

Specification for Approval

Product Name: 42W Programmable Driver
Product Model: PHC-042M062
Rev.: A.1
Sample Date: -

| 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 |
|-------------|------------|-------------|
| | | |

Product Feature:

- ◆ Input Voltage: 90~305Vac;
- ◆ Offline programming through dimming wire;
- ◆ No stroboscopic;
- ◆ 2-in-1 dimming mode: 0-10Vdc, PWM dimming;
Dim-to-off;
- ◆ THD<10%;
- ◆ Surge protection: 4KV line-line, 6KV line-earth;
- ◆ Protection: Input OVP, Output OVP, SCP, OTP;
- ◆ IP67 design for indoor and outdoor applications;
- ◆ 5 years warranty.



Application

- ◆ LED street lighting, industrial lighting and landscape lighting.

DESCRIPTION

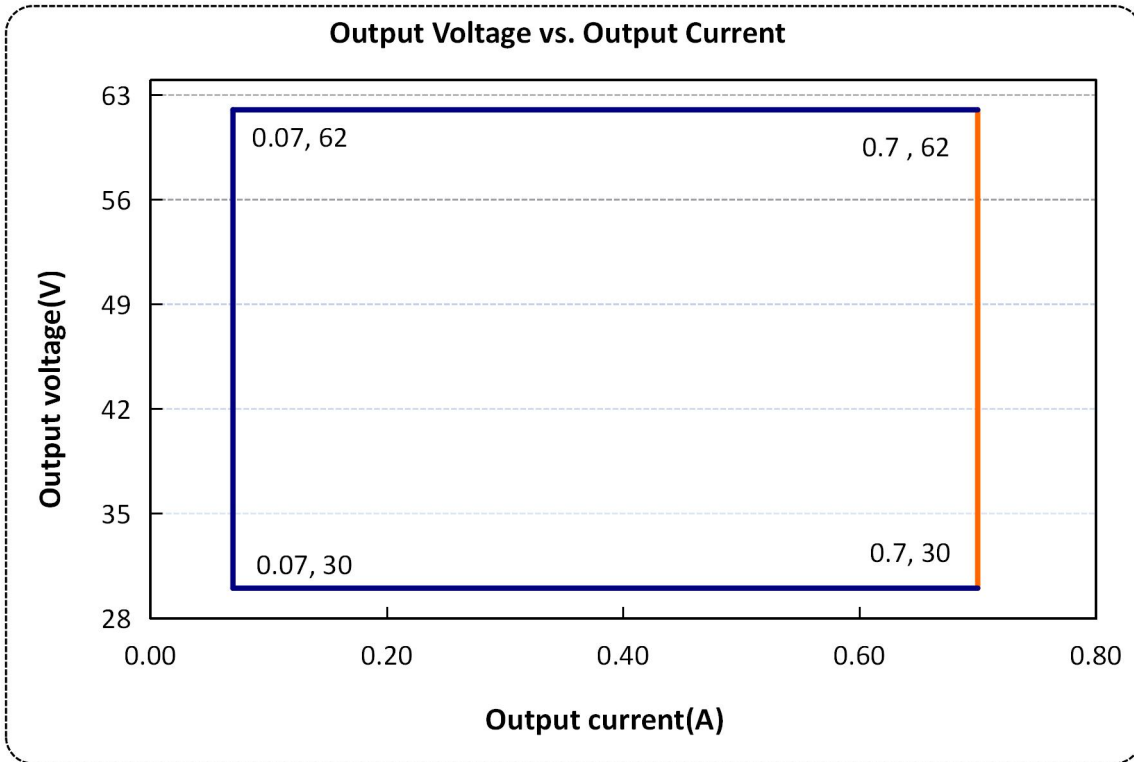
The PHC-042 is a 42W, constant-current, programming LED driver that operates from 90-305Vac input with excellent power factor and low THD. It is created for industrial lights, tunnel and street lights. The high efficiency of these drivers and compact metal case enable them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, input over voltage, output over voltage, short circuit, and over temperature.

Models

| Model Number | Max Output Power (W) | Output Voltage Range (Vdc) | Output current (A) | Default Output Setting | Typical Efficiency | Typical THD | Typical PF | |
|--------------|----------------------|----------------------------|--------------------|------------------------|--------------------|-------------|------------|--------|
| | | | | | | | 120Vac | 230Vac |
| PHC-042M062 | 42 | 30-62 | 0.070~0.700 | 30~62V/0.700A | 85% | 10% | 0.98 | 0.96 |

Remark: All parameters not specially mentioned are measured at 230Vac input, full load and 25°C of ambient temperature.

