

SOSEN LED Driver, Your Smart Choice

Specifications

SS-240CNL-E(64) Series LED Driver

Model: SS-240CNL-E260*

Description: 240W LED Driver

Rev.: V05

Release Date: 2023-11-15

SS-240CNL-E(64) Series LED Driver

SOSEN
LED DRIVER



LED DRIVER

CNL-E(64) Series



Features:

- Efficiency up to 96%
- Isolated dimming: DALI-2, 0-10V, PWM, Resistor
- Optional aux : 12V/0.2A
- Dim to off
- Protections: SCP/OTP/OVP
- IP65
- Surge protection: CM: 6kV, DM: 6kV
- Warranty: 5 years



IP65 RoHS

Description:

SS-240CNL-E(64) Series are 240W round non-isolated constant current LED Driver. It is specially designed for commercial lightings with isolation dimming function. 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:

High bay lighting, High pole 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-240CNL-E260* | 90-305Vac | 240W | 180-260V | 200V-260V | 0.84-1.2A | 1.2A | 7% | 0.97 | 95.5% | 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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“★” Means Additional Function

| “★” | DALI (suffix:D) | AUX 12V (suffix:H) | Dimming off 0-10V/PWM/Resistor | 1-10V/PWM /Resistor (suffix:B) | Remark |
|-----------|--------------------|-----------------------|-----------------------------------|-----------------------------------|--------|
| No Suffix | | | | | |
| B | | | | ✓ | |
| BH | | ✓ | ✓ | | |
| D | ✓ | | | | |

Input Characteristics:

| Parameter | Min. | Typ. | Max. | Remark |
|----------------------------|--------|---------|--------|--|
| Rated AC Input Range | 120Vac | | 277Vac | |
| AC Input Range | 90Vac | | 305Vac | Reference derating curve |
| Input Frequency Range | 47Hz | 50/60Hz | 63Hz | |
| Max Input Current | | | 2.4A | 120Vac, Full load |
| Max Input Power | | | 288W | 120Vac, 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, Dim to off, For BH model |
| Power Factor | 0.95 | 0.97 | | 220Vac/50Hz, Full load |
| | 0.90 | | | 120-277Vac/50Hz, 70%-100% load |
| THD | | 7% | 12% | 220Vac/50Hz, Full load |
| | | | 20% | 120-277Vac/50Hz, 70%-100% load |

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Output Characteristics:

| Parameter | Min. | Typ. | Max. | Remark |
|------------------------------|-----------|-------|-----------|--|
| Output Voltage Range | 180V | | 260V | Power Derated @180-200V |
| Rated Output Voltage | 200V | | 260V | $P_o = V_o \cdot I_o = 240W$, Full load |
| Rated Output Current | 0.92A | | 1.2A | 1.2A for 200V, 0.92A for 260V |
| Adj. O/P Current (AOC) Range | 0.84A | | 1.2A | |
| No Load Voltage | | | 310V | |
| Efficiency @120Vac | 90.0% | 92.0% | | Output 260V/0.92A |
| Efficiency @220Vac | 93.5% | 95.5% | | Output 260V/0.92A |
| Efficiency @277Vac | 94.0% | 96.0% | | Output 260V/0.92A |
| 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 |
| | | | 0.75S | 220Vac, Full load, DALI-2 |
| Line Regulation | -2.5% | | +2.5% | Full load |
| Load Regulation | -3% | | +3% | |
| 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 | | | | Driver will not be damaged |
| | | | | Driver will not be damaged, Shut down for DALI-2 |

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Other Characteristics:

| Parameter | | Min. | Typ. | Max. | Remark |
|-----------------------------|---------------|---------------|------|-----------|--|
| Aux Power (Optional) | O/P Voltage | 10.8V | 12V | 13.8V | |
| | O/P Current | | | 200mA | |
| 0-10V Dimming (Optional) | Dim Vmax | 0V | | 12V | DIM+ source current 100uA. |
| | Dim Range | 10%Iomax | | 100%Ioset | Dimming prohibits reverse connection |
| | Rec.Dim Range | 0V | | 10V | |
| PWM Dimming (Optional) | PWM High | 9.8V | | 10.2V | DIM+ source current 100uA. |
| | PWM Low | 0V | | 0.3V | Dimming prohibits reverse connection |
| | Frequency | 1KHz | | 2KHz | |
| | PWM Duty | 0% | | 100% | |
| Resistor Dimming (Optional) | Resistance | 0Kohm | | 100Kohm | DIM+ source current 100uA. |
| | Dim Range | 10%Iomax | | 100%Ioset | |
| Dim to Off (BH Type) | Dim off | 0.7V | 0.8V | 0.95V | Afterglow(Standard) |
| | Dim on | 0.95V | 1.1V | 1.2V | Without afterglow(Optional) |
| DALI Dimming Level | | 1-170(10%) | | 254(100%) | Logarithmic dimming curve |
| DALI Dimming(Optional) | | Meet DALI-2 | | | |
| Lifetime(Tc≤85°C) | | ≥50,000 hours | | | |
| MTBF | | 198,000 hours | | | 220Vac, Full load, Ta=25°C (MIL-HDBK-217F) |
| IP Grade | | IP65 | | | |
| Tc | | 90°C | | | |
| Warranty | | 5 years | | | Tc: 85°C |
| Net Weight | | 735g | | | |
| Dimension | | Φ128mm*62.5mm | | | D x 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 EN61347-1:2015 EN62493:2015 | ✓ | |
| UKCA | EN 61347-1:2015+A1:2021 EN 61347-2-13:2014+A1:2017 EN 62493:2015 BS EN 61347-1:2015+A1:2021 BS EN 61347-2-13:2014+A1:2017 BS EN 62493:2015 | ✓ | |
| EAC | EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013 TP TC 004/2011 TP TC 020/2011 | ✓ | |
| 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 | EN IEC 55015:2019+A11:2020 | |
| Radiation Emission | EN IEC 55015:2019+A11:2020 | |
| Harmonic Current Emissions | IEC/EN 61000-3-2:2019+A1:2021 | Class C |
| Surge | IEC/EN 61000-4-5 | DM: 6kV,CM: 6kV,Criterion B |
| | ANSI/C82.77-5-2017 | DM: 6kV,CM: 6kV,Criterion B ^① |
| Ring Wave | IEC/EN 61000-4-12;ANSI/C82.77-5-2017 | DM: 6kV,CM: 6kV,Criterion B |

Note: ① ANSI/C82.77-5-2017 surge standard is optional.

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Safety Test Items:

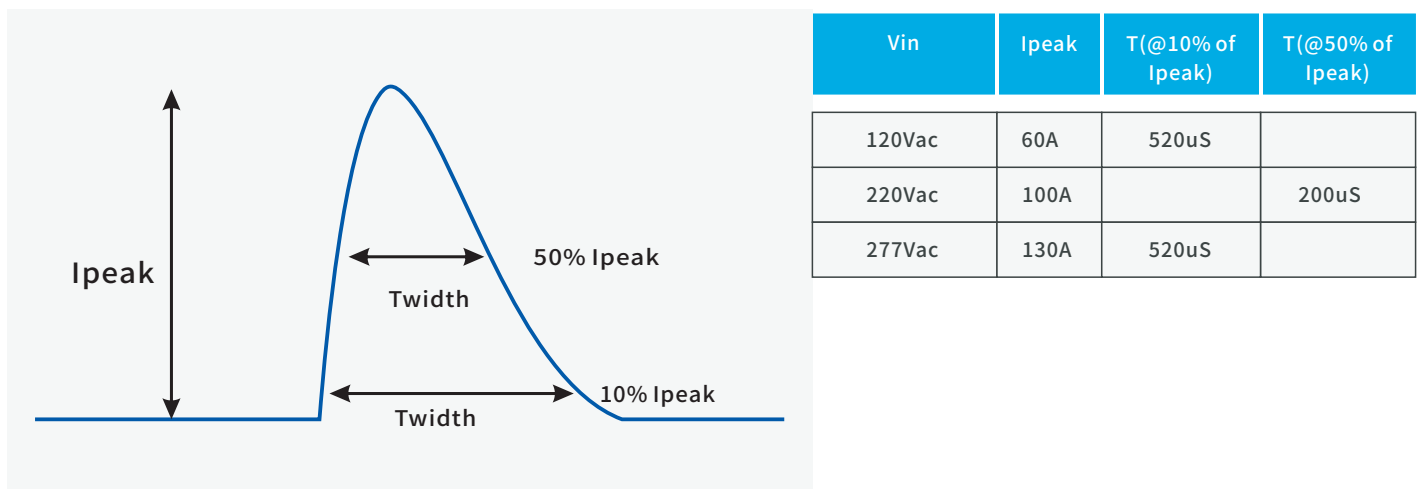
| Safety test items | Technical Indicators | | | Remark |
|-------------------------|----------------------------|-----------------------------|-----------------------------|---------------------------------|
| Insulation Requirements | UL Insulation Requirements | TUV Insulation Requirements | CCC Insulation Requirements | |
| Input-Case | 1600Vac | 1500Vac | 1875Vac | Basic insulation |
| Input-Dim | 1600Vac | 3000Vac | 3750Vac | Reinforced insulation |
| O/P-Dim | 1600Vac | 3000Vac | 3750Vac | Reinforced insulation |
| Dim-Case | 500Vac | 500Vac | 500Vac | Basic insulation |
| Insulation Resistance | $\geq 10M\Omega$ | | | Input-Dim, Test voltage: 500Vdc |
| Ground Resistance | $\leq 0.1\Omega$ | | | 25A/1min |
| Leakage Current | $\leq 0.75mA$ | | | 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 Vaux+ and Vaux-) when Hi-pot test.
3. During the HI-POT, the built-in GDT and the ground connection terminal wire shall be disconnected.

