



### Product Features

- Universal input voltage / Full range: 110~305Vac;
- Constant power design, output current programming adjustable;
- (M types) offline programmable, (V types) output current adjustable by built-in potentiometer;
- 3-in-1 dimmable: 0~10Vdc / PWM/ Timer dimming. Dim-to-off;
- Constant lumen output;
- Output and Dimming Signal Isolating;
- Surge protection: 5KV line-line, 10KV line-earth;
- Protections: Input OVP/Input UVP/SCP/OTP;
- IP67 design for indoor and outdoor applications;
- Suitable for dry / damp / wet locations;
- 5 years warranty.

### Application

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

### DESCRIPTION

The X6-200W series is 200W outdoor offline programmable LED driver that operates in constant current with high PF value and universal input voltage range 110~305Vac model. A wide range of output current in a single driver, which delivers maximum flexibility with customized operating settings and intelligent control options for lighting manufacturers, as one driver can be adjusted for many different luminaire designs. X6 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, input over voltage, input under voltage, short circuit, and over temperature, to ensure low failure rate.

### MODELS

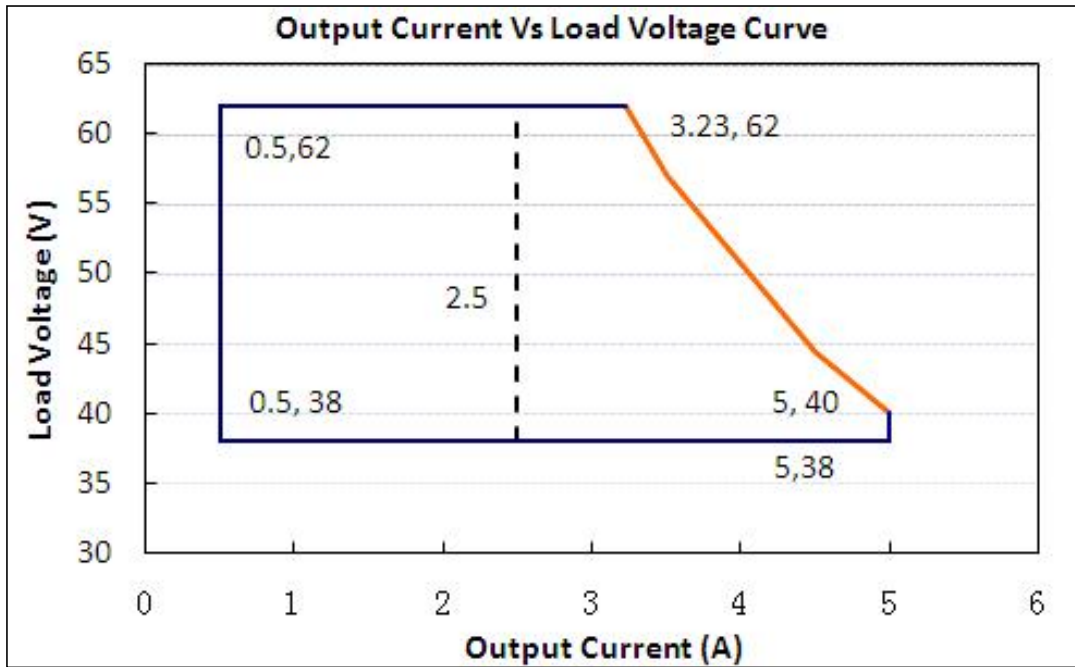
| Model Number [1]                      | Max Output Power (W) | Output Voltage Range (Vdc) | Full Power Output Voltage Range (Vdc) | Full Power Current Adjustable Range (A) [2] | Default Output Current Setting(A) | Typical Efficiency [3] | Power Factor |
|---------------------------------------|----------------------|----------------------------|---------------------------------------|---|-----------------------------------|------------------------|--------------|
|                                       |                      |                            |                                       |   |                                   |                        | 240Vac       |
| X6-200M062-I(input 440V over voltage) | 200                  | 38-62                      | 40-62                                 | 3.23-5.00                                   | 4.90                              | 92%                    | 0.97         |

#### Notes:

- [1]. Y can be M or V, Y=M means dimmable and offline programmable. The adjustable lout range: 10%-100% I<sub>max</sub>, Y=V means non-dimmable and output current adjusted by built-in potentiometer.
- [2]. Output current adjustable range with constant power at max output power;
- [3]. All specifications are measured at 25°C ambient temperature, input voltage 240Vac, and the typical value tested by full load, if no specific note.

### OPERATING AREA I-V

#### X6-200Y062-I(Input 440V over voltage)



**Notes:**

The drivers are not allowed to work in over-load condition, otherwise warranty will expire.  
 Y=V is suitable for the right area of the dotted line; Y=M is suitable for the solid line contain area.

### INPUT SPECIFICATIONS

| Parameter                           | Min.   | Typ.       | Max.   | Notes                              |     |    |        |
|-------------------------------------|--------|------------|--------|------------------------------------|-----|----|--------|
| Input Voltage                       | 110Vac | 120-277Vac | 305Vac | Rated Input Voltage is 240Vac      |     |    |        |
| Input Frequency                     | 47Hz   | 50/60      | 63Hz   |                                    |     |    |        |
| Leakage Current                     | -      | -          | 0.70mA | 277Vac/60Hz                        |     |    |        |
| Input AC Current                    | -      | -          | 2.8A   | 120-277Vac & full load             |     |    |        |
| Inrush Current                      | -      | -          | 75A    | 240Vac & full load                 |     |    |        |
| Standby Power Consumption           |        |            | 3W     | 240Vac/50Hz                        |     |    |        |
| Power Factor                        | 0.97   | 0.99       | -      | 120Vac, 50-60Hz, full load         |     |    |        |
|                                     | 0.95   | 0.97       |        | 240Vac, 50-60Hz, full load         |     |    |        |
|                                     | 0.90   | 0.92       |        | 277Vac, 50-60Hz, full load         |     |    |        |
| THD                                 | -      | 5%         | 10%    | 120-240Vac, 50-60Hz, 70%-100% load |     |    |        |
|                                     | -      | -          | 15%    | 277Vac, 50-60Hz, 70%-100% load     |     |    |        |
| Max. NO. of PSUs on CIRCUIT BREAKER | B10    | 2          | B16    | 4                                  | B25 | 6  | 240Vac |
|                                     | C10    | 4          | C16    | 6                                  | C25 | 10 |        |

