

# SPECIFICATIONS

## 40W NFC Driver with DALI-2 and D4i

Model: 40PA-H80F

Power: 40W

Rev.: V01

Release date: 2026-06-18



# 40W NFC Driver with DALI-2 and D4i

## Features

- Efficiency up to 92%
- Adjusted by NFC
- DALI-2 & D4i certification
- Dim-to-off & Standby power  $\leq 0.35W$
- Surge Protection: CM: 10kV, DM: 6kV
- AUX Power: 24V/125mA (Peak Power 6W)
- Built-in 16Vdc DALI-2 bus power supply
- Built-in AC power metering with up to  $\pm 1\%$  accuracy
- AC Dimming/Timing/ELA/CLO/NTC
- Protections: SCP/OTP/OVP/OPP
- Suitable for Class I /II luminaires
- IP20
- Installation dimensions conform to Zhaga standards
- Warranty: 8 years



## Description

The 40PA-H80F is a 40W NFC-programmable LED driver that fully complies with D4i and DALI-2 standards. It is compatible and can connect with various smart lighting systems and controllers, enabling precise lighting control and management. Additionally, it features built-in high-precision AC power metering and can monitor luminaire status and faults, supporting remote management and maintenance. Furthermore, it incorporates multiple protection function, providing stable and efficient power supply for LED luminaires.

Application:

Street lights, tunnel lights, sports lights.

## Model List

| Model     | AC Input Range | Max. Pout | Vout Range | Full Power Vo range | Iout Range | Default Output Current | THD (Typ.) | PF (Typ.) | Eff. (Typ.) | Max.Tc |
|-----------|----------------|-----------|------------|---------------------|------------|------------------------|------------|-----------|-------------|--------|
| 40PA-H80F | 165-264Vac     | 40W       | 20-80V     | 38V-80V             | 0.2-1.05A  | 0.7A                   | 5%         | 0.98      | 91.5%       | 85°C   |

Note:

1.Default Tested: at 230Vac, full load, Ta 25°C.

2.The performance of the LED Driver can be guaranteed within the full power Vo range.

if the voltage lower than full power Vo range, need to test the performance with the LED module.

# 40W NFC Driver with DALI-2 and D4i

## Input Characteristics

| Parameter                  | Min.   | Typ.    | Max.   | Remark                                                |
|----------------------------|--------|---------|--------|-------------------------------------------------------|
| Rated AC Input Range       | 184Vac |         | 264Vac |                                                       |
| Input AC Voltage Range     | 165Vac |         | 264Vac |                                                       |
| Input DC Voltage Range     | 168Vdc |         | 280Vdc | The full range must be derated to 80%.                |
| Input Frequency Range      | 47Hz   | 50/60Hz | 63Hz   |                                                       |
| Max Input Current          |        |         | 0.35A  | 200Vac, Full load                                     |
| Max Inrush Current(230Vac) |        |         | 40A    | Cold start                                            |
| Power measurement accuracy | -3%    | 1%      | +3%    | 220Vac, Full load                                     |
| Standby Power              |        |         | 0.35W  | 230Vac/50Hz, Dim to off,<br>Turn off DALI-2 bus power |
| Power Factor               | 0.96   | 0.98    |        | 230Vac/50Hz, Full load                                |
|                            | 0.90   |         |        | 220-240Vac/50Hz, 40-100% load                         |
| THD                        |        | 5%      | 10%    | 230Vac/50Hz, Full load                                |
|                            |        |         | 20%    | 220-240Vac/50Hz, 30-100% load                         |

