

Product Features



- Universal input voltage / Full range: 90~305Vac;
- Constant power design, output current programming adjustable;
- offline programmable
- 3-in-1 dimmable: 0~10Vdc, PWM, Timer dimming. Dim-to-off;
- Constant lumen output;
- Output and Dimming Signal Isolating;
- Surge protection: 6KV line-line, 10KV line-earth;
- Protections: SCP, OVP, OTP;
- IP67 design for indoor and outdoor applications;
- Suitable for dry / damp / wet locations;
- 7 years warranty.

Application

- Suitable for LED roadway lighting, plant lighting, industrial lighting, landscape lighting, etc.

DESCRIPTION

The X6-600W series is 600W outdoor offline programmable LED driver that operates in constant current with high PF value and universal input voltage range 90~305Vac model. Offline Monitored by dimming cable connected with an USB kit programming device, the fully programmed drivers offer all dimming, dim-to-off, constant lumen output options and a wide range of output current in a single driver, which deliver maximum flexibility with customized operating settings and intelligent control options for lighting manufacturers, as one driver can be programmed for many different luminaire designs. X6 provides built-in timer dimming schedules further increasing the energy savings and CO₂ reductions achieved with LED lighting. It also helps clients to improve the management of logistics and stock. The compact metal case and high efficiency enables the driver to operating with high reliability, and extending product lifetime. Overall protection is provided against lightening surge, output over voltage, short circuit, and over temperature, to ensure low failure rate.

MODELS

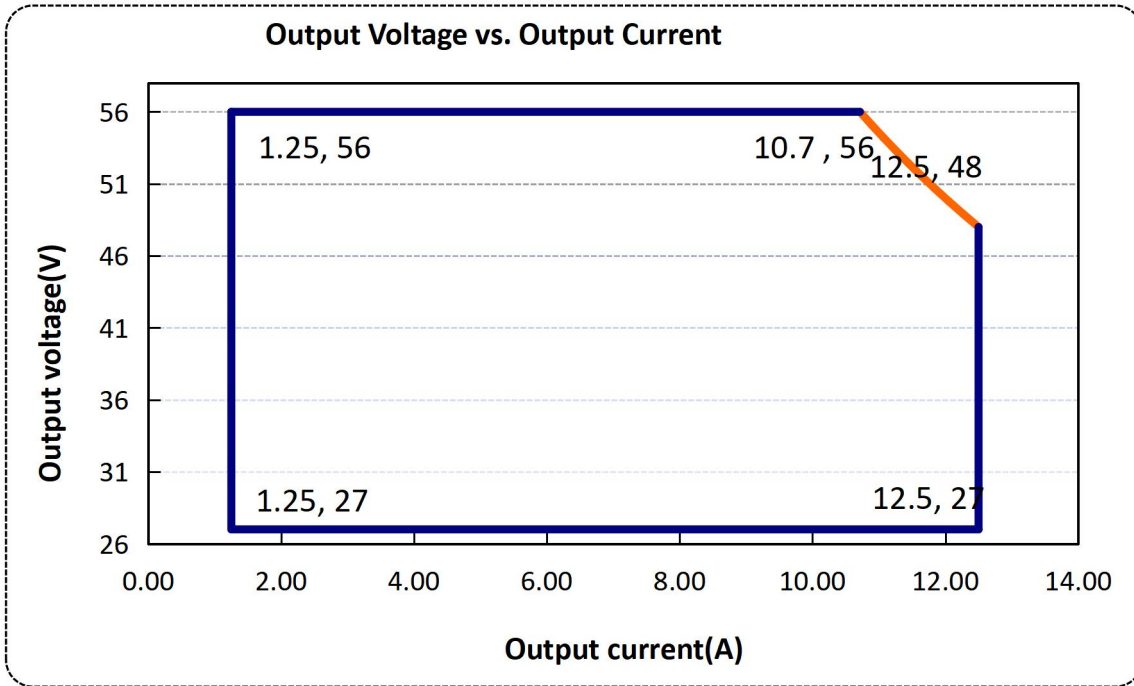
| Model Number [1] | Max Output Power(W) | Output Voltage Range(Vdc) | Full Power Output Voltage Range (Vdc) | Full Power Current Adjustable Range (A) | Default Output Current Setting(A) | Typical Efficiency [2] | PF |
|------------------|---------------------|---------------------------|---------------------------------------|---|-----------------------------------|------------------------|------|
| X6-600M056Z | 600 | 27-56 | 48-56 | 10.71-12.50 | 11.2 | 93% | 0.96 |

Notes:

- [1]. Z=A12 means the driver with 12V/300mA auxiliary power supply;
- [2]. Output current adjustable range with constant power at max output power;
- [3]. All specifications are measured at 25°C ambient temperature, input voltage 230Vac, and the typical value tested by full load, if no specific note.

