

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: 6KV line-line, 6KV line-earth(Class I);
- Suitable for luminaires with protection Class I & Class II;
- Protections: Input UVP / 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-100M143	176~264	100	72-143	0.7~1.05	0.75	91.5%	0.97	8%

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	-	-	0.9A	176Vac & 100% load
Max Input Power	-	-	120W	176Vac & 100% load
Leakage Current	-	-	0.70mA	IEC 60598-1;240Vac/60Hz
Inrush Current	-	-	75A	240Vac, 100% load
Power Factor (PF)	0.95	0.97	-	220-240Vac, 50-60Hz, 70%-100% load
Total Harmonic Distortion (THD)	-	8%	12%	220-240Vac, 50-60Hz, 70%-100% load
MCB(B16)	-	9	-	230Vac; 100% load

Output Specifications

Parameter	Min	Typ.	Max	Notes
Output Voltage Range	72Vdc	-	143Vdc	The full power cannot be lower than 96Vdc
Open Circuit Voltage	-	-	180Vdc	
Output Current Setting Range	0.63A	-	1.05A	Adjustable output current with potentiometer, Shipped with fixed current.
Full Power Current Range	0.70A	-	1.05A	
Current Accuracy	-5%	-	+5%	
Total Output Current Ripple (pk-pk)	-	10%	15%	20MHz BW full load & LED load the LED load ripple is slightly different for different leds
Startup Overshoot Current	-	5%	10%	220-240Vac full load condition, LED load
Line Regulation	-3%	-	+3%	25°C±10°C ambient temperature, input changes from 200Vac 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=1.05A Io=0.70A	90.0% 90.0%	91.5% 91.5%	-	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	-	+55°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	-	+50°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	
Input Under voltage Protection	130Vac	150Vac	170Vac	Turn off the output or hiccup when the input voltage falls below protection voltage.
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)	132*50.3*34mm			
Net Weight	430±50g/PCS			
Package (L*W*H)	500*310*150mm; 20PCS/Ctn, Gross Weight: 10.5Kg			

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 _{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-off
Turn-off Voltage	0.4V	-	0.7V	Only applicable to Dim-to-off
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-off
Turn-Off Duty Cycle	4%	-	7%	Only applicable to Dim-to-off

Safety Specification

Parameter	Min	Class I/Class II	Max	Notes
Dielectric Strength (Input-Output)	-	3750Vac	-	60S, Current not exceeding 5mA
Dielectric Strength (Input-Case)	-	1560/3750Vac	-	60S, Current not exceeding 5mA
Dielectric Strength (Output-Case)	-	1560/3750Vac	-	60S, Current not exceeding 5mA
Dielectric Strength (Input-Dimming)	-	3750Vac	-	60S, Current not exceeding 5mA
Dielectric Strength (Dimming-Case)	-	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	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 61347.2.13, AS/NZS 61347.1		
EAC	ГОСТ Р МЭК 61347-1 ГОСТ IEC 61347-2-13		

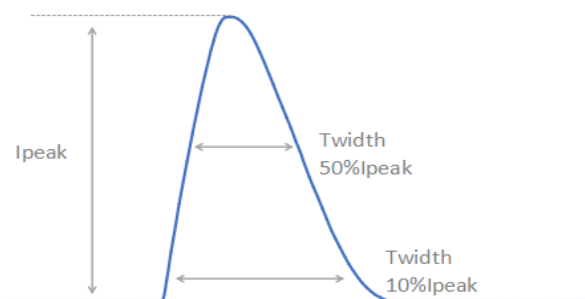
EMC Compliance

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

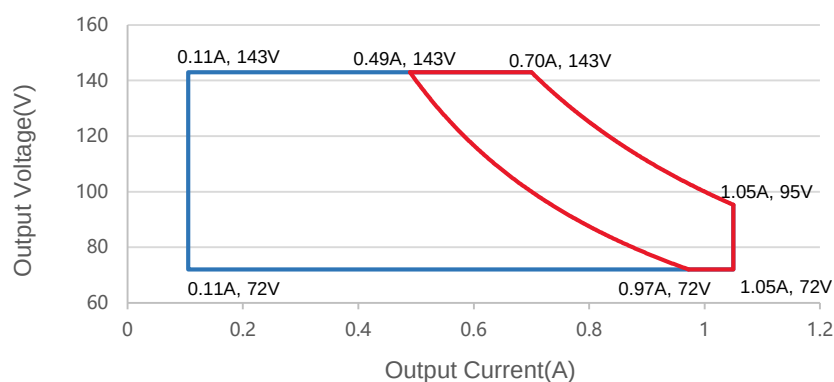
Our products comply with reference to RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Inrush Current