**OUTPUT SPECIFICATIONS**

| Parameter   | Min. | Typ. | Max. | Notes   |
|---|------|------|------|---|
| Output Current Tolerance  | -5%  | -    | 5%   |   |
| Output Current Setting Range (A)<br>X6-200Y062-I                    | 0.50 | -    | 5.00 | The 'M type' adjustable lout range:<br>10%-100% I <sub>max</sub> ,                                |
| Output Current Setting Range with<br>Constant Power<br>X6-200Y062-I | 3.23 | -    | 5.00 |   |
| Total Output Current Ripple(pk-pk)                                  | -    | 5%   | 10%  | 20MHz BW, full load& LED load, the ripple<br>would be tiny different under different<br>LED load. |
| Startup Overshoot Current   | -    | -    | 10%  | 120~277Vac &100% Load, load is LED  |
| No Load Output Voltage(V)<br>X6-200Y062-I                           | -    | -    | 70   |   |
| Line Regulation   | -1%  | -    | 1%   | 25°C±10°C ambient temperature, input<br>voltage changes from 100Vac to277Vac.                     |
| Load Regulation   | -3%  | -    | 3%   | 25°C±10°C ambient temperature, Input<br>Voltage 240Vac, load changes from 60%<br>to 100%.         |
| Turn-on Delay Time  | -    | 1S   | 2S   | 120Vac,100% load  |
|   | -    | -    | 0.5S | 240Vac,100% load  |

**GENERAL SPECIFICATIONS**

| Parameter   | Min.           | Typ.           | Max.    | Notes   |
|---|----------------|----------------|---------|---|
| Efficiency @115Vac<br><br>X6-200Y062-I<br>I <sub>o</sub> =3.23<br>I <sub>o</sub> =5.0 | 88%<br>88%     | 90%<br>90%     |         | Measured at full load and<br>25°C ambient temperature       |
| Efficiency @240Vac<br><br>X6-200Y062-I<br>I <sub>o</sub> =3.23<br>I <sub>o</sub> =5.0 | 90%<br>90%     | 92%<br>92%     | -       | Measured at full load and 25°C ambient<br>temperature       |
| Efficiency @277Vac<br>X6-200Y062-I<br>I <sub>o</sub> =3.23<br>I <sub>o</sub> =5.0     | 90.5%<br>90.5% | 92.5%<br>92.5% |         | Measured at full load and 25°C ambient<br>temperature       |
| 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<br>temperature             |
| Insulation Resistance   | 10MΩ           | -              | -       | Input-Output, Input-PE, Output-PE,<br>500Vdc/60S/25°C/70%RH |

|  |  |           |       |  |
|--|--|-----------|-------|--|
| MTBF   | -  | 200000Hrs | -     | 25°C±10°C ambient temperature, 240Vac,80% load (MIL-HDBK-217F)               |
| Lifetime                                     | -  | 50000Hrs  | -     | 240Vac&100% load, 75°C case temperature, refer to lifetime curve for details |
| Ambient Temperature                          | -40°C  |           | +60°C | 240Vac&100% load   |
| Operating Case Temperature for Safety Tc_s   | -40°C  | -         | +90°C |  |
| Operating Case Temperature for Warranty Tc_s | -40°C  | -         | +75°C | 5 years warranty case temperature<br>Humidity: 10% to 95% RH                 |
| Storage Temperature                          | -40°C  | -         | +85°C | Humidity: 5% to 100% RH  |
| Dimensions (LxWxH)mm                         | L193.6*W68*H39   |           |       |  |
| Net Weight                                   | 940±100g/PCS   |           |       |  |
| Package                                      | L500mm*W370mm*H160mm;<br>10PCS/Ctn, Gross Weight: 12.5Kg |           |       |  |

### DIMMING

| Parameter  |              | Min.    | Typ.  | Max.     | Notes  |
|--|--------------|---------|-------|----------|--|
| 0~10V Absolute Maximum Voltage on the Vdim (+) Pin |              | -       | 10V   | -        |  |
| 0~10V Source Current on Vdim(+)Pin                 |              | -       | 200uA | 400uA    |  |
| Dimming Output Range                               | X6-200M062-I | 10%Imax | -     | 100%Imax | Imax=5.0A  |
|  | X6-200M062-I | 0.5     | -     | 5.0      |  |
| Recommended Dimming Range for 0-10V                |              | 0V      | -     | 10V      | Default 0-10V/ PWM<br>Dimming(0-10V,0-9V,0-5V,0-3.3V<br>Positive and Reverse Logic 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   | -     | 2KHz     |  |
| 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                   | √        |
| 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            | √        |
| EAC             | Russia              | ГОСТ Р МЭК 61347-1-2011   | √        |
|                 |                     | ГОСТ IEC 61347-2-13-2013  |          |

|  |  |   |  |
|--|--|---|--|
|  |  | ГОСТ IEC 62493-2014<br>СТБ EH 55015-2006<br>ГОСТ IEC 61547-2013<br>ГОСТ 30804.3.2-2013 (IEC 61000-3-2:2009)<br>ГОСТ 30804.3.3-2013 (IEC 61000-3-3:2008) |  |
|--|--|---|--|

**Insulation**

|             |             |         |            |       |
|-------------|-------------|---------|------------|-------|
| Insulation  | Input/Mains | Dimming | LED Output | Case  |
| Input/Mains | /           | Double  | Double     | Basic |
| Dimming     | Double      | /       | Basic      | Basic |
| LED Output  | Double      | Basic   | /          | Basic |
| Case        | Basic       | Basic   | Basic      | /     |