# 40W NFC Driver with DALI-2 and D4i

## Output Characteristics

| Parameter                    | Min.  | Typ.  | Max.  | Remark                                                                                        |
|------------------------------|-------|-------|-------|-----------------------------------------------------------------------------------------------|
| O/P Voltage Range            | 20V   |       | 80V   | Power derated @20-38V                                                                         |
| Rated O/P Voltage            | 38V   |       | 80V   | $P_o = V_o \cdot I_o = 40W$ , Full load                                                       |
| Rated O/P Current            | 0.5A  |       | 1.05A | 1.05A for 38V, 0.5A for 80V                                                                   |
| Adj. O/P Current (AOC) Range | 0.2A  |       | 1.05A | Output current can be adjusted by NFC                                                         |
| Dimming Range                | 0.05A |       | loset | $0.2A \leq I_{o\text{set}} \leq 1.05A$                                                        |
| No Load Voltage              |       |       | 100V  |                                                                                               |
| Efficiency @230Vac           | 91.0% | 91.5% | 92.0% | O/P 80V/0.5A                                                                                  |
| O/P Current Tolerance        | -5%   |       | +5%   | @230Vac/50Hz at Full load, 25°C                                                               |
| O/P Current Ripple(PK-AV)    |       | 5%    | 10%   | Full load                                                                                     |
| Output PstLM                 |       |       | 1     | Full load                                                                                     |
| Output SVM                   |       |       | 0.4   | Full load                                                                                     |
| Start-up Current Overshoot   |       |       | 10%   | Full load                                                                                     |
| Start-up Time                |       |       | 1S    | 230Vac, Full load                                                                             |
| Line Regulation              | -2%   |       | +2%   | Full load                                                                                     |
| Load Regulation              | -2%   |       | +2%   |                                                                                               |
| OTP                          | 85°C  | 90°C  | 95°C  | Drop current when OTP, and it can be automatically restored after the abnormality is removed. |
| Short Circuit Protection     |       |       |       | Driver will not be damaged, CC mode                                                           |

Note: Complies With Parts 101, 102, 150, 207, 250, 251, 252, 253.

# 40W NFC Driver with DALI-2 and D4i

## NTC Functions

| Parameter                         |                                  | Min.     | Typ.     | Max.      | Remark                                                                                                                         |
|-----------------------------------|----------------------------------|----------|----------|-----------|--------------------------------------------------------------------------------------------------------------------------------|
| External Thermal Protection (NTC) | T1 (Begins derating)             |          | 70°C     |           | The value can be set through software, When the temperature of the LED module is $\geq$ T1, the output current begins derating |
|                                   | T2 (Stop derating)               |          | 90°C     |           | The value can be set through software, when the temperature of the LED module is $\geq$ T2, the output current stop derating   |
|                                   | T3 (off)                         |          | 100°C    |           | The value can be set through software, When the temperature of the LED module is $\geq$ T3, the power is turned off            |
|                                   | Protection Current Setting Range | 10%loset | 20%loset | 100%loset | Default setting is 10%                                                                                                         |

Note: The recommended NTC is 10K-3950B/3435B, NTC function disabled by default.

## Other Characteristics

| Parameter                                  |                     | Min.                 | Typ. | Max.  | Remark                                                                                                               |
|--------------------------------------------|---------------------|----------------------|------|-------|----------------------------------------------------------------------------------------------------------------------|
| Aux Power                                  | Rated O/P Voltage   | 21.6V                | 24V  | 26.4V | The reference ground is "DA-/AUX-"                                                                                   |
|                                            | No Load O/P Voltage |                      |      | 30V   | The reference ground is "DA-/AUX-"                                                                                   |
|                                            | Rated O/P Current   |                      |      | 125mA |                                                                                                                      |
|                                            | Peak O/P Current    |                      |      | 250mA | During a 6ms period, maximum duration of 250mA peak output current 2.2ms, and the average value cannot exceed 125mA. |
| DALI-2                                     | DA+, DA- High Level | 9.5V                 | 16V  | 22.5V |                                                                                                                      |
|                                            | DA+, DA- Low Level  | -6.5V                | 0V   | 6.5V  |                                                                                                                      |
|                                            | DA+, DA- Current    |                      |      | 2mA   |                                                                                                                      |
| Integrated DALI-2 Bus Power Supply Voltage |                     | 12V                  | 16V  | 20V   |                                                                                                                      |
| Integrated DALI-2 Bus Power Supply Current |                     | 50mA                 |      | 60mA  |                                                                                                                      |
| Life Time(Tc $\leq$ 75°C)                  |                     | $\geq$ 100,000 hours |      |       | 100% load                                                                                                            |
| MTBF                                       |                     | 250,000 hours        |      |       | 230Vac, Full load, Ta=25°C (MIL-HDBK-217F)                                                                           |
| IP Grade                                   |                     | IP20                 |      |       |                                                                                                                      |
| Tc(Maximum)                                |                     | 85°C                 |      |       |                                                                                                                      |
| Warranty                                   |                     | 8 years              |      |       | Tc: 75°C                                                                                                             |
| Net Weight                                 |                     | 356g                 |      |       |                                                                                                                      |
| Dimension                                  |                     | 123mm*79mm*33.8mm    |      |       | L x W x H                                                                                                            |

NOTE:

1. All the parameters above are tested Ta 25°C and LED load, unless specified.
2. The DALI-2 bus power supply is enabled by default and can be disabled through the programming interface.

