



### Product Features:

- Universal input voltage : 110~305Vac;
- Constant power design, output current offline programming adjustable;
- 3-in-1 dimmable: 0~10Vdc, PWM, Timer dimming. Dim-to-off;
- Constant lumen output;
- Self adapting-midnight dimming;
- 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 X6-240 series is 240W 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

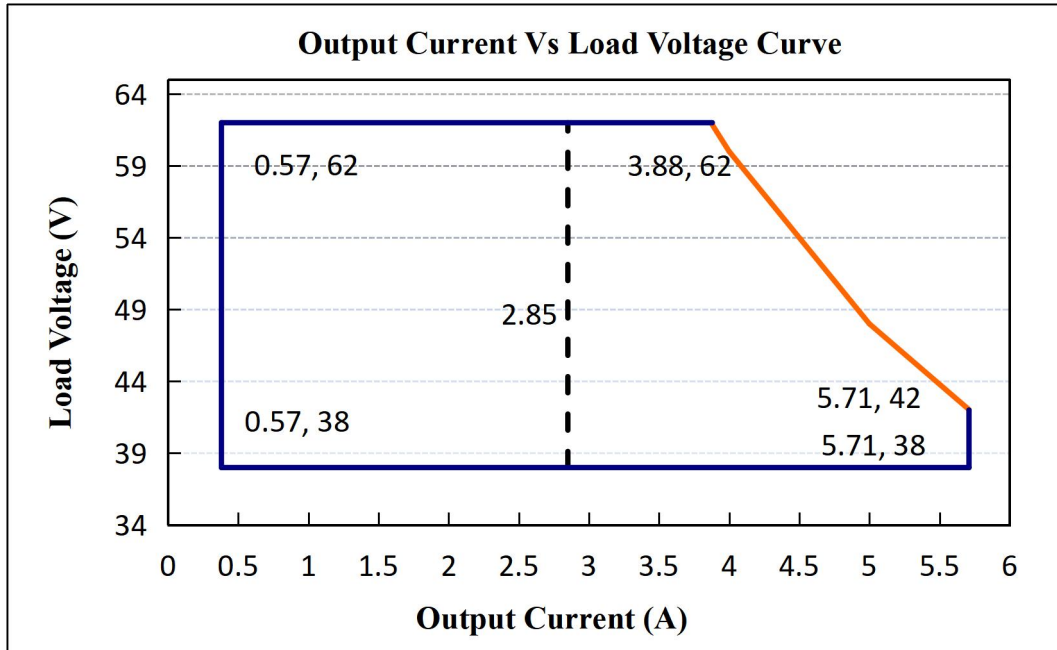
Model Number [1]	Max Output Power (W)	Output Voltage Range (Vdc)	Full Power Output Voltage Range (Vdc)	Full Power Current Adjustable Range (A) [2]	Default Output Current Setting(A)	Typical Efficiency [3]	PF
X6-240Y62-I	240	38-62	42-62	3.88-5.71	5.00	92%	0.97

### 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

X6-240Y062



**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	-	-	3.3A	120-277Vac & full load			
Inrush Current	-	-	75A	240Vac & full load			
Standby Power Consumption			2W	240Vac/50Hz			
Power Factor	0.97	0.99	-	120Vac, 50-60Hz, full load			
	0.95	0.97		240Vac, 50-60Hz, full load			
	0.93	0.95		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	1	B16	2	B25	2	230Vac
	C10	2	C16	3	C25	4	

## OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%	-	5%	
Output Current Setting Range(A)	0.57	-	5.71	
Output Current Setting Range with Constant Power	3.88	-	5.71	
Total Output Current Ripple(pk-pk)	-	5%	10%	20MHz BW, full load & LED load, the ripple would be tiny different under different LED load.
Startup Overshoot Current	-	-	10%	120~277Vac & 100% Load, load is LED
No Load Output Voltage(V)	-	-	70	
Line Regulation	-1%	-	1%	25°C±10°C ambient temperature, input voltage changes from 100Vac to 277Vac.
Load Regulation	-3%	-	3%	25°C±10°C ambient temperature, Input Voltage 240Vac, load changes from 60% to 100%.
Turn-on Delay Time	-	1S	2S	120Vac, 100% load
	-	-	0.5S	240Vac, 100% load

