

## Description

The X6E series is outdoor programmable LED driver that operates in constant current with high PF value and full power input voltage range 176~305Vac model. It also helps clients to improve the management of logistics and stock. The compact metal case and high efficiency enables the driver to operate with high reliability. It provides extreme durability with an IP67 rating and extends product lifetime. Overall protection is provided against lightning surge, output over voltage, short circuit and over temperature to ensure low failure rate.



## Product Features

- Universal input voltage: 90~305Vac;
- Full power work range: 176~305Vac;
- Isolate constant power design;
- High 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;
- 5 years warranty;

## Application

Road and street lighting,  
 Tunnel lighting  
 Area and flood lighting  
 High-bay lighting

## Models

| Model Number | Input Voltage Range (Vac) | MAX Output Power (W) | Output Voltage Range (Vdc) | Full Power Output Current Range (A) | Default Current(A) | Eff. (Typ.) | PF(Typ.) | THD(Typ.) |
|--------------|---------------------------|----------------------|----------------------------|-------------------------------------|--------------------|-------------|----------|-----------|
| X6E-240V056  | 100-277                   | 240                  | 30-56                      | 4.30~6.85                           | 5.0                | 92.5%       | 0.97     | 10%       |

### Notes:

- [1]. V means non-dimmable, adjustable output current potentiometer.  
 [2]. 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  | 220~240Vac | 305Vac |                                                                                     |
| Full Power Work Range           | 176Vac | 220~240Vac | 277Vac | 100Vac, 70%load; 176Vac, 100%load,<br>Refer to Output Power vs. Input Voltage curve |
| Input Frequency AC              | 47Hz   | 50/60Hz    | 63Hz   |                                                                                     |
| Max Input Current               | -      | -          | 1.8A   |                                                                                     |
| Max Input Power                 | -      | -          | 280W   |                                                                                     |
| Leakage Current                 | -      | -          | 0.70mA | IEC 60598-1; 240Vac/60Hz                                                            |
| Inrush Current                  | -      | -          | 75A    | 230Vac, 100% load                                                                   |
| Power Factor (PF)               | 0.93   | 0.95       | -      | 220-240Vac, 50-60Hz, 70%-100% load                                                  |
| Total Harmonic Distortion (THD) | -      | 10%        | 15%    | 220-240Vac, 50-60Hz, 70%-100% load                                                  |
| MCB(B16)                        | -      | 4          | -      | 240Vac; 100%load                                                                    |

## Output Specifications

| Parameter                           | Min                 | Typ. | Max                 | Notes                                                                                         |
|-------------------------------------|---------------------|------|---------------------|-----------------------------------------------------------------------------------------------|
| Output Voltage Range                | 30Vdc               | -    | 56Vdc               | The full power cannot be lower than 35Vdc                                                     |
| Open Circuit Voltage                | -                   | -    | 70Vdc               |                                                                                               |
| Output Current Range                | 3.43A               | -    | 6.85A               | Adjustable output current with potentiometer, full power<br>performance range 4.30A-6.85A     |
| Current Accuracy                    | -5%I <sub>set</sub> | -    | +5%I <sub>set</sub> | I <sub>set</sub> is set to the full power range                                               |
| Total Output Current Ripple (pk-pk) | -                   | 5%   | 10%                 | 20MHz BW full load & LED load the LED load ripple is slightly<br>different for different leds |
| Startup Overshoot Current           | -                   | -    | 10%                 | 220-240Vacfull load condition, LED load                                                       |
| Line Regulation                     | -1%                 | -    | +1%                 | 25°C±10°Cambient temperature, input changes from<br>200Vac to 264Vac                          |
| Load Regulation                     | -3%                 | -    | +3%                 | Load varies from 70% to 100% with 230Vac<br>Input at 25°C±10°C ambient temperature            |
| Turn-on Delay Time                  | -                   | -    | 1.0s                | 230Vac,100% load                                                                              |

