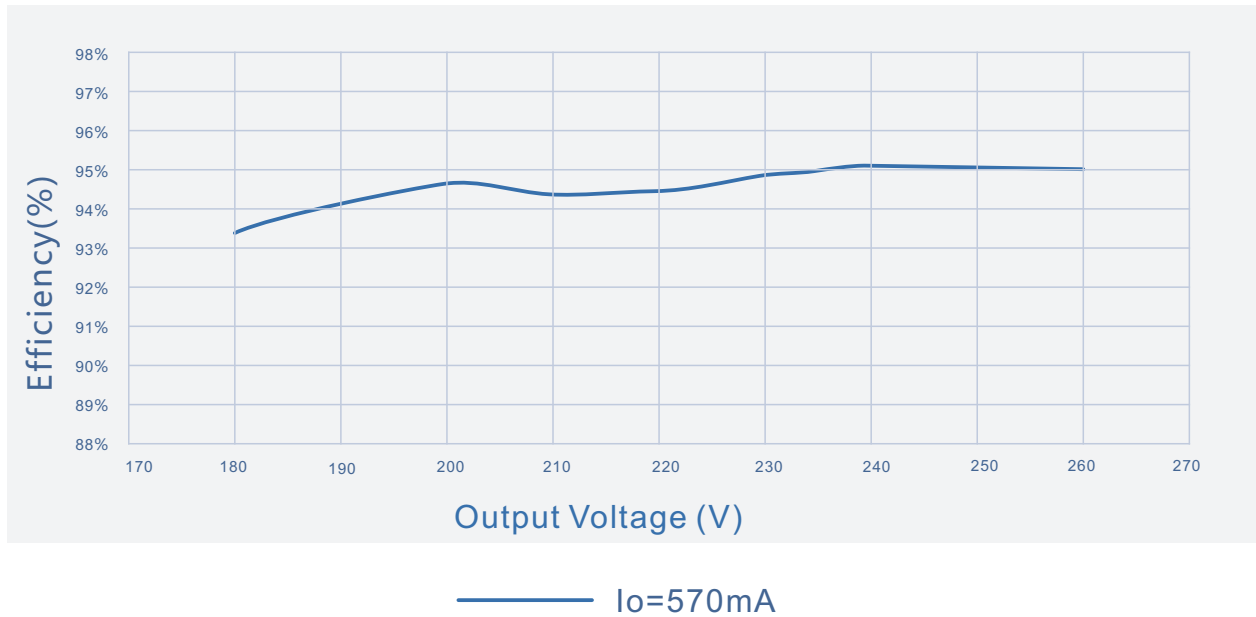
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Performance Curves:

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



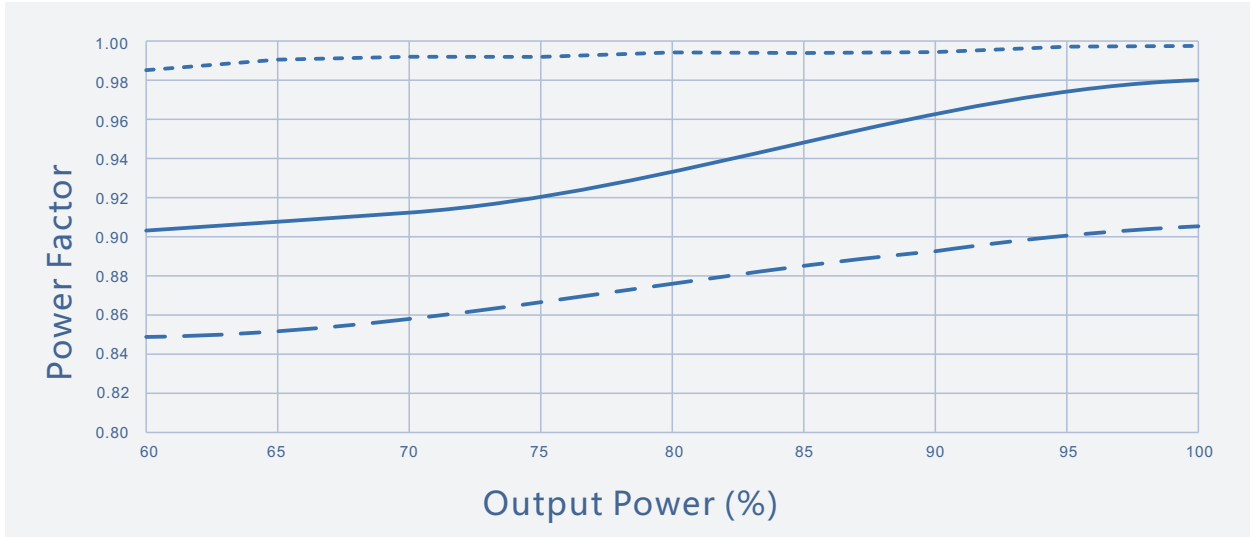
Efficiency Vs. Output Voltage ($V_{in}=277V_{ac}$)