Performance Curves:

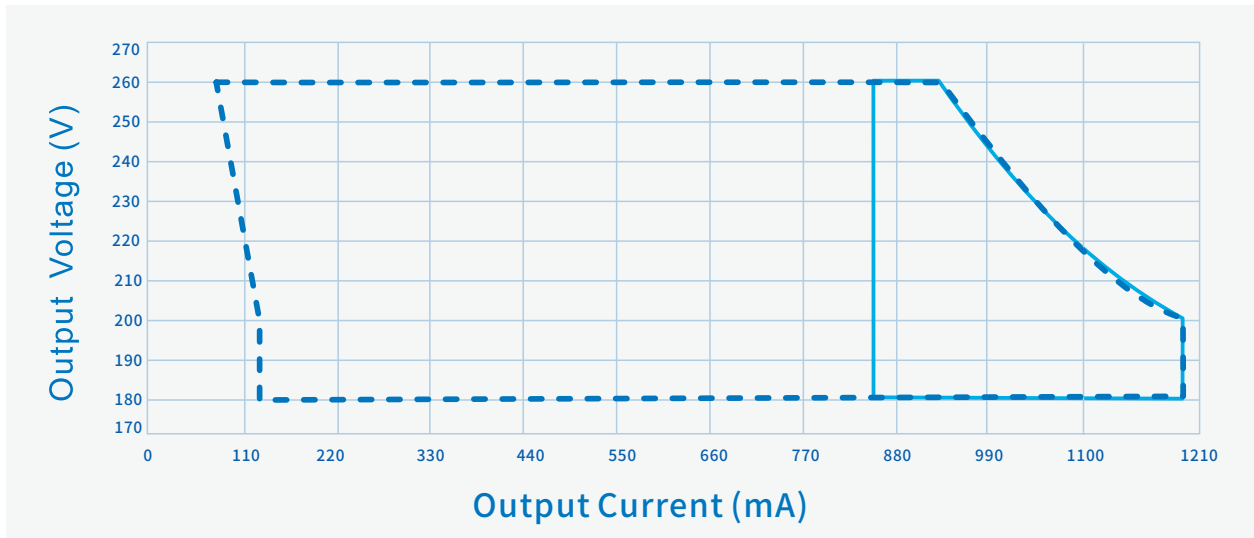
Input Inrush Current



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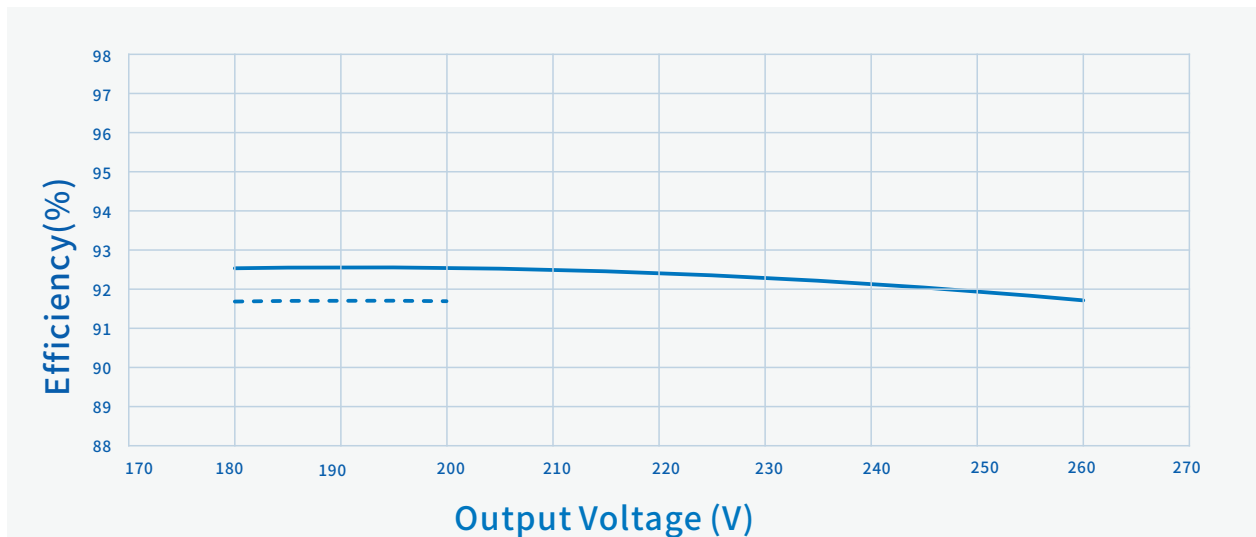
Performance Curves:

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



----- Dimming Window ————— AOC Window

Efficiency Vs. Output Voltage (Vin=120Vac)