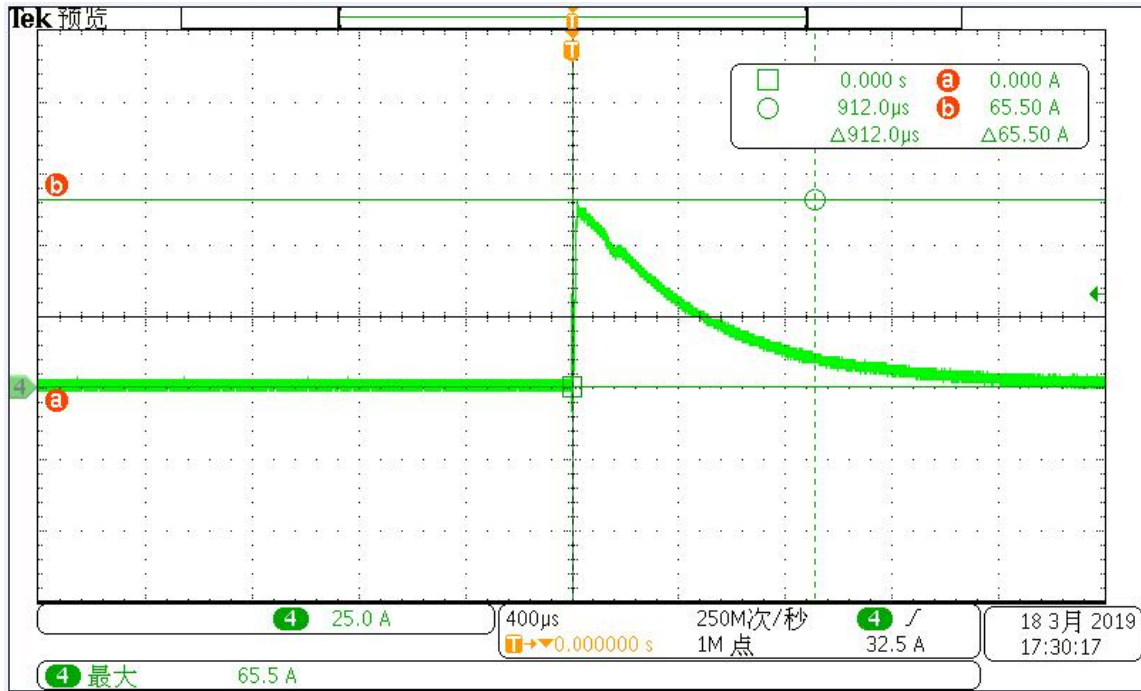
**EMC COMPLIANCE**

| 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:**

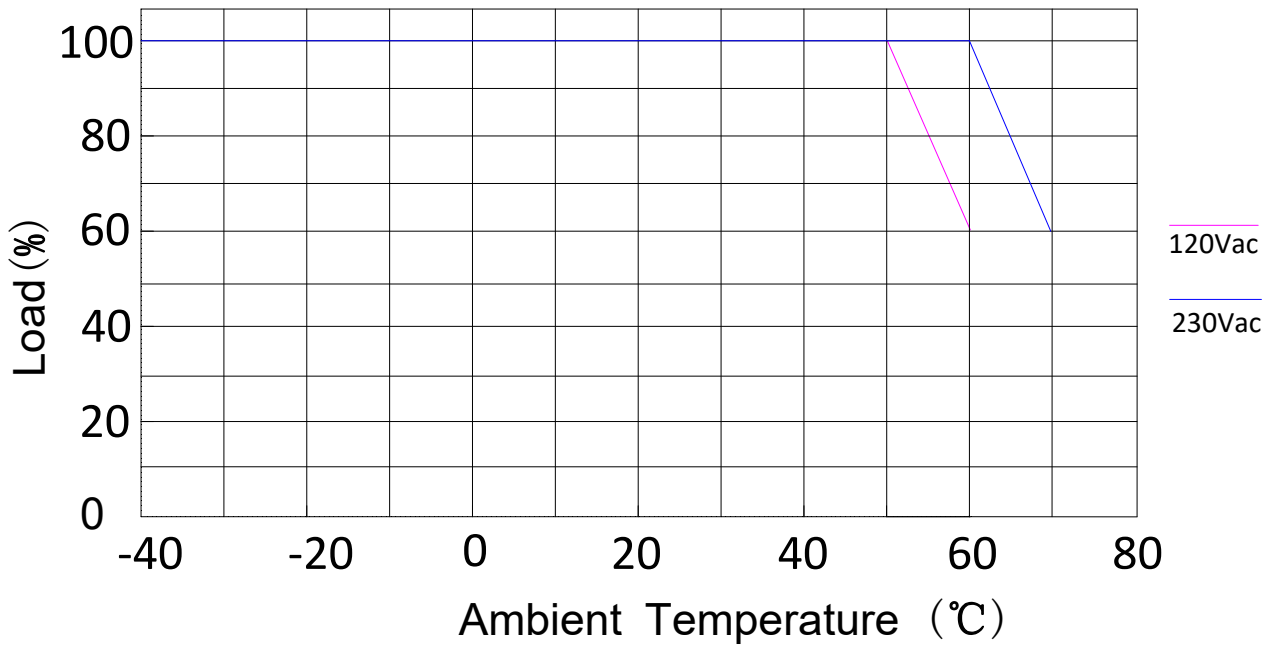
This LED driver meets the EMI specifications above, but as a component of a luminaire, end customer need to identify the EMI performance of a luminaire including LED driver, other devices connected to the driver and on the luminaire itself.

