



# SPECIFICATIONS

## SS-150CNH-300\* CC DRIVER

Model: SS-150CNH-300\*

Power: 150W

Rev.: V01

Release date: 2025-11-14



# SS-150CNH-300\* LED DRIVER

## Features

- Efficiency up to 97%
- Isolated dimming: 0-10V, PWM, Resistor
- Optional aux: 12V/0.2A
- Time-controlled programmable
- Dim to off
- Standby Power<0.5W
- Protections: SCP/OTP/OVP/UVP
- Compatible with intelligent emergency controls
- Wide output voltage range,Dial Power Range Programmable
- IP65
- Surge protection: CM: 6kV,DM: 6kV
- Long lifetime
- Warranty: 5 years



IP65

## Description

SS-150CNH-300\* series is 150W round non-isolated constant current LED driver. This series of products have the advantages of isolated dimming function, ultra-high efficiency, compact housing, fully potted, compatible with intelligent emergency control, good heat dissipation and waterproof performance, high reliability, high cost-effective and so on.

Applications:  
industrial and mining lights, sports lighting

## Model List

| Model          | AC Input Range | Max. Pout | Vout Range | Recommended Voltage | Iout       | Default Current | THD (Typ.) | PF (Typ.) | Eff. (Typ.) | Max.Tc |
|----------------|----------------|-----------|------------|---------------------|------------|-----------------|------------|-----------|-------------|--------|
| SS-150CNH-300* | 108-305Vac     | 150W      | 180-300V   | 200V-300V           | 0.19-0.75A | 0.6A            | 7%         | 0.97      | 97%         | 90℃    |

Note:

1.Default Tested:at220Vac,fullload, 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.

# SS-150CNH-300\* LED DRIVER

## “\*” Means Additional Function

| “*” | 3Angle+3Color<br>Temperature+<br>3 Power | 3CCT+DIP<br>Power | DIP Power | AUX 12V<br>suffix:H) | Dimming off<br>0-10V/PWM/Resistor | 1-10V/PWM<br>/Resistor (suffix:B) | Remark |
|-----|------------------------------------------|-------------------|-----------|----------------------|-----------------------------------|-----------------------------------|--------|
| BB  |                                          |                   | ✓         |                      |                                   | ✓                                 |        |
| BD  |                                          | ✓                 |           |                      |                                   | ✓                                 |        |
| BHB |                                          |                   | ✓         | ✓                    | ✓                                 |                                   |        |
| BHD |                                          | ✓                 |           | ✓                    | ✓                                 |                                   |        |
| BHT | ✓                                        |                   |           | ✓                    | ✓                                 |                                   |        |

## Input Characteristics

| Parameter                  | Min.   | Typ.    | Max.   | Remark                                    |
|----------------------------|--------|---------|--------|-------------------------------------------|
| Rated AC Input Range       | 120Vac |         | 277Vac |                                           |
| AC Input Range             | 108Vac |         | 305Vac | Reference derating curve                  |
| Input DC Voltage Range     | 140Vdc |         | 280Vdc |                                           |
| Input Frequency Range      | 47Hz   | 50/60Hz | 63Hz   |                                           |
| Max Input Current          |        |         | 1.8A   | 120Vac, Full load                         |
| Max Input Power            |        |         | 180W   | 120Vac, Full load                         |
| Max Inrush Current(120Vac) |        |         | 50A    | Cold start                                |
| Max Inrush Current(220Vac) |        |         | 90A    | Cold start                                |
| Max Inrush Current(277Vac) |        |         | 110A   | Cold start                                |
| Standby Power              |        |         | 0.5W   | 220Vac, Dim-to-of<br>(BHB/BHD/BHT models) |
| Power Factor               | 0.95   | 0.97    |        | 220Vac, Full load                         |
|                            | 0.90   |         |        | 120-277Vac, 70%-100% load                 |
| THD                        |        | 7%      | 10%    | 220Vac, Full load                         |
|                            |        |         | 20%    | 120-277Vac, 70%-100% load                 |

# SS-150CNH-300\* LED DRIVER

## DIP switches:

BD/BHD Dial to adjust the power + dial to adjust the color temperature BB/BHB dial-up power control BHT Dial to adjust power+Dial to adjust color temperature+Dial to adjust angle

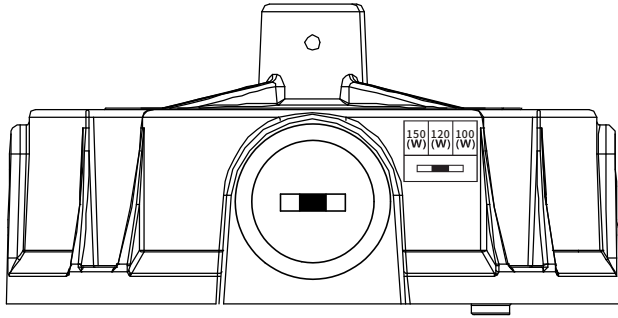
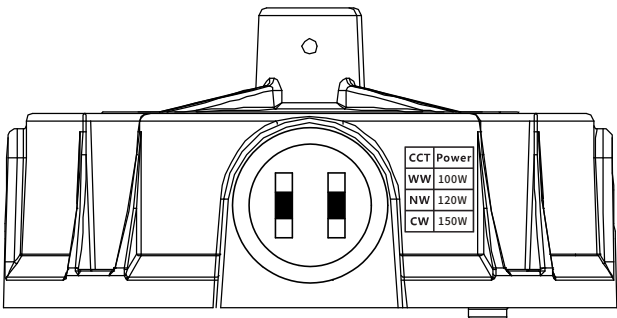
| CCT | Power |
|-----|-------|
| WW  | 100W  |
| NW  | 120W  |
| CW  | 150W  |

|                                                                                   |            |            |
|-----------------------------------------------------------------------------------|------------|------------|
| 150<br>(W)                                                                        | 120<br>(W) | 100<br>(W) |
|  |            |            |