# 40W NFC Driver with DALI-2 and D4i

## Environmental Requirements

| Parameter                    | Min.  | Typ. | Max.  | Remark          |
|------------------------------|-------|------|-------|-----------------|
| Operating Temperature(Tcase) | -40℃  | 25℃  | +85℃  |                 |
| Storage Temperature          | -40℃  | 25℃  | +85℃  |                 |
| Operation Humidity           | 10%RH |      | 90%RH | No condensation |
| Storage Humidity             | 5%RH  |      | 95%RH | No condensation |
| Altitude                     | -65m  |      | 4000m |                 |

## Safety and EMI/EMS Standards

| Certification | Standard                                                                          | Status | Remark |
|---------------|-----------------------------------------------------------------------------------|--------|--------|
| UL            | UL8750                                                                            |        |        |
| CUL           | CAN/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/T 19510.1<br>GB/T 19510.213                                                    |        |        |
| CE            | EN 61347-1<br>EN 61347-2-13                                                       | ✓      |        |
|               | EN 301 489-1<br>EN 301 489-3<br>EN 300 330<br>EN 62479/EN 50663/EN 50665/EN 50364 | ✓      |        |

| EMI/EMS                    | Criterion                     | Remark                       |
|----------------------------|-------------------------------|------------------------------|
| Conduction Emission        | EN IEC 55015:2019/A11:2020    | Class B                      |
| Radiation Emission         | EN IEC 55015:2019/A11:2020    | Class B                      |
| Harmonic Current Emissions | EN IEC 61000-3-2:2019/A1:2021 | Class C                      |
| Surge                      | IEC/EN61000-4-5               | DM: 6kV,CM: 8kV,Criterion B  |
|                            | EN61547:2009                  | DM: 6kV,CM: 10kV,Criterion B |

# 40W NFC Driver with DALI-2 and D4i

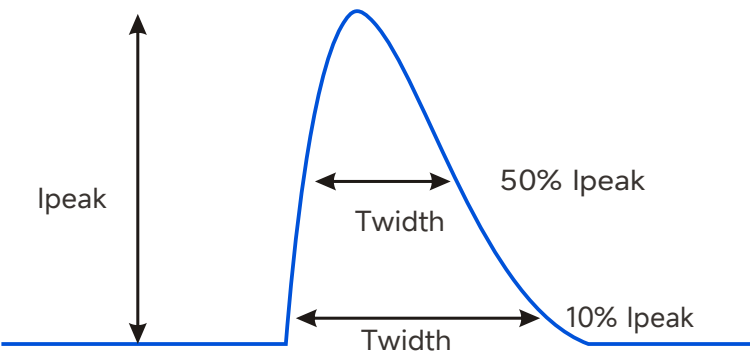
## Safety Test Items

| Safety Test Items       | Technical Indicators         | Remark                           |
|-------------------------|------------------------------|----------------------------------|
| Insulation Requirements | ENEC Insulation Requirements |                                  |
| Input to EQUI           | 4U+2000                      | Reinforced insulation            |
| Input-Dim               | 4U+2000                      | Reinforced insulation            |
| Dim to EQUI             | 2U+1000                      | Basic insulation                 |
| Insulation Resistance   | ≥10MΩ                        | Input-Output,Test voltage:500Vdc |
| Leakage Current         | ≤0.7mApk                     | 240Vac                           |

- 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), (LED+ and LED- and NTC+ and NTC- ), (DA+ and DA - and Vaux+ )when Hi-pot test.