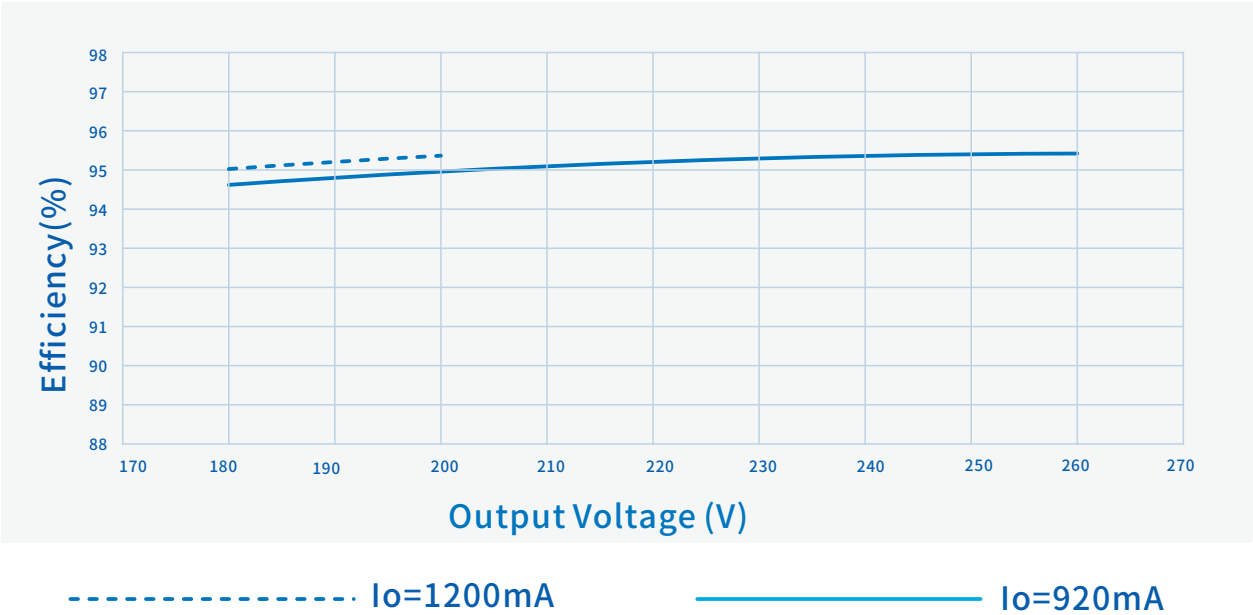


----- Io=1200mA ————— Io=920mA

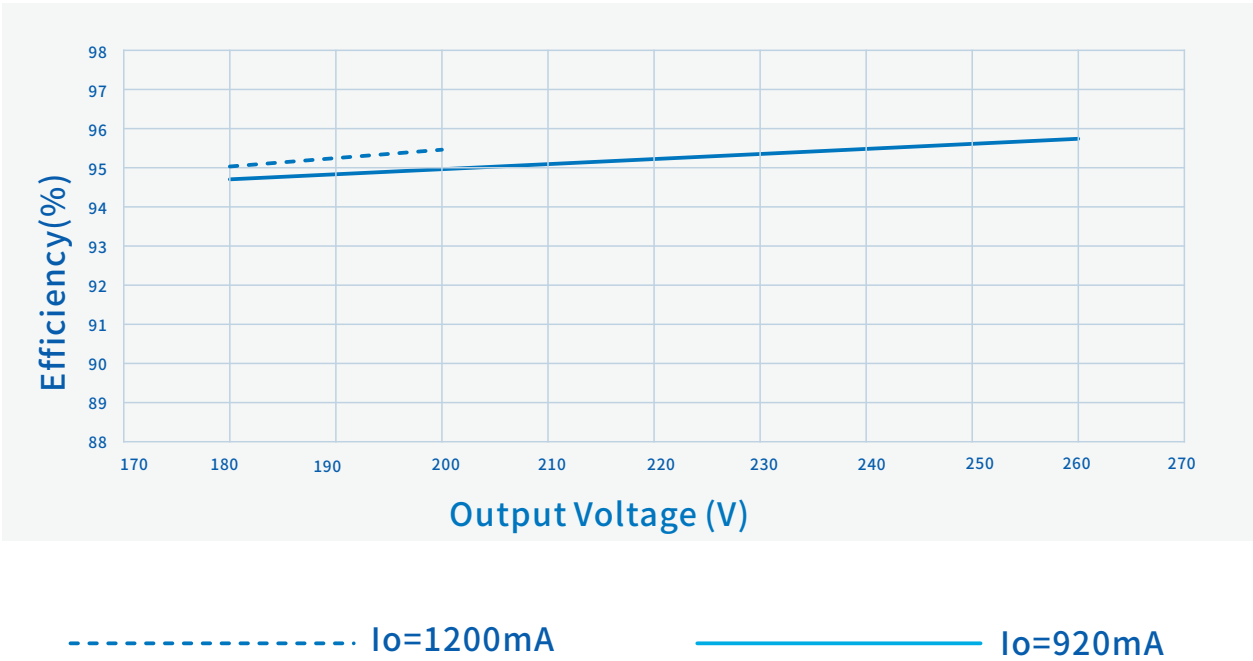
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Performance