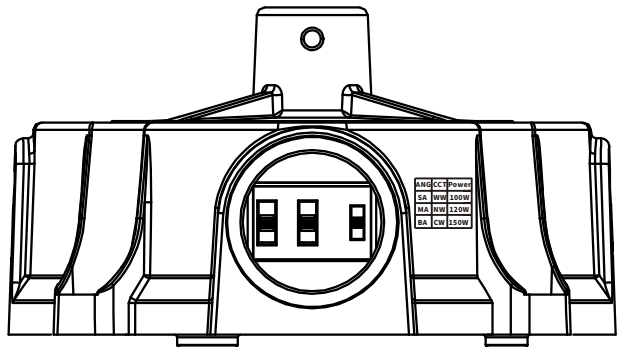
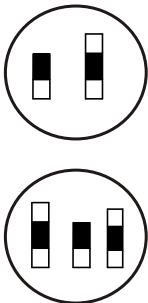
| ANG | CCT | Power |
|-----|-----|-------|
| SA  | WW  | 100W  |
| MA  | NW  | 120W  |
| BA  | CW  | 150W  |

CW: cool light NW: mixed light WW: warm light

CW: cool light NW: mixed light WW: warm light  
SA: small angle MA: medium angle BA: large angle



If 2CCT is required please add the following Mylar tabs to be affixed above the toggle code.

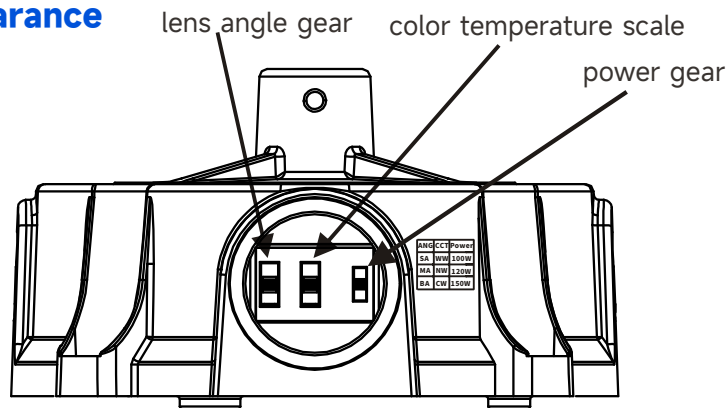


- Note:
- 1.the schematic diagram for the default power level, programmable custom dial power level.
  - 2.adjust the angle, adjust the power and color temperature need to be input after power failure operation.

# SS-150CNH-300\* LED DRIVER

## Instructions for using the BHT triple-dial code:

### Structural Appearance

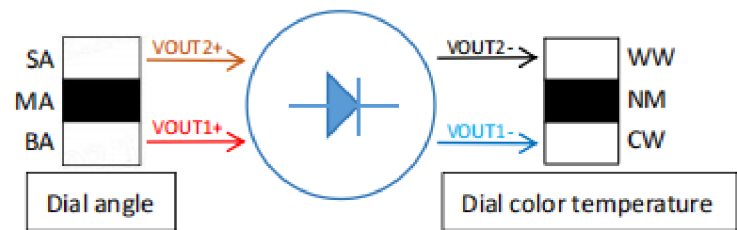


As shown in the figure, the color temperature from top to bottom: WW, NM, CW (warm light, mixed light, cold light) Lens angle gear from top to bottom: SA, MA, BA (small angle, medium angle, large angle) power gear from top to bottom: gradually larger

### Wiring method.

Red VOUT1+, Brown VOUT2+, Blue VOUT1-, Black VOUT2-

### The dialing schematic diagram illustrates.



| Output positive electrode | Output negative pole | Output state | Angle state | color temperature state |
|---------------------------|----------------------|--------------|-------------|-------------------------|
| VOUT1+                    | VOUT1-               | on           | BA          | CW                      |
| VOUT1+                    | VOUT2-               | on           | BA          | WW                      |
| VOUT1+                    | VOUT1-&VOUT2-        | on           | BA          | NW                      |
| VOUT2+                    | VOUT1-               | on           | SA          | CW                      |
| VOUT2+                    | VOUT2-               | on           | SA          | WW                      |
| VOUT2+                    | VOUT1-&VOUT2-        | on           | SA          | NW                      |
| VOUT1+&VOUT2+             | VOUT1-               | on           | MA          | CW                      |
| VOUT1+&VOUT2+             | VOUT2-               | on           | MA          | WW                      |
| VOUT1+&VOUT2+             | VOUT1-&VOUT2-        | on           | MA          | NW                      |

# SS-150CNH-300\* LED DRIVER

## Output Characteristics

| Parameter                   | Min.      | Typ.  | Max.      | Remark                                                                                        |
|-----------------------------|-----------|-------|-----------|-----------------------------------------------------------------------------------------------|
| O/P Voltage Range           | 180V      |       | 300V      | Power derated @180-200V                                                                       |
| Rated O/P Voltage           | 200V      |       | 300V      | Po=Vo*Io=150W, Full load                                                                      |
| Rated O/P Current           | 0.5A      |       | 0.75A     | 0.75A for 200V,0.5A for 300V                                                                  |
| Adj. O/P Current (AOC)Range | 0.5A      |       | 0.75A     | 0.6A                                                                                          |
|                             | 0.4A      |       | 0.6A      | 0.48A,Tolerance +10%                                                                          |
|                             | 0.33A     |       | 0.5A      | 0.4A,Tolerance +10%                                                                           |
| No Load Voltage             |           |       | 350V      |                                                                                               |
| Efficiency @120Vac          | 92.0%     | 94.0% |           | Output 300V/0.5A                                                                              |
| Efficiency @220Vac          | 94.0%     | 96.0% |           | Output 300V/0.5A                                                                              |
| Efficiency @277Vac          | 95.0%     | 97.0% |           | Output 300V/0.5A                                                                              |
| O/P Current Tolerance       | -5%       |       | +5%       | 0.5A~0.75A                                                                                    |
| O/P 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             | -3%       |       | +3%       | Full load                                                                                     |
| Load Regulation             | -5%       |       | +5%       |                                                                                               |
| Temperature Coefficient     | -0.01%/°C |       | +0.01%/°C | Tc:0°C~90°C                                                                                   |
| OTP                         | 90°C      | 93°C  | 96°C      | Drop current when OTP, and it can be automatically restored after the abnormality is removed. |
| Short Circuit Protection    |           |       |           | Driver will not be damaged                                                                    |