## Performance Curves

### Input Inrush Current

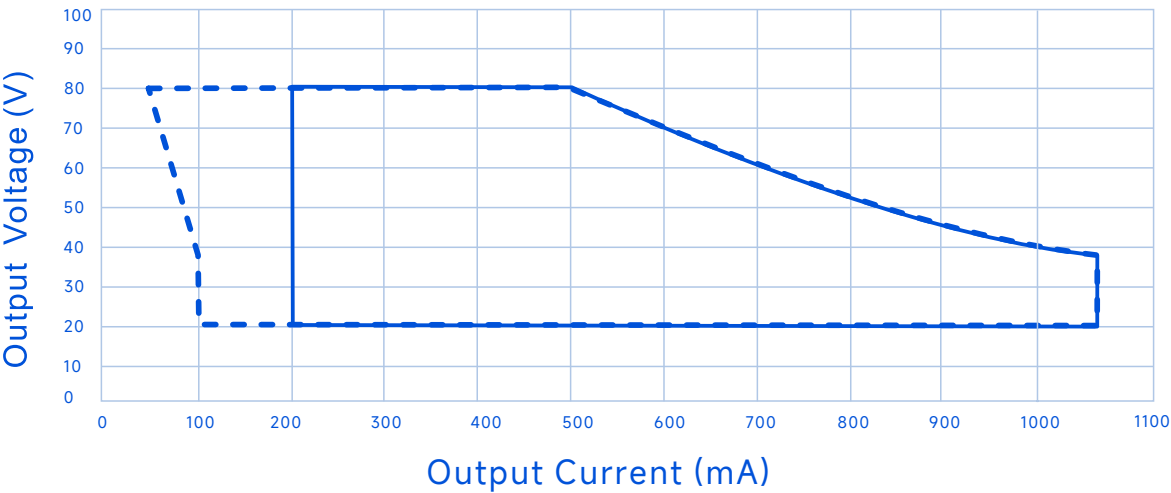


| Vin    | Ipeak | T(@10% Ipeak) | T(@50% Ipeak) | Configurable LED Driver Quantity/PCS |      |      |      |      |      |      |      |
|--------|-------|---------------|---------------|--------------------------------------|------|------|------|------|------|------|------|
|        |       |               |               | B10A                                 | B16A | B20A | B25A | C10A | C16A | C20A | C25A |
| 230Vac | 40A   | 510us         | 200us         | 10                                   | 16   | 20   | 25   | 17   | 27   | 34   | 42   |

# 40W NFC Driver with DALI-2 and D4i

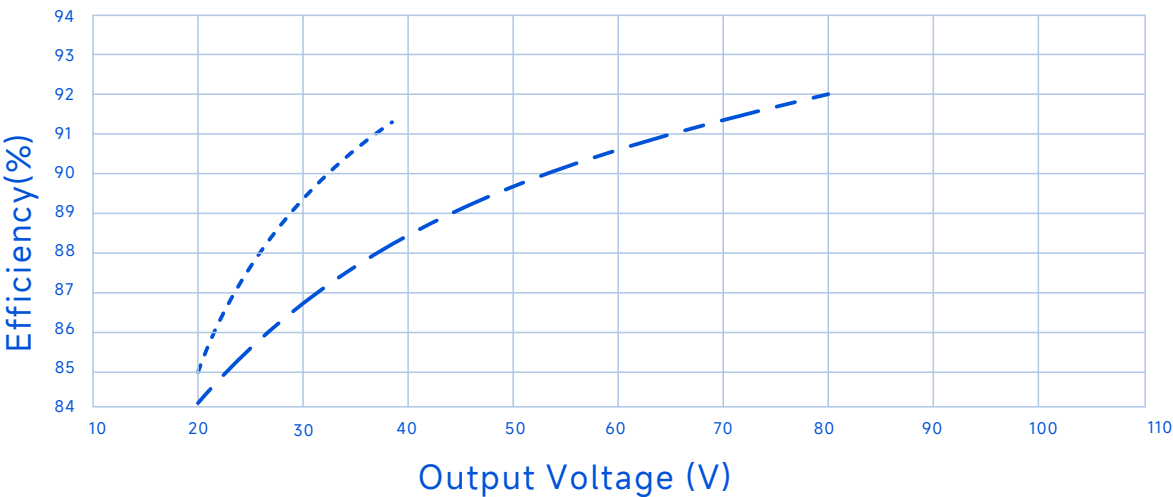
## Performance Curves

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



----- Dimming Window      ————— AOC Window

Efficiency Vs. Output Voltage (Vin=230Vac)