Curves:

Efficiency Vs. Output Voltage (Vin=220Vac)



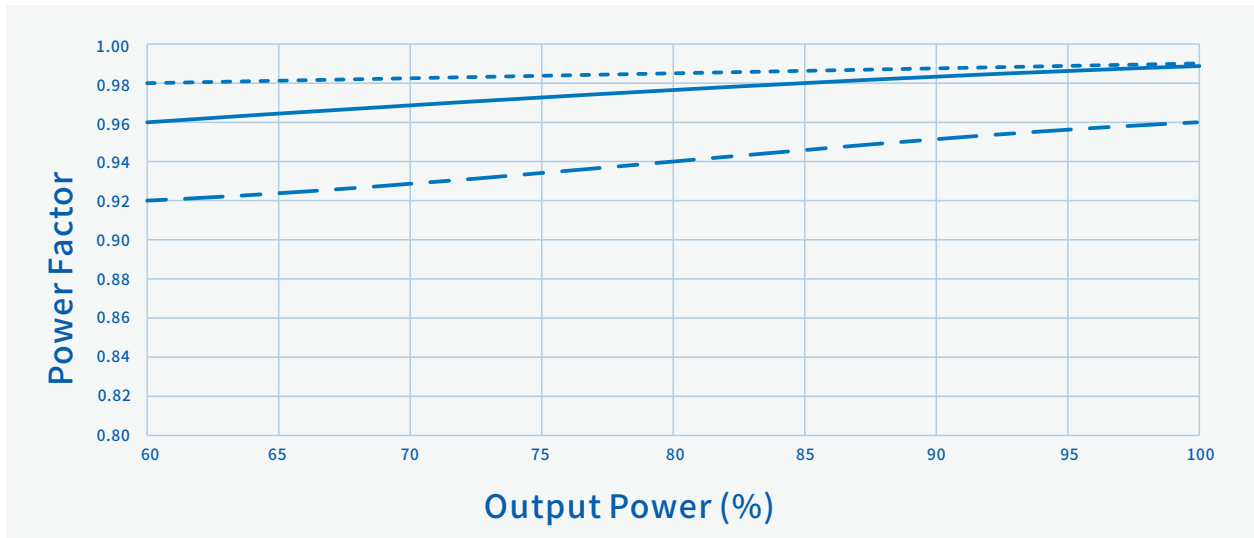
Efficiency Vs. Output Voltage (Vin=277Vac)