# SS-150CNH-300\* LED DRIVER

## 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 110uA.                              |
|                                                                | Dim Range                                | 10%Iomax                                                 |      | 100%loset | Dimming prohibits reverse connection                    |
|                                                                | Rec.Dim Range                            | 0V                                                       |      | 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                                 | 0%                                                       |      | 100%      |                                                         |
| Resistor Dimming (Optional)                                    | Resistance                               | 0Kohm                                                    |      | 100Kohm   | DIM+ source current 110uA.                              |
|                                                                | Dim Range                                | 10%Iomax                                                 |      | 100%loset |                                                         |
| Dim to Off<br>BHB/BHD/BHT models                               | Dim off                                  | 0.7V                                                     | 0.8V | 0.9V      | Auxiliary source 12V unloaded                           |
|                                                                | Dim on                                   | 0.9V                                                     | 1.0V | 1.1V      |                                                         |
| Intelligent<br>Emergency Control<br>(Optional, off by default) | Emergency switchover time                | 3S                                                       |      |           | AC power failure switching to battery power supply time |
|                                                                | Output Current                           |                                                          | 8%   | 10%       | Emergency output current can be set via PC software     |
|                                                                | Auto-exit time                           |                                                          |      | 2H        | When the sensor does not detect a signal configurable   |
|                                                                | Access to emergency communications       | 4Hz duty cycle 25%, high level: 4-10V, low level: 0-0.3V |      |           | Duration 30S                                            |
|                                                                | Withdrawal from emergency communications | 1Hz duty cycle 25%, high level: 4-10V, low level: 0-0.3V |      |           | Duration 2H; configurable                               |
| Timing Curve(Optional)                                         |                                          | By programming                                           |      |           | Set by program                                          |
| Lifetime(Tc≤85°C)                                              |                                          | ≥50,000 hours                                            |      |           | 80% load                                                |
| MTBF                                                           |                                          | 198,000 hours                                            |      |           | 220Vac, Full load, Ta=25°C (MIL-HDBK-217F)              |
| Protection class                                               |                                          | IP65                                                     |      |           |                                                         |
| Tc                                                             |                                          | 90°C                                                     |      |           |                                                         |
| Warranty                                                       |                                          | 5 years                                                  |      |           | Tc 85°C                                                 |
| Net Weight                                                     |                                          | 760g                                                     |      |           | Input line: 300mm                                       |
| Dimension                                                      |                                          | Φ116mm*62.5mm                                            |      |           | WxH                                                     |

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

# SS-150CNH-300\* 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 CSA C22.2 No. 250.13                 | ✓      |        |
| ENEC          | EN 61347-1<br>EN 61347-2-13<br>EN IEC 62384 |        |        |
| RCM           | AS/NZS61347.2.13                            |        |        |
| CCC           | GB 19510.213                                |        |        |
| CE            | EN 61347-2-13<br>EN61347-1                  |        |        |

| EMI/EMS                    | Criterion                         | Remark                           |
|----------------------------|-----------------------------------|----------------------------------|
| Conduction Emission        | FCC Part 15 Subpart B; ANSI C63.4 | 120Vac: Class B, 277Vac: Class A |
| Radiation Emission         | FCC Part 15 Subpart B; ANSI C63.4 | 120Vac: Class B, 277Vac: Class A |
| Harmonic Current Emissions | EN IEC 61000-3-2                  | Class C                          |
| Surge                      | ANSI/C82.77-5                     | DM: 6kV,CM: 6kV,Criterion B      |
| Ring Wave                  | ANSI/C82.77-5                     | DM: 6kV,CM: 6kV,Criterion B      |

# SS-150CNH-300\* LED DRIVER

## Safety Test Items

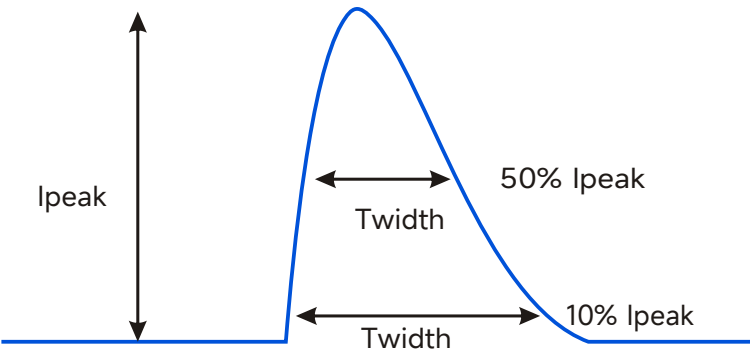
| Safety Test Items       | Technical Indicators       |                             |                             | Remark                          |
|-------------------------|----------------------------|-----------------------------|-----------------------------|---------------------------------|
| Insulation Requirements | UL Insulation Requirements | TUV Insulation Requirements | CCC Insulation Requirements |                                 |
| Input-Case              | 2U+1000Vac                 | /                           | /                           | Basic insulation                |
| Input-Dim               | 2U+1000Vac                 | /                           | /                           | Reinforced insulation           |
| Dim-Case                | 500Vac                     | /                           | /                           | Basic insulation                |
| Insulation Resistance   | $\geq 10\text{M}\Omega$    |                             |                             | Input-Dim, Test voltage: 500Vdc |
| Ground Resistance       | $\leq 0.1\Omega$           |                             |                             | 25A/1min                        |
| Leakage Current         | $\leq 0.75\text{mA}$       |                             |                             | 277Vac                          |

Note:

1. The power supply complies with the relevant EMC standards. The power supply, as part of the terminal equipment system, needs to be combined with the whole system to reconfirm EMC.
2. During voltage withstand test, please short-circuit between L/N, short-circuit between positive/negative output line, and short-circuit between positive/negative dimmer line and auxiliary power supply.

