

## Description

The X7E series is outdoor LED driver that operates in constant current with high PF value, input voltage range 176~264Vac model, the X7E series also provide multiple isolated dimming controls, Dim-to-Off. It also helps clients to improve the management of logistics and stock. The compact metal case and high efficiency enable the driver to operate with high reliability. 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: 176~264Vac;
- Isolate constant current design;
- The output current is adjustable
- 3-in-1 dimmable: 0/1~10Vdc / PWM/ Resistor dimming,
- Output and Dimming Signal Isolating;
- High surge protection: 4KV line-line, 6KV line-earth(Class I);
- Suitable for luminaires with protection Class I & Class II;
- Protections: Output SCP / OVP / OTP;
- 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.) |
|--------------|---------------------------|----------------------|----------------------------|-------------------------------------|--------------------|-------------|----------|-----------|
| X7E-050Y058F | 176~264                   | 50                   | 28-58                      | 0.86~1.20                           | 1.20               | 89%         | 0.97     | 10%       |

### NOTES:

- [1]. M means 0-10V/PWM dimming, V means non-dimmable, adjustable output current with potentiometer.  
 [2]. All specifications are measured at 25

°C, ambient temperature, input voltage 230Vac, and the typ

## Input Specifications

| Parameter                       | Min    | Typ.       | Max    | Notes                              |
|---------------------------------|--------|------------|--------|------------------------------------|
| Input Voltage Range             | 176Vac | 220~240Vac | 264Vac |                                    |
| Input Frequency AC              | 47Hz   | 50/60Hz    | 63Hz   |                                    |
| Max Input Current               | -      | -          | 0.4A   | 176Vac & 100% load                 |
| Max Input Power                 | -      | -          | 60W    | 176Vac & 100% load                 |
| Leakage Current                 | -      | -          | 0.70mA | IEC 60598-1;240Vac/60Hz            |
| Inrush Current                  | -      | -          | 50A    | 240Vac, 100% load                  |
| Power Factor (PF)               | 0.93   | 0.95       | -      | 220-240Vac, 50-60Hz, 70%-100% load |
| Total Harmonic Distortion (THD) | -      | -          | 10%    | 220-240Vac, 50-60Hz, 60%-100% load |
| MCB(B16)                        | -      | 23         | -      | 230Vac; 100%load                   |

## Output Specifications

| Parameter                           | Min   | Typ. | Max   | Notes                                                                                      |
|-------------------------------------|-------|------|-------|--------------------------------------------------------------------------------------------|
| Output Voltage Range                | 28Vdc | -    | 58Vdc | The full power cannot be lower than 38Vdc                                                  |
| Open Circuit Voltage                | -     | -    | 80Vdc |                                                                                            |
| Output Current Setting Range        | 0.60A | -    | 1.20A | Adjustable output current with potentiometer, Shipped with fixed current.                  |
| Full Power Current Range            | 0.86A | -    | 1.20A |                                                                                            |
| Current Accuracy                    | -8%   | -    | +8%   |                                                                                            |
| Total Output Current Ripple (pk-pk) | -     | -    | 200%  | 20MHz BW full load & LED load the LED load ripple is slightly different for different leds |
| Startup Overshoot Current           | -     | -    | 10%   | 220-240Vac full load condition, LED load                                                   |
| Line Regulation                     | -3%   | -    | +3%   | 25°C±10°C ambient temperature, input changes from 176Vac to 264Vac                         |
| Load Regulation                     | -5%   | -    | +5%   | Load varies from 70% to 100% with 230Vac Input at 25°C ±10°C ambient temperature           |
| Turn-on Delay Time                  | -     | -    | 1.0s  | 220Vac, 100% load                                                                          |