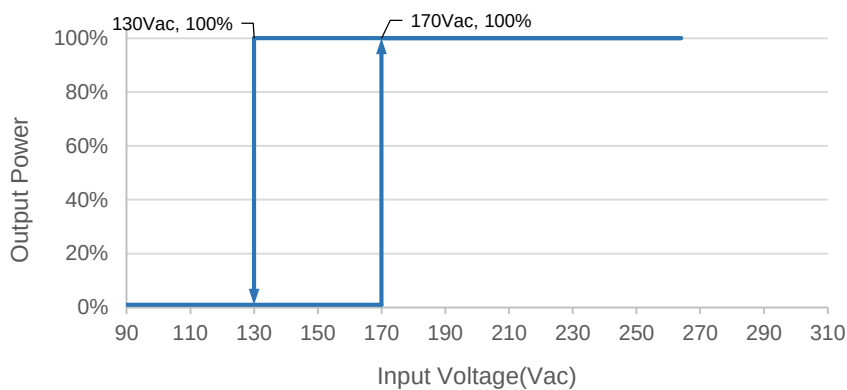
Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
230Vac	42A	550us	230us

Output Voltage vs. Output Current

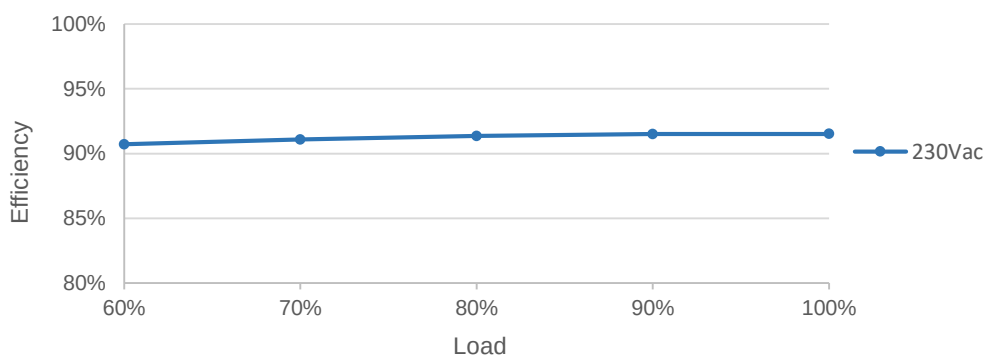