### INRUSH CURRENT WAVEFORM

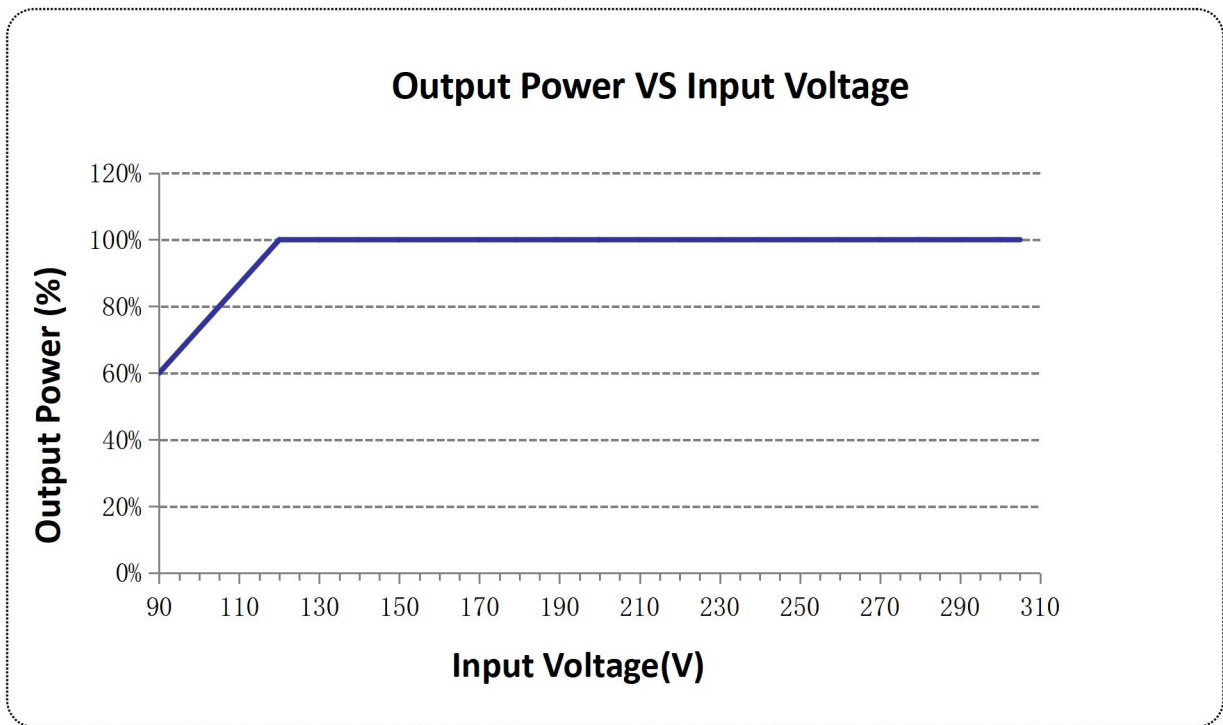


### DERATING CURVE

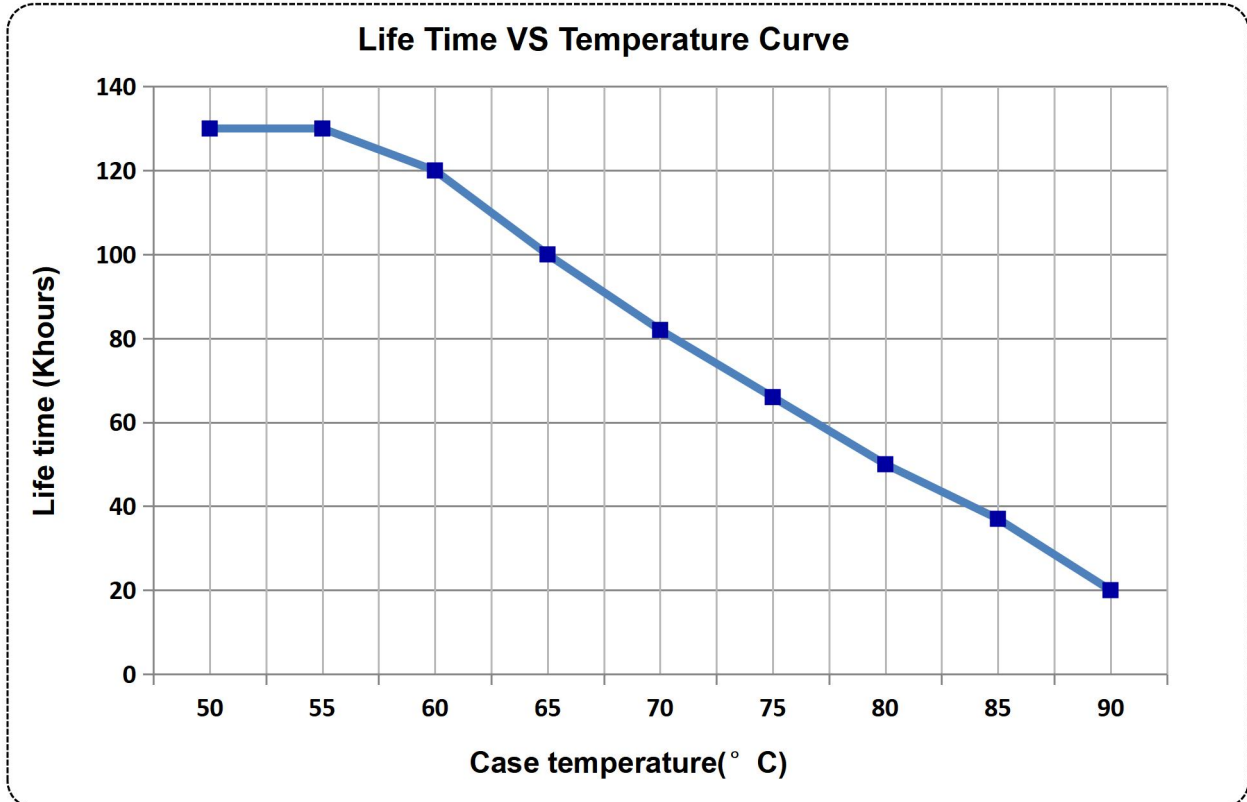
Derating Curve



### OUTPUT POWER VS INPUT VOLTAGE

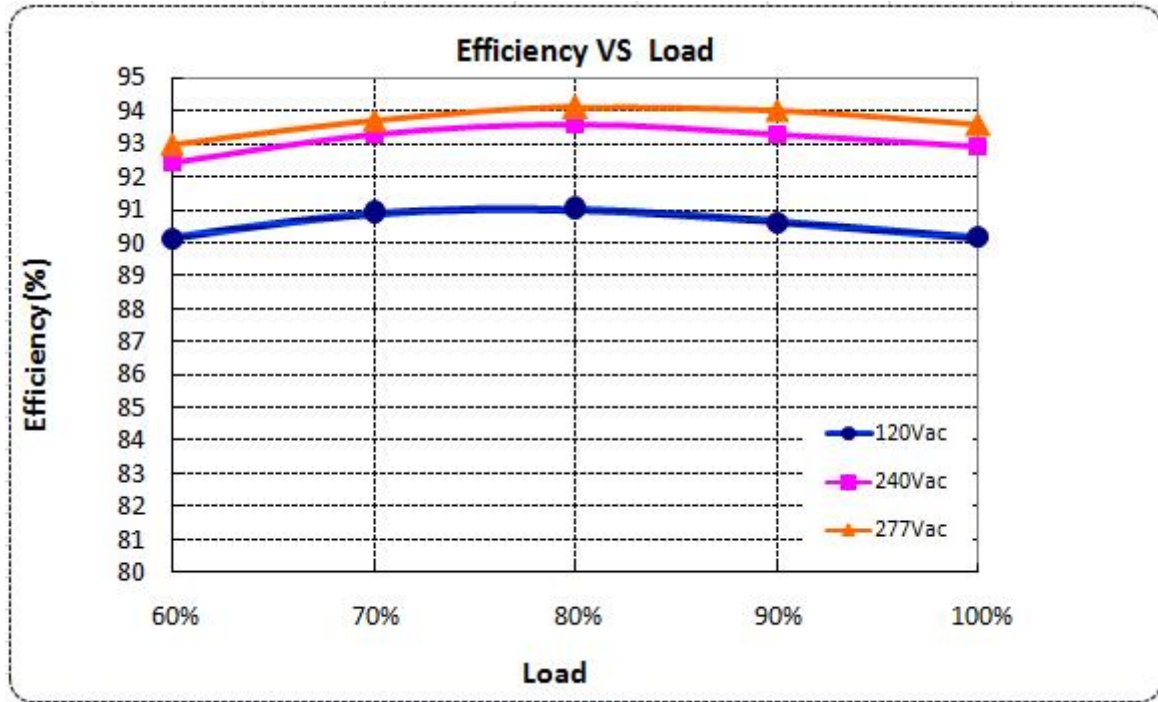


### LIFETIME VS CASE TEMPERATURE

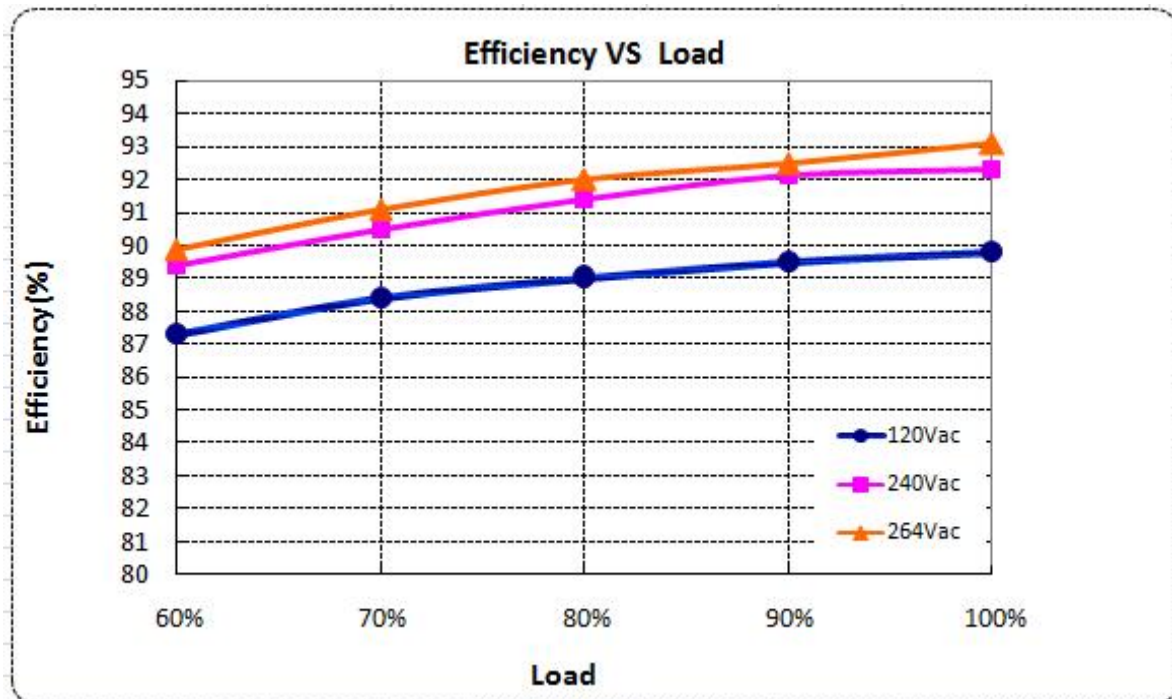


### EFFICIENCY VS LOAD

Io=3.23A

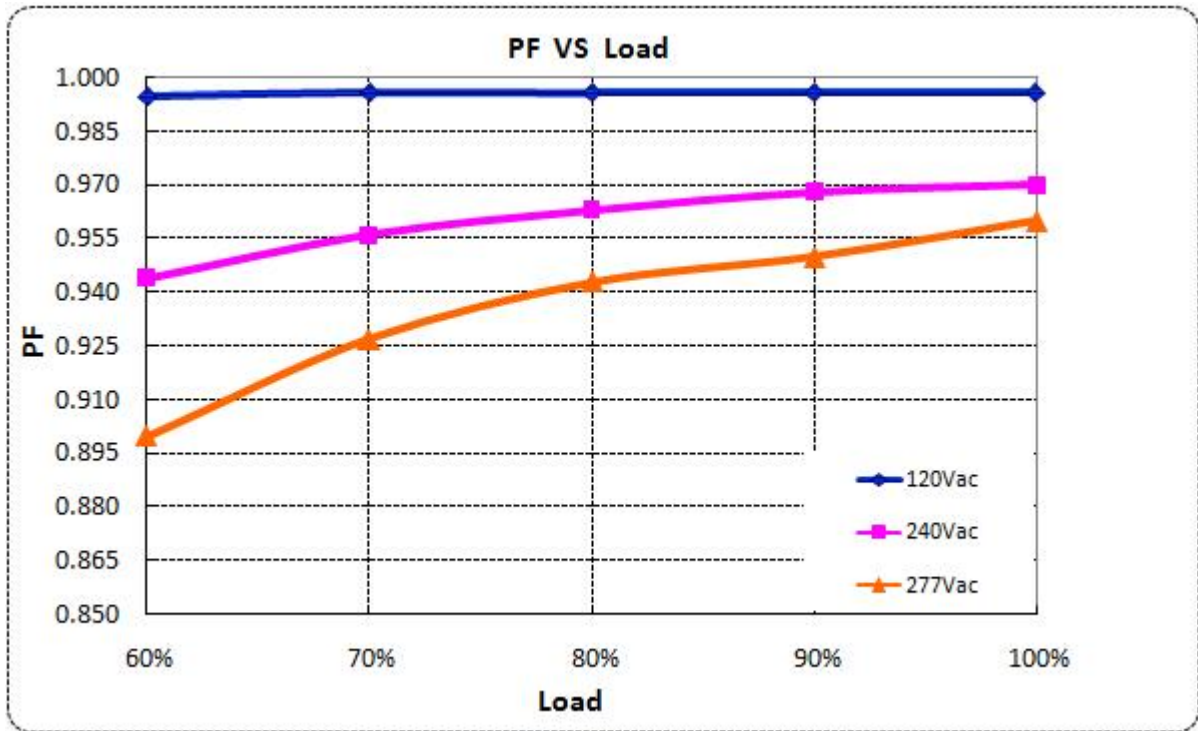


Io=5.0A

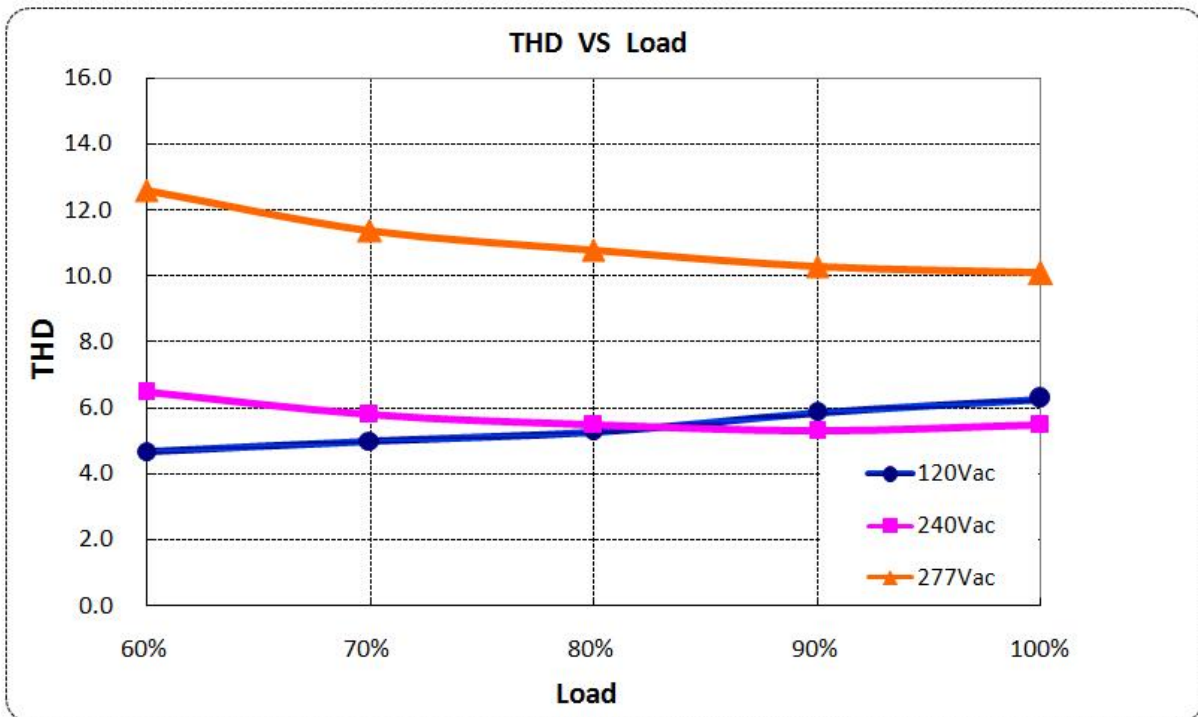