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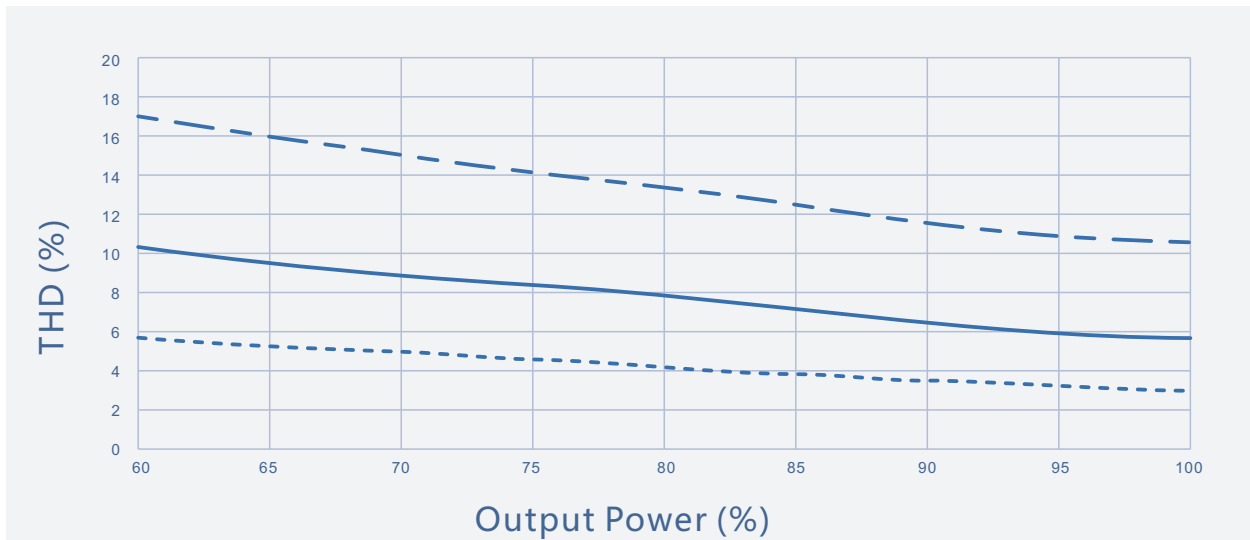
Performance Curves:

Power Factor Vs. Output Power



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

THD Vs. Output Power

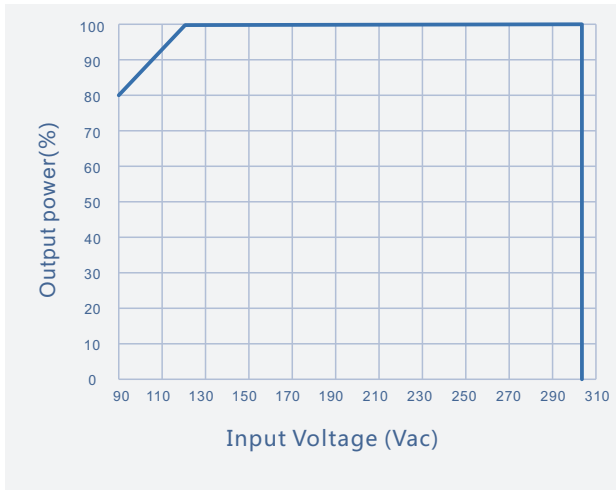


----- Vin=120Vac ——— Vin=220Vac - · - · Vin=277Vac

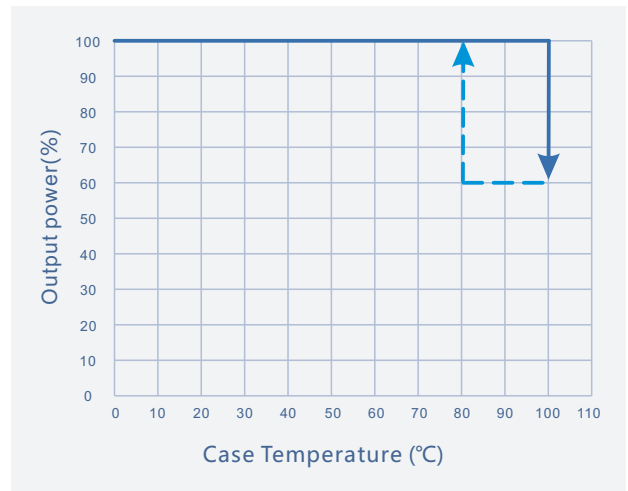
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Performance Curves:

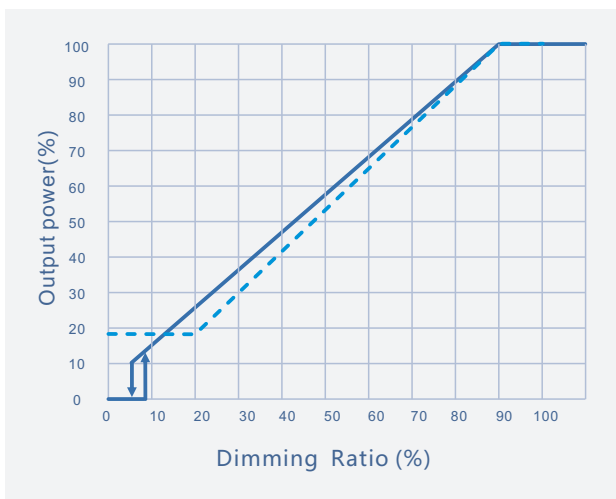
Output power Vs. Input Voltage (Ta Max.60°C)