OPERATING AREA I-V

X6-600M056Z



INPUT SPECIFICATIONS

| Parameter | Min. | Typ. | Max. | Notes |
|------------------|-------|------------|--------|------------------------------------|
| Input Voltage | 90Vac | 120-277Vac | 305Vac | |
| Input Frequency | 47Hz | 50/60 | 63Hz | |
| Leakage Current | - | - | 0.75mA | 277Vac/60Hz |
| Input AC Current | - | - | 7.5A | 100-277Vac & full load |
| Inrush Current | - | - | 50A | 230Vac & full load |
| Power Factor | 0.97 | 0.99 | - | 120Vac, 50-60Hz, full load |
| | 0.95 | 0.97 | - | 230Vac, 50-60Hz, full load |
| | 0.90 | 0.92 | - | 277Vac, 50-60Hz, full load |
| THD | - | 10% | 15% | 100-240Vac, 50-60Hz, 70%-100% load |
| | - | - | 20% | 277Vac, 50-60Hz, 70%-100% load |

OUTPUT SPECIFICATIONS

| Parameter | Min. | Typ. | Max. | Notes |
|--|------|------|-------|---|
| Output Current Tolerance | -5% | - | 5% | |
| Output Current Setting Range (A) X6-600M056Z | 1.25 | | 12.50 | The 'M type' adjustable lout range: 10%-100% I _{max} |
| Output Current Setting Range with Constant Power (A) X6-600M056Z | 11.2 | | 12.50 | |
| Total Output Current Ripple(pk-pk) | - | 5% | 10% | 20MHz BW, full load& LED load, the ripple would be tiny different under different LED load. |
| Startup Overshoot Current | - | - | 10% | 100~277Vac &100% Load, load is LED |
| No Load Output Voltage (V) X6-600M056Z | | | 60 | |
| Line Regulation | -3% | - | 3% | 25°C±10°C ambient temperature, input voltage changes from 100Vac to277Vac. |
| Load Regulation | -3% | - | 3% | 25°C±10°C ambient temperature, Input Voltage 230Vac, load changes from 60% to 100%. |
| Turn-on Delay Time | - | - | 3S | 120Vac,100% load |
| | - | - | 0.5S | 230Vac,100% load |

GENERAL SPECIFICATIONS

| Parameter | Min. | Typ. | Max. | Remark |
|--|--------------|-----------|---------|---|
| Efficiency @120Vac X6-600M056Z I _o =10.7A | 89% | 91% | - | Measured at full load and 25°C ambient temperature |
| Efficiency @230Vac X6-600M056Z I _o =10.7A | 92% | 93% | - | Measured at full load and 25°C ambient temperature |
| Efficiency @277Vac X6-600M056Z I _o =10.7A | 92% | 93% | - | Measured at full load and 25°C ambient temperature |
| AUX. Power(Optional) | 10.8V | 12V | 13.2V | Only for A12 version |
| | 0 | - | 300mA | |
| Dielectric Strength | Input-Output | - | 3750Vac | Max 5mA/60S |
| | Input-PE | - | 1600Vac | |
| | Output-PE | - | 1600Vac | |
| Grounding Resistance | - | - | 0.1Ω | 25A/60S, under 25°C±10°C ambient temperature |
| Insulation Resistance | 10MΩ | - | - | Input-Output, Input-PE, Output-PE, 500Vdc/60S/25°C/70%RH |
| MTBF | - | 200000Hrs | - | 25°C±10°C ambient temperature, |

Specification subject to change without notice



| | | | | |
|--|--|----------|-------|--|
| | | | | 230Vac,80% load (MIL-HDBK-217F) |
| Lifetime | - | 70000Hrs | - | 230Vac&100% load, 75°C case temperature, refer to lifetime curve for details |
| Ambient Temperature | -40°C | | +45°C | 230Vac&100% load |
| Operating Case Temperature for Safety Tc_s | -40°C | - | +90°C | |
| Operating Case Temperature for Warranty Tc_s | -40°C | - | +75°C | 7 years warranty case temperature Humidity: 10% to 95% RH |
| Storage Temperature | -40°C | - | +85°C | Humidity: 5% to 100% RH |
| Dimensions (LxWxH)mm | L276*W144*H47.5mm; | | | |
| Net Weight | 3600±100g/PCS | | | |
| Package | L465xW400xH210mm 5PCS/Ctn, Gross Weight: 18Kg | | | |

DIMMING

| Parameter | | Min. | Typ. | Max. | Notes |
|--|-------------|----------------------|-------|-----------------------|---|
| 0~10V Absolute Maximum Voltage on the Vdim (+) Pin | | - | 10V | - | |
| 0~10V Source Current on Vdim(+)Pin | | - | 0.2mA | 0.4mA | |
| Dimming Output Range | X6-600M056Z | 10% I _{max} | - | 100% I _{max} | I _{max} =12.50A |
| | X6-600M056Z | 1.25 | - | 12.5 | |
| Recommended Dimming Range for 0-10V | | 0V | - | 10V | Default 0-10V/ PWM Dimming(0-10V,0-9V,0-5V,0-3.3V can be customized as request) |
| PWM_in High Level | | 9.7V | - | 10.3V | |
| PWM_in Low Level | | 0V | - | 0.3V | |
| PWM_in Frequency Range | | 300Hz | | 2000Hz | |
| PWM_in Duty Cycle | | 1% | - | 99% | |