## GENERAL SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Efficiency @120Vac I <sub>o</sub> =3.88A I <sub>o</sub> =5.71A	88% 88%	90% 90%		Measured at full load and 25°C ambient temperature
Efficiency @240Vac I <sub>o</sub> =3.88A I <sub>o</sub> =5.71A	91% 91%	92% 92%	-	Measured at full load and 25°C ambient temperature
Efficiency @277Vac I <sub>o</sub> =3.88A I <sub>o</sub> =5.71A	92% 92%	93% 93%		Measured at full load and 25°C ambient temperature
Dielectric Strength	Input-Output	-	3750Vac	-
	Input-PE	-	1600Vac	-
	Output-PE	-	1600Vac	-
Grounding Resistance	-	-	0.1Ω	25A/60S, under 25°C±10°C ambient temperature
Insulation Resistance	10MΩ	-	-	Input-Output, Input-PE, Output-PE, 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 T <sub>c_s</sub>	-40°C	-	+90°C	
Operating Case Temperature for Warranty T <sub>c_s</sub>	-40°C	-	+75°C	5 years warranty case temperature Humidity: 10% to 95% RH
Storage Temperature	-40°C	-	+85°C	Humidity: 5% to 100% RH

Dimensions (L*W*H)mm	L208.W*68*H39	
Net Weight	1050±100g/PCS	
Package	L502mm*W372mm*H222mm; 15PCS/Ctn Gross weight: 16.2 KG	

### 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	X6-240M062	10%Imax	-	100%Imax	Imax=5.71A
	X6-240M062	0.571A	-	5.71A	
Recommended Dimming Range for 0-10V	0V	-	10V	Default 0-10V/ PWM Dimming(0-10V,0-9V,0-5V,0-3.3V 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	√
		EN62384	√
ENEC			√
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 СТБ EH 55015-2006 ГОСТ IEC 61547-2013 ГОСТ 30804.3.2-2013 (IEC 61000-3-2:2009) ГОСТ 30804.3.3-2013 (IEC 61000-3-3:2008)	√