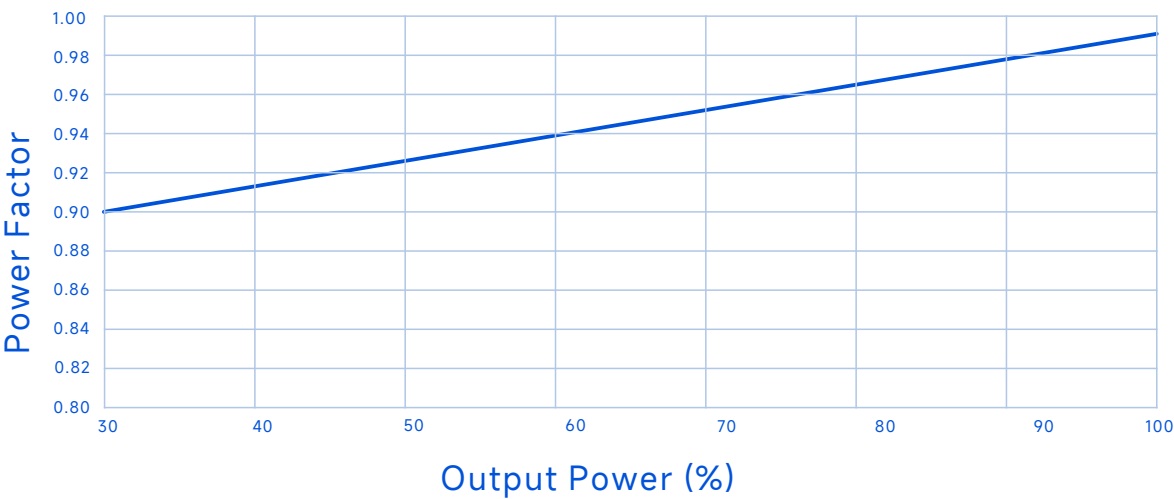


----- Io=1050mA      - . - . Io=500mA

# 40W NFC Driver with DALI-2 and D4i

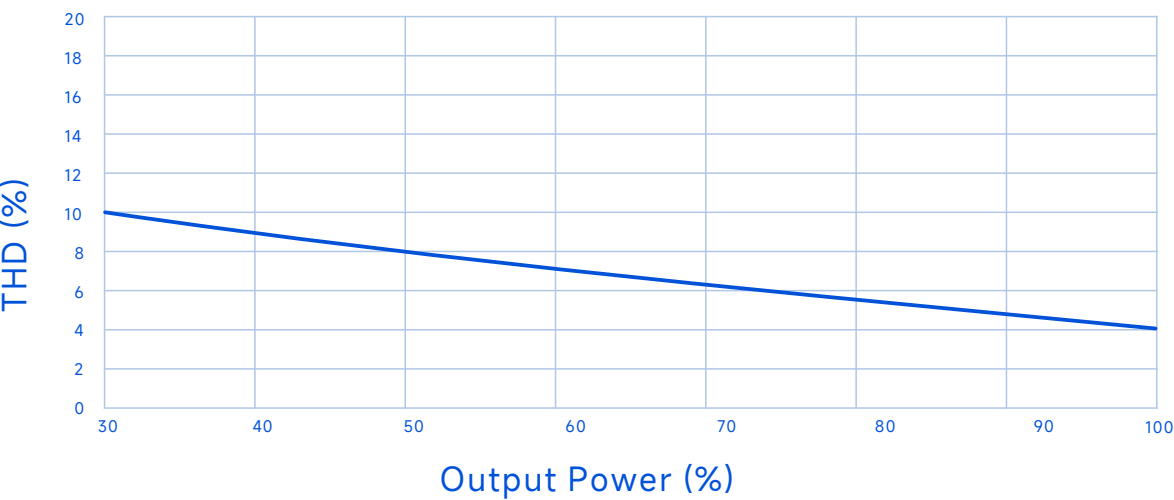
## Performance Curves

Power Factor Vs. Output Power



—  $V_{in}=230V_{ac}$

THD Vs. Output Power

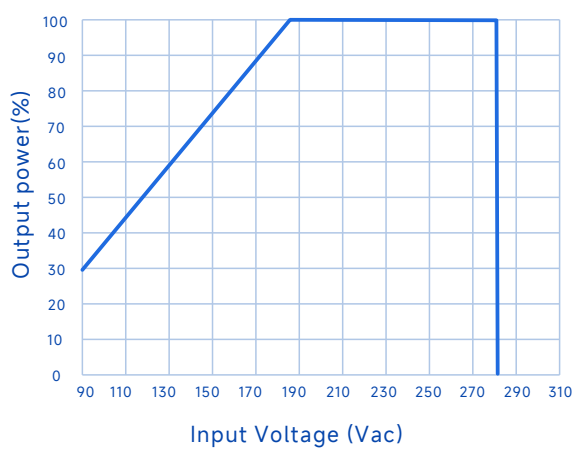


—  $V_{in}=230V_{ac}$

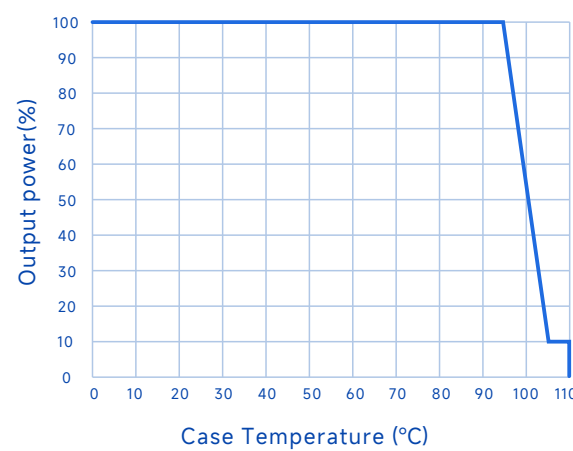
# 40W NFC Driver with DALI-2 and D4i

## Performance Curves

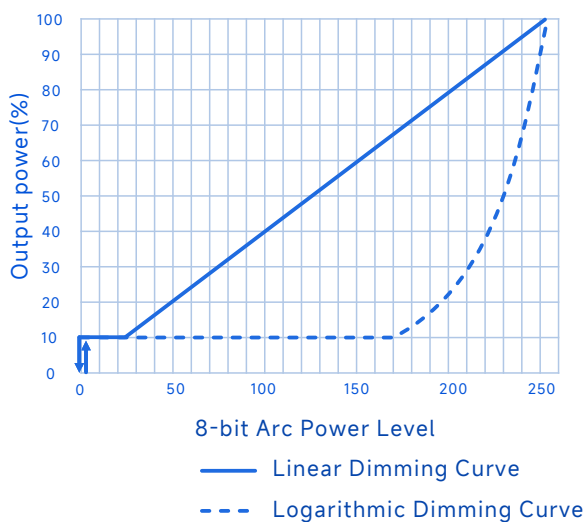
Output Power Vs. Input voltage



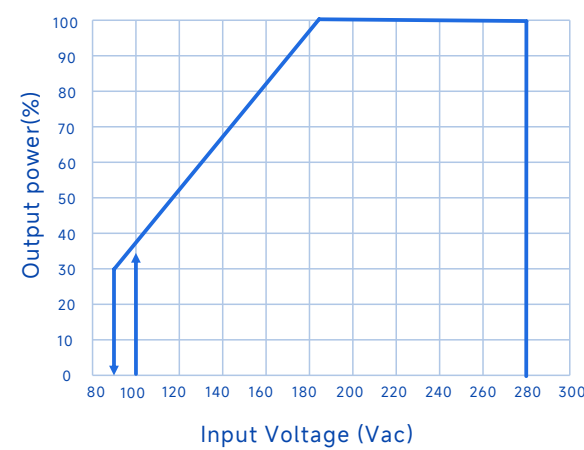
O/P power Vs. Case Temperature



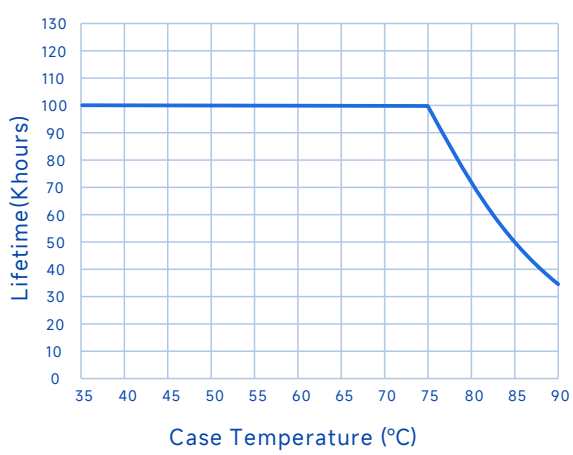
Dimming Curve



AC Dimming Curve



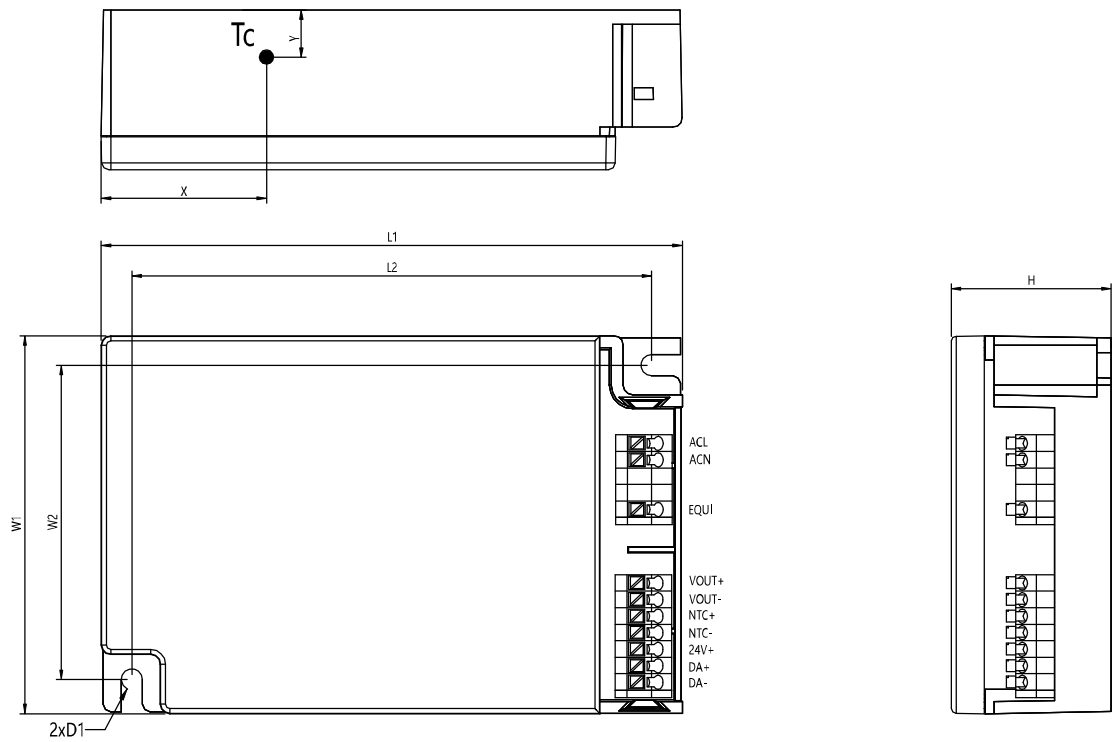
Lifetime Vs. Case Temperature





# 40W NFC Driver with DALI-2 and D4i

## Mechanical Characteristic



| Name<br>Description  | Standard<br>Code | mm(In.)    |
|----------------------|------------------|------------|
| Case Length          | L1               | 123(4.84)  |
| Mounting Hole Length | L2               | 110(4.33)  |