## Performance Curves

### Input Inrush Current

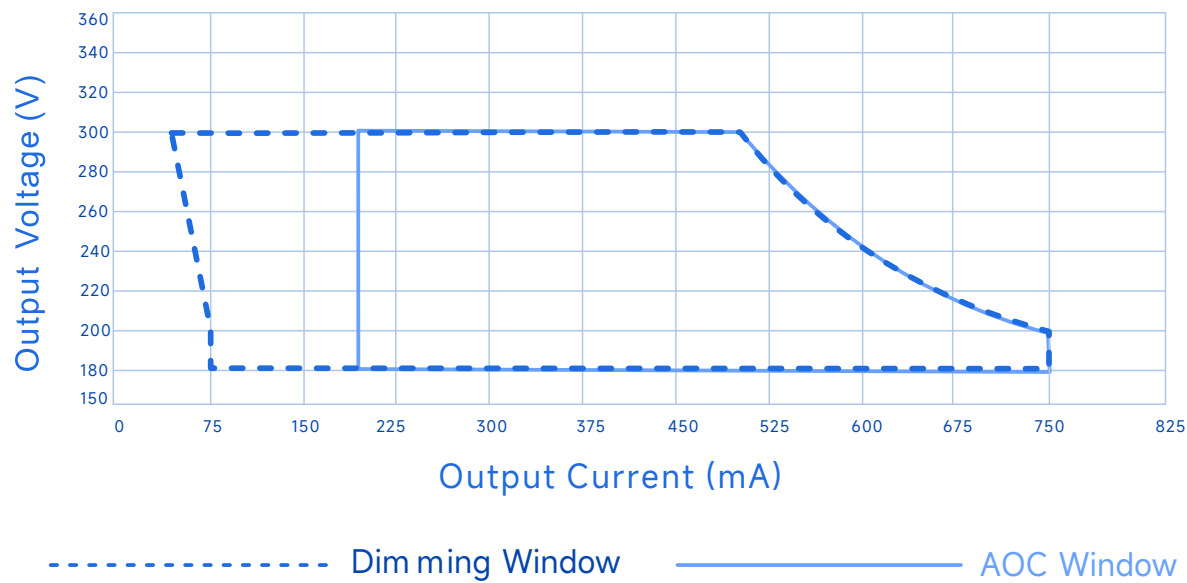


| $V_{in}$ | $I_{peak}$ | $T(@10\% \text{ of } I_{peak})$ | $T(@50\% \text{ of } I_{peak})$ |
|----------|------------|---------------------------------|---------------------------------|
| 120Vac   | 50A        | 520uS                           | 200uS                           |
| 220Vac   | 90A        | 520uS                           | 200uS                           |
| 277Vac   | 110A       | 520uS                           | 200uS                           |