### Insulation Conditions

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

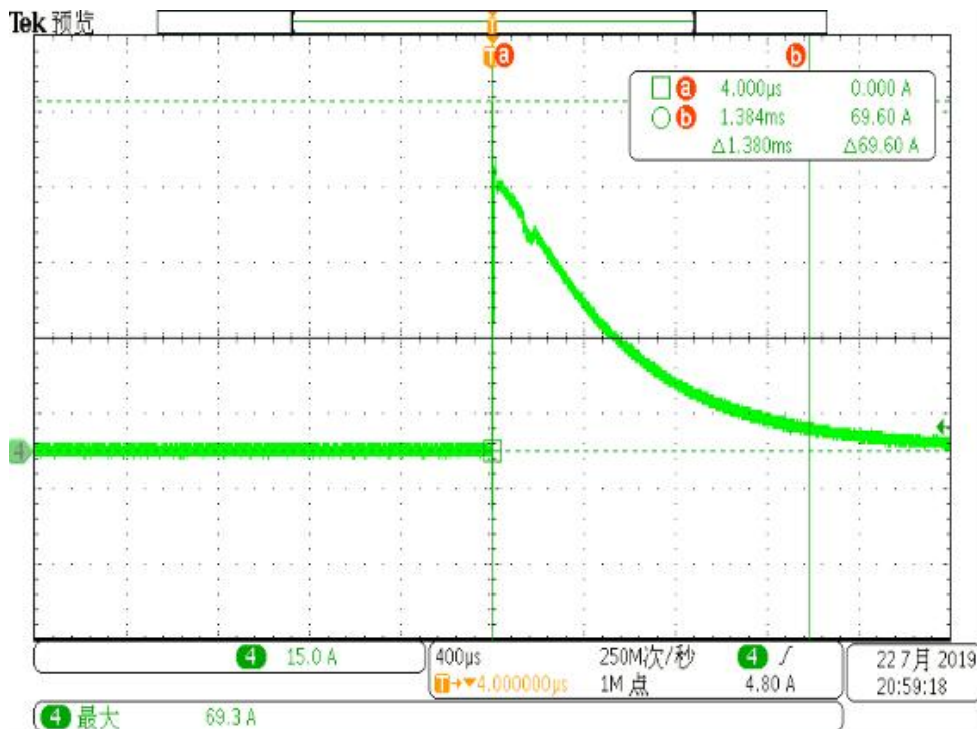
### EMC COMPLIANCE

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	√

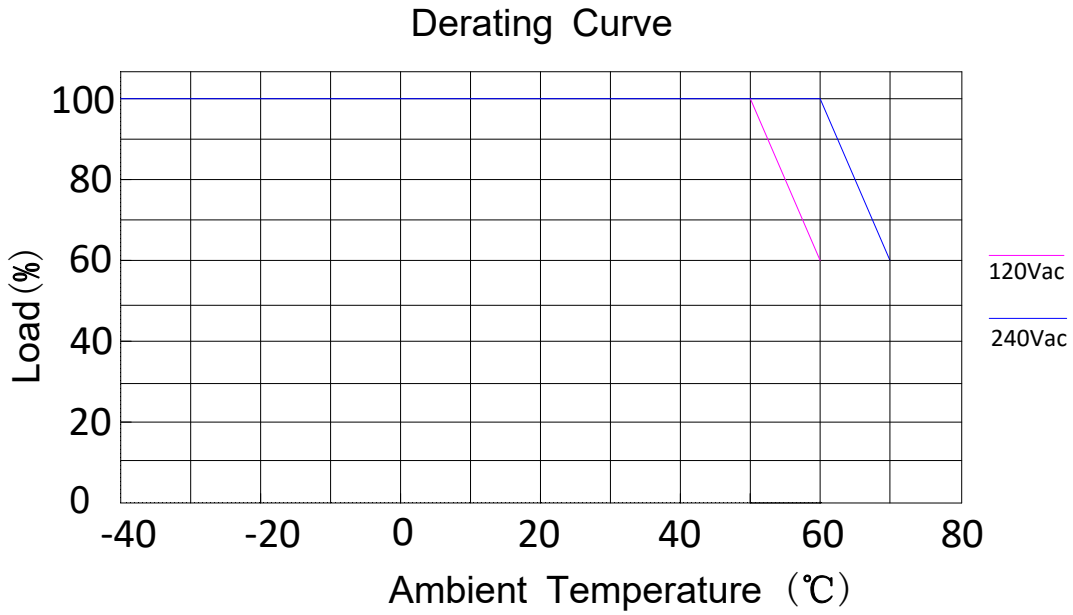
### NOTE:

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.

