

Description

The N7L-(II) series is specifically designed for industrial lighting applications. It has a non-isolated design and operates in constant current mode with a high power factor and universal input voltage range of 90–305 V ac. It features 0-10V/PWM/Resistor dimming. Its compact housing and high efficiency enable the drivers to operate with high reliability, and it features input surge, output overvoltage, short circuit and over temperature protection.



Product Features

- Universal input voltage:90~305Vac;
- Non-isolated constant current design, Efficiency up to 97%;
- 3 in 1 dimmable: 0-10Vdc/PWM/Resistor;
- 3 Timers dimming: Traditional, Virtual Midnight; Self-Adaptive;
- Off-line programmable;
- DIP switch power and photosensor related settings are programmable;
- Output and dimming signal isolating;
- Standby Power Consumption:<0.5W;
- 12V/0.2Aauxiliary power supply;
- Surge protection: DM: 6KV, CM: 6KV;
- Protections: Input UVP, output SCP/ OVP/ OTP;
- Warranty: 5years.

Application

Industrial lighting
Road lighting
Landscape lighting

Models

| Model | Input Voltage (Vac) | Max Output Power (W) | Output Voltage (Vdc) | Output Current Adjustable Range (A) | Default Current(A) | Eff.(Typ.) | PF(Typ.) | THD(Typ.) |
|-----------------------|---------------------|----------------------|----------------------|-------------------------------------|--------------------|------------|----------|-----------|
| N7L-400M300A12 (II) | 90~305 | 400 | 180~300 | 0.36~1.80 | 1.60 | 97% | 0.97 | 8% |

Notes:

[1].All specifications are measured at 25°C ambient temperature, input voltage 230Vac, and the typical value tested at full load, if no specific note.

Input Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|---------------------------|--------|---------|--------|--|
| Input Voltage Range | 90Vac | - | 305Vac | |
| Rated Input Voltage | 100Vac | - | 277Vac | Refer to Output Power vs. Input Voltage Curve |
| Input Frequency AC | 47Hz | 50/60Hz | 63Hz | |
| Max Input Current | - | - | 4.0A | 120Vac&100%load |
| Max Input Power | - | - | 450W | 120Vac&100%load |
| Leakage Current | - | - | 0.70mA | IEC 60598-1;240Vac/50Hz |
| Leakage Current | - | - | 0.75mA | UL 8750; 277Vac/60Hz |
| Inrush Current | - | - | 120A | 230Vac,cold start |
| Standby Power Consumption | - | - | 0.5W | 230Vac, dimming off, no load on auxiliary power supply |
| Power Factor | 0.95 | 0.97 | - | 230Vac,50/60Hz,70%-100% load |
| | 0.90 | - | - | 120-277Vac,50/60Hz,70%-100% load |
| THD | - | 8% | 10% | 230Vac, 50/60Hz, 100% load |
| | - | 10% | 20% | 120-277Vac, 50/60Hz, 70%-100% load |
| MCB(B16) | - | 6 | - | 230Vac |

Output Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|---------------------------------------|--------|------|--------|--|
| Output Voltage Range | 180Vdc | - | 300Vdc | |
| Open Circuit Voltage | - | - | 350Vdc | |
| Output Current Adjustable Range | 1.33A | - | 1.80A | |
| Full Power Current Range | 0.36A | - | 1.80A | 222-300Vdc |
| Default Photocontrol Turn-off Voltage | 0V | 1V | 2V | Adjust via PC software |
| Default Photocontrol Turn-on Voltage | 3V | 4V | 5V | |
| Current Accuracy | -5% | - | +5% | |
| Total Output Current Ripple (pk- pk) | - | 10% | 15% | 20MHz BW full load&LED load the LED load ripple is slightly different for different LEDs |
| Startup Overshoot Current | - | - | 10% | 120-277Vac full load condition, LED load |
| Auxiliary Source output voltage | 10.8V | 12V | 13.8V | |
| Auxiliary Source output current | - | - | 200mA | |
| Line Regulation | -5% | - | +5% | 25°C±10°C ambient temperature, input voltage changes from 120Vac to 277Vac |
| Load Regulation | -5% | - | +5% | 25°C±10°C ambient temperature, 230Vac input, load changes from 70% to100% |
| Turn-on Delay Time | - | - | 1.0s | 120-277Vac, 100%load |