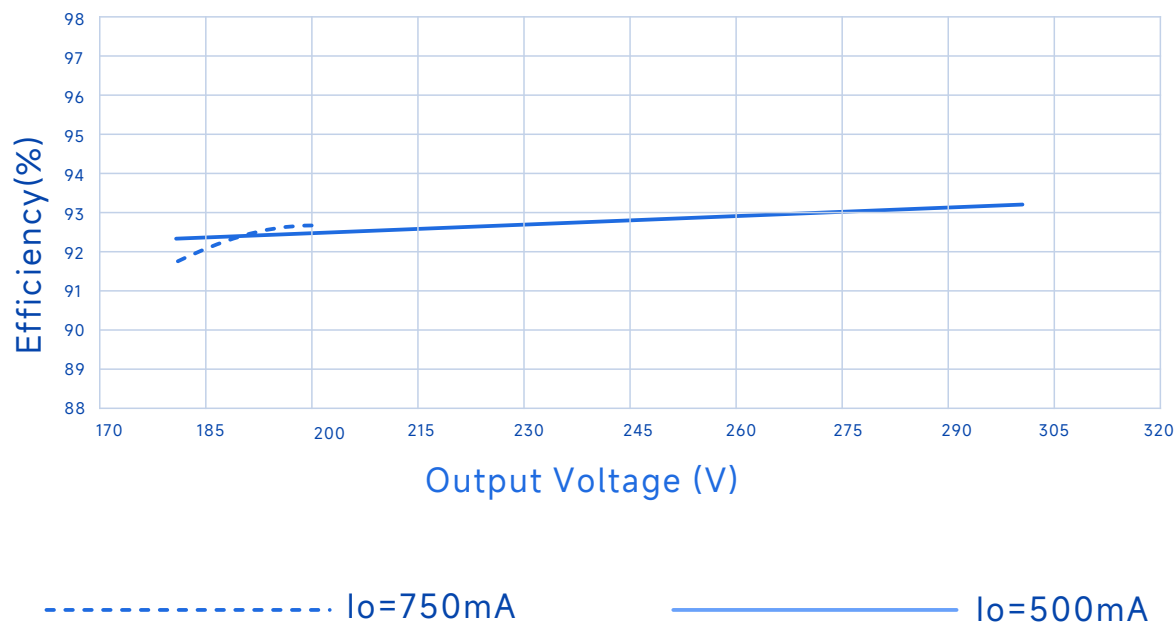
# SS-150CNH-300\* LED DRIVER

## Performance Curves

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



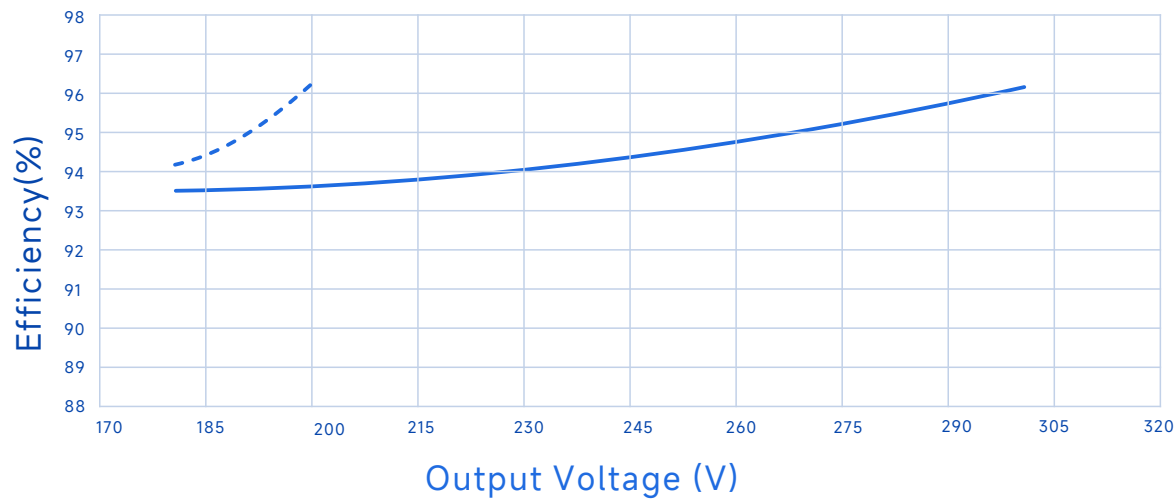
Efficiency Vs. Output Voltage(Vin=120Vac)



# SS-150CNH-300\* LED DRIVER

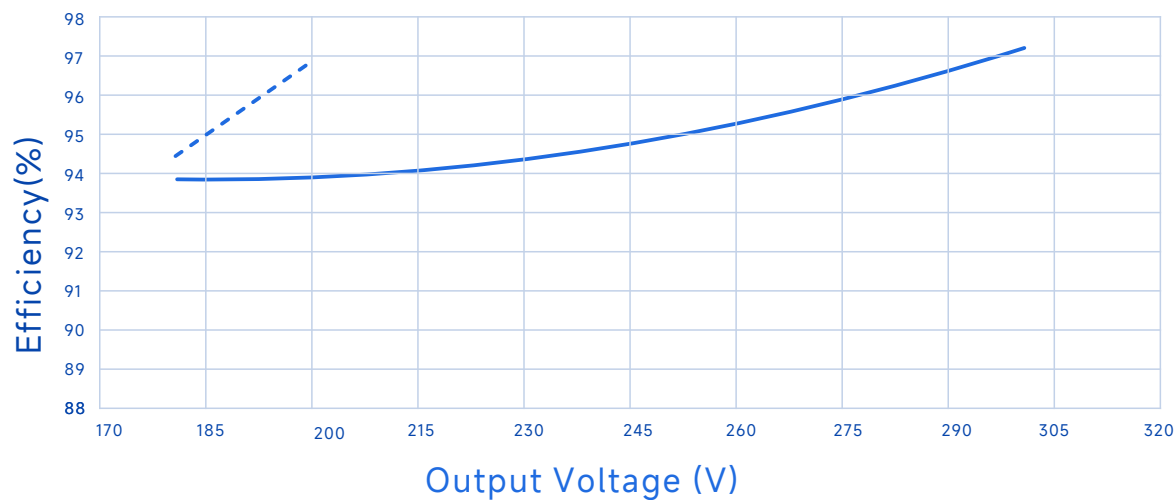
## Performance Curves

Efficiency Vs. Output Voltage (Vin=220Vac)



----- Io=750mA                      ————— Io=500mA

Efficiency Vs. Output Voltage(Vin=277Vac)