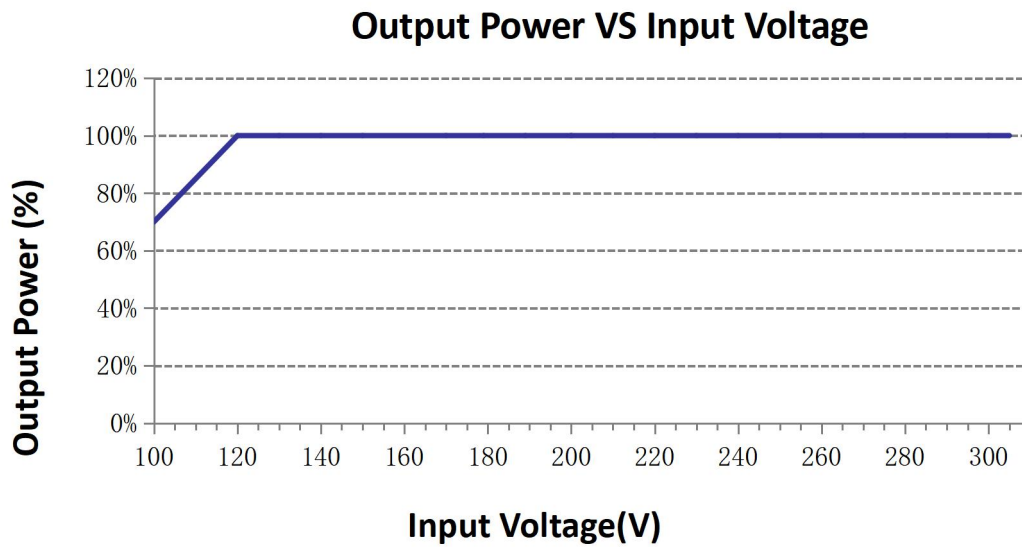
### INRUSH CURRENT WAVEFORM



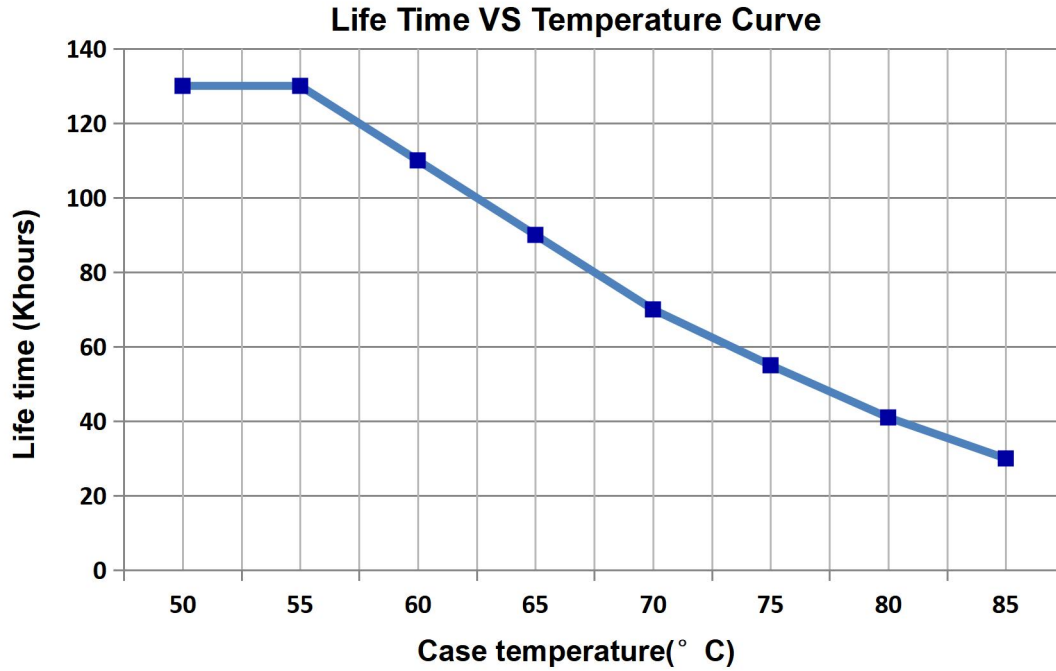
### DERATING CURVE



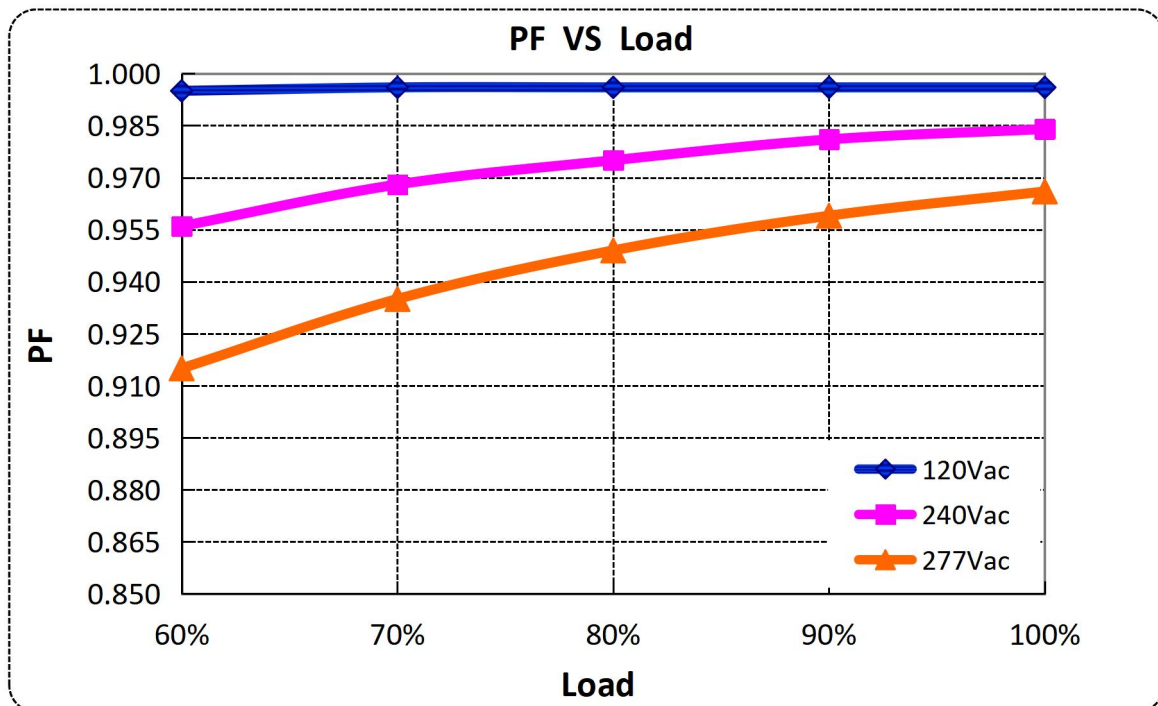
### OUTPUT POWER VS INPUT VOLTAGE



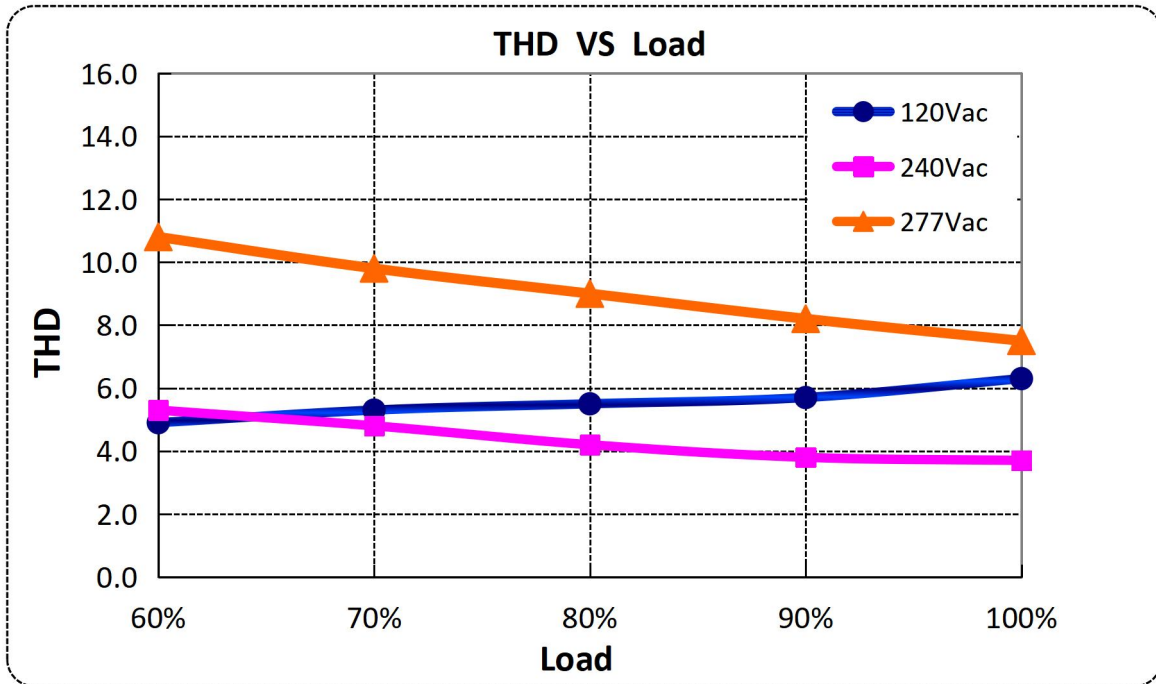