## General Specifications

| parameter                                 | Min                                                | Typ.       | Max    | Notes                                                                                         |
|-------------------------------------------|----------------------------------------------------|------------|--------|-----------------------------------------------------------------------------------------------|
| Efficiency@230Vac<br>Io=0.86A<br>Io=1.20A | 87.5%<br>86.5%                                     | 89%<br>88% | -      | 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, reference lifetime vs. case temperature curve                    |
| Operating Temperature Ta                  | -40 °C                                             | -          | +60°C  | Output Power vs. Ambient Temperature curve                                                    |
| Operating Tc for Safety Tc_s              | -40 °C                                             | -          | +85°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 95% RH                                                                        |
| Altitude                                  | -60m                                               | -          | 4000m  |                                                                                               |
| Over Temperature Protection Tc            | 90°C                                               | 100°C      | 110°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)                        | 115*63.5*34mm                                      |            |        |                                                                                               |
| Net Weight                                | 410±50g/PCS                                        |            |        |                                                                                               |
| Package (L*W*H)                           | L500*W310*H170mm; 18PCS/ Ctn., Gross Weight: 8.5Kg |            |        |                                                                                               |

## Dimming

| Parameter                     | Min                  | Typ.  | Max                   | Notes                                           |
|-------------------------------|----------------------|-------|-----------------------|-------------------------------------------------|
| Absolute Maximum Voltage      | -                    | 15V   | 18V                   | On the Vdim (+) Pin                             |
| Source Current on Vdim (+)Pin | -                    | 100uA | 150uA                 |                                                 |
| Dimming Range                 | 10% I <sub>set</sub> | -     | 100% I <sub>set</sub> | I <sub>set</sub> is set to the full power range |
| Suggest Dimming Input 0-10V   | 0V                   | -     | 10V                   |                                                 |
| Turn-on Voltage               | 0.7V                 | -     | 1.0V                  | Only applicable to Dim-to-of                    |
| Turn-off Voltage              | 0.4V                 | -     | 0.7V                  | Only applicable to Dim-to-of                    |
| 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%                   |                                                 |
| Turn-on Duty Cycle            | 7%                   | -     | 10%                   | Only applicable to Dim-to-of                    |
| Turn-Off Duty Cycle           | 4%                   | -     | 7%                    | Only applicable to Dim-to-of                    |

## Safety Specification

| Parameter                                 | Min  | Class I/Class II | Max | Notes                                                        |
|-------------------------------------------|------|------------------|-----|--------------------------------------------------------------|
| Dielectric Strength (Input-Output)        | -    | 3750Vac          | -   | 60S, Current not exceeding 5mA                               |
| Dielectric Strength (Input-Ground/Case)   | -    | 1480/3000Vac     | -   | 60S, Current not exceeding 5mA                               |
| Dielectric Strength (Output-Ground/Case)  | -    | 1160/1160Vac     | -   | 60S, Current not exceeding 5mA                               |
| Dielectric Strength (Input-Dimming)       | -    | 3750Vac          | -   | 60S, Current not exceeding 5mA                               |
| Dielectric Strength (Dimming-Ground/Case) | -    | 500Vac           | -   | 60S, Current not exceeding 5mA                               |
| Insulation Resistance                     | 10MΩ | -                | -   | Input-Output, Input-PE/Case, Output-PE/Case, 500Vdc/60S/25°C |

## Safety Compliance

| Safety Category | Standards                                 | Approved | Notes |
|-----------------|-------------------------------------------|----------|-------|
| CCC             | GB/T 19510.213, GB/T 19510.1              |          |       |
| 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 61347.2.13, AS/NZS 61347.1             |          |       |
| EAC             | ГОСТ Р МЭК 61347-1<br>ГОСТ IEC 61347-2-13 |          |       |

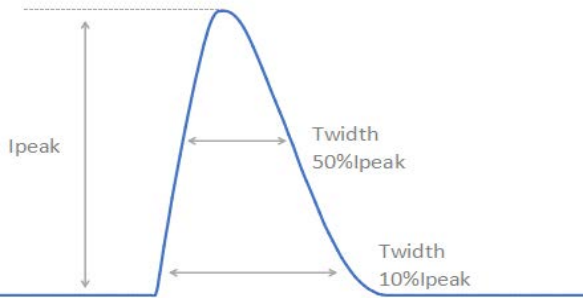
## EMC Compliance

| 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                                                      |          |       |
| Surge Shock Immunity | EN61000-4-5                                                      |          |       |
| Ringing Wave         |                                                                  |          |       |
| EAC                  | ГОСТ IEC 62493, СТБ EH 55015<br>ГОСТ IEC 61547                   |          |       |
| EAC                  | ГОСТ 30804.3.2 (IEC 61000-3-2)<br>ГОСТ 30804.3.3 (IEC 61000-3-3) |          |       |

## RoHS

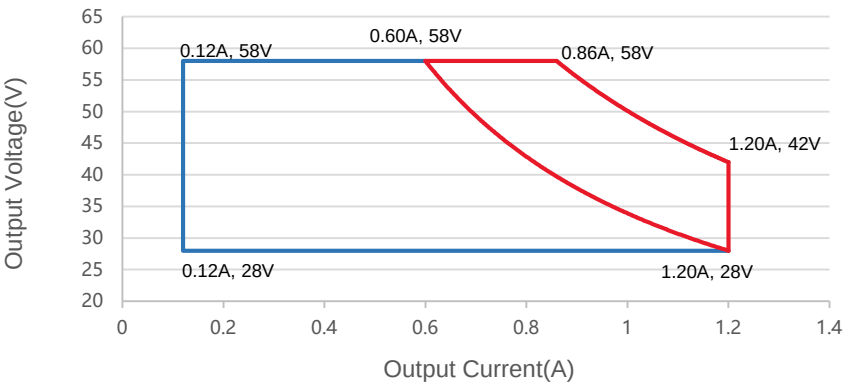
Our products comply with reference to RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Inrush Current



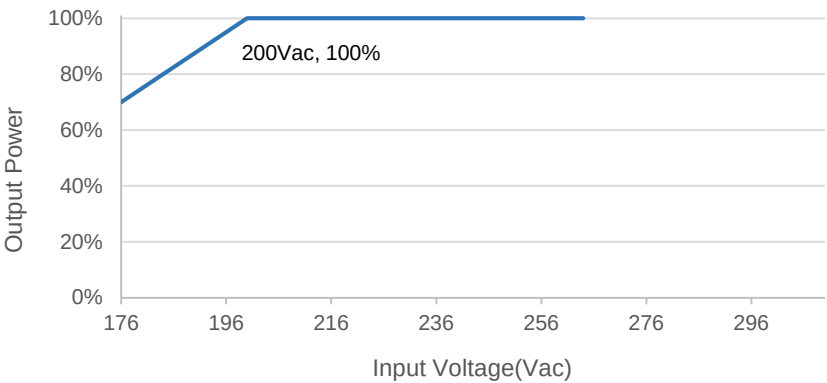
| Vin    | Ipeak | T(@10% of Ipeak) | T(@50% of Ipeak) |
|--------|-------|------------------|------------------|
| 230Vac | <40A  | 200us            | 120us            |

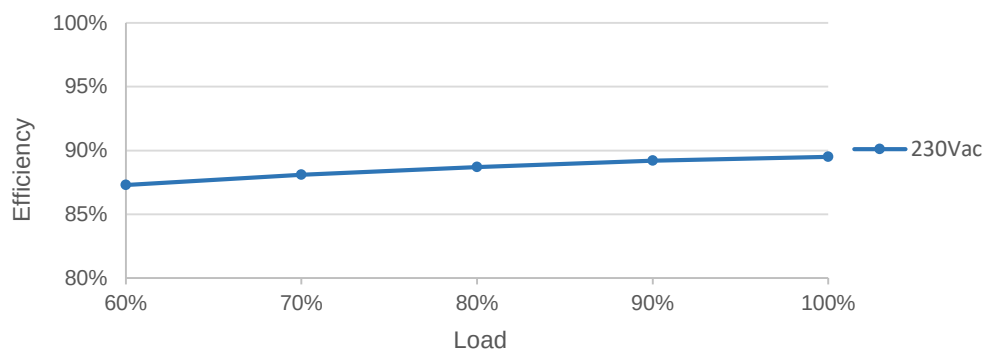
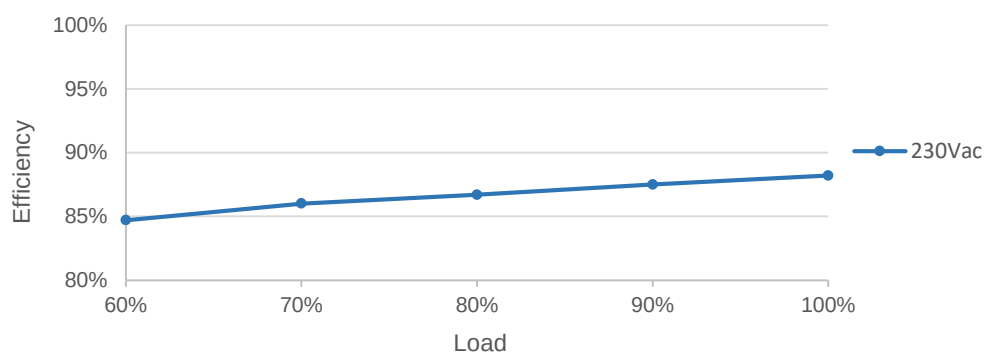
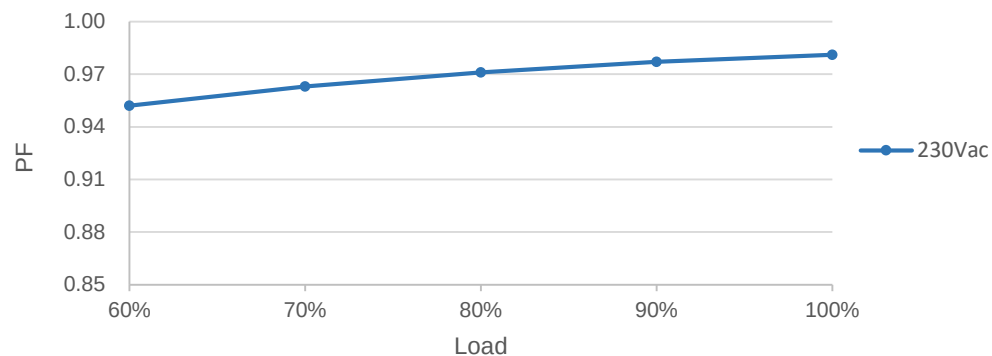
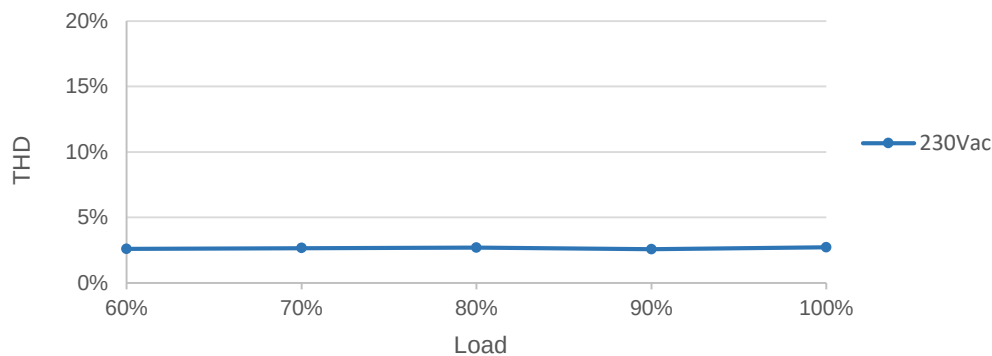
Output Voltage vs. Output Current



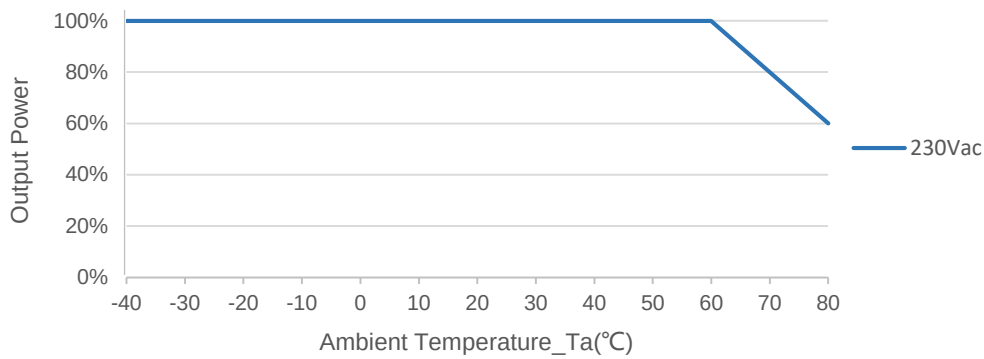
Red curve: good performance area

Output Power vs. Input Voltage

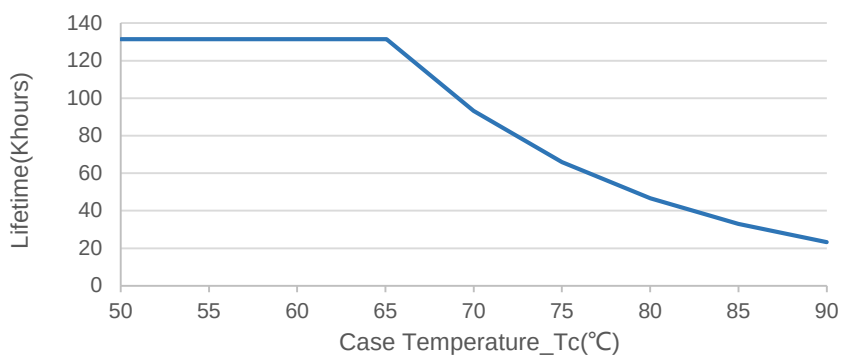


**Efficient vs. Load****Io=0.86A****Io=1.20A****PF vs. Load****THD vs. Load**

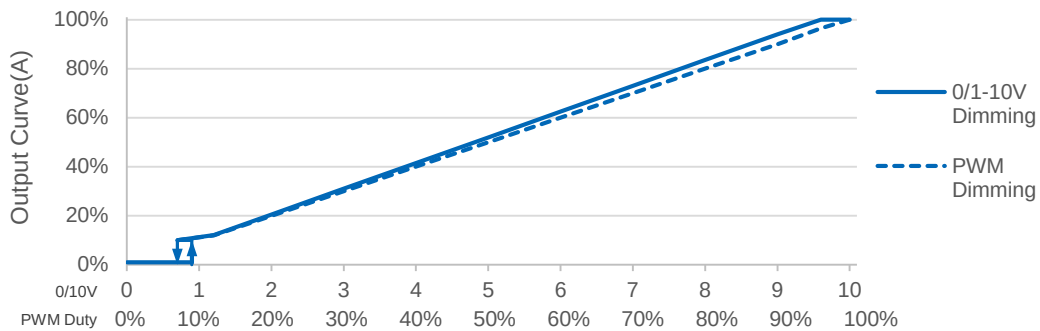
### Output Power vs. Ambient Temperature



### Lifetime vs. Case Temperature

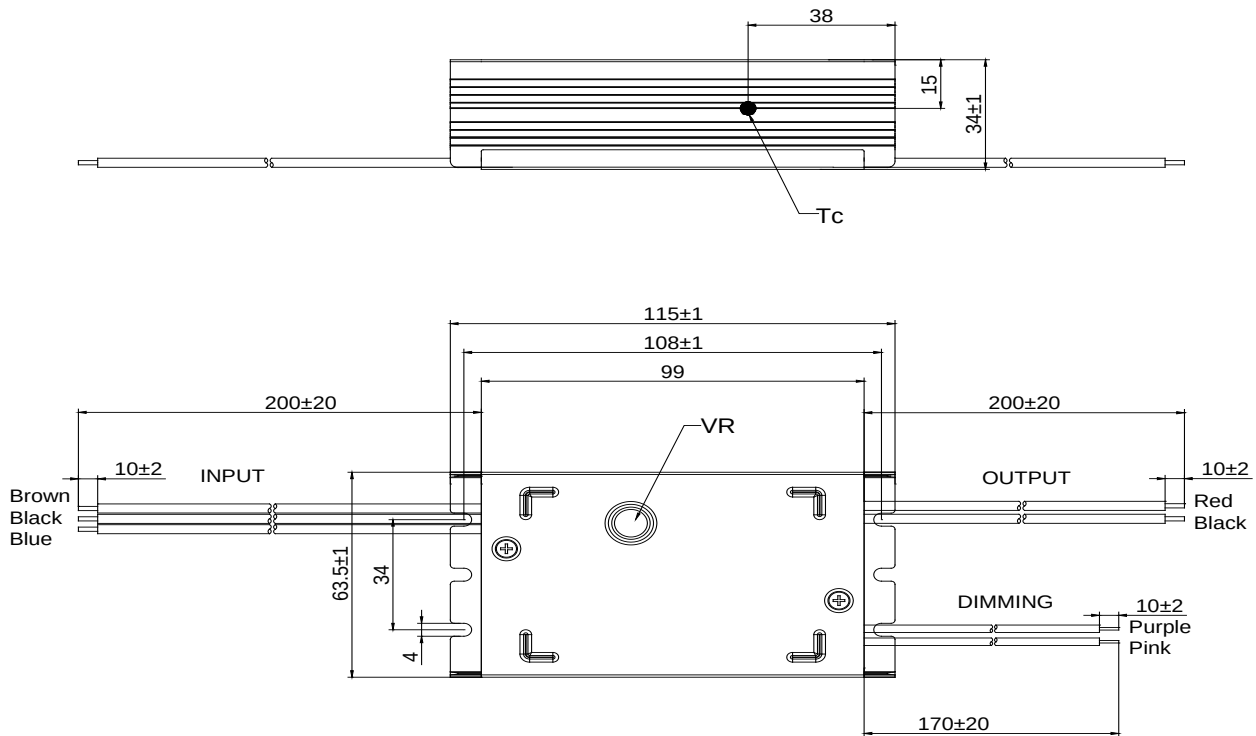


### 0-10V/PWM Dimming



Note: Afterglow may appear after switching off dimming due to the difference of lamp panel. Thus, lighting fixture grounding test is suggested.

## Mechanical Outline



## Specification

|         |         |       |            |                       |                             |
|---------|---------|-------|------------|-----------------------|-----------------------------|
| Input   | UL 1672 | 18AWG | L=200±20mm | Tin-dip length 10±2mm | L: Brown, N: Blue, G: Black |
| Output  | UL 1672 | 18AWG | L=200±20mm | Tin-dip length 10±2mm | LED+: Red, LED-: Black      |
| Dimming | UL 1015 | 22AWG | L=170±20mm | Tin-dip length 10±2mm | DIM+: Purple, DIM-: Pink    |

## Label

**INPUT**

L BROWN

G BLACK

N BLUE

**MOSO**<sup>®</sup>

**X7E-050M058F**

LED DRIVER (Constant current type)

|        |                                                                                           |
|--------|-------------------------------------------------------------------------------------------|
| INPUT  | 220-240V~50/60Hz, 0.4A Max. PF:0.5C-0.96, Max. 60W                                        |
| OUTPUT | 28-58V <sup>+</sup> 0.6-1.2A<br>U <sub>out</sub> Max: 80V <sup>+</sup><br>Max. Power: 50W |
| tc:85℃ | ta:60℃                                                                                    |

**OUTPUT**

RED Vo +

BLACK Vo -

PURPLE DIM "+"

PINK DIM "-"

CE

25

SELV

RoHS

110

SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD  
No.1061, Songbai Road, Xili Town, Nanshan District, Shenzhen, CHINA

MADE IN CHINA  
For LED module only



Version

|     |               |            |
|-----|---------------|------------|
| A.4 | First release | 2025-07-02 |
| B.2 | ECL202507039  | 2025-07-31 |
| C.2 | DCGL202508015 | 2025-08-25 |
|     |               |            |
|     |               |            |
|     |               |            |
|     |               |            |

## Specification for Approval

Product Name: 50W LED Driver

Product Model: X7E-050M058F

Rev: C.2

Address: XiLi Songbai Road 1061, Nanshan District, Shenzhen City, Guangdong, China

Tel: 0755-27657000

FAX: 755-27657908

E-mail: [info@mosopower.com](mailto:info@mosopower.com)

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

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

## Specification for Approval

Product Name: 50W LED Driver

Product Model: X7E-050M058F

Rev: C.2

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

Address:XiLi Songbai Road 1061, Nanshan District, Shenzhen City, Guangdong, China

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