## General Specifications

| parameter                                 | Min                                          | Typ.           | Max   | Notes                                                                                         |
|-------------------------------------------|----------------------------------------------|----------------|-------|-----------------------------------------------------------------------------------------------|
| Efficiency@230Vac<br>Io=4.30A<br>Io=6.85A | 91.5%<br>91.0%                               | 92.5%<br>92.0% | -     | 100% load, 25°C ambient temperature                                                           |
| Mean Time Between Failure                 | -                                            | 200Khours      | -     | 25°C±10°C ambient temperature, 230Vac, 80% load condition (MIL-HDBK-217/SR-332)               |
| Lifetime                                  | -                                            | 50Khours       | -     | 230Vac & 100% load, Tc 75°C, refer to lifetime vs. case temperature curve                     |
| Operating Temperature Ta                  | -40°C                                        | -              | +50°C | Output Power vs. Ambient Temperature curve                                                    |
| Operating Tc for Safety Tc_s              | -40°C                                        | -              | +90°C |                                                                                               |
| Operating Tc for Warranty Tc_w            | -40°C                                        | -              | +75°C | 5-year warranty shell temperature, humidity: 10% to 95% RH                                    |
| Storage Temperature Ta                    | -40°C                                        | -              | +85°C | Humidity: 5% to 100% RH                                                                       |
| Altitude                                  | -60m                                         | -              | 4000m |                                                                                               |
| Input Under voltage Protection            | 55Vac                                        | 65Vac          | 75Vac | Turn off the output or hiccup when the input voltage falls below protection voltage.          |
| Over Temperature Protection Tc            | -                                            | 90°C           | -     | Decreases output current, returning to normal after over temperature is removed.              |
| Short Circuit Protection                  | -                                            | -              | -     | Constant current mode. The output shall return to normal when the fault condition is removed. |
| Dimensions (L*W*H)                        | 207*68*37mm                                  |                |       |                                                                                               |
| Net Weight                                | 980±50g/PCS                                  |                |       |                                                                                               |
| Package (L*W*H)                           | 376*352*172mm; 12PCS/Ctn, Gross Weight: 14Kg |                |       | For reference only                                                                            |

## Safety Specifications

| Parameter                           | Min  | Typ.    | Max  | Notes                                                 |
|-------------------------------------|------|---------|------|-------------------------------------------------------|
| Dielectric Strength (Input-Output)  | -    | 3750Vac | -    | 60s, Current not exceeding 5mA                        |
| Dielectric Strength (Input-Ground)  | -    | 1875Vac | -    | 60s, Current not exceeding 5mA                        |
| Dielectric Strength (Output-Ground) | -    | 500Vac  | -    | 60s, Current not exceeding 5mA                        |
| Grounding Resistance                | -    | -       | 0.1Ω | 25°C±10°C Ambient Temperature, pass 25A Current, 60s. |
| Insulation Resistance               | 10MΩ | -       | -    | Input-Output, Input-PE, Output-PE, 500Vdc/60s/25°C    |

## Safety Compliance

| Safety Category | Standards                        | Approved | Notes |
|-----------------|----------------------------------|----------|-------|
| CCC             | GB19510.1, GB19510.14            | √        |       |
| 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            |          |       |
| SAA             | AS/NZS 61347.1                   |          |       |

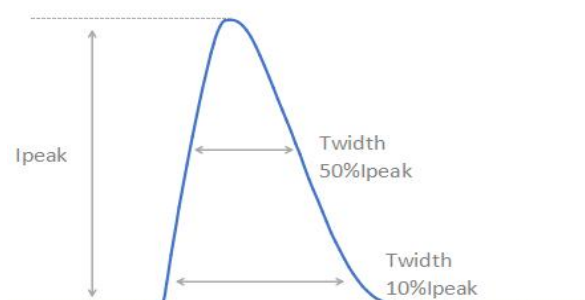
## EMC Compliance

| 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                |          |       |
| Surge Shock Immunity | ANSI/C82.77-5-2017         |          |       |
| Ring Wave            |                            |          |       |

## RoHS

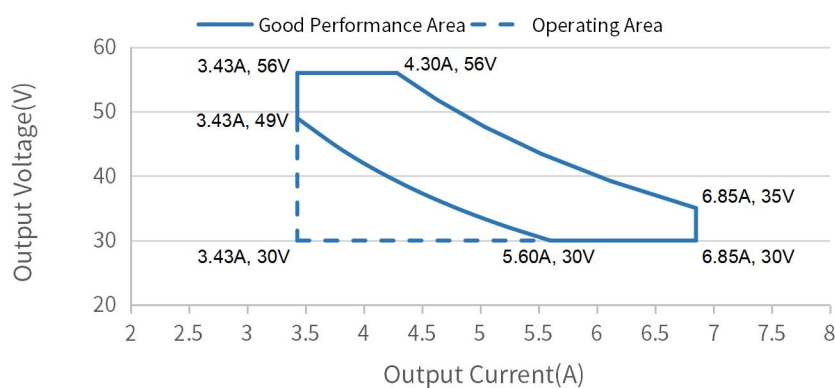
Our products comply with RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