### LIFETIME VS CASE TEMPERATURE



### POWER FACTOR VS LOAD

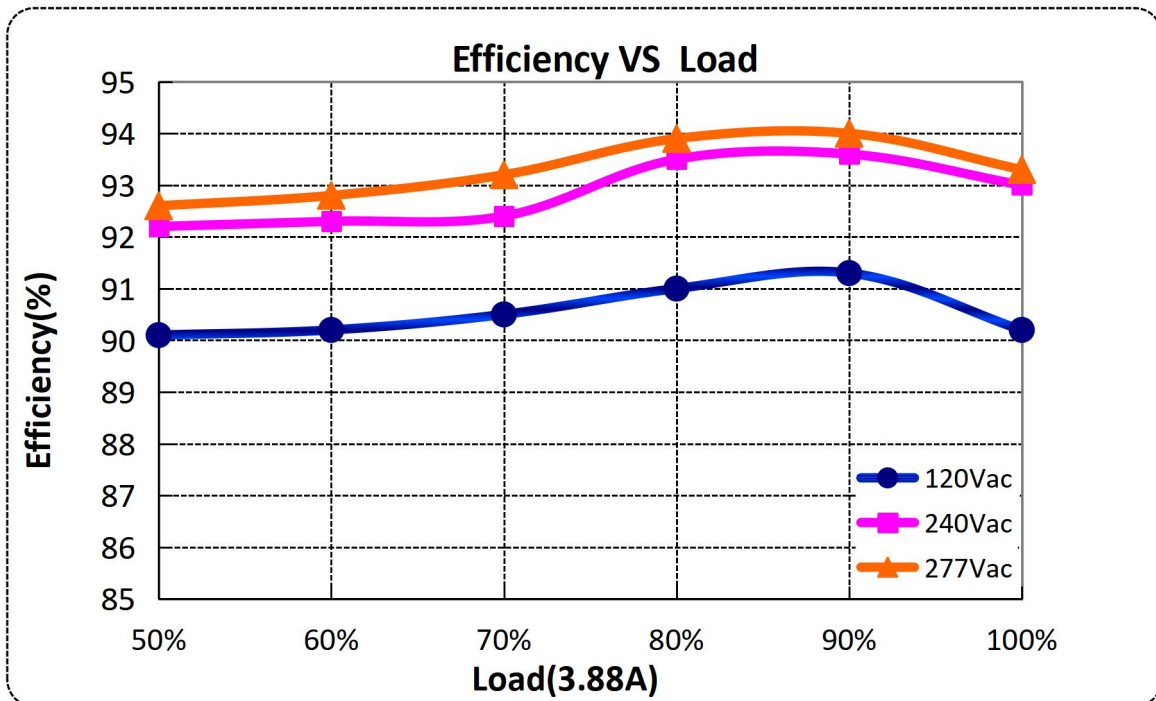


### TOTAL HARMONIC DISTORTION



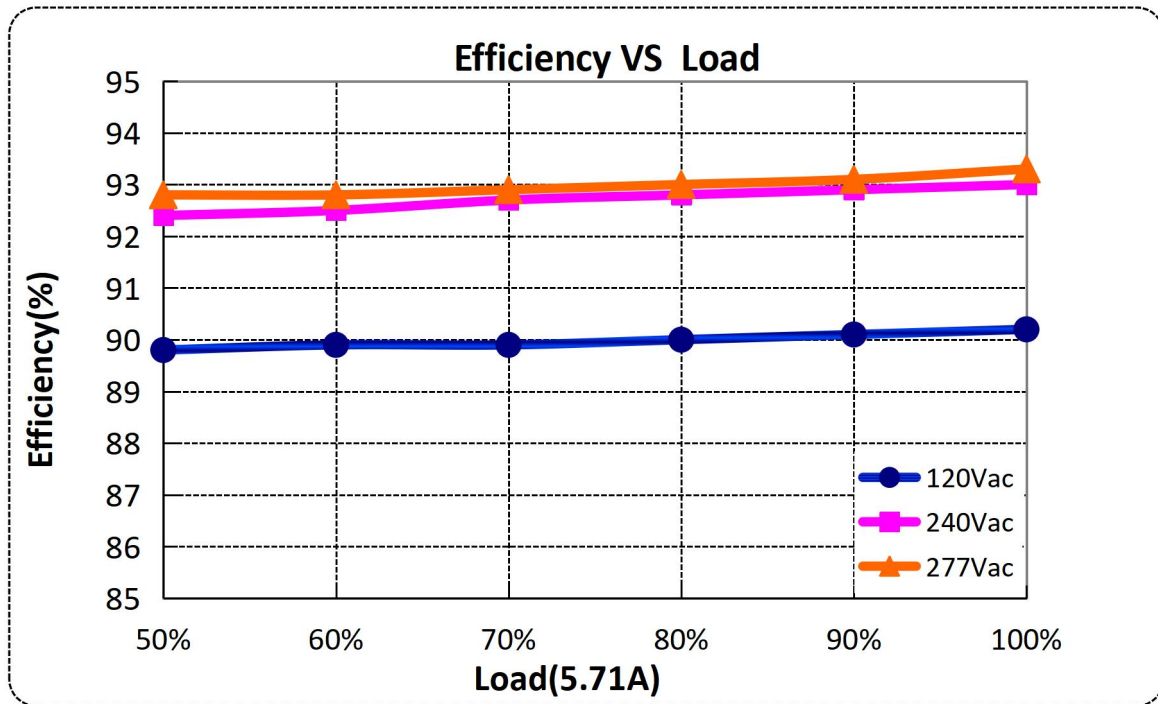
### EFFICIENCY VS LOAD

$I_o=3.88A$