### POWER FACTOR VS LOAD



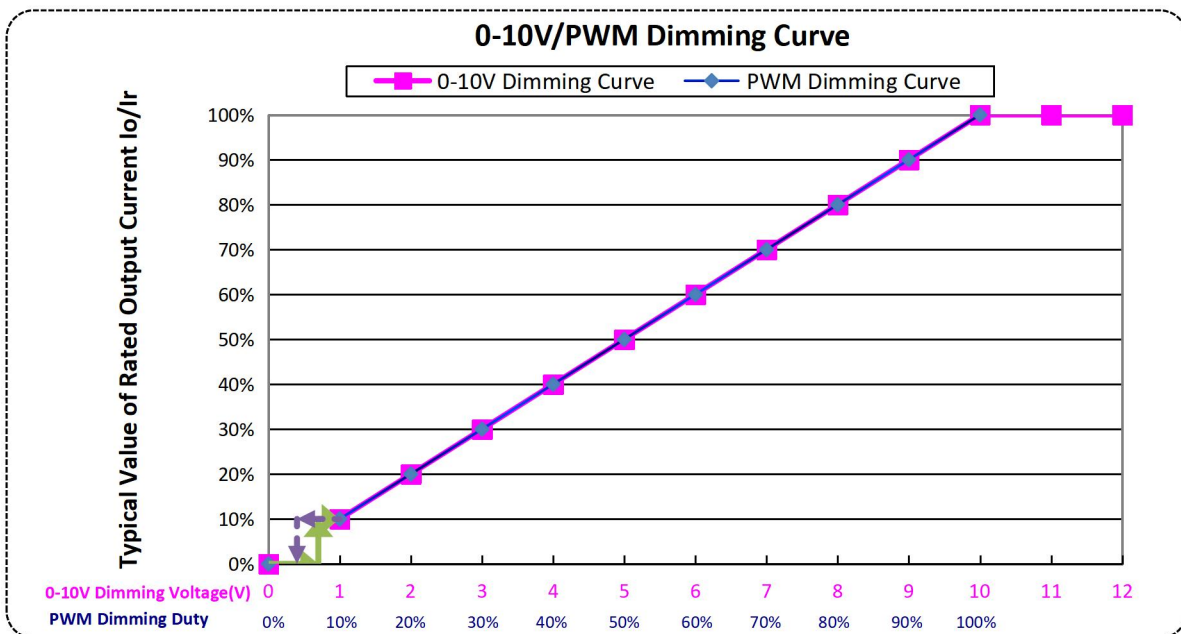
### TOTAL HARMONIC DISTORTION



### PROTECTIONS

| Parameter                      |                            | Min.   | Typ.   | Max.   | Notes   |
|--------------------------------|----------------------------|--|--------|--------|---|
| Input Over Voltage Protection  | Input Protection Voltage   | 315Vac   | 325Vac | 335Vac | Turn off the output when the input voltage exceeds protection voltage.                      |
|                                | Recovery Voltage           | 300Vac   | -      | 315Vac | 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.                      |
| Input Under Voltage Protection |                            | 90Vac  | 100Vac | 110Vac |   |
| 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   |        |        |   |