General Specification

| Parameter | Min. | Typ. | Max. | Notes |
|--|-----------------------------------|-----------|-------|--|
| Efficiency@120Vac | 93% | 94.5% | - | 300Vdc/1.33A Vdc;25°C ambient temperature, no load of auxiliary source |
| Efficiency@230Vac | 95% | 96.5% | - | 300Vdc/1.33A Vdc;25°C ambient temperature, no load of auxiliary source |
| Efficiency@277Vac | 95% | 97% | - | 300Vdc/1.33A Vdc;25°C ambient temperature, no load of auxiliary source |
| MTBF | - | 200Khours | - | 25°C±10ambient temperature,230Vac,80% load (MIL-HDBK-217/SR-332) |
| Lifetime | - | 50Khours | - | 230Vac&100% load,Tc 85°C, refer to lifetime vs. casetemperature curve |
| Operating Temperature Ta | -45°C | - | +60°C | 120-200VAC Ta:45°C 200-277VAC Ta:60°C |
| Operating Case Temperature for Safety Tc_s | -40°C | - | +90°C | |
| Operating Case Temperature for Warranty Tc_w | -40°C | - | +85°C | 5 years warranty shell temperature Humidity: 10%-90% RH |
| Storage TemperatureTa | -40°C | - | +85°C | Humidity:5%-95% RH |
| Altitude | -60m | - | 4000m | |
| Over Temperature ProtectionTc | 90°C | 95°C | 100°C | Decreases output current, returning to normal after over temperature is removed |
| Short Circuit | | | | Hiccupmode. The output shall return to normal when the fault condition is removed. |
| Dimensions (L*W*H)mm | 225*55*33mm | | | |
| Net Weight | 740±50g/PCS | | | |
| Package (L*W*H) | 460*430*165mm;12PCS/Ctn.,GW:9.0KG | | | |

Dimming

| Parameter | Min. | Typ. | Max. | Notes |
|-------------------------------|-----------------------|-------|-----------------------|---|
| Absolute Maximum Voltage | - | 10V | 15V | On the Vdim (+) Pin |
| Source Current on Vdim (+)Pin | - | 100uA | 200uA | |
| Dimming Range | 10% I _{omax} | - | 100% I _{set} | I _{set} =1.33-1.80A (满功率电流范围) |
| Suggest Dimming Input 0-10V | 0V | - | 10V | |
| Turn-on voltage | 0.9V | - | 1.2V | |
| Turn-off voltage | 0.6V | - | 0.9V | |
| PWM in High Level | 9.7V | - | 10.3V | |
| PWM in Low Level | 0V | - | 0.3V | |
| PWM in Frequency Range | 1KHz | - | 2KHz | |
| PWM in Duty Cycle | 1% | - | 99% | |
| Turn-on duty cycle | 9% | - | 12% | |
| Turn-off duty cycle | 6% | - | 9% | |
| Resistor Range | 0 | - | 100KΩ | |
| Time control dimming | - | - | - | Three time control options are available. |
| Output lumen compensation | - | - | - | Output lumen compensation |

Safety Specifications

| Parameter | UL | CE/CCC | Note |
|------------------------------------|---------|---------|--|
| Dielectric Strength (Input-Ground) | 1600Vac | 1500Vac | 60s, Current not exceeding 5mA input L/N short-circuit |
| Grounding Resistance | ≤0.1Ω | | 25°C±10°C Ambient Temperature, pass 30A Current, 120s. (UL) 25°C±10°C Ambient Temperature, pass 25A Current, 60s (CE) . |
| Insulation Resistance | ≥10MΩ | | Input-PE, 500Vdc/60s/25°C |

Notes: 1.The voltage resistance requirement of aluminum substrate is greater than 2KVac.