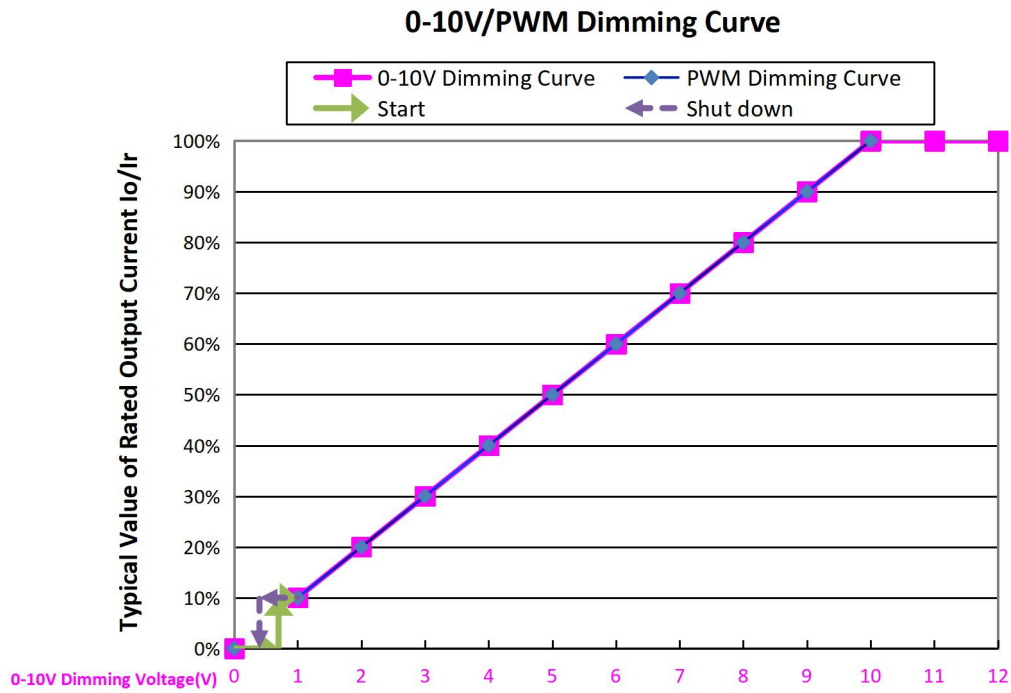
Io=5.71A



### PROTECTIONS

Parameter		Min.	Typ.	Max.	Notes
Input Over Voltage Protection	Input ProtectionVoltage	315Vac	325Vac	335Vac	Turn off the output when the input voltage exceeds protection voltage.
	RecoveryVoltage	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		The driver Can Survive input Voltage Stress of 100V for 48 hours			
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