## Inrush Current

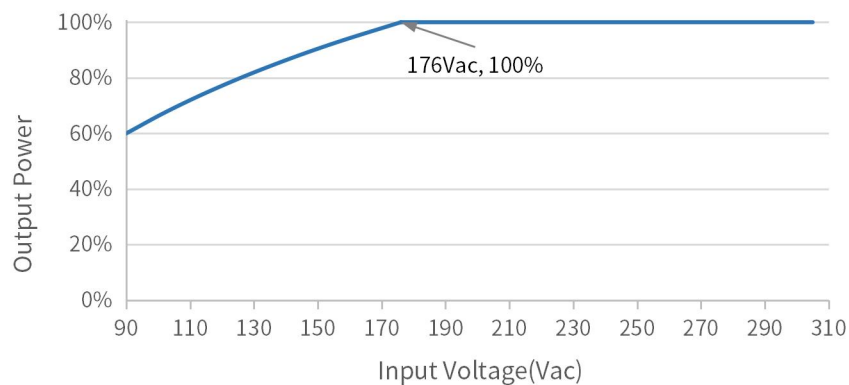


| $V_{in}$ | $I_{peak}$ | $T(@10\% \text{ of } I_{peak})$ | $T(@50\% \text{ of } I_{peak})$ |
|----------|------------|---------------------------------|---------------------------------|
| 230Vac   | 61A        | 830 $\mu$ s                     | 412 $\mu$ s                     |