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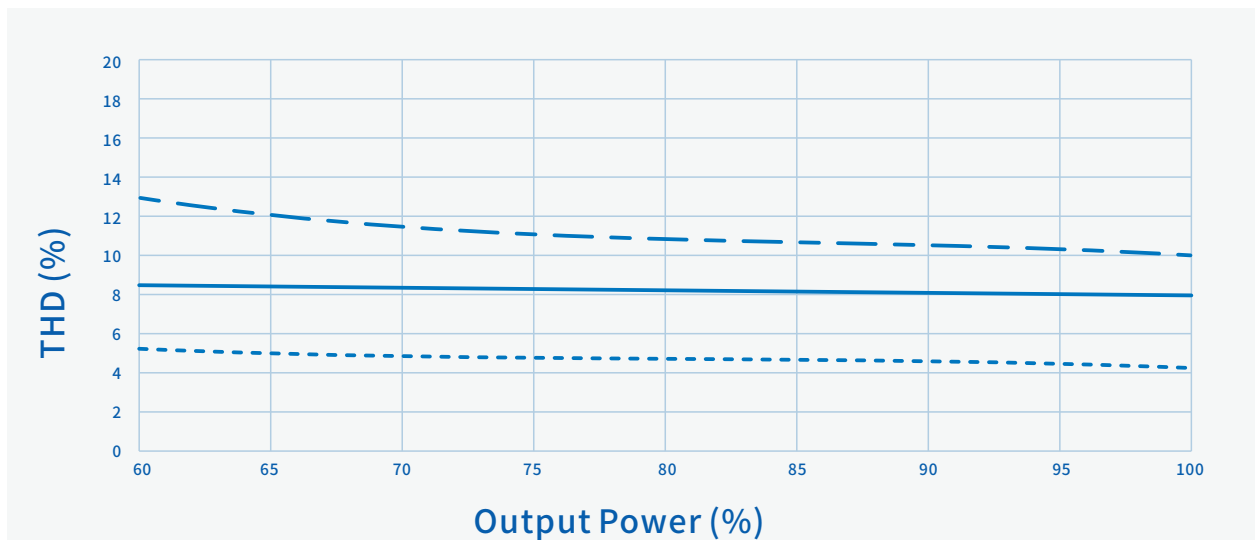
Performance Curves:

Power Factor Vs. Output Power



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

THD Vs. Output Power

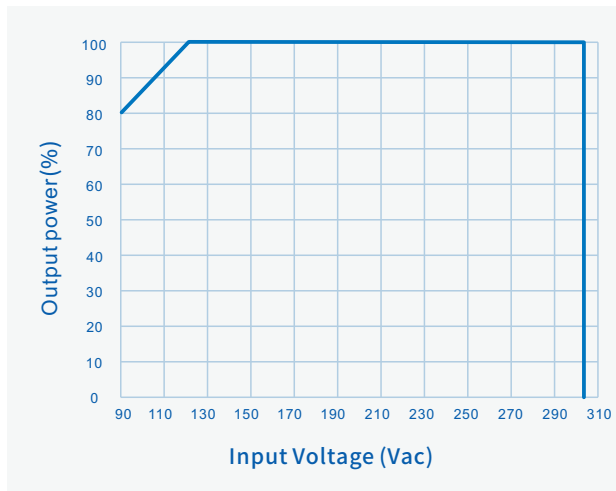


----- Vin=120Vac ————— Vin=220Vac - . - . Vin=277Vac

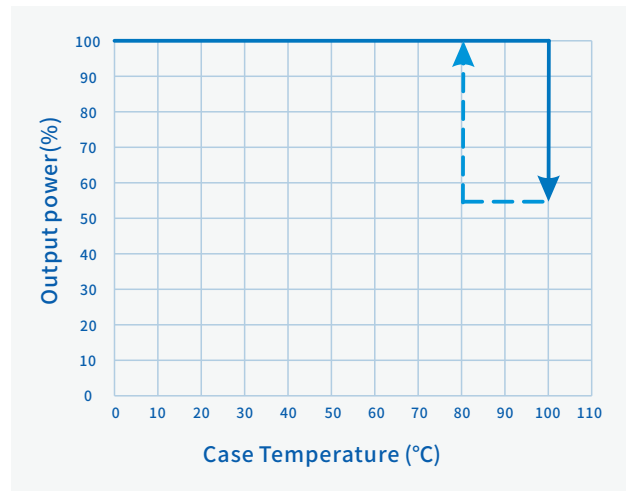
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Performance Curves:

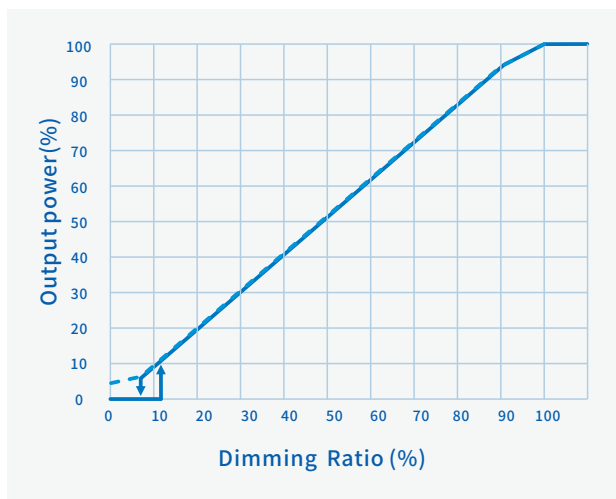
Output power Vs. Input Voltage



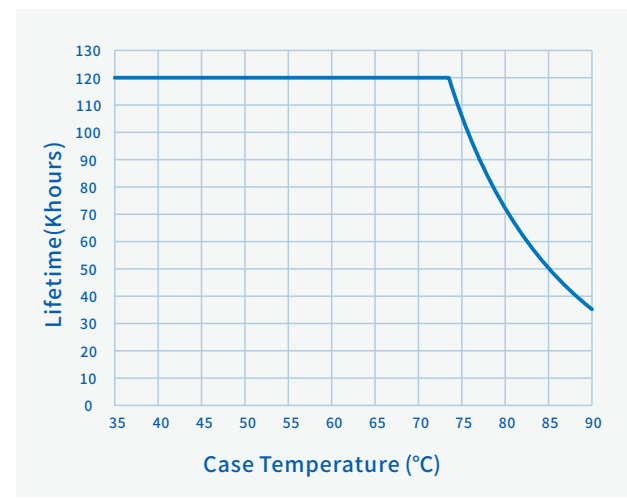
Output power Vs. Case Temperature



Output Power Vs. Dimming



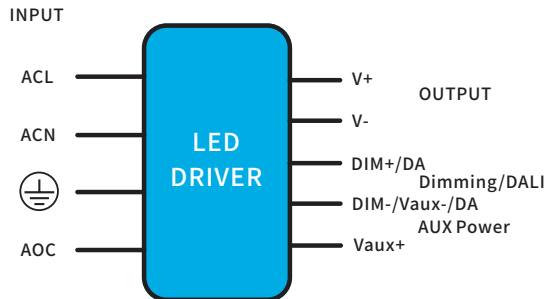
Lifetime Vs. Case Temperature



—— BH Type - - - - - B Type

SS-240CNL-E(64) Series LED Driver

Mechanical Characteristics:



AC Input Cable(Exposed Length $300\pm 10\text{mm}$):

Global model: SJOW,3*17AWG ,O.D:8.0mm,Brown:ACL, Blue:ACN,Yellow/Green: ⏏

DC Output Cable(Exposed Length $300\pm 10\text{mm}$):

Global model: SJOW,2*17AWG ,O.D:7.7mm, Brown:V+, Blue:V-

DIM/DALI/AUX Cable(Exposed Length $220\pm 10\text{mm}$):

UL/EU/Global Model:

UL 21996 3*22AWG ,O.D: 4.9mm, Purple: DIM+, Pink: DIM-/Vaux-,

Black/White: Vaux+

UL 21996 2*22AWG ,O.D: 4.7mm, Purple: DIM+, Pink: DIM-

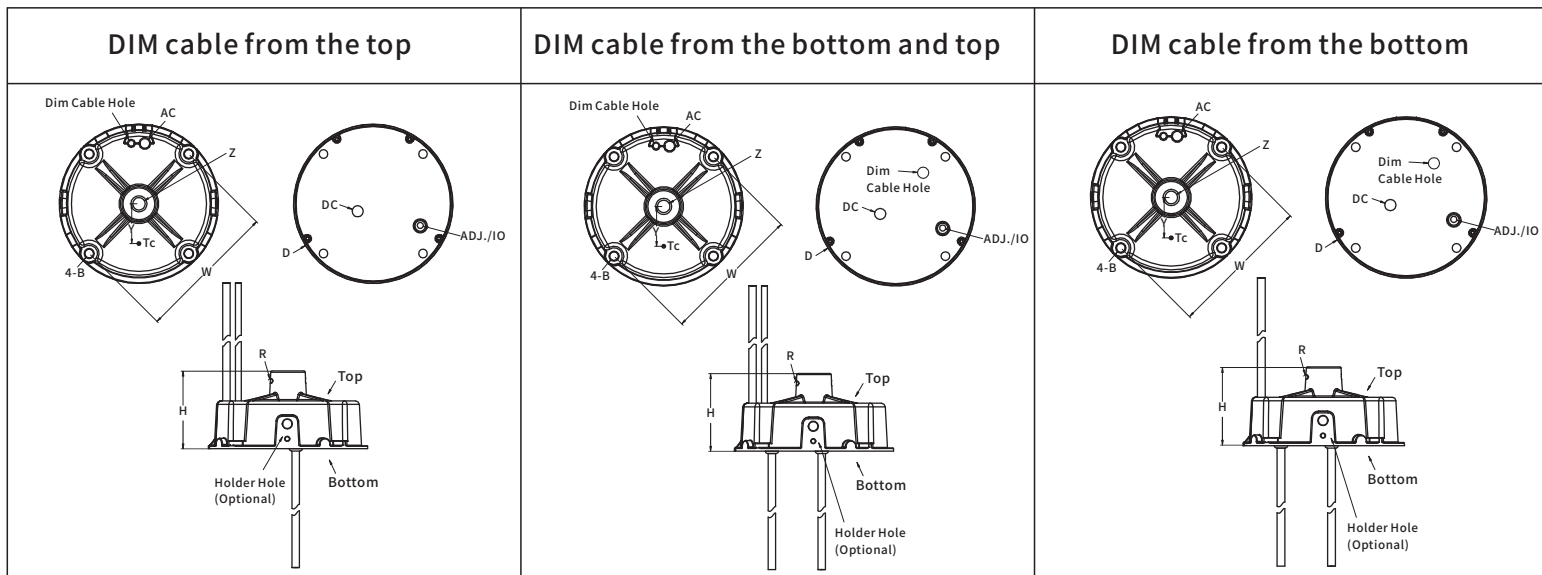
UL 21996 2*22AWG ,O.D: 4.7mm, Purple: DA, Pink: DA

| Name Description | Standard code | mm(In.) |
|-------------------------|------------------|---|
| Fixed Screw Diameter | 4-B | $\Phi 7.0(0.28)$ |
| Case Diameter | D | $\Phi 128(5.04)$ |
| Height | H | 62.5(2.46) |
| Ring Hole | Z | M10*1.5(Depth 18mm) G1/2(Depth 18mm) |
| Ring Fixed Hole | R | M4*0.7 |
| Fixed Size | W | 113(4.45) |
| TC Point Position | Y | 32(1.26) |

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: $43\pm 5\text{mm}$, Tinned length of wire: $10\pm 2\text{mm}$



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Assembly Tips

1. Highly recommended to seal the adjustable hole with silicon glue(#704 preferred) after adjusting the Driver's output current. Avoid permanent damage to adjust the potentiometer with suitable strength.
2. Dimming or AUX Power tinned connectors should be capped if not used to avoid dimming or AUX Power parts damage from external signals.
3. Safety space between aluminum base and LED coppers >5mm.
4. Safety space/coppers between LED+ and LED- >1.8mm.
5. Minimize the copper area on the aluminum PCB to reduce parasitic capacitance and leakage current.
6. It is recommended to design LED beads in parallel first and then in series.
7. The insulation level of LED light panels should meet the reliability design requirements.
8. For other precautions, please refer to the "LED Driver User Manual" .

Package

- Outside carton dimension: $L \times W \times H = 495\text{mm} \times 385\text{mm} \times 162\text{mm}$;
- 9PCS/Carton;
- Net weight/Piece: 0.735kg;Gross weight/Carton: 8.17kg;
- 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 | 2022/06/30 | |
| V01 | Update Weight | 2022/08/24 | |
| V02 | Add DALI Model | 2023/02/01 | |
| V03 | Update Assembly Tips | 2023/04/14 | |
| V04 | Update Remark Of Dim To Off | 2023/05/06 | |
| V05 | Update Lifetime | 2023/11/15 | |
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