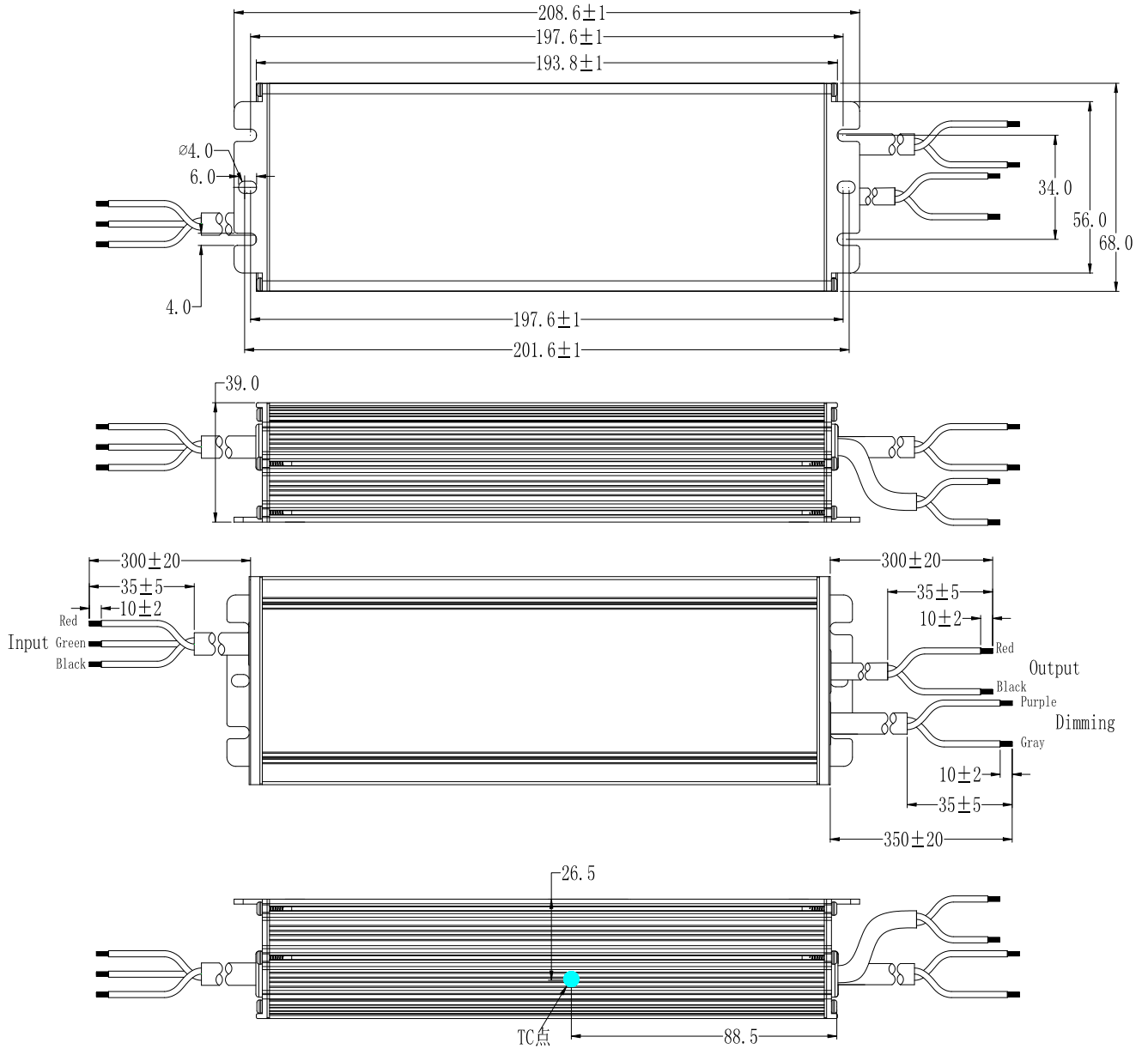


**Note:**

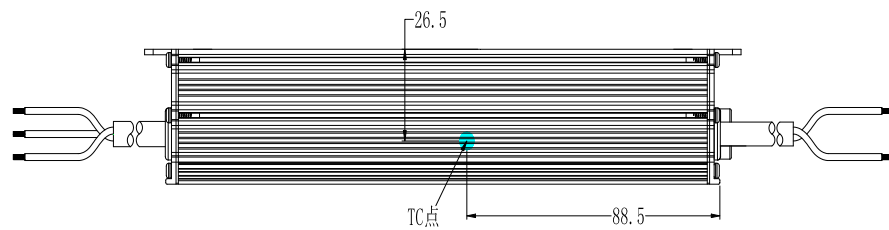