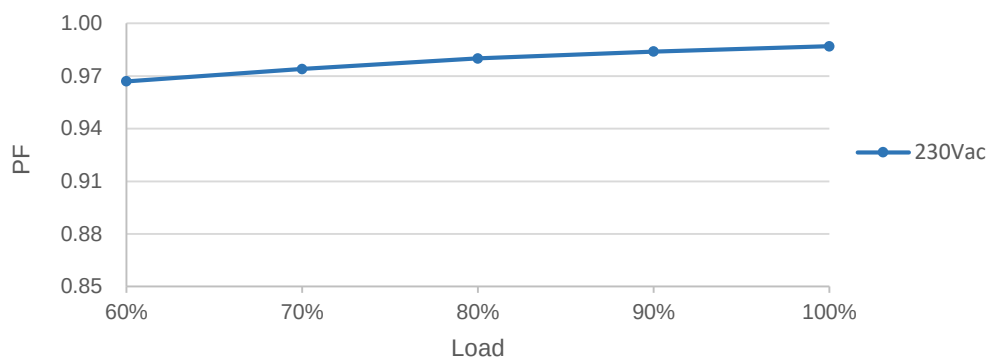
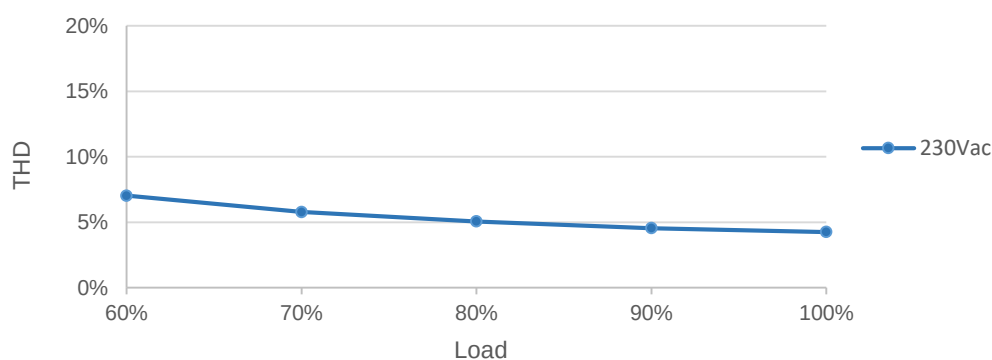
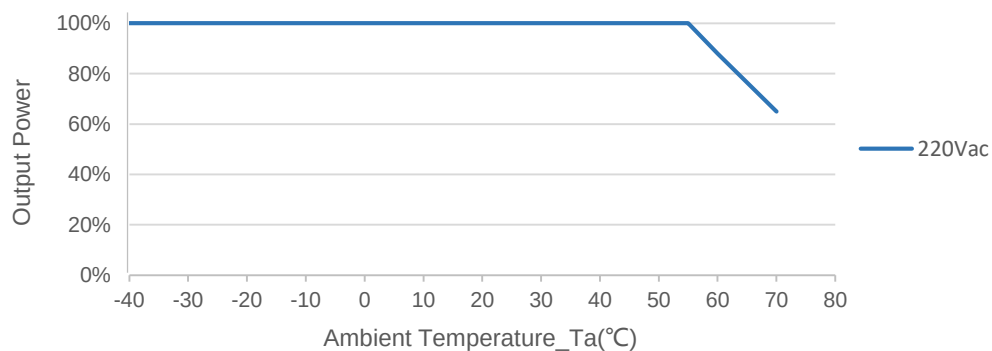
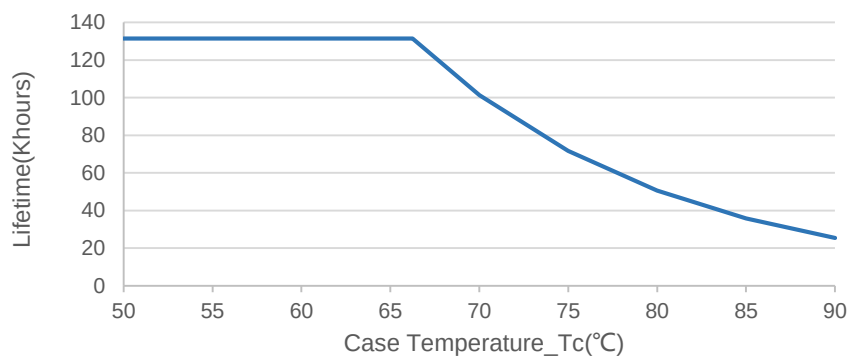
Red curve: good performance area