### 0-10V/PWM DIMMING

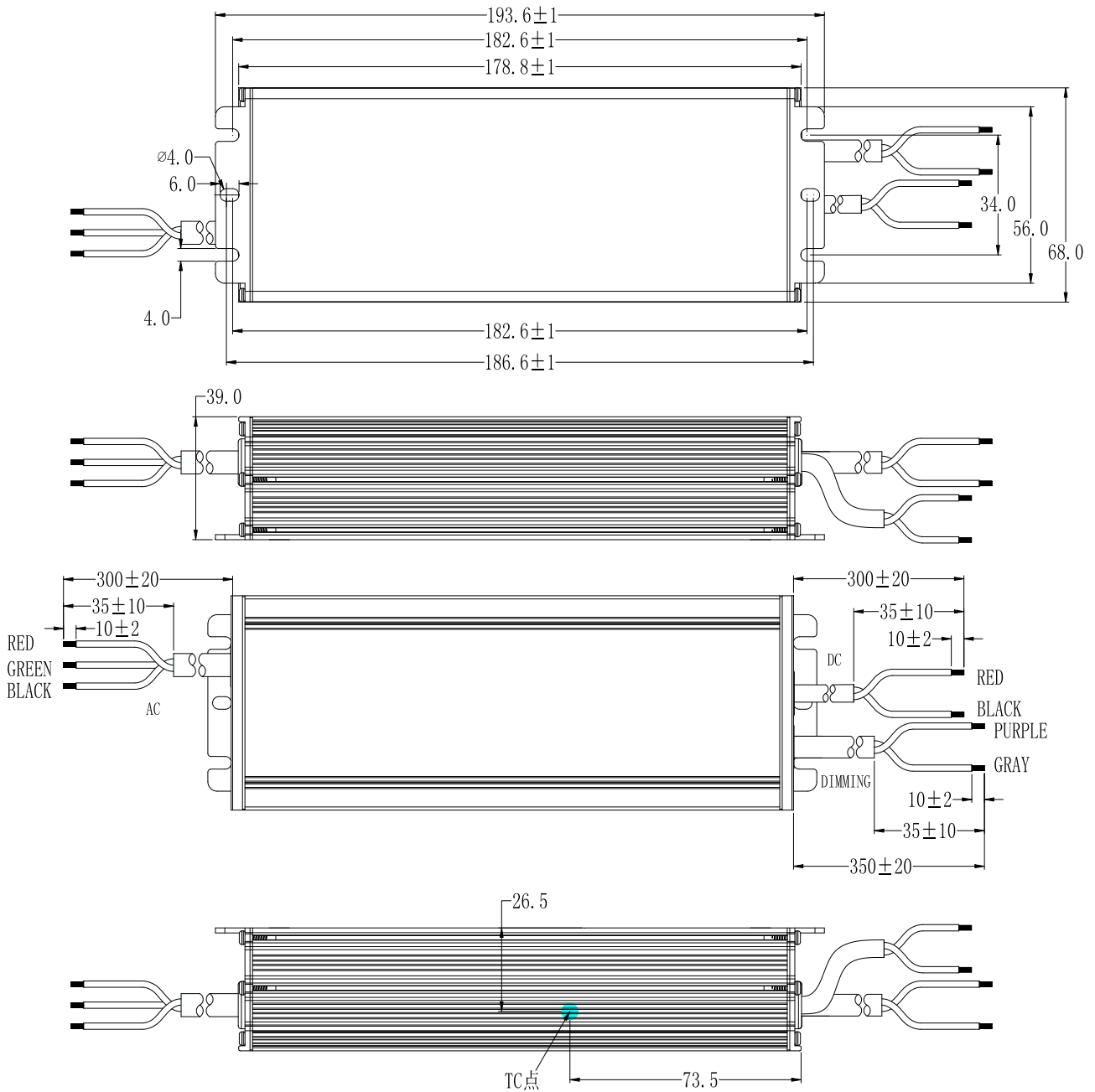


#### Note:

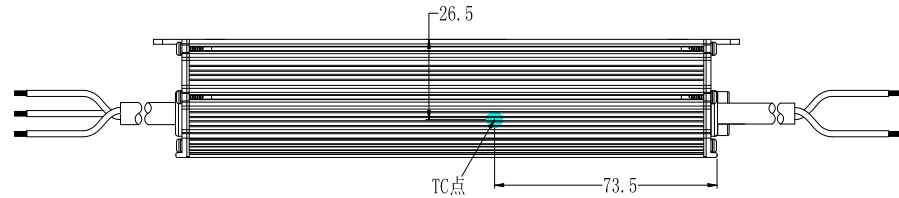
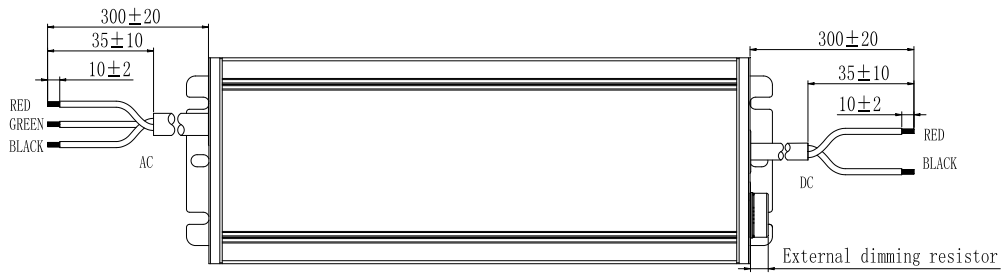
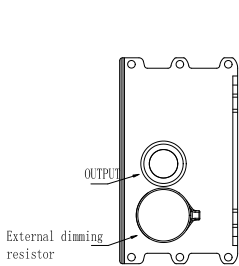
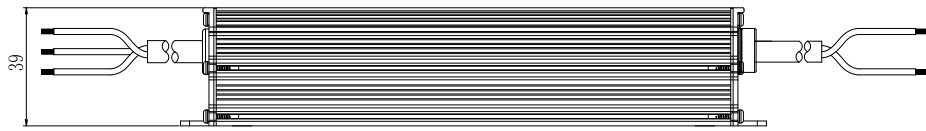
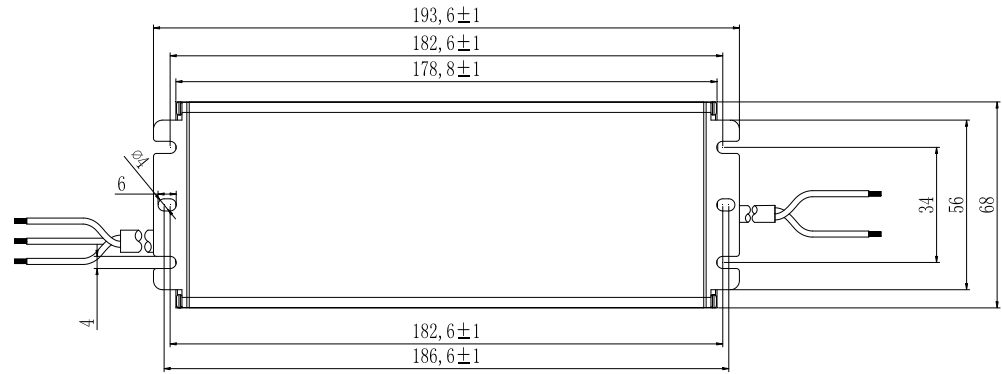
Dim to off model is realized by decreasing the output voltage, the power supply still has residual voltage when dim to off, so the start up voltage of the lamp should be higher than residual voltage.

### MECHANICAL OUTLINE

X6-200M062-I



X6-200V062-I



| Wire    | Specification                                      | Note    |
|---------|--|---------|
| Input   | BIS 9968 3*1.0mm <sup>2</sup> OD=7.3mm L=300±20mm  | for BIS |
| Output  | BIS 9968 2*1.0 mm <sup>2</sup> OD=7.0mm L=300±20mm | for BIS |
| Dimming | UL2733 22AWG*2C OD=5.45mm L=350±20mm               | Y = M   |

### LABEL

45.50 mm
169.00 mm

|   |  |  |                                    |   |
|---|--|--|------------------------------------|---|
| <b>INPUT</b><br>L RED<br>G GREEN<br><br>N BLACK | <b>MOSO<sup>®</sup> X6-200M062</b><br>LED DRIVER | IS15885(Part2/Sec13)<br><br>R-41077186<br>www.bis.gov.in<br><br><br> | <b>IP67</b><br><br><b>SELV</b><br> | <b>OUTPUT</b><br>RED Vo +<br>BLACK Vo -<br>PURPLE DIM +<br>GRAY DIM - |
|---|--|--|------------------------------------|---|

|                       |  |
|-----------------------|--|
| INPUT                 | 100-240V~ 50/60Hz, 2.8A Max.PF:0.95  |
| OUTPUT                | 38-62V--- 0.50-5.00A<br>Max: 70V---<br>Max.Power:200W                          |
| t <sub>c</sub> : 90°C | t <sub>a</sub> : 50°C Input:100-200V~<br>t <sub>a</sub> : 60°C Input:200-240V~ |