SAFETY STANDARDS

| Safety Category | Country / Territory | Standards | Approved |
|-----------------|---------------------|---------------------------|----------|
| CCC | China | GB19510.1, GB19510.14 | √ |
| CE | Europe | EN61347-1, EN61347-2-13 | √ |
| | | EN62493 | √ |
| | | 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 | √ |

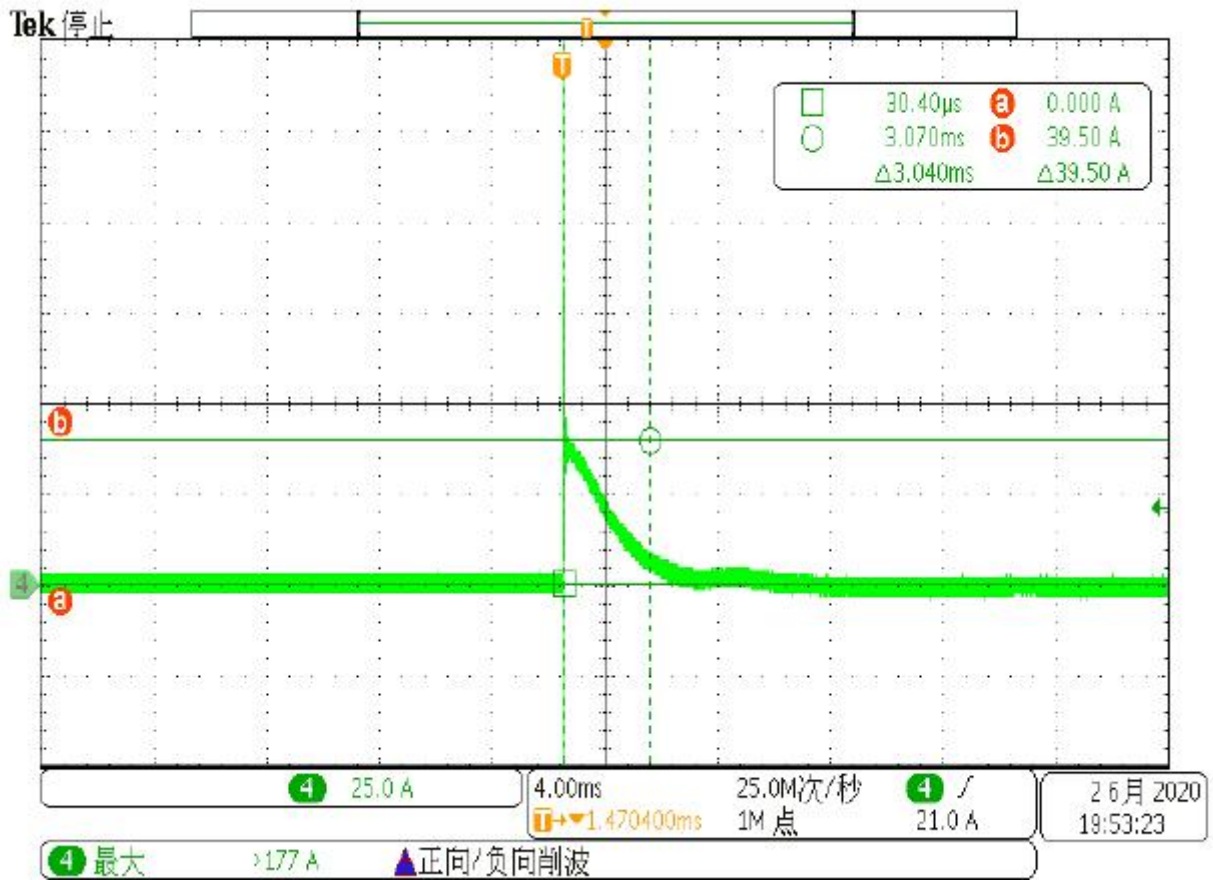
EMC COMPLIANCE

| EMC Category | Country / Territory | Standards | Approved |
|--------------|---------------------|----------------------------|----------|
| 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:

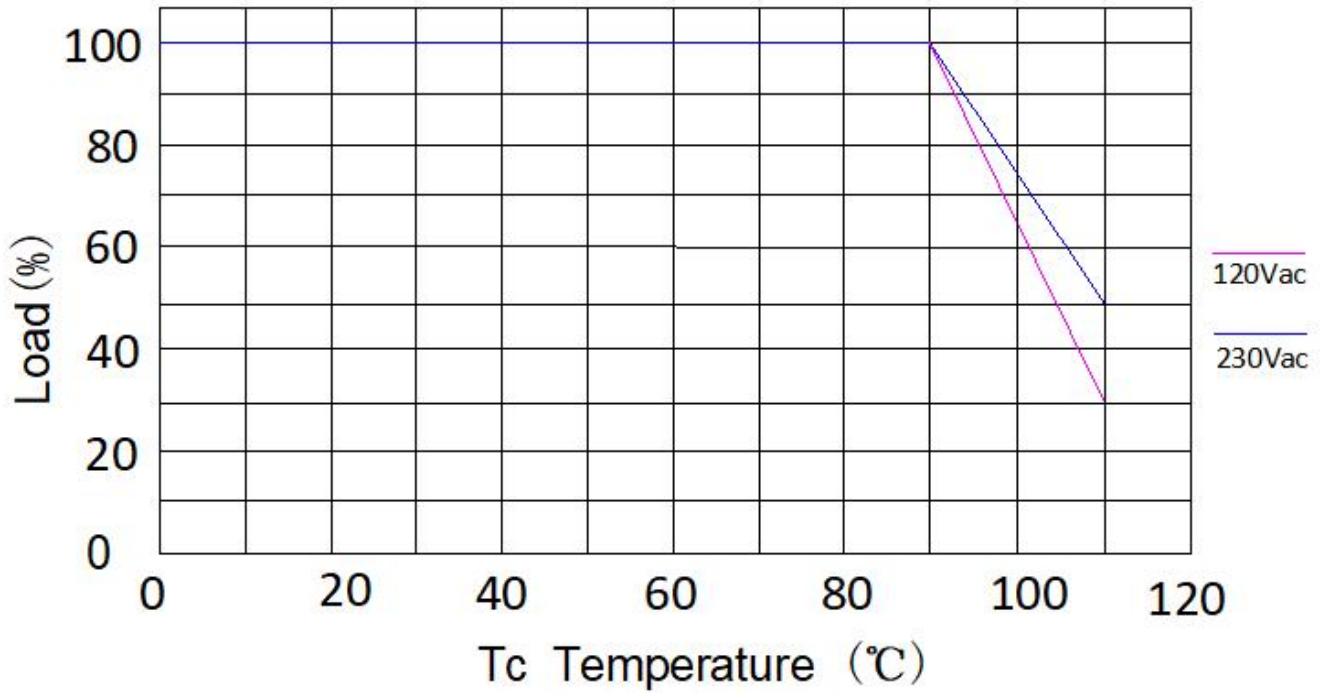
This LED driver meets the EMI specifications above, but as a component of a luminaire, end customer need to identify the EMI performance of a luminaire including LED driver, other devices connected to the driver and on the luminaire itself.