OPERATING AREA I-V



INPUT SPECIFICATIONS

| Parameter | Min. | Typ. | Max. | Notes |
|----------------------------------|-------|------------|---------------------|------------------------------------|
| Input Voltage | 90Vac | 100-277Vac | 305Vac | Please refer to the derating curve |
| Input Frequency | 47Hz | 50/60 Hz | 63Hz | |
| Leakage Current | - | - | 0.70mA | 277Vac/60Hz |
| Input AC Current | - | - | 0.70A | 120-277Vac with full load |
| Inrush Current(I ² t) | - | - | 0.1A ² S | 230Vac input, Ta=25°C (cold start) |
| Power Factor | 0.96 | 0.98 | - | 120Vac with full load |
| | 0.95 | 0.96 | - | 230Vac with full load |
| THD | - | 15% | 20% | 120-277Vac with 70%-100% load |
| | - | 10% | 15% | 120-230Vac with 80%-100% load |

OUTPUT SPECIFICATIONS

| Parameter | Min. | Typ. | Max. | Notes |
|---------------------------------------|------|------|------|---|
| Output Current Tolerance | -8% | - | 8% | |
| Total Output Current Ripple(pk-pk) | - | 10% | 20% | 20MHz BW, full load & LED Load, ripple is different with difference LED load. |
| Startup Overshoot Current | - | 10% | 20% | 120~277Vac & full load, LED Load |
| No Load Output Voltage PHC-042M062 | - | - | 80V | |
| Line Regulation | -8% | - | +8% | 25°C±10°C ambient temperature, input voltage changes from 120Vac to 277Vac. |
| Load Regulation | -8% | - | +8% | 25°C±10°C ambient temperature, 230Vac input, load changes from 60% to 100%. |
| Turn-on Delay Time | - | - | 3S | 120Vac, 100% load |
| | - | 1S | 2S | 230Vac, 100% load |

GENERAL SPECIFICATIONS

| Parameter | Min. | Typ. | Max. | Notes |
|-----------------------------------|--------------|-------------|---------|--|
| Efficiency @120Vac PHC-042M062 | 82% | 83% | - | Measured at full load and 25°C ambient temperature |
| Efficiency @230Vac PHC-042M062 | 83% | 85% | - | Measured at full load and 25°C ambient temperature |
| Efficiency @277Vac PHC-042M062 | 83% | 85% | - | Measured at full load and 25°C ambient temperature |
| Dielectric Strength | Input-Output | - | 3750Vac | 10mA/60S |
| | Input-PE | - | 1600Vac | |
| | Output- PE | - | 1600Vac | |
| Grounding Resistance | - | - | 0.1Ω | 25A/60S |
| Insulation Resistance | 50MΩ | - | - | Input-Output, Input-PE, Output-PE, 500Vdc/60S/25°C/70%RH |
| MTBF | - | 200000Hours | - | 230Vac, 80% load (MIL-HDBK-217F) |
| Lifetime | - | 50000Hours | - | 230Vac&100% load, 70°C case temperature, refer to lifetime VS Tc curve for details |

| | | | | |
|---|------------------------------|---|-------|---|
| Operating Case Temperature for Safety Tc _s | -40°C | - | +85°C | |
| Operating Case Temperature for Warranty Tc _w | -40°C | - | +70°C | 5 Years Warranty Humidity: 10% to 95% RH |
| Storage Temperature | -40°C | - | +85°C | Humidity: 10% to 95% RH |
| Dimensions (L×W×H)mm | 117*67*37 | | | |
| Net Weight | 490±50g/PCS | | | |
| Package | L480×W275×H208mm; 24PCS/Ctn. | | | |

Note: All specifications are tested by Cree XLamp XP-G2 and typical measured at 230Vac and 25°C unless otherwise stated.

DIMMING

| Parameter | Min. | Typ. | Max. | Notes | |
|--|-------------|----------------------|-------|---|--------------------------|
| 0~10V Absolute Maximum Voltage on the V _{dim} (+) Pin | - | 10V | - | | |
| 0~10V Source Current on V _{dim} (+)Pin | - | 1mA | 2mA | | |
| Dimming Output Range | PHC-042M062 | 10% I _{max} | - | 100% I _{max} | I _{max} =0.700A |
| | PHC-042M062 | 0.070A | - | 0.700A | |
| Recommended Dimming Range for 0-10V | 0V | - | 10V | Default 0-10V/PWM dimming Dim-to-off | |
| PWM_in High Level | 9.7V | - | 10.3V | | |
| PWM_in Low Level | 0V | - | 0.3V | | |
| PWM_in Frequency Range | 200Hz | - | 2KHz | | |
| PWM_in Duty Cycle | 10% | - | 100% | | |

SAFTY STANDARDS

| Safety Category | Country / Territory | Standards | Whether have Certification |
|-----------------|---------------------|---------------------------|----------------------------|
| CCC | China | GB19510.1, GB19510.14 | |
| CE | Europe | EN61347-1, EN61347-2-13 | √ |
| | | EN62493 | √ |
| ENEC | | EN62384 | |
| CB | CB Countries | IEC61347-1, IEC61347-2-13 | |
| BIS | India | IS 15885(PART 2/SEC 13) | |
| UL | USA | UL 8750 | |
| CUL | Canada | CSA C22.2 No.250.13 | |
| KC | South Korea | K61347-1, K61347-2-13 | |
| PSE | Japan | J61347-1, J61347-2-13 | |
| SAA | Australia | AS/NZS IEC 61347.2.13 | |
| | | AS/NZS 61347.1 | |