MADE IN CHINA For LED module only  
 SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD  
 No.1061, Songbai Road, Xili Town, Nanshan District, Shenzhen, CHINA

45.50 mm
169.00 mm

|   |  |  |                                    |   |
|---|--|--|------------------------------------|---|
| <b>INPUT</b><br>L RED<br>G GREEN<br><br>N BLACK | <b>MOSO<sup>®</sup> X6-200V062</b><br>LED DRIVER | IS15885(Part2/Sec13)<br><br>R-41077186<br>www.bis.gov.in<br><br><br> | <b>IP67</b><br><br><b>SELV</b><br> | <b>OUTPUT</b><br>RED Vo +<br>BLACK Vo -<br>Io ADJ (+) |
|---|--|--|------------------------------------|---|

|                       |  |
|-----------------------|--|
| INPUT                 | 100-240V~ 50/60Hz, 2.8A Max.PF:0.95  |
| OUTPUT                | 38-62V--- 2.50-5.00A<br>Max: 70V---<br>Max.Power:200W                          |
| t <sub>c</sub> : 90°C | t <sub>a</sub> : 50°C Input:100-200V~<br>t <sub>a</sub> : 60°C Input:200-240V~ |

MADE IN CHINA For LED module only  
 SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD  
 No.1061, Songbai Road, Xili Town, Nanshan District, Shenzhen, CHINA



## Specification for Approval

Product Name: 200W outdoor off-line programmable driver

Product Model: X6-200M062-I   
X6-200V062-I

Rev. B.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. |            |             |

XiLi Songbai Road 1061, Nanshan  
Address: District, Shenzhen City, Guangdong Province, P.R.China Post Code: 518108

TEL: 0755-27657000 FAX: 0755-27657908

E-mail: wcx@mosopower.com Web site: <http://www.mosopower.com>

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