INRUSH CURRENT WAVEFORM

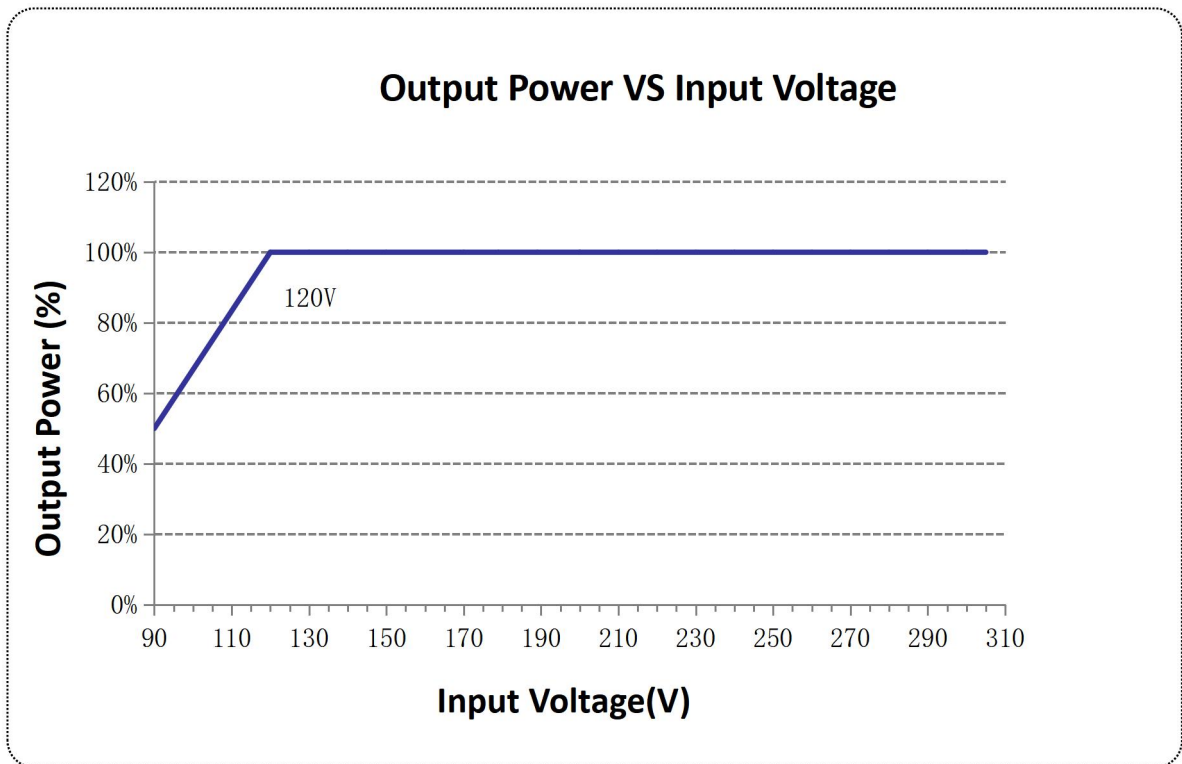


DERATING CURV

Derating Curve

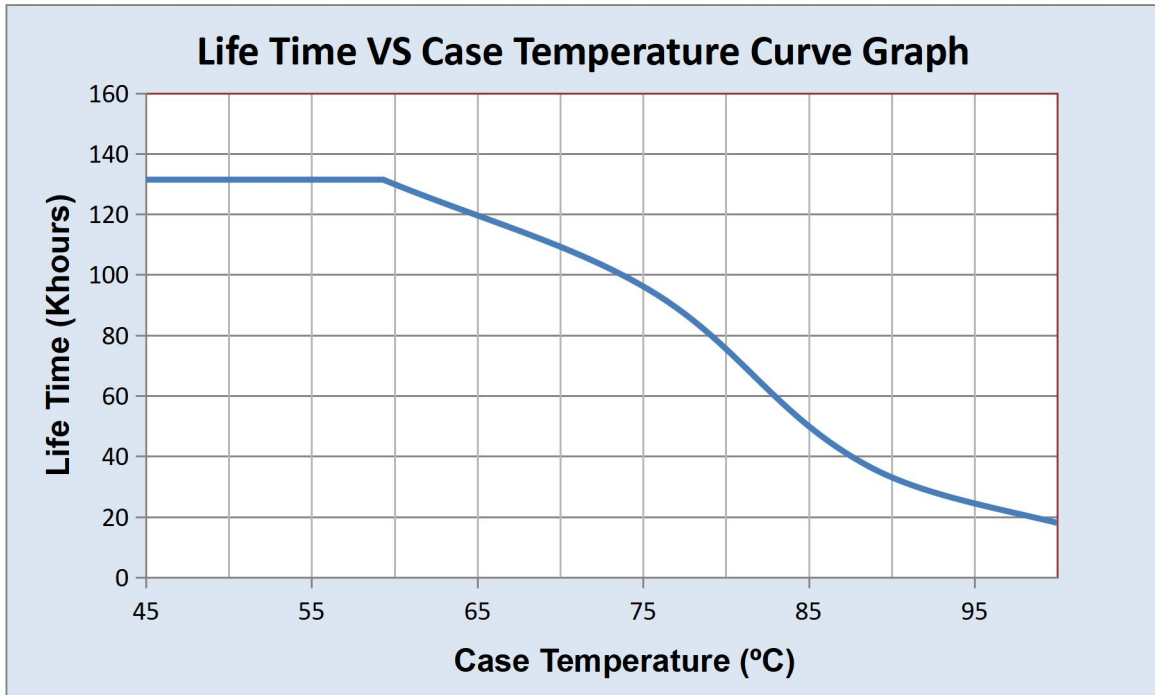


OUTPUT POWER VS INPUT VOLTAGE