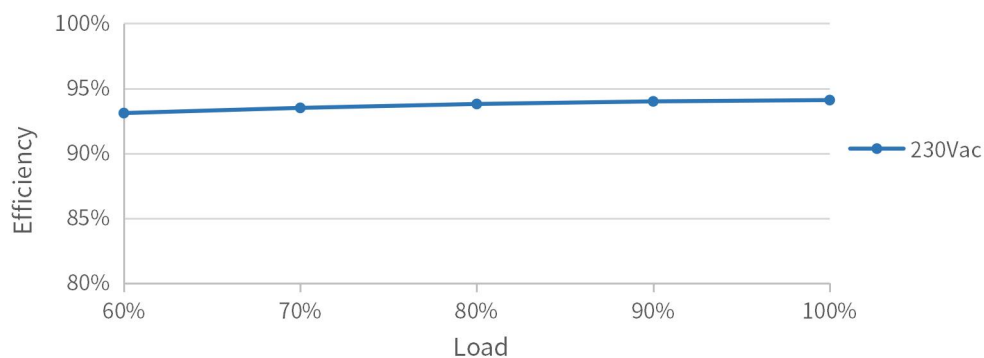
## Output Voltage vs. Output Current

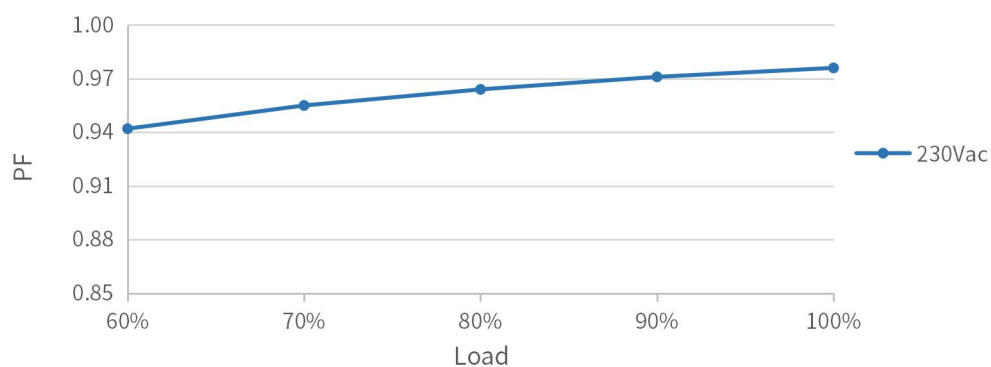
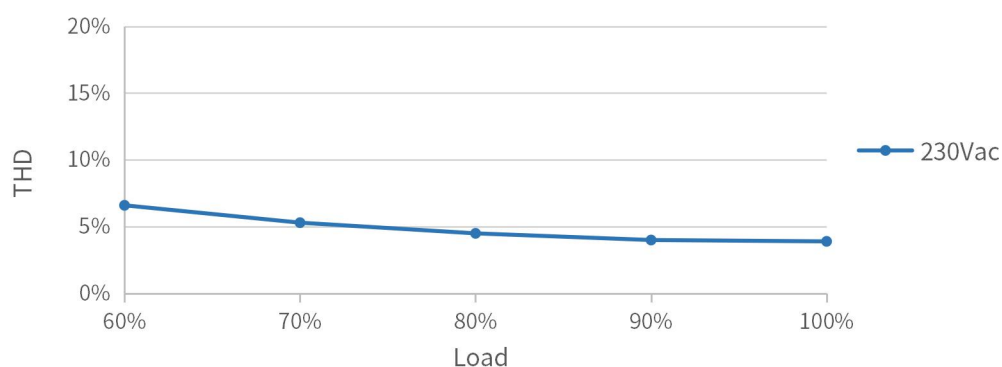
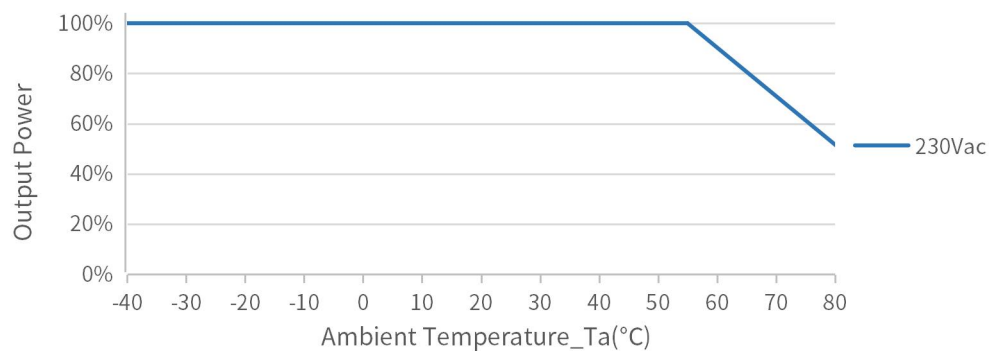
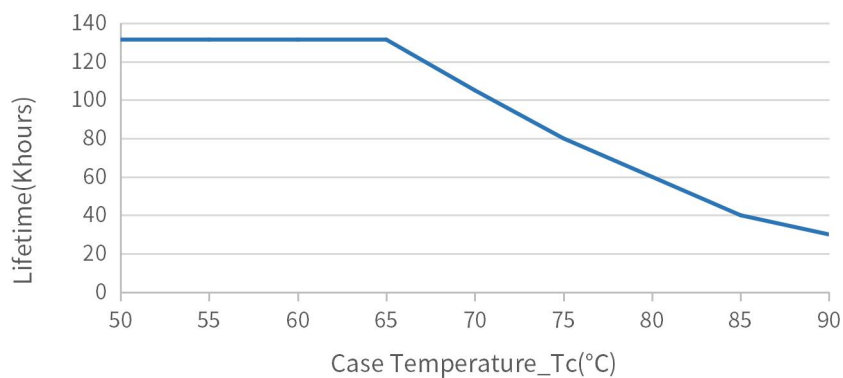