2. During the withstand voltage test, please short-circuit the L/N, positive and negative output lines, positive and negative dimming lines, and auxiliary power supply.

Safety Compliance

| Safety Category | Safety normative standards | Certification | Notes |
|-----------------|---|---------------|-------|
| CCC | GB/T19510.1, GB/T 19510.213 | √ | |
| CE | EN61347-1, EN61347-2-13, EN62493 | √ | |
| ENEC | EN61347-1, EN61347-2-13, EN62384 | √ | |
| CB | IEC61347-1, IEC61347-2-13 | √ | |
| BIS | IS 15885(PART 2/SEC 13) | | |
| UL | UL 8750 | √ | |
| CUL | CSA C22.2 No.250.13 | √ | |
| KC | K61347-1, K61347-2-13 | | |
| PSE | J61347-1, J61347-2-13 | | |
| SAA | AS/NZS IEC 61347.2.13 AS/NZS 61347.1 | | |
| EAC | ГОСТ Р МЭК 61347-1 ГОСТ IEC 61347-2-13 | | |

EMC Compliance

| EMC Category | Standards | Approved | Notes |
|----------------------|--|----------|---------|
| CCC | GB/T 17743, GB 17625.1 | √ | |
| CE | EN 55015 | √ | |
| CE | EN 61000-3-2, EN 61000-3-3 | √ | |
| CE | EN61000-4-2,3,4,5,6,11 | √ | |
| CE | EN 61547 | √ | |
| KC | K61547 | | |
| KC | K00015 | | |
| PSE | J55015 | | |
| FCC | FCC part 15 | √ | Class B |
| Surge Shock Immunity | ANSI/C82.77-5-2017 | | |
| | IEC/EN 61000-4-5 | √ | |
| Ringing Wave | IEC/EN 61000-4-12 | | |
| | ANSI/IEEE C62.41.2 | | |
| EAC | ГОСТ IEC 62493, СТБ EH 55015 ГОСТ IEC 61547 | | |
| EAC | ГОСТ 30804.3.2 (IEC 61000-3-2) ГОСТ 30804.3.3 (IEC 61000-3-3) | | |

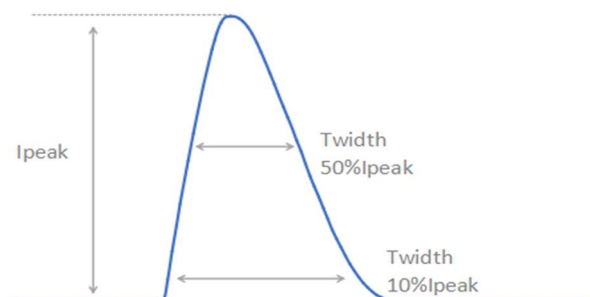
Notes :

1. The power supply complies with relevant EMC standards. As a part of the terminal equipment system, the power supply needs to be reconfirmed for EMC in conjunction with the entire system.

RoHS

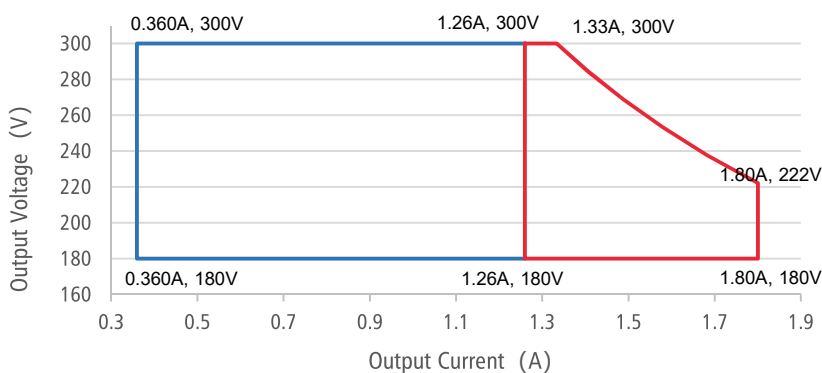
Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.