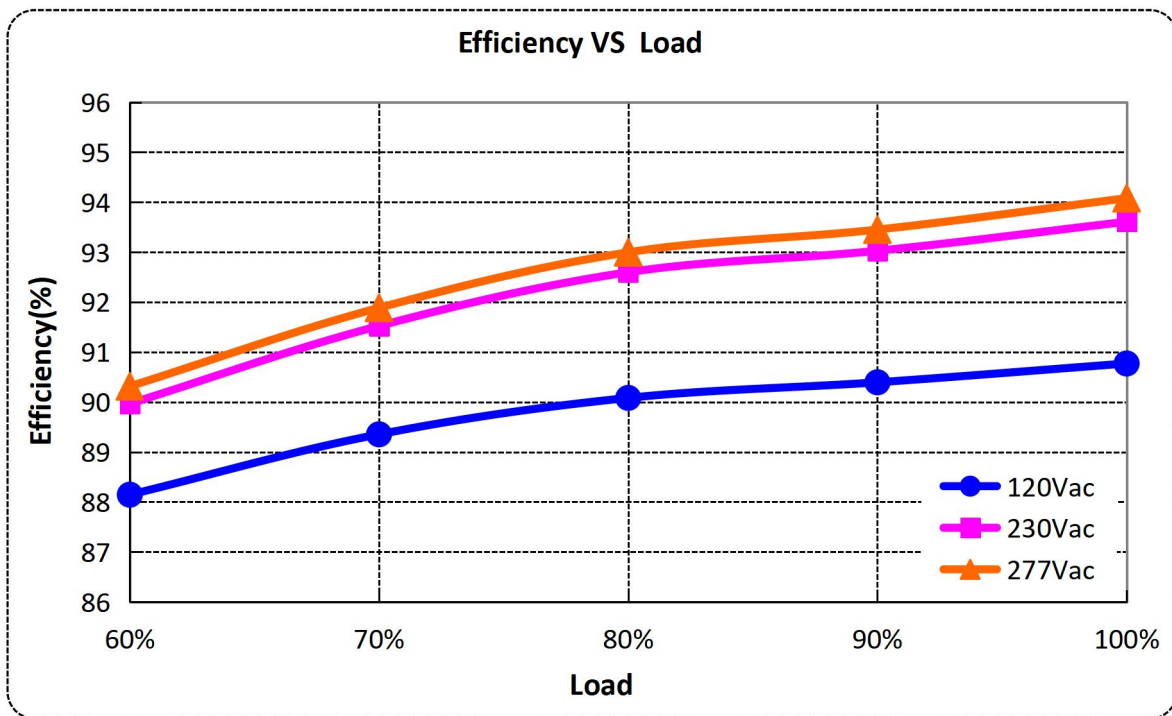


LIFETIME VS CASE TEMPERATURE

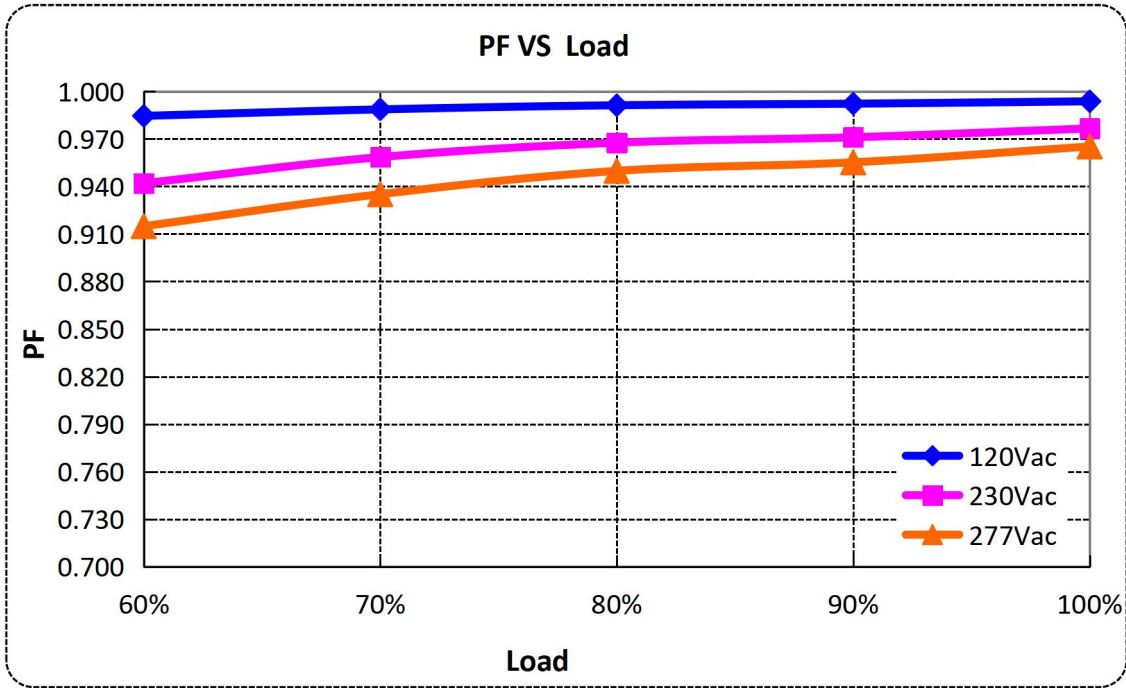
Specification subject to change without notice