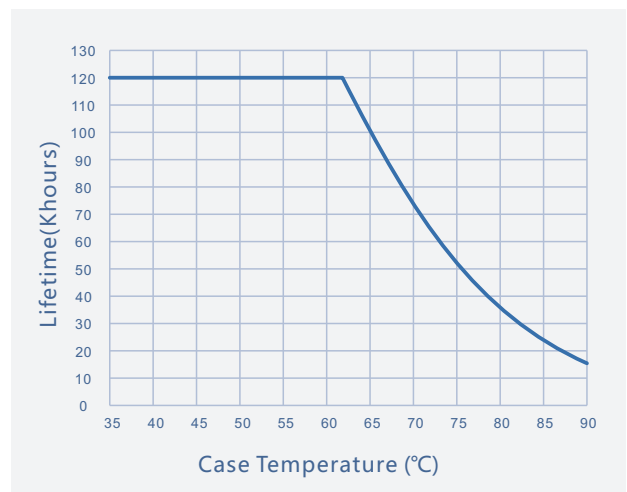
Output power Vs. Case Temperature



Output Power Vs. Dimming



Lifetime Vs. Case Temperature



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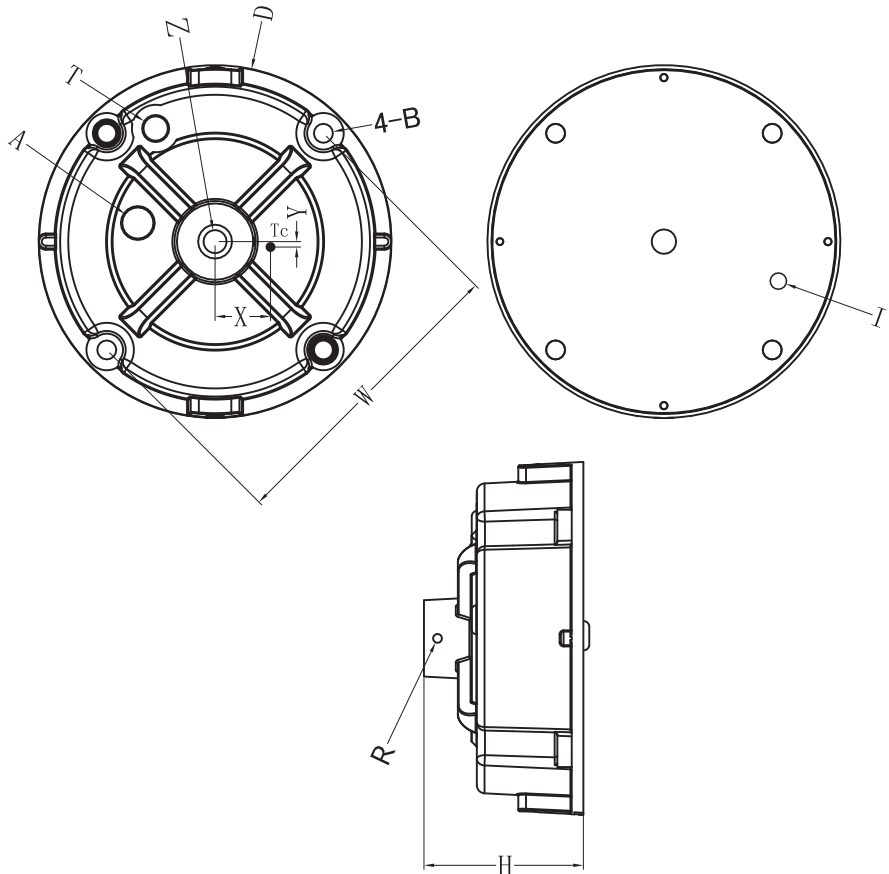
Mechanical characteristics(Unit: mm)

AC Input Cable(Lead Length outside enclosure 300±10mm):
 UL model: SJTW,3*0.824mm²,O.D: 7.8mm,Black:L,White:N,Green:⊕
 Euro model: H05RN-F,3*1.0mm², O.D:7.4mm,Brown:L, Blue:N, Yellow/Green:⊕

DC Output Cable(Lead Length outside enclosure 300±10mm):
 UL model: SJTW,2*0.824mm²,O.D: 7.6mm,Red:V+ , Black:V-
 Euro model: H05RN-F,2*1.0mm², O.D:7.0mm, Brown:V+, Blue:V-

DIM Power Cable(Lead Length outside enclosure 220±10mm):
 UL/Euro model(BH Type): UL 21996#22AWG , O.D: 6.0mm , Purple: DIM+ , Gray: DIM- , Pink: Vaux+
 UL/Euro model(B Type): UL 2733#22AWG , O.D: 6.0mm , Purple: DIM+ , Gray: DIM-

| Name Description | Standard code | mm(In.) |
|----------------------|---------------|---|
| Input line hole | A | 11.5(0.45) |
| Fixed Screw Diameter | 4-B | Φ7.0(0.28) |
| Case Diameter | D | Φ132(5.2) |
| Height | H | 61.8(2.43) |
| ADJ Hole | I | ADJ./IO |
| Ring Hole | Z | M10*1.5(Depth 18mm) G1/2(Depth 17mm) |
| Ring Fixed Hole | R | M4*0.7 |
| Dim cable hole | T | Optional |
| Fixed Size | W | 113(4.45) |
| TC point position | X | 20.4(0.8) |
| TC point position | Y | 2.0(0.08) |



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Installation Tips

1. Highly recommended to seal the adjustable hole with silicon glue(#704 preferred) after adjusting the driver's output current. Torsion with proper strength to avoid permanent damage to the potentiometer inside.
2. Dimming leads should be capped if not in use to avoid dimming circuit damage caused by external signals.
3. Voltage resistance of LED lamp beads and aluminum substrates should be >3KV.
4. Creepage distance of the aluminum substrate trace safety is >5mm.
5. LED+ and LED-climbing distance on the aluminum substrate is >1.8mm.
6. Minimize the copper area on the aluminum substrate, reduce the junction capacitance, and reduce the leakage current.
7. LED lamp bead arrangement is recommended first and then string.

Package

- Outside carton dimension: L×W×H =500mm×390mm×170mm;
- 10PCS/Carton;
- Net weight/PC: 0.92kg;Gross weight/Carton: 10.2kg;
- 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 | 2019/07/22 | |
| V01 | Update installation tips | 2019/09/18 | |
| V02 | Add auxiliary source | 2019/11/06 | |
| V03 | Update Structure Dimension Characteristics | 2020/04/02 | |
| | | | |