Inrush Current Waveform

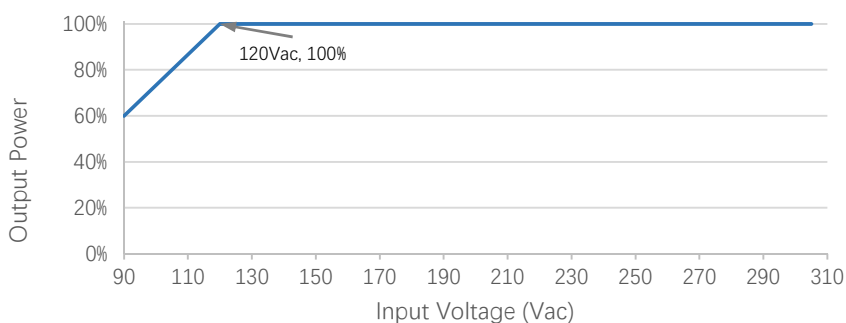


| Vin | Ipeak | T(@10% of Ipeak) | T(@50% of Ipeak) |
|---------|-------|------------------|------------------|
| 120Vac | 60A | - | 150 μ s |
| 230Vac | 120A | - | 135 μ s |
| 277 Vac | 150A | - | 120 μ s |

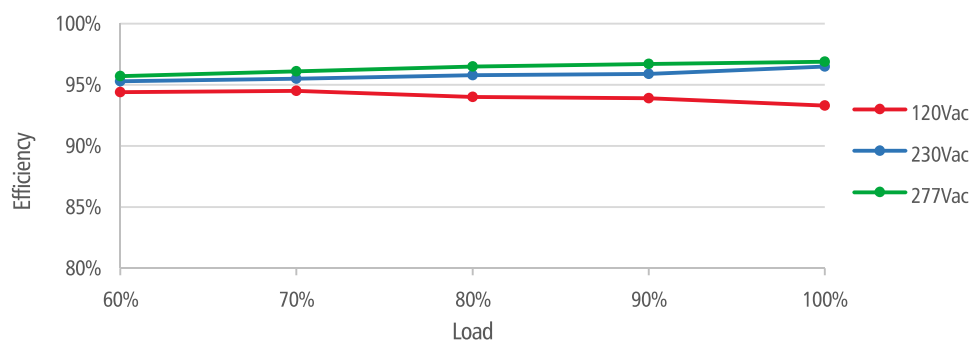
Output Voltage vs. Output Current



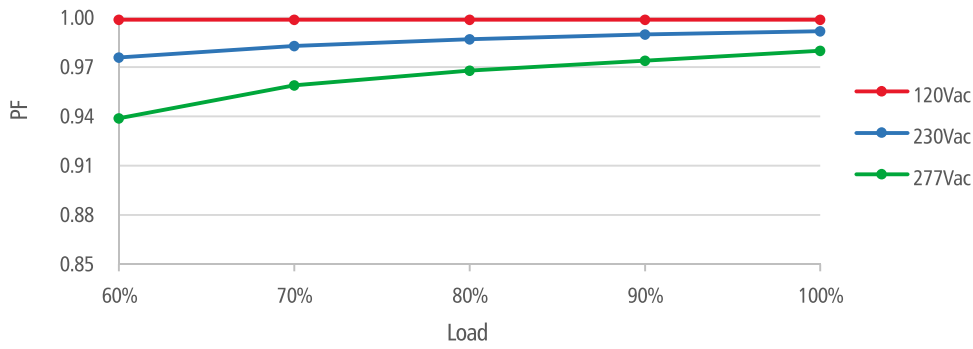
Output Power vs. Input Voltage



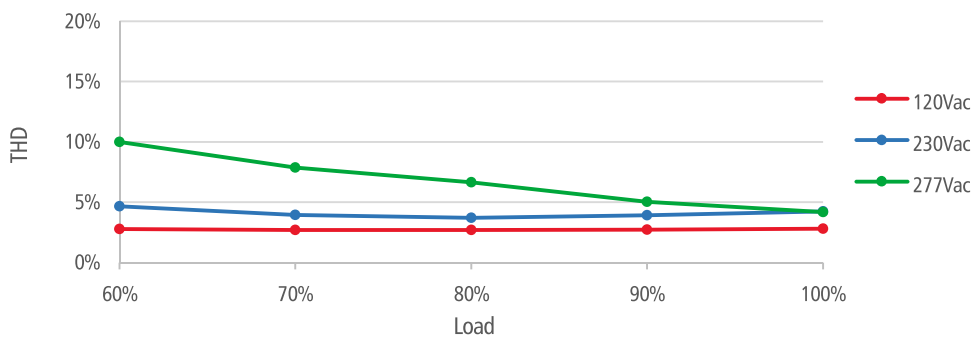
Efficiency vs. Load