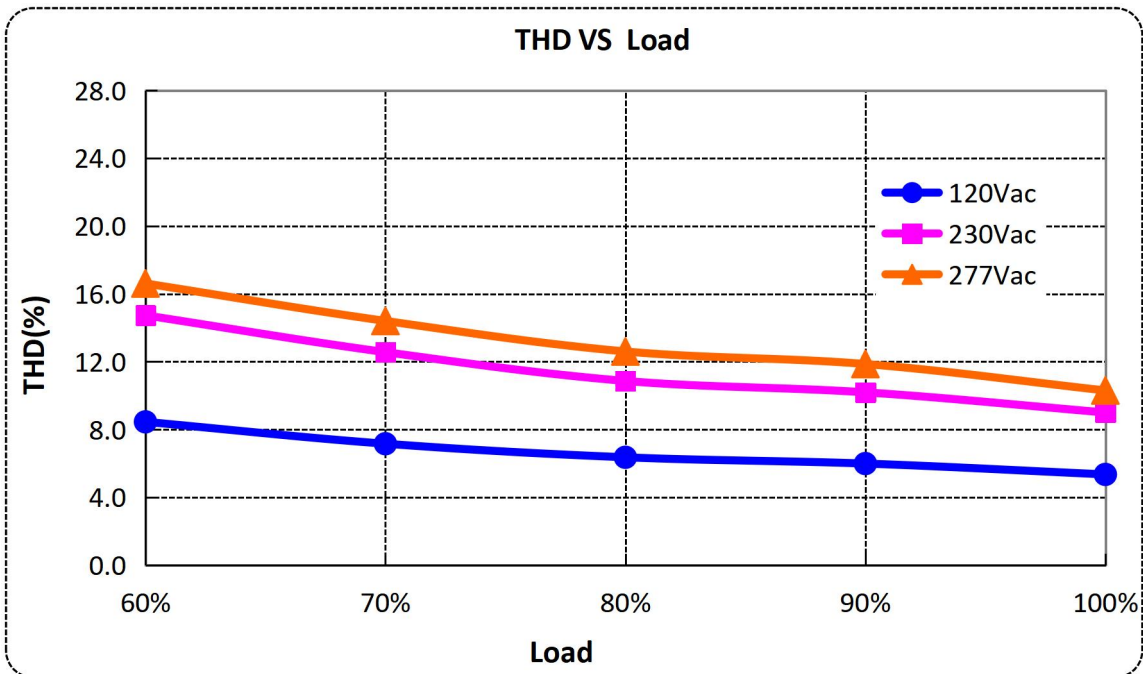
EFFICIENCY VS LOAD



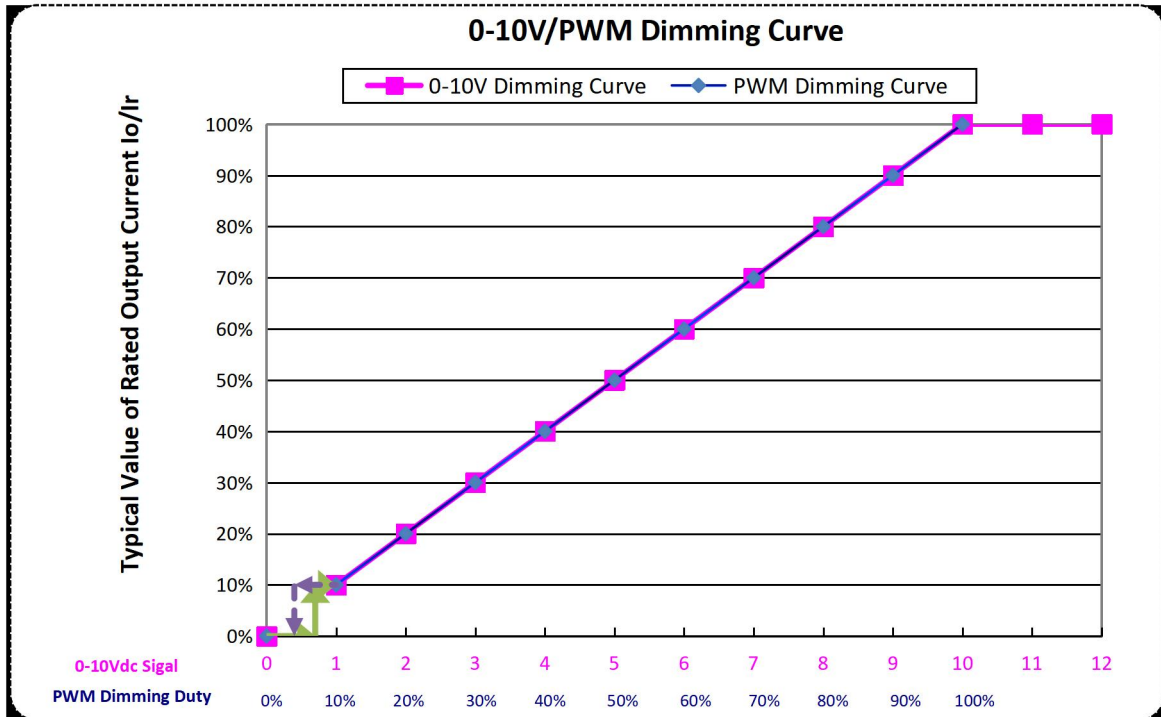
POWER FACTOR VS LOAD



TOTAL HARMONIC DISTORTION



0-10V/PWM DIMMING

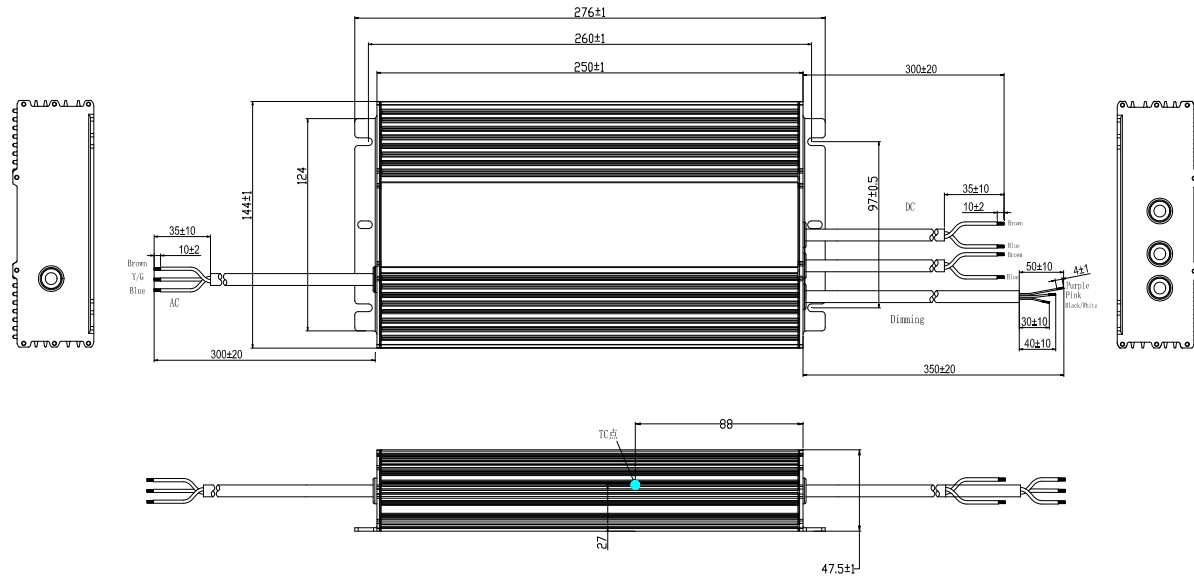


PROTECTIONS

| Parameter | Notes |
|------------------|--|
| Over Temperature | Decreases output current, returning to normal after over temperature is removed. |
| Short Circuit | Constant current 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. |
| Over Voltage | Run into protection model when output voltage exceeds limit, and return to normal when the fault condition is removed. |

MECHANICAL OUTLINE

X6-600M056A12 types



X6-600V types without dimming wire.

| Wire | Specification | Note |
|---------|---|-----------|
| Input | SJOW 17AWG*3C external diameter: 8.3mm L=300±20mm; | |
| Output | SJOW 17AWG*2C external diameter: 7.7mm L=300±20mm; | |
| Dimming | UL2733 22AWG*2C external diameter: 5.45mm L=350±20mm; | M types |
| Dimming | UL 21996 22AWG*3C external diameter: 5.0mm L=350±20mm | A12 types |

LABEL

45.00 mm

230.00 mm

| | | | | | | | | | |
|--|---|------------------------------------|---|--------------|--|-----------------------|--|---|--|
| <p>INPUT</p> <p>L (BROWN 棕)</p> <p>G (Y/G 黄/绿)</p> <p style="text-align: center;">⊕</p> <p>N (BLUE 蓝)</p> | <p>MOSO[®] X6-600M056A12</p> <p>LED DRIVER LED 控制装置</p> | <p>IP67</p> <p>SELV</p> <p>110</p> | <p>OUTPUT</p> <p>(BROWN 棕) Vo+</p> <p>(BLUE 蓝) Vo-</p> <p>(BROWN 棕) Vo+</p> <p>(BLUE 蓝) Vo-</p> <p>(BLACK/WHITE 黑白) 12V+</p> <p>(PURPLE 紫) DIM+</p> <p>(PINK 粉) 12V/DIM-</p> | | | | | | |
| | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center;">INPUT 输入</td> <td>100-240V~50/60Hz, 7.5A Max. PF:0.95, 700W 277V~ 50/60Hz, 2.8A Max (277V~ for North America only)</td> </tr> <tr> <td style="text-align: center;">OUTPUT 输出</td> <td>27-56V^{DC} 1.25-12.5A Max. 最大电压: 70V^{DC} Max. Power 最大功率: 600W</td> </tr> <tr> <td style="text-align: center;">t_a: 90°C</td> <td>t_a: 45°C Input: 100-200V~ t_a: 55°C Input: 200-240V~ 277V~</td> </tr> </table> | INPUT 输入 | 100-240V~50/60Hz, 7.5A Max. PF:0.95, 700W 277V~ 50/60Hz, 2.8A Max (277V~ for North America only) | OUTPUT 输出 | 27-56V ^{DC} 1.25-12.5A Max. 最大电压: 70V ^{DC} Max. Power 最大功率: 600W | t _a : 90°C | t _a : 45°C Input: 100-200V~ t _a : 55°C Input: 200-240V~ 277V~ | <p>MADE IN CHINA For LED module only</p> <p style="font-size: small;">Suitable for Dry, Damp and Wet locations SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD No. 1051, Songbai Road, Xili Town, Nanshan District, Shenzhen, CHINA</p> | |
| INPUT 输入 | 100-240V~50/60Hz, 7.5A Max. PF:0.95, 700W 277V~ 50/60Hz, 2.8A Max (277V~ for North America only) | | | | | | | | |
| OUTPUT 输出 | 27-56V ^{DC} 1.25-12.5A Max. 最大电压: 70V ^{DC} Max. Power 最大功率: 600W | | | | | | | | |
| t _a : 90°C | t _a : 45°C Input: 100-200V~ t _a : 55°C Input: 200-240V~ 277V~ | | | | | | | | |

Specification subject to change without notice

www.mosopower.com Tel: +86-755-27657000

Email: info@mosopower.com

Form No.: FP-10-017RevA/1.0

Specification for Approval

Product Name: 600W outdoor off-line programmable driver
Product Model: X6-600M056A12
Rev. C.2
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 |
|-------------|------------|-------------|
| | | |