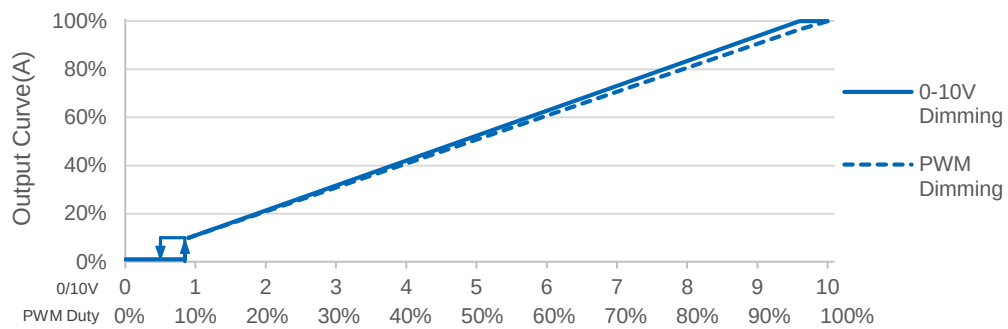
Output Power vs. Input Voltage



Efficiency vs. Load

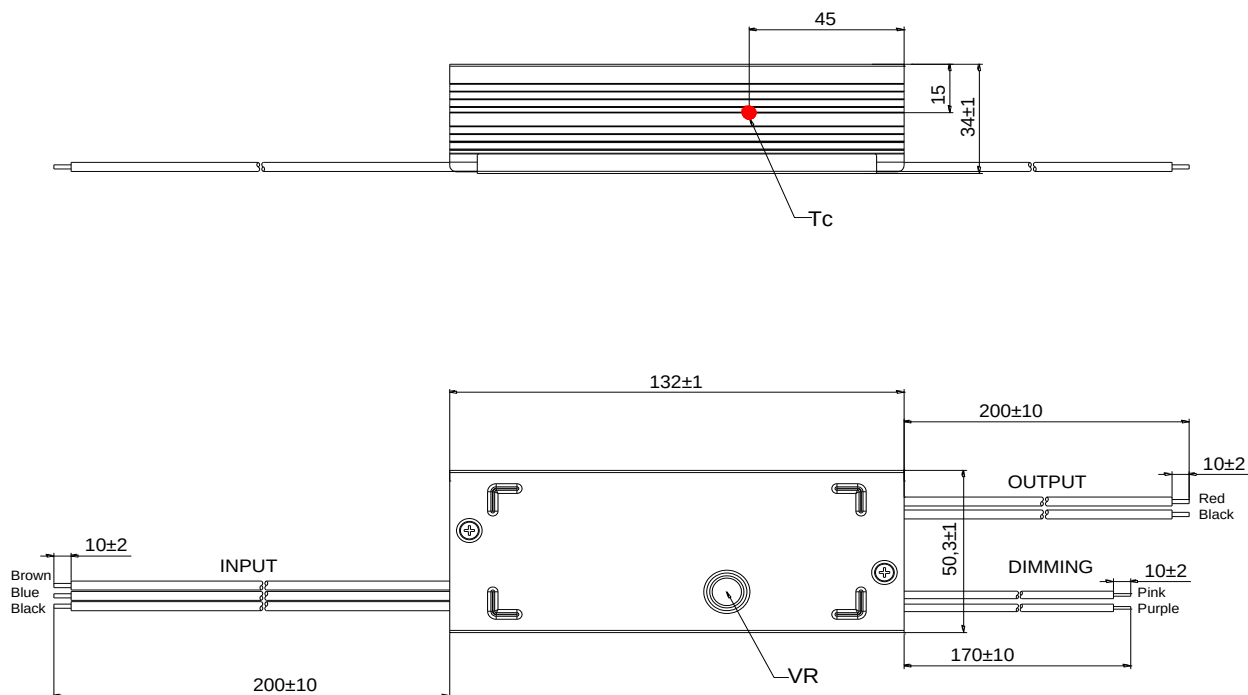


PF vs. Load**THD vs. Load****Output Power vs. Ambient Temperature****Lifetime vs. Case Temperature**

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±10mm Tin-dip length 10±2mm L: Brown, N: Blue, G: Black	
Output	UL 1672 18AWG L=200±10mm 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 MOSO [®] X7E-100M143 LED DRIVER (Constant current type)			OUTPUT RED Vo + BLACK Vo - PURPLE DIM "+" PINK DIM "-"						
L BROWN G BLACK N BLUE	<table border="1"> <tr> <td>INPUT</td> <td>220-240V~50/60Hz, 0.9A Max. PF:0.6C-0.97, Max. 120W</td> </tr> <tr> <td>OUTPUT</td> <td>72-143V== 0.63-1.05A Uout Max:180V== Max.Power:100W</td> </tr> <tr> <td>tc:90℃</td> <td>ta:55℃</td> </tr> </table>	INPUT	220-240V~50/60Hz, 0.9A Max. PF:0.6C-0.97, Max. 120W	OUTPUT	72-143V== 0.63-1.05A Uout Max:180V== Max.Power:100W	tc:90℃	ta:55℃		MADE IN CHINA For LED module only
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tc:90℃	ta:55℃								
SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD No.1061, Songbai Road, Xili Town, Nanshan District, Shenzhen, CHINA									

Version

A.1	First release	2024-7-31

Specification for Approval

Product Name: 100W LED Driver

Product Model: X7E-100M143

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: 100W LED Driver

Product Model: X7E-100M143

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

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Prepared By	Checked By	Approved By