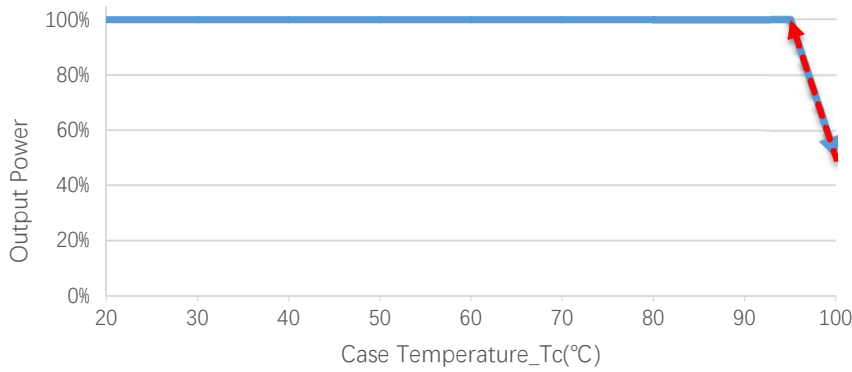
PF vs. Load



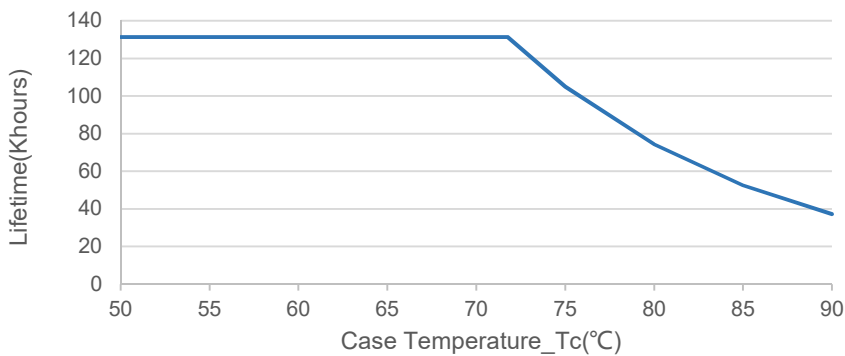
THD vs. Load



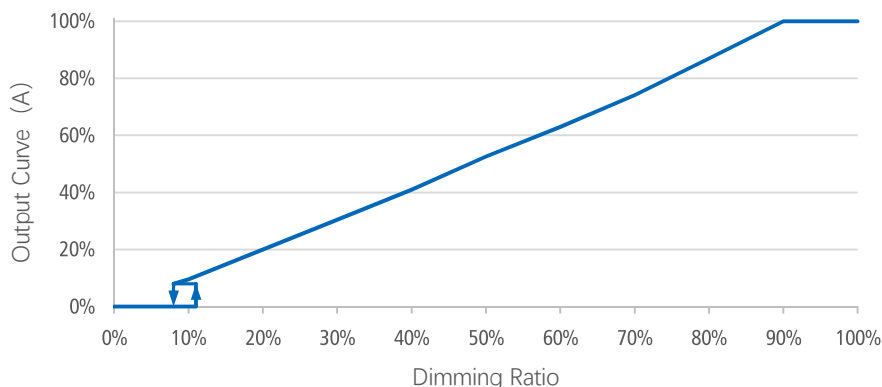
Output Power vs. Case Temperature



Lifetime vs. Case Temperature

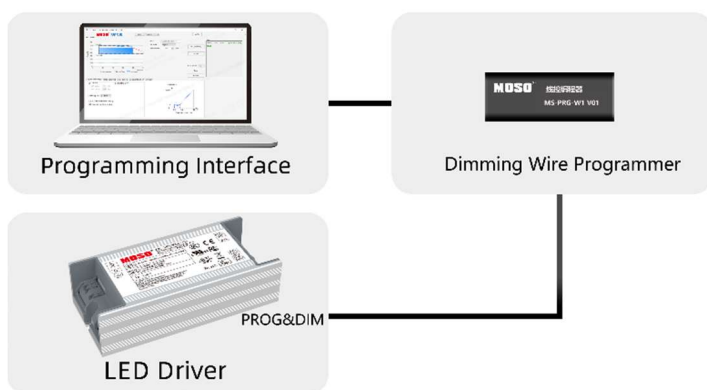


0-10V/PWM/Resistor Dimming



Off-line Programming

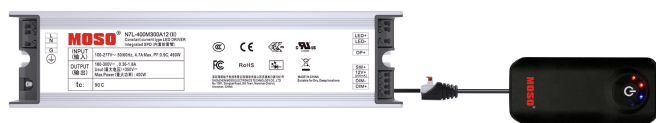
User-friendly connection of programming without necessary to power on device (suitable for N7-II, N7L-II Series).



Visual Intelligent Programming

1. Set the output parameters through the control signal line 0-3.3V/0-5V/0-9V/0-10V optional.
2. Timer dimming. Set the timer control function, support up to 7 segments;
3. Set DIP switch power range and photocontrol range;
4. Set output CLO;
5. Read the recorded system parameters; Record the working time working temperature,.
6. Configure the driving parameters. After setting is completed, then click the configured parameters to complete programming.

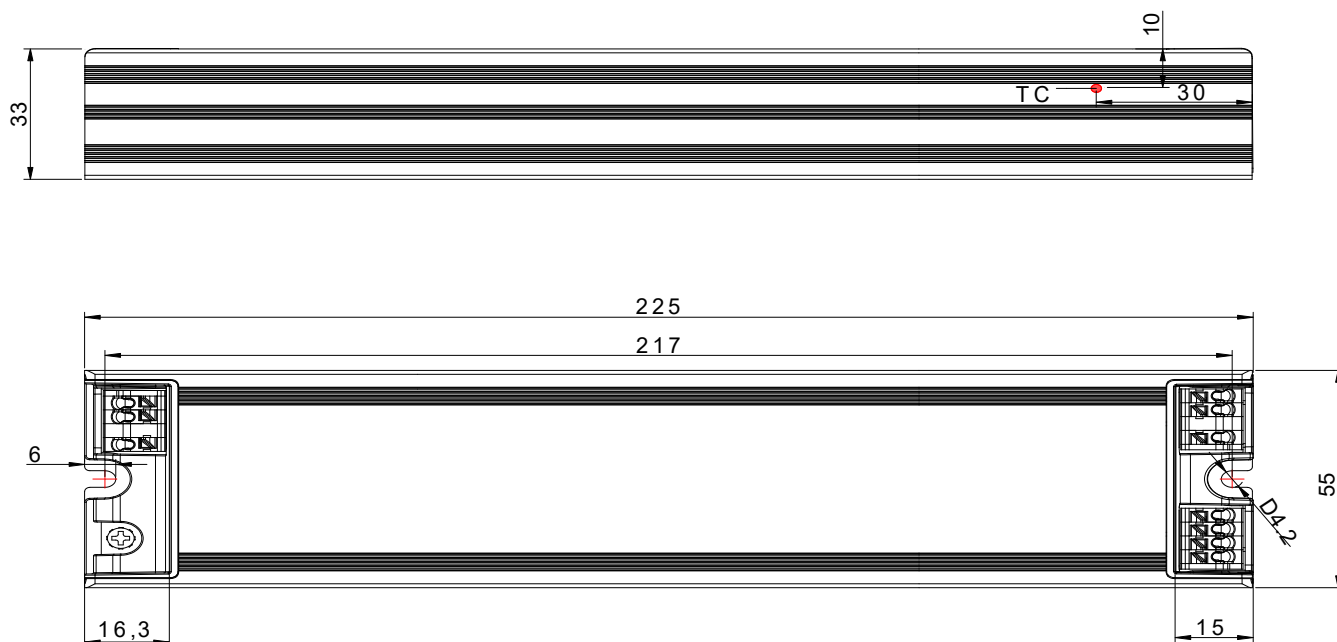
Programming mode 2



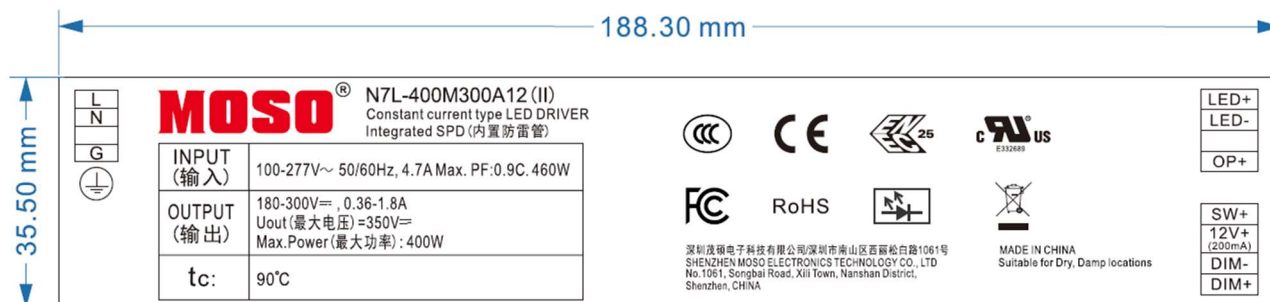
Instructions of one touch programmer:

1. Open the software interface and download the program to the offline programmer .
2. Connect the dimming wire with the programmer, press the programmer button, the programmer will give you a subtle reminder “ (Beep) ” to tell you the installation completed.

Mechanical Outline



Label



Version

| | | |
|-----|---------------------|------------|
| A.1 | First release | 2025-12-30 |
| B.2 | Modify the template | 2026-01-05 |
| | | |
| | | |
| | | |
| | | |

Specification for Approval

Product Name: 400W Linear Non-isolated Driver

Product Model: N7L-400M300A12(II)

Rev. B.2

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| Prepared By | Checked By | Approved By |
|-------------|------------|-------------|
| | | |

Specification for Approval

Product Name: 400W Linear Non-isolated Driver

Product Model: N7L-400M300A12(II)

Rev. B.2

| CUSTOMER AUTHORIZED SIGNATURE | | |
|--|------------|-------------|
| Tested By | Checked By | Approved By |
| | | |
| (Company seal)Return one copy to MOSO with approved signature and company seal | | |

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| Prepared By | Checked By | Approved By |
|-------------|------------|-------------|
| | | |