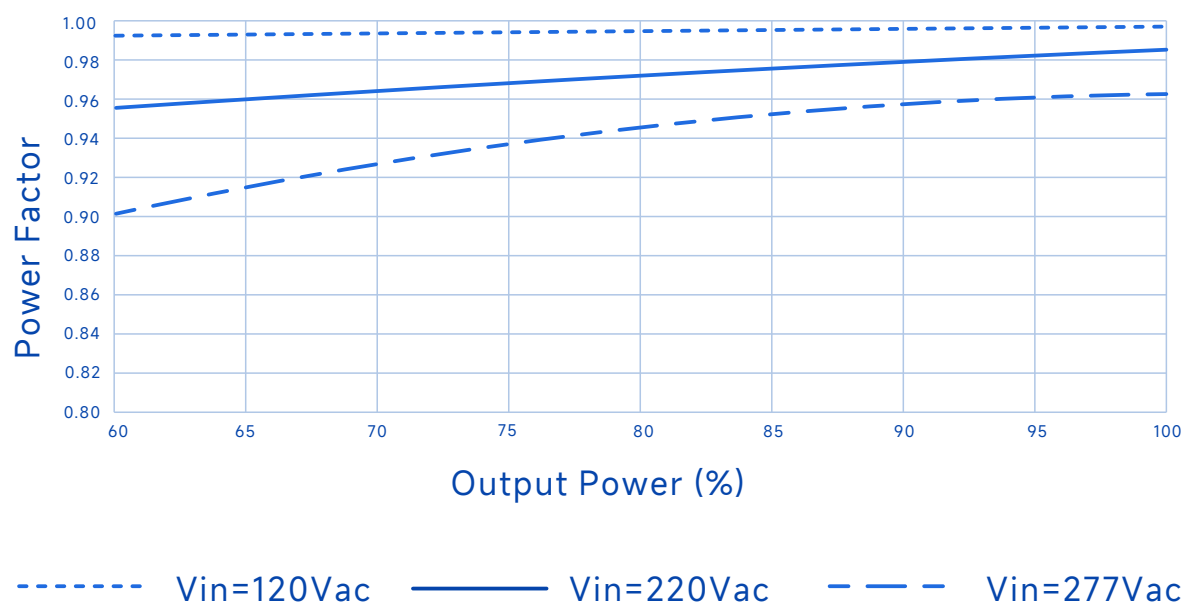


----- Io=750mA                      ————— Io=500mA

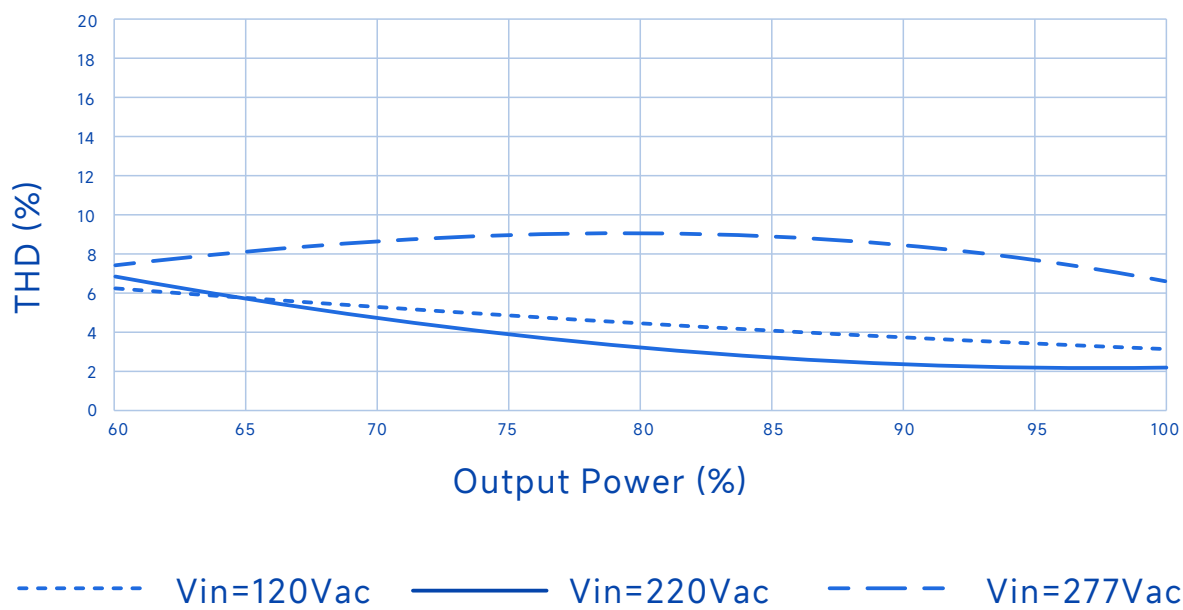
# SS-150CNH-300\* LED DRIVER

## Performance Curves

Power Factor Vs. Output Power



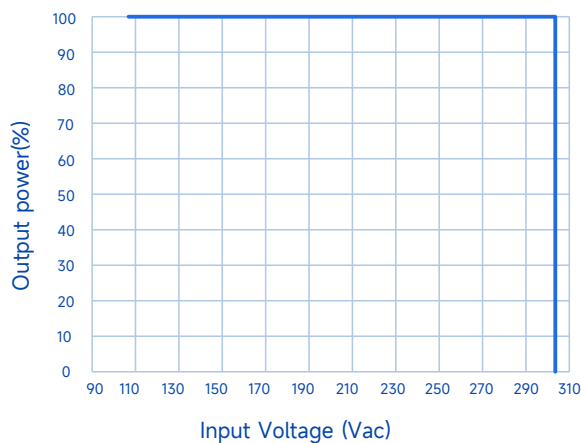
THD Vs. Output Power



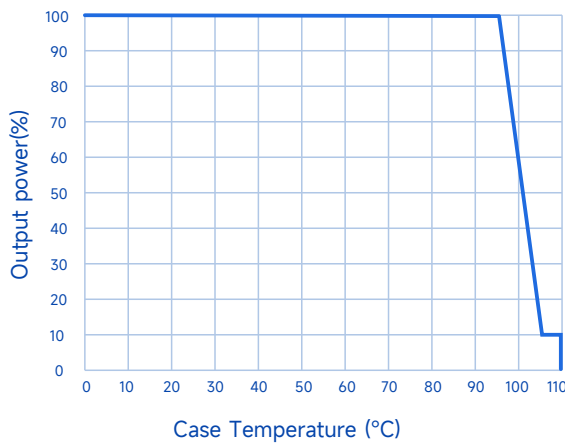
# SS-150CNH-300\* LED DRIVER

## Performance Curves

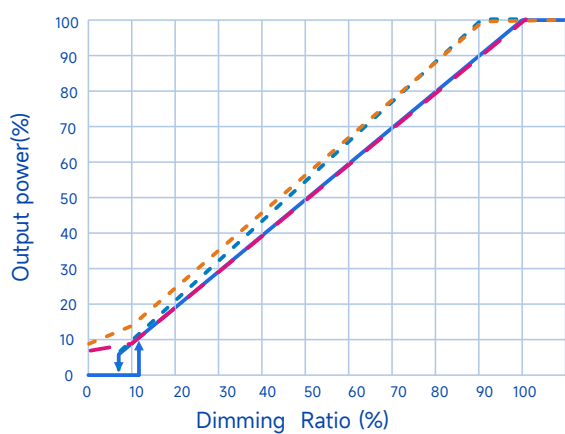
Output Power Vs. Input Voltage



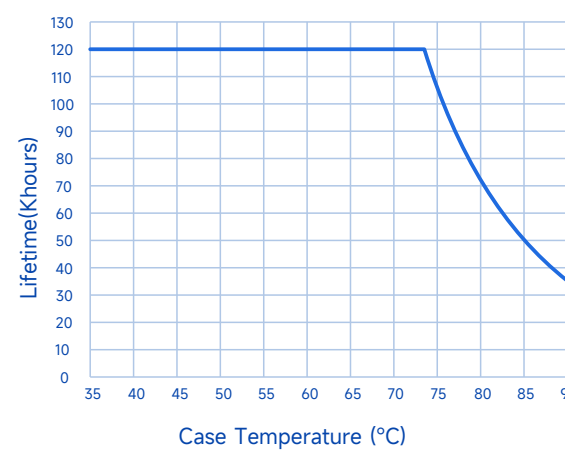
Output Power Vs. Case Temperature



Output Power Vs. Dimming



Lifetime Vs. Case Temperature



BHB/BHD/BHT:

— 0-10V ,PWM Dimming      - - - Resistor Dimming

BB/BD:

- - - 1-10V ,PWM Dimming      - - - Resistor Dimming

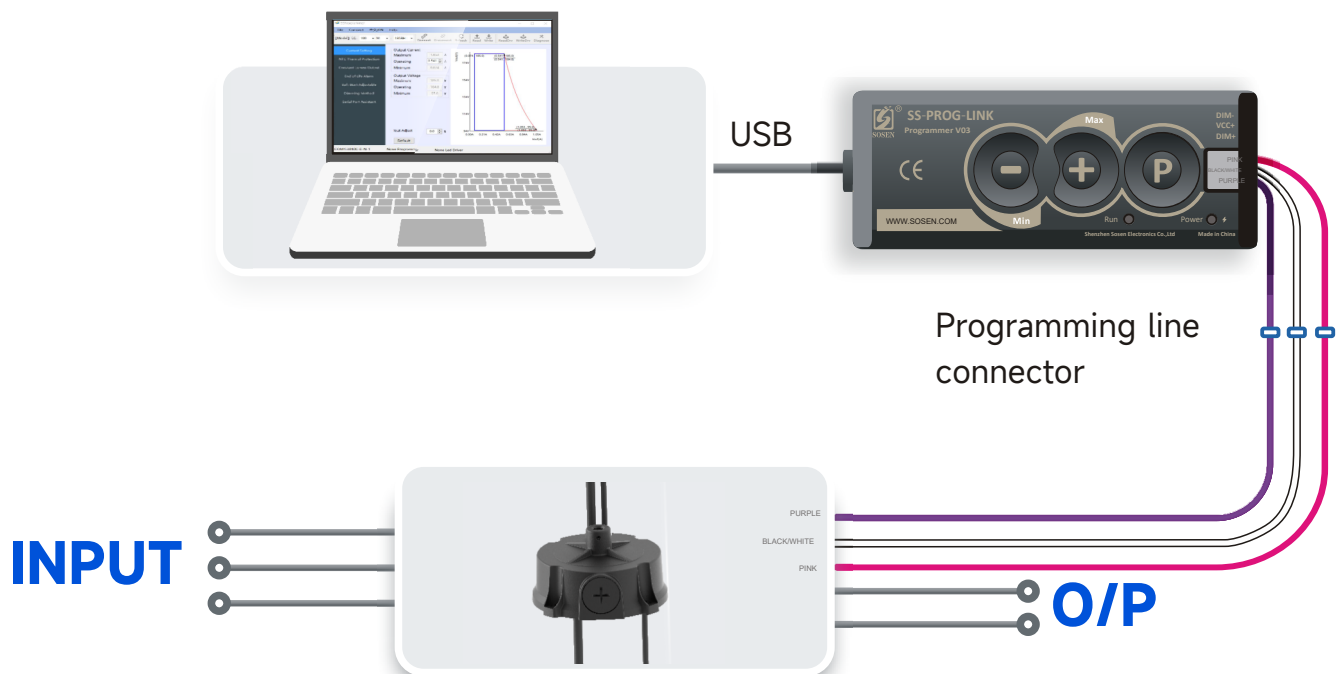
# SS-150CNH-300\* LED DRIVER

## 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.

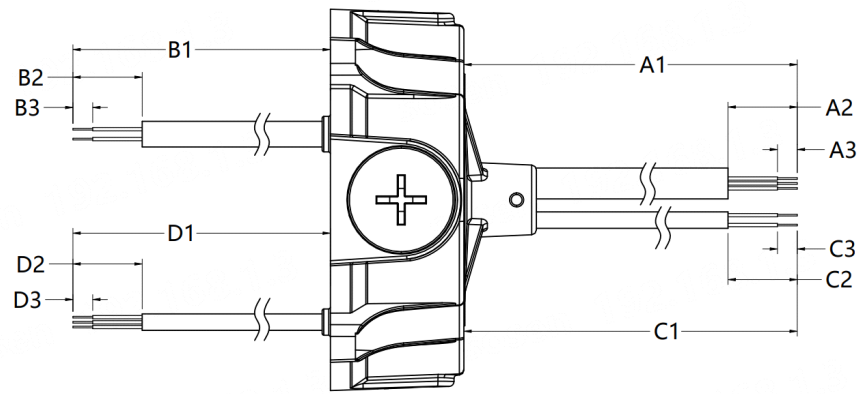


### Note:

During the lifetime of the LED lamp, the driver continuously adjusts to increase the output optical power, thus ensuring that the LED lamp still has a constant optical power output after a long period of operation.

# SS-150CNH-300\* LED DRIVER

## Mechanical Characteristic



| Optional<br>wires | AC Input Cable<br>(mm) |      |      | DC ouput Cable<br>mm |      |     | UP Dimming Cable<br>mm |      |      | Down Dimming Cable<br>mm |      |     |
|-------------------|------------------------|------|------|----------------------|------|-----|------------------------|------|------|--------------------------|------|-----|
|                   | kind                   | A1   | A2   | A3                   | B1   | B2  | B3                     | C1   | C2   | C3                       | D1   | D2  |
| 1#                | 1830±10                | 45±5 | 10±2 | 200±10               | 22±3 | 9±1 | 1830±10                | 45±5 | 10±2 | 200±10                   | 22±3 | 9±1 |
| 2#                | 1530±10                | 45±5 | 10±2 | 200±10               | 22±3 | 9±1 | 1530±10                | 45±5 | 10±2 | 200±10                   | 22±3 | 9±1 |
| 3#                | 300±10                 | 45±5 | 10±2 | 200±10               | 22±3 | 9±1 | 300±10                 | 45±5 | 10±2 | 200±10                   | 22±3 | 9±1 |