| Case Width           | W1               | 79(3.11)   |
| Mounting Hole Width  | W2               | 66.5(2.62) |
| Case Height          | H                | 33.8(1.33) |
| Mounting aperture    | D1               | 4.5(0.18)  |
| TC Point Position    | X                | 35(1.38)   |
| TC Point Position    | Y                | 8(0.31)    |

### AC Input Cable:

0.75-1.5mm<sup>2</sup>,16-18AWG, Solid/Stranded Wire  
Strip length 8.5-9.5mm

### DC O/P Cable:

0.2-1.5mm<sup>2</sup>,16-24AWG, Solid/Stranded Wire  
Strip length 8.5-9.5mm

### DIM Cable:

0.2-1.5mm<sup>2</sup>,16-24AWG, Solid/Stranded Wire  
Strip length 8.5-9.5mm

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

# 40W NFC Driver with DALI-2 and D4i

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## Package

Standard Packaging Box:

- External dimensions (in mm):  $L \times W \times H = 455 \times 280 \times 175$ ;
- 40PCS/Carton;
- Net weight/Piece: 0.356kg; Gross weight/Carton: 14.3kg;

Burner Packaging Box:

- External dimensions (in mm):  $L \times W \times H = 275 \times 275 \times 110$ ;
- 14PCS/Carton;
- Net weight/Piece: 0.356kg; Gross weight/Carton: 5.0kg;
- 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                                     | 2026/04/28   |        |
| V01     | Update the number of configurable LED power supplies | 2026/06/18   |        |
|         |                                                      |              |        |
|         |                                                      |              |        |
|         |                                                      |              |        |
|         |                                                      |              |        |
|         |                                                      |              |        |
|         |                                                      |              |        |
|         |                                                      |              |        |
|         |                                                      |              |        |