## Output Power vs. Input Voltage

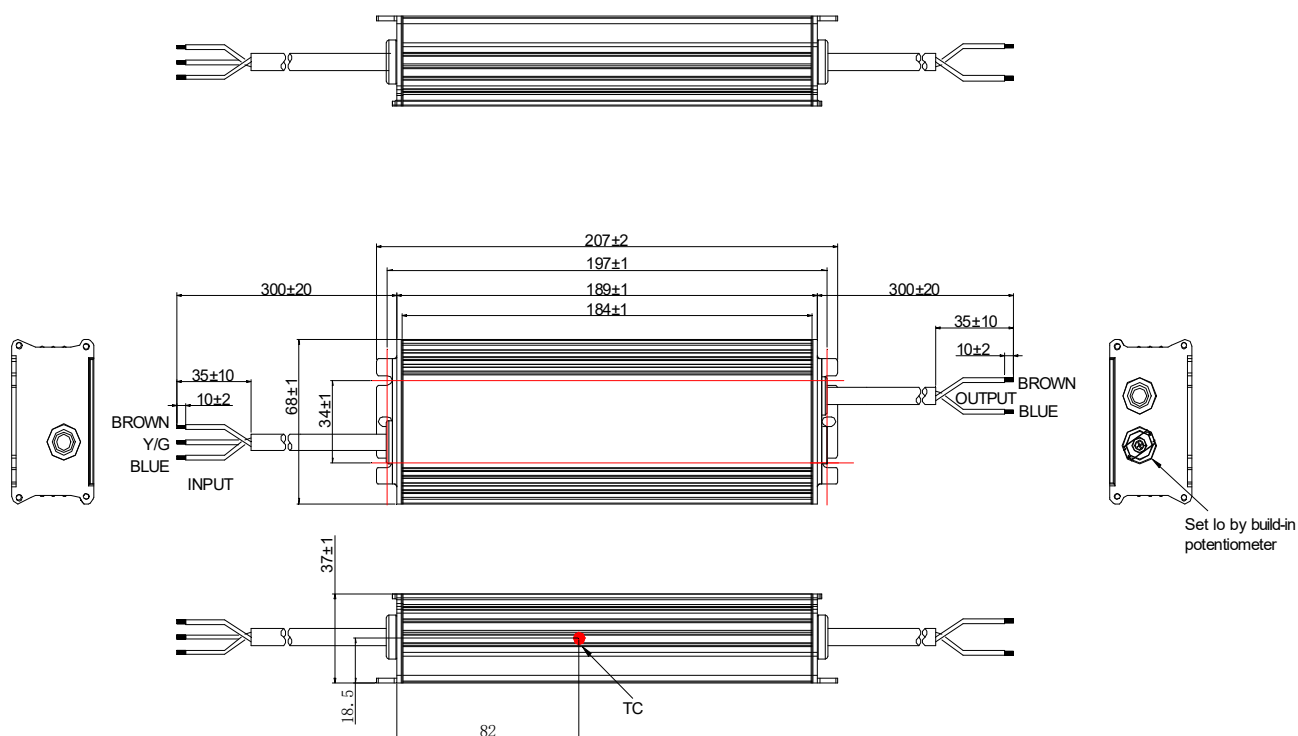


## Efficiency vs. Load



**PF vs. Load****THD vs. Load****Output Power vs. Ambient Temperature****Lifetime vs. Case Temperature**

## Mechanical Outline



## Specification

|        |                                                  |        |
|--------|--------------------------------------------------|--------|
| Input  | CCC+VDE H05RN-F 3*1.0 mm <sup>2</sup> L=300±20mm | CCC/CE |
| Output | CCC+VDE H05RN-F 2*1.0 mm <sup>2</sup> L=300±20mm | CCC/CE |

## Label

|                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                          |  |                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------|
| <b>INPUT</b> <b>MOSO</b> <sup>®</sup> <b>X6E-240V056</b><br>L (BROWN 棕) Uout (最大电压): 70V ~<br>G (Y/G 黄/绿) INPUT (输入) 100-240V/277V ~ 50/60Hz, 280W Max. 1.8A Max. PF: 0.95<br>N (BLUE 蓝) OUTPUT (输出) 30-56V ~, 2.65-6.85A Max. 240W<br>t <sub>c</sub> : 90°C 144W Max. 2.65-3.1A (Input: 100-176V ~)<br>t <sub>a</sub> : 50°C 240W Max. 3.43-6.85A (Input: 176-240/277V ~) |  | LED DRIVER Constant current type<br>LED 控制装置 恒流型, 内置防浪涌<br>CCC CE SELV IP67 RoHS                                                         |  | <b>OUTPUT</b><br>(BROWN 棕) Vo +<br>(BLUE 蓝) Vo -<br>Io ADJ (+) |
| 中国制造 仅适用LED模块 MADE IN CHINA For LED module only                                                                                                                                                                                                                                                                                                                            |  | 深圳茂硕电子科技有限公司<br>SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD<br>No. 1061, Songbai Road, Xili Town, Nanshan District,<br>Shenzhen, CHINA |  |                                                                |

### Note:

Nameplate is laser engraved.

Version

|     |               |            |
|-----|---------------|------------|
| A.1 | First release | 2023-03-29 |
|     |               |            |
|     |               |            |
|     |               |            |
|     |               |            |
|     |               |            |



## Specification for Approval

Product Name:    240W LED Driver

Product Model:   X6E-240V056

Rev:    A.1

Address: XiLiSongbai Road 1061, Nanshan District, Shenzhen City, Guangdong, China

Tel: 0755-27657000

FAX: 755-27657908

E-mail: info@mosopower.com

Web Site: <http://www.mosopower.com>

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

## Specification for Approval

Product Name:    240W LED Driver

Product Model:    X6E-240V056

Rev:    A.1

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

Address:XiLiSongbai Road 1061, Nanshan District, Shenzhen City, Guangdong, China

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E-mail:info@mosopower.com

Web Site:http://www.mosopower.com

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