

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. It provides extreme durability with an IP54 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: 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 lighting,
Tunnel lighting
Landscape 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 typical value tested by full load, if no specific note.

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 Io=1.20A Io=0.86A	87.5% 86.5%	89% 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, Ta=50°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)	98.4*63.5*34mm			
Net Weight	410±50g/PCS			
Package (L*W*H)	L500*W310*H175mm; 20PCS/Ctn, Gross Weight: 9.4Kg			

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 _{set}	-	100% I _{set}	I _{set} 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)	-	1560/3750Vac	-	60S, Current not exceeding 5mA
Dielectric Strength (Output-Ground)	-	1560/3750Vac	-	60S, Current not exceeding 5mA
Dielectric Strength (Input-Dimming)	-	3750Vac	-	60S, Current not exceeding 5mA
Dielectric Strength (Dimming-Ground)	-	500Vac	-	60S, Current not exceeding 5mA
Insulation Resistance	10MΩ	-	-	Input-Output, Input-PE, Output-PE, 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 ГОСТ IEC 61347-2-13		

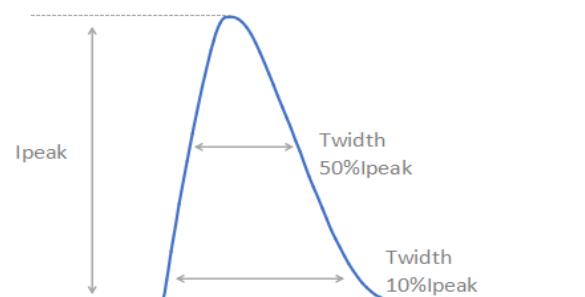
EMC Compliance

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 ГОСТ IEC 61547		
EAC	ГОСТ 30804.3.2 (IEC 61000-3-2) ГОСТ 30804.3.3 (IEC 61000-3-3)		

RoHS

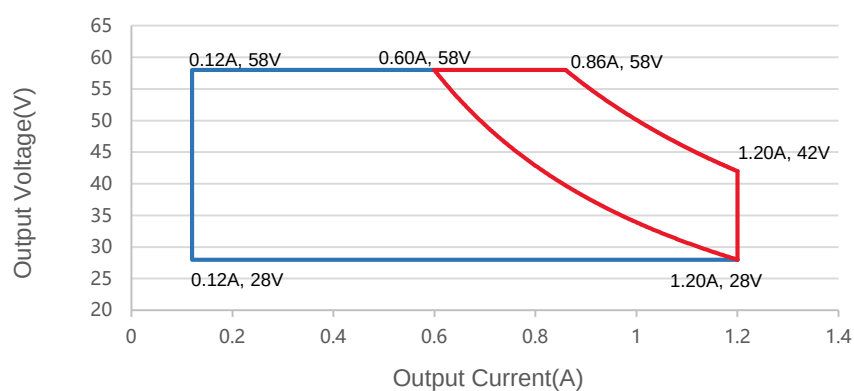
Our products comply with reference to RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Inrush Current



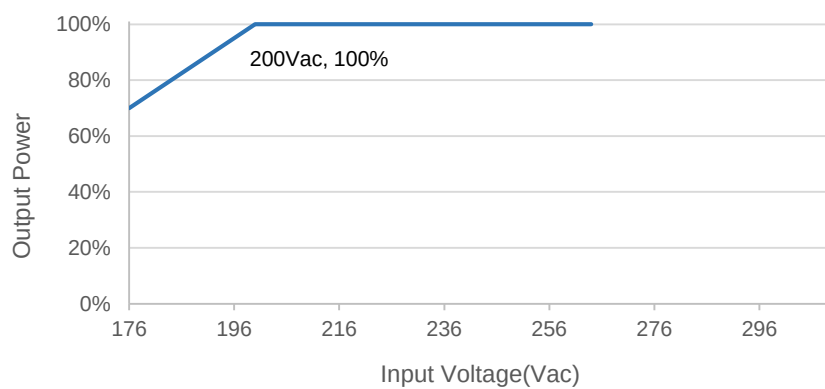
Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
230Vac	<40A	200us	120us

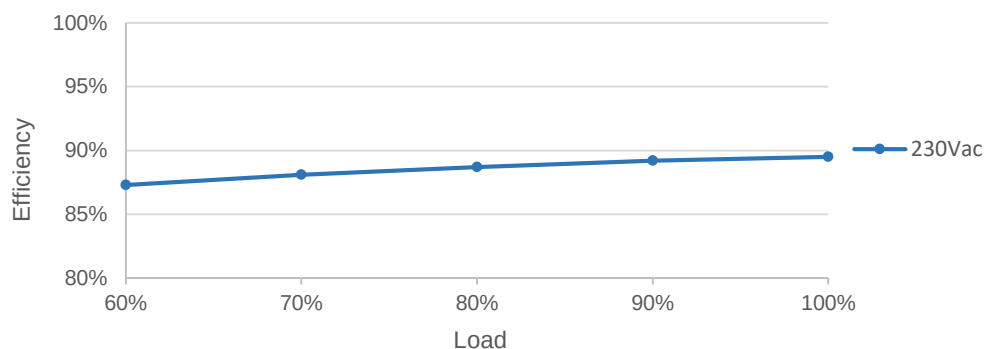
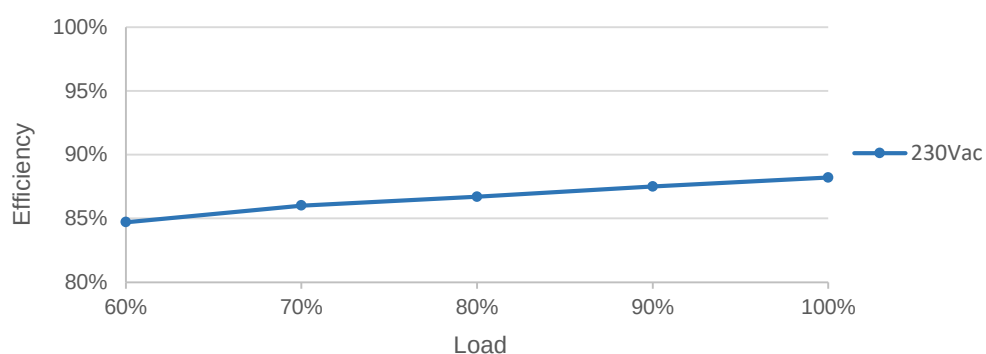
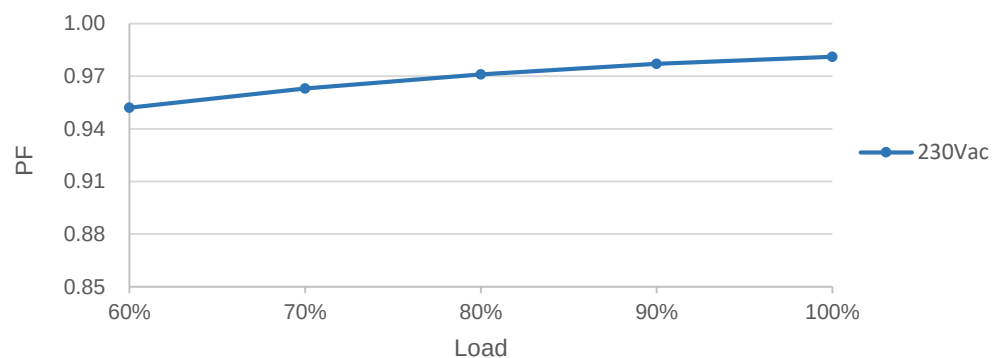
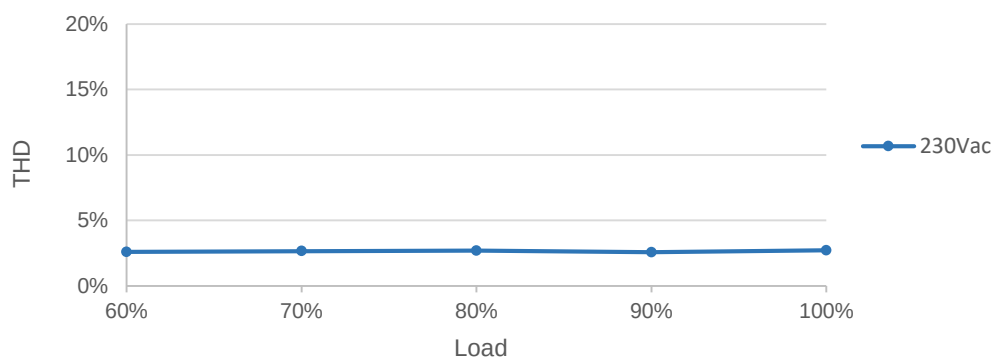
Output Voltage vs. Output Current



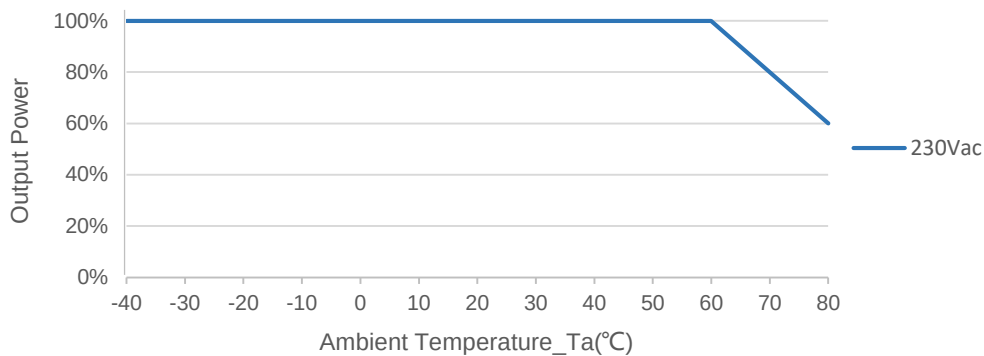
Red curve: good performance area

Output Power vs. Input Voltage

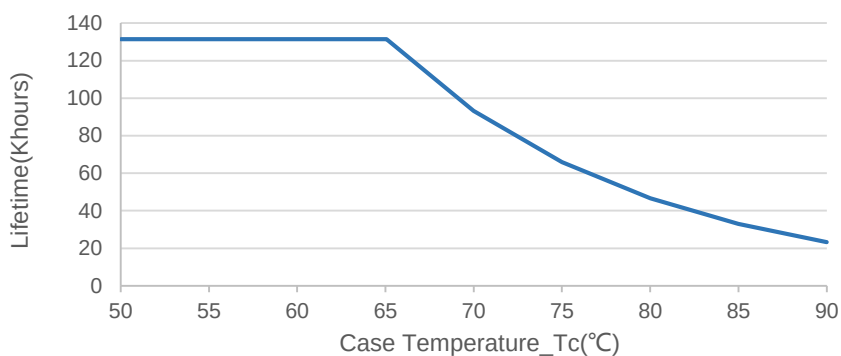


Efficiency vs. Load**Io=0.86A****Io=1.20A****PF vs. Load****THD vs. Load**

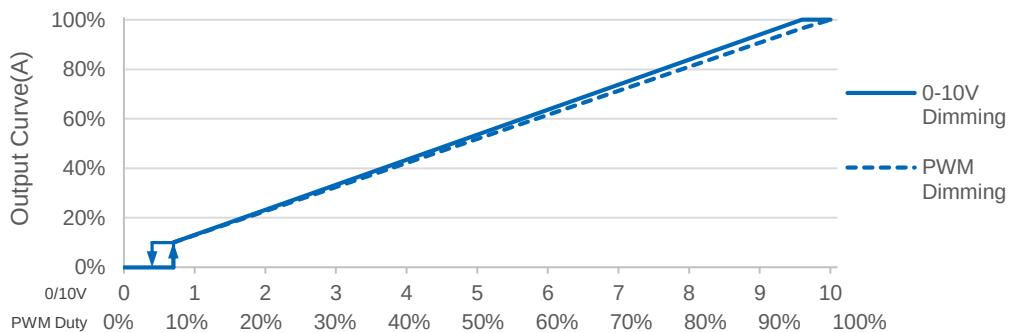
Output Power vs. Ambient Temperature



Lifetime vs. Case Temperature

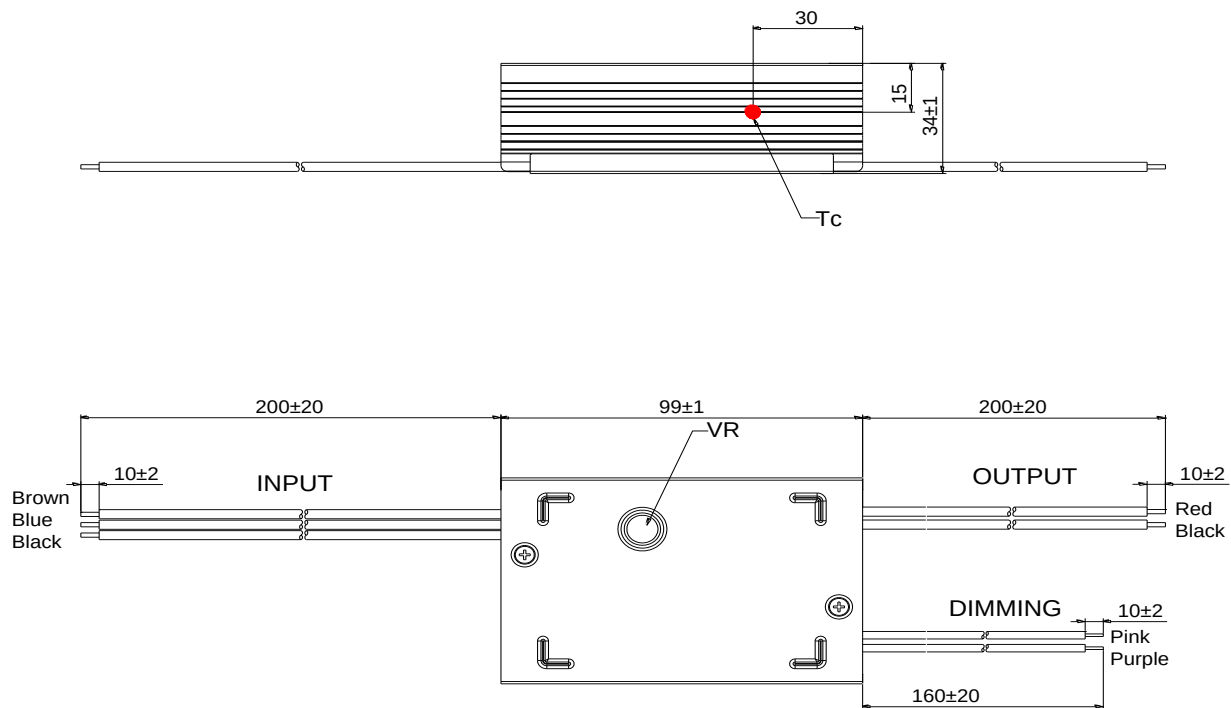


0-10V/PWM Dimming



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=160±20mm Tin-dip length 10±2mm DIM+: Purple, DIM-: Pink	

Label

INPUT

L BROWN

G BLACK

N BLUE

MOSO[®]

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= 0.6-1.2A Uout Max: 80V= Max. Power: 50W
tc: 85°C	ta: 60°C

OUTPUT

BROWN Vo +

BLUE Vo -

PURPLE DIM "+"

PINK DIM "-"

CE SELV

SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD

No. 1081, Songbai Road, Xili Town, Nanshan District, Shenzhen, CHINA

MADE IN CHINA

For LED module only

RoHS

110

RoHS

Version

A.1	First release	

Specification for Approval

Product Name: 50W LED Driver

Product Model: X7E-050M058F

Rev: A.1

Address: XiLi Songbai 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: 50W LED Driver

Product Model: X7E-050M058F

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:XiLi Songbai 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