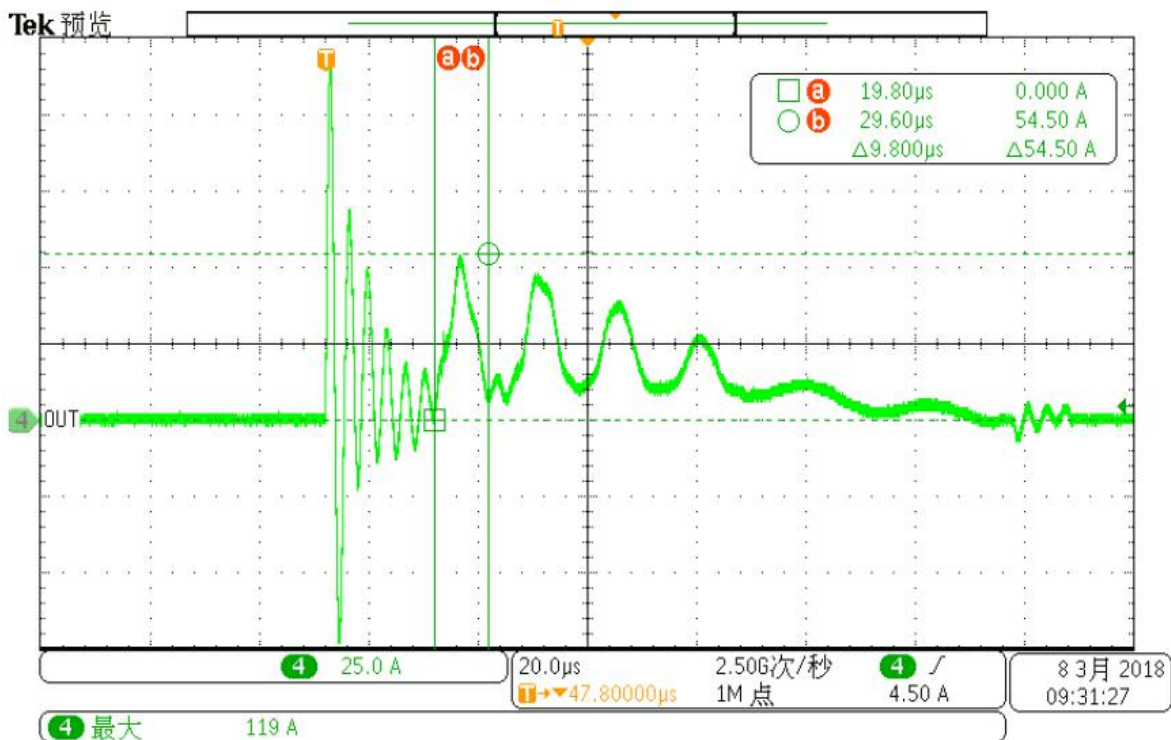
EMC COMPLIANCE

| EMC Category | Country / Territory | Standards | Whether have Certification |
|--------------|---------------------|----------------------------|----------------------------|
| CCC | China | GB/T 17743, GB 17625.1 | |
| CE | Europe | EN 55015 | √ |
| | | EN 61000-3-2, EN 61000-3-3 | √ |
| | | EN61000-4-2,3,4,5,6,11 | √ |
| | | EN 61547 | √ |
| KC | South Korea | K61547 | |
| | | K00015 | |
| PSE | Japan | J55015 | |
| FCC | USA | FCC part 15 | |