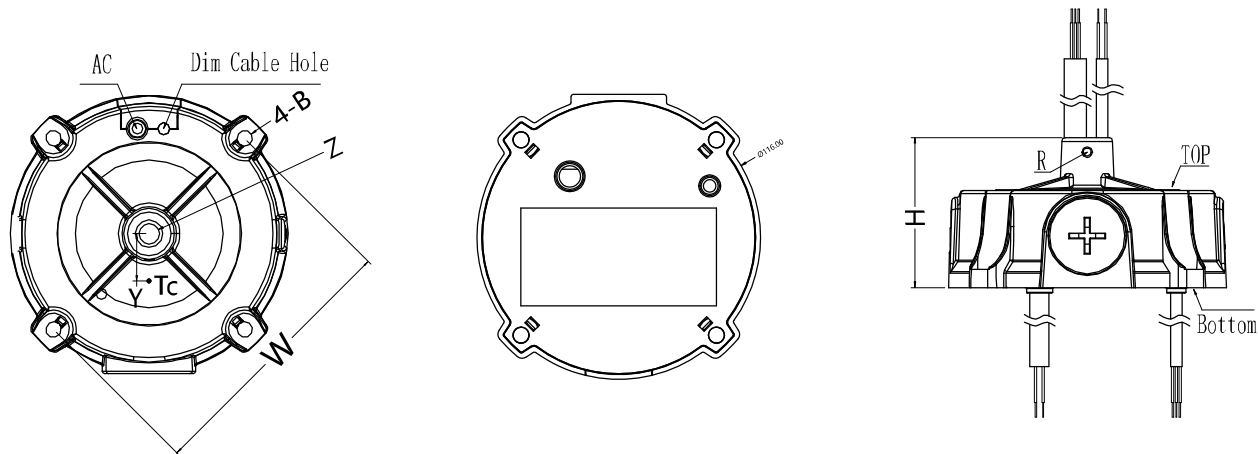
| AC Input Cable                                                           | DC ouput Cable                                                                                                                                                                                                                                                                                                                                                                                                                                       | UP Dimming Cable                                                                                                                                                           | Down Dimming Cable                                                                       |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| UL:<br>SJTW, 3*17AWG,<br>Black: ACL,<br>White: ACN,<br>Green: $\oplus$ ; | UL:<br>1.SJTW, 2*18AWG, Red: V+, Black: V-;<br>2.SJTW, 3*18AWG, Red: V+, Black: V1- (Cool temperature ), Blue: V2- (Warm temperature )<br>Global:<br>SJOW, 4*17AWG,<br>Red: V1+ (Large angle);<br>Brown: V2+ (Small angle);<br>Blue: V1- (Cool light);<br>Black: V2- (Warm light);<br>BB/BD Global:<br>1. SJOW/HO5RN-F, 2x17AWG,<br>Brown: V+, Blue: V-;<br>2. SJOW/HO5RN-F, 3x17AWG,<br>Brown: V+, Black: Cool Light (V1-), Blue: Warm Light (V2-); | BHB/BHD/BHT:<br>UL 21996 3*22AWG<br>Purple: DIM+,<br>Pink: DIM-<br>Black/White: Vaux+;<br>BB/BD:<br>UL 21996 3*22AWG,<br>Purple: DIM+,<br>Pink: DIM-<br>Black/White: VPP+; | UL/EU/Global :<br>UL 21996 3*22AWG<br>Purple: DIM+,<br>Pink: DIM-<br>Black/White: Vaux+; |

# SS-150CNH-300\* LED DRIVER

## Mechanical Characteristic

| Name<br>Description           | Standard<br>Code | mm(In.)                               |
|-------------------------------|------------------|---------------------------------------|
| Fixing screw<br>hole diameter | 4-B              | Φ6.5(0.26)                            |
| Housing Diameter              | D                | Φ116(4.57)                            |
| Enclosure height              | H                | 62.5(2.46)                            |
| Eyelet hole<br>(optional)     | Z                | M10*1.5(depth20mm)<br>G1/2(depth20mm) |
| Eyebolt Holes                 | R                | M4*0.7                                |
| Mounting<br>hole size         | W                | 113(4.45)                             |
| Tc point location             | Y                | 32(1.26)                              |

Note  
1,Please follow the "LED Driver User Manual" obtained  
from SOSEN's official website for assembly.



The bottom and top of the line are tuned at the same time.

# SS-150CNH-300\* LED DRIVER



## Assembly Tips

- 1、 If the product has an external adjustable potentiometer, please adjust the current, it is recommended to use 704 silicone to adjust the current of the      Seal the hole of adjusting current with 704 silicone and cover it with waterproof rubber plug.
- 2、 When the dimmer line is not in use, please seal the connector of the dimmer line with insulating sleeve, so as not to string into the interfering signals and cause damage to the dimmer line, affecting the power supply. dimming line damage, affecting the normal operation of the power supply.
- 3, aluminum substrate alignment safety regulations creepage distance > 5mm.
- 4, aluminum substrate LED + and LED - creepage distance > 1.8mm.
- 5, aluminum substrate to minimize the laying of copper area, reduce junction capacitance, reduce leakage current.
- 6, LED lamp bead arrangement is recommended first and then string.
- 7, LED light board insulation level should meet the reliability design requirements.
- 8, other notes, please refer to the “LED driver power supply instruction manual”.

## Package

- Outside carton dimension: L×W×H =577mm×385mm×162mm;
- 15PCS/Carton;
- Net weight/Piece: 0.76kg;Gross weight/Carton: 12.9kg;
- 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.

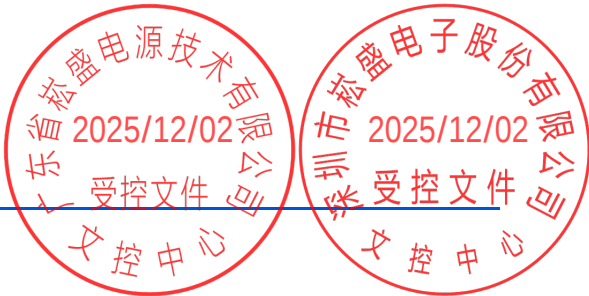
## Storage

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.



Revision History

| Version | Description of Update                                   | Updated Date | Remark |
|---------|---------------------------------------------------------|--------------|--------|
| V00     | Original Release                                        | 2025/06/06   |        |
| V01     | Increase the power adjustment accuracy via DIP switches | 2025/11/14   |        |
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