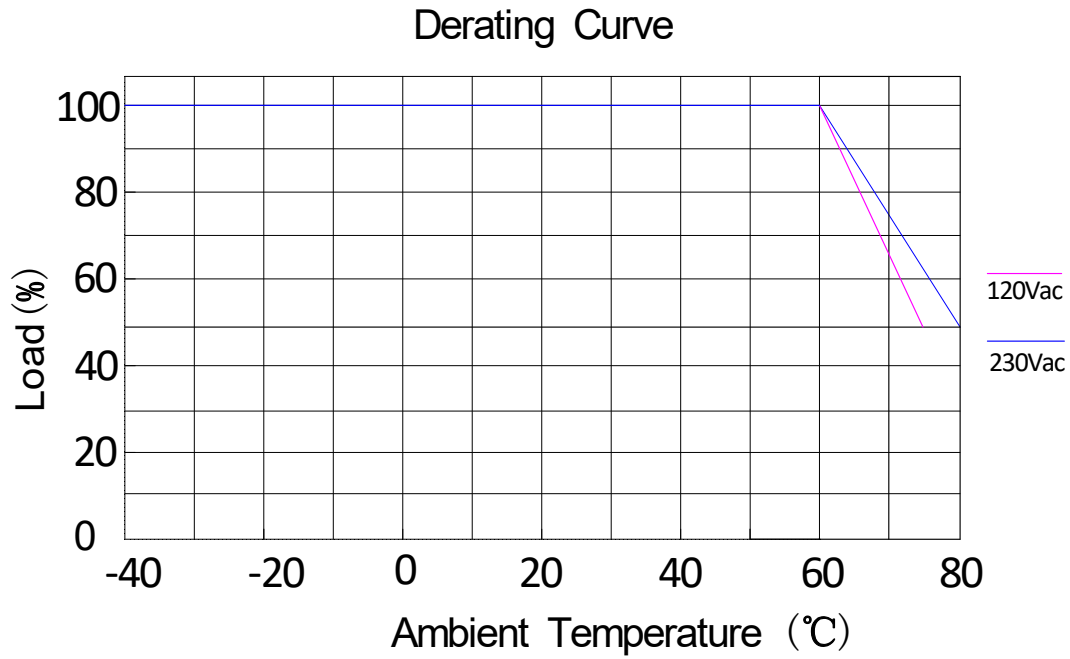
NOTE:

This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

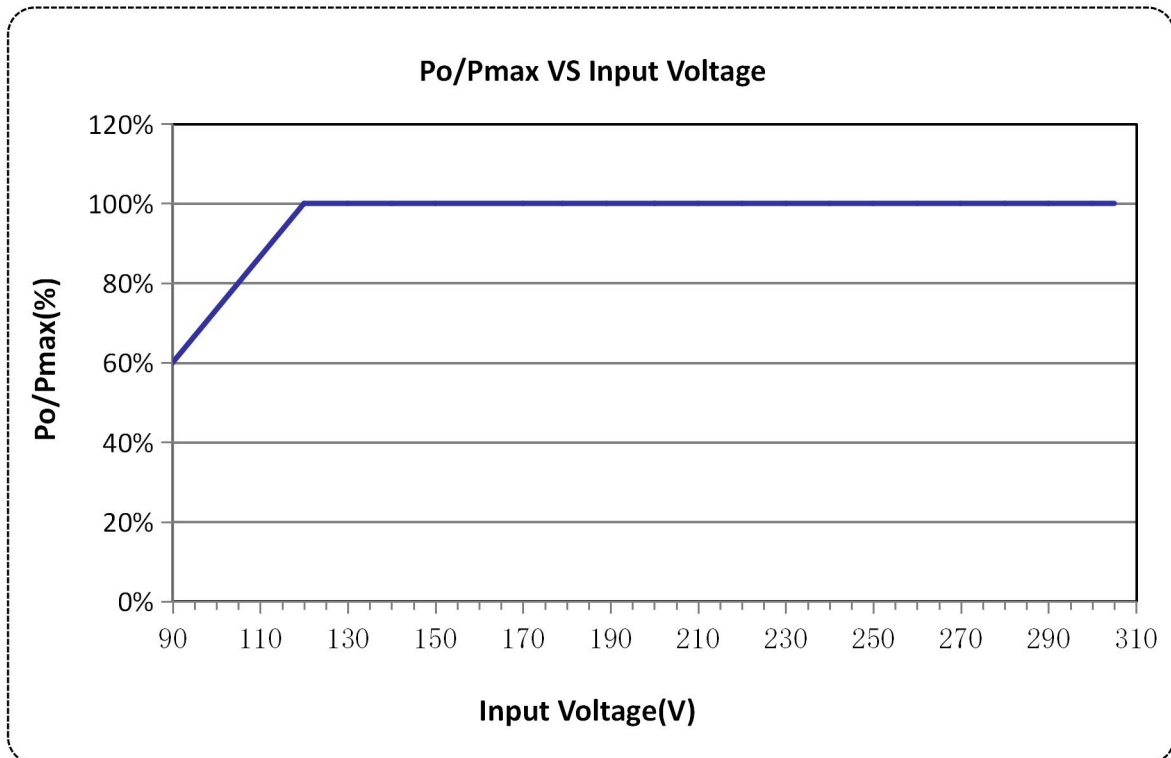
INRUSH CURRENT WAVEFORM



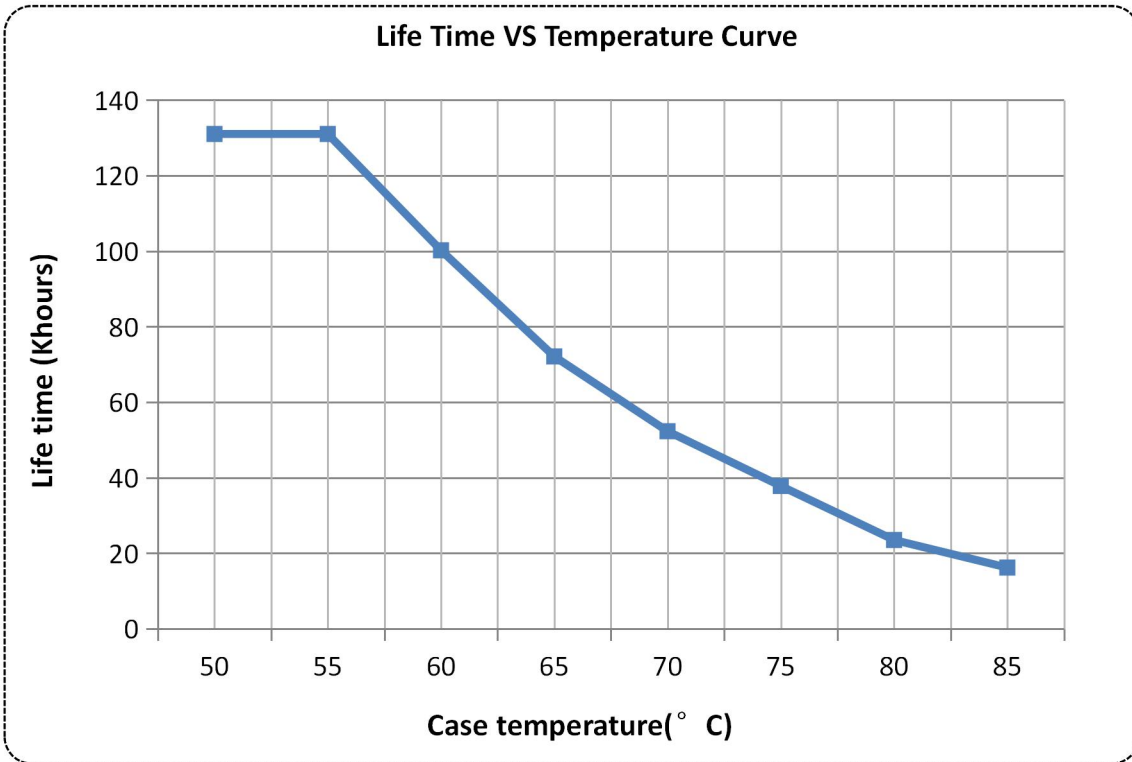
DERATING CURVE



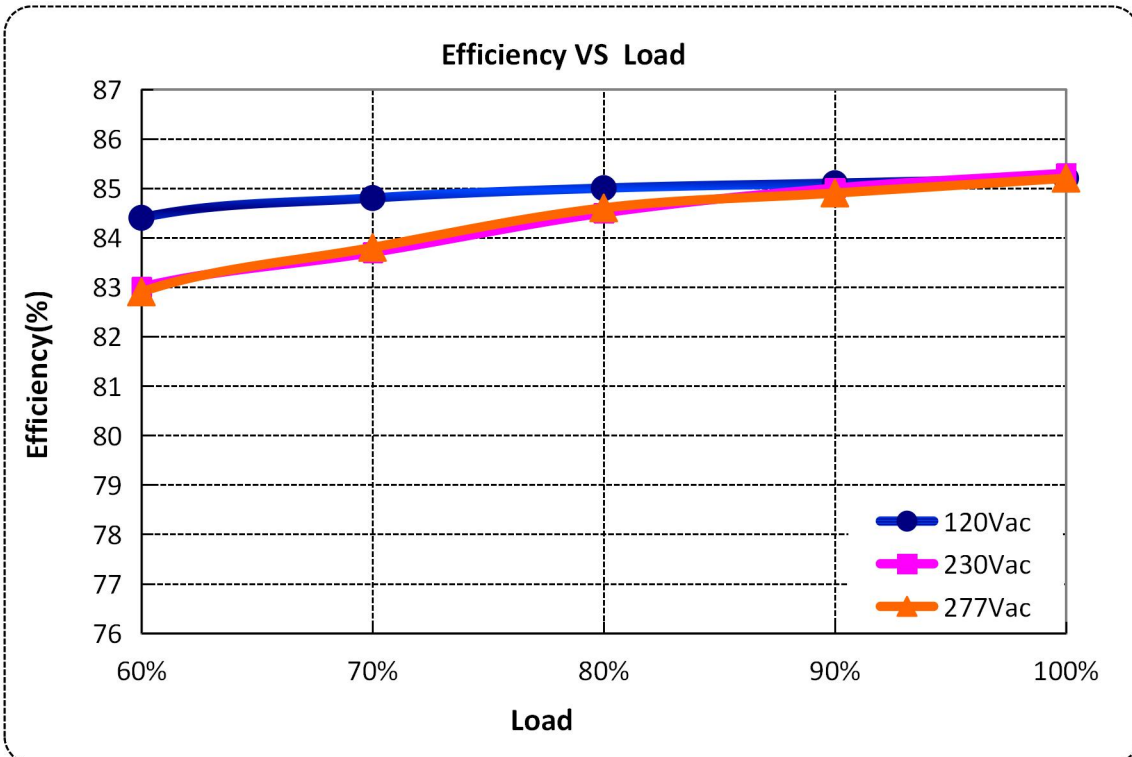
OUTPUT POWER VS INPUT VOLTAGE



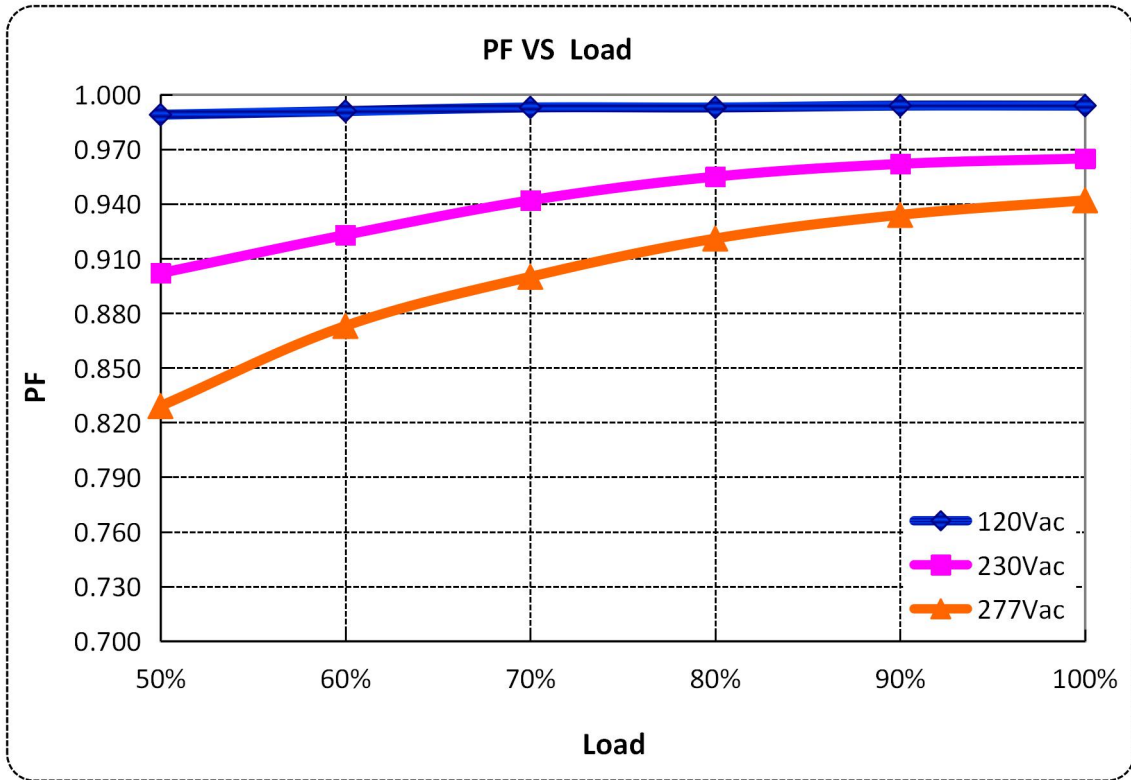
LIFETIME VS CASE TEMPERATURE



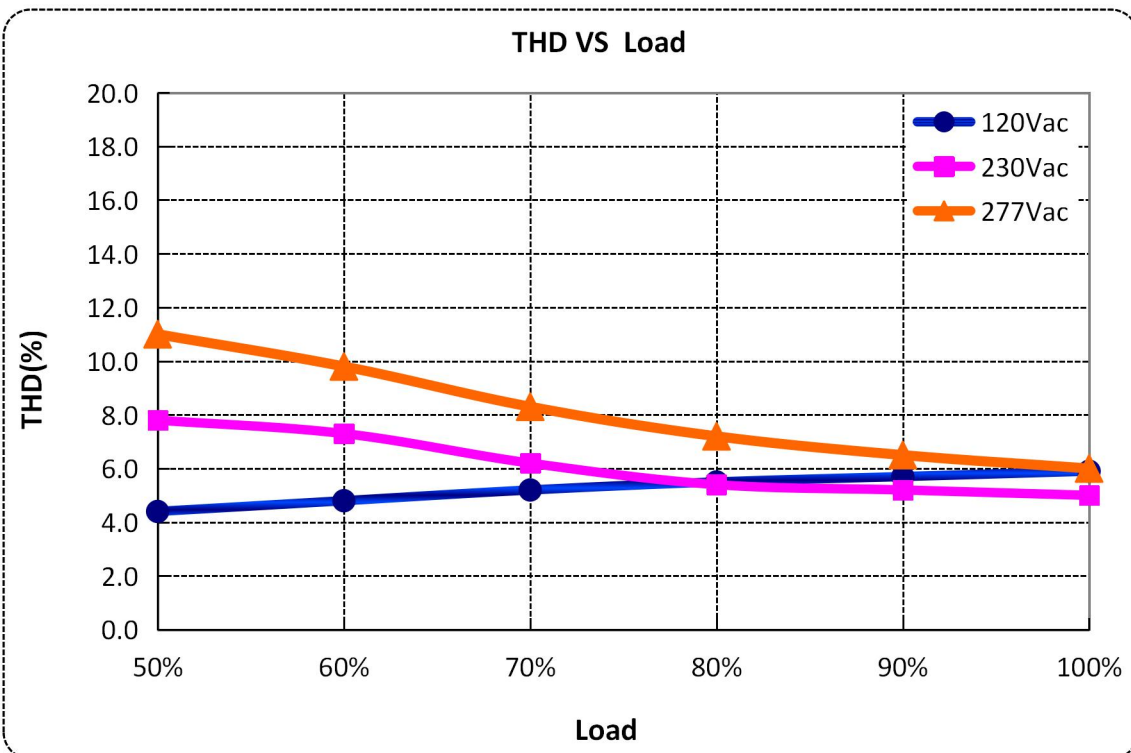
EFFICIENCY VS LOAD



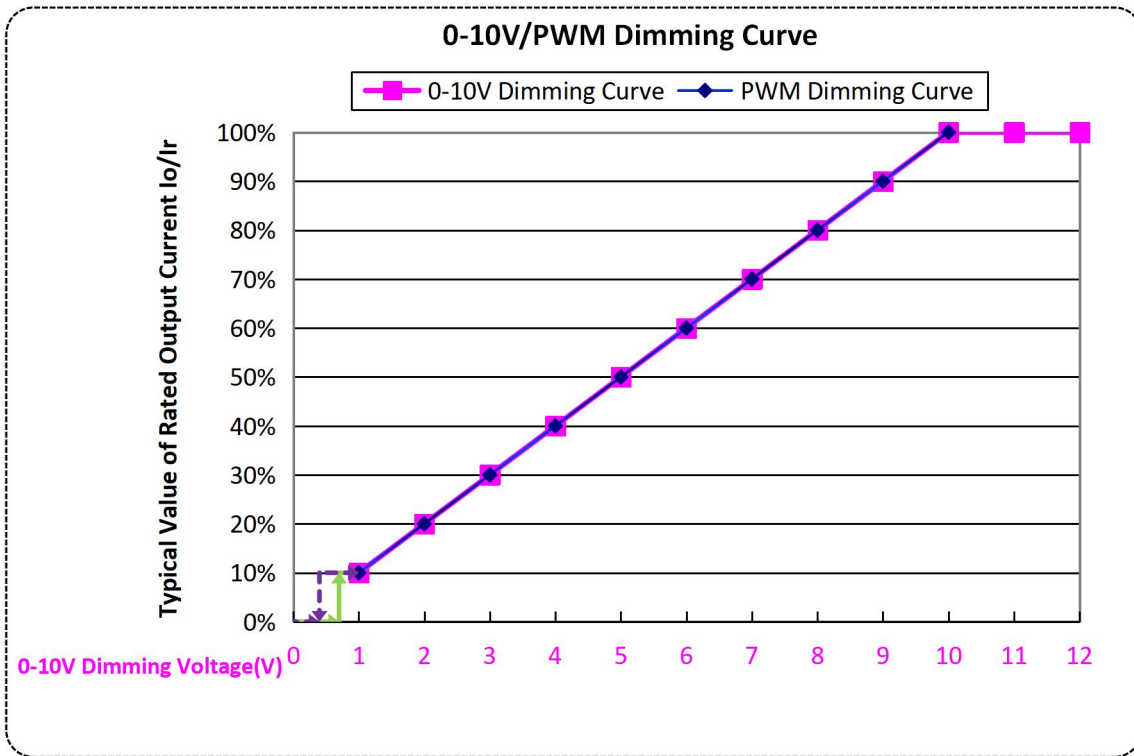
POWER FACTOR VS LOAD



TOTAL HARMONIC DISTORTION



0-10V/PWM DIMMING CURVE



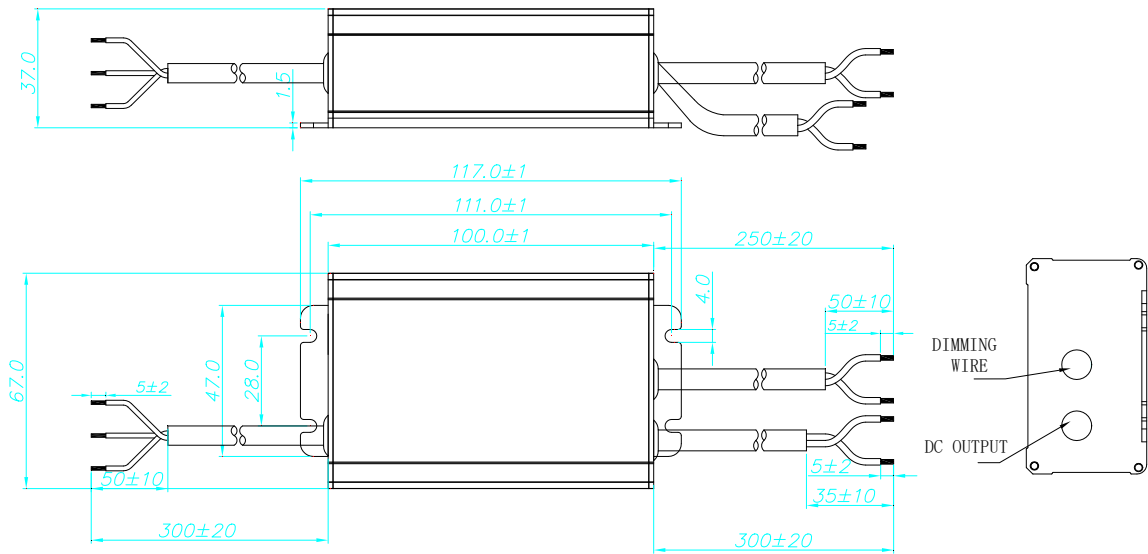
Note:

Dim to off model is realized by decreasing the output voltage, the power supply still has residual voltage when dim to off, so the start up voltage of the lamp should be higher than residual voltage.

PROTECTIONS

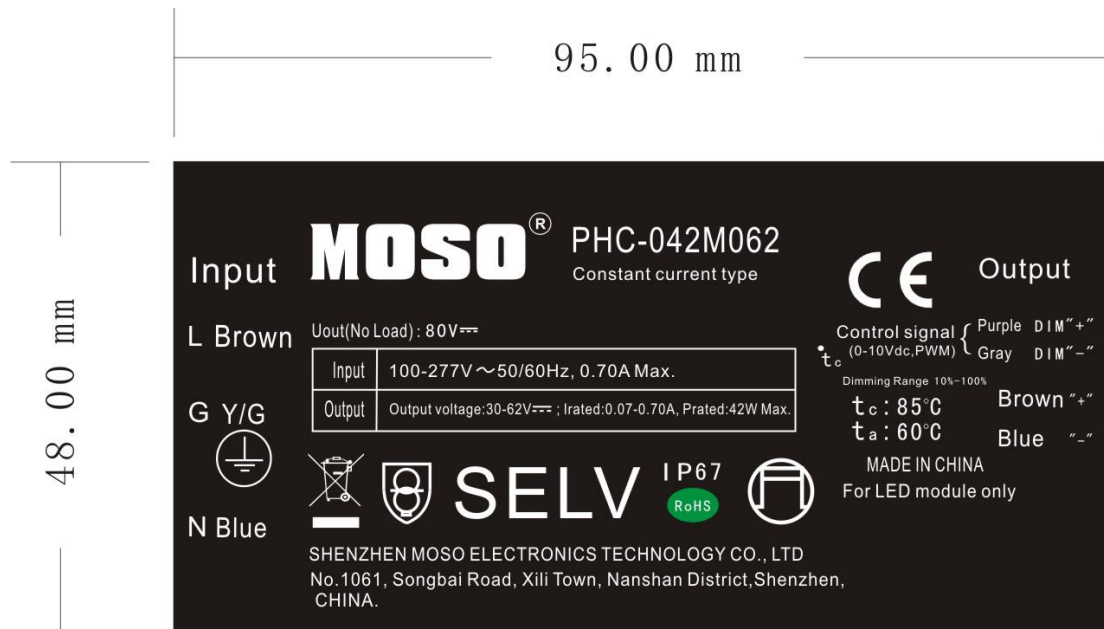
| Parameter | | Min. | Typ. | Max. | Notes |
|--------------------------------|----------------------------|--|--------|--------|---|
| Input Over Voltage Protection | Input Protection Voltage | 310Vac | 330Vac | 350Vac | Turn off the output when the input voltage exceeds protection voltage. |
| | Recovery Voltage | 300Vac | 320Vac | 340Vac | Auto Recovery. The driver will restart when the input voltage falls below recovery voltage. |
| | Max. of Input Over Voltage | - | - | 440Vac | The driver can survive for 48 hours with input over-voltage of 440Vac. |
| Over Temperature Protection | | Decreases output current, returning to normal after over temperature is removed. | | | |
| Short Circuit Protection | | Hiccup mode and auto recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed. | | | |
| Output Over Voltage Protection | | Limits output voltage at no load and in case the normal voltage limit fail | | | |

MECHANICAL OUTLINE



| Wire | Specification | Note |
|---------|---|-------------|
| Input | CCC+VDE H05RN-F 3x1.0mm ² L=300±20mm | CCC/CE |
| Output | CCC+VDE H05RN-F 2x1.0mm ² L=300±20mm | CCC/CE |
| Dimming | UL2733 22AWG*2C L=250±20mm | PURPLE/GRAY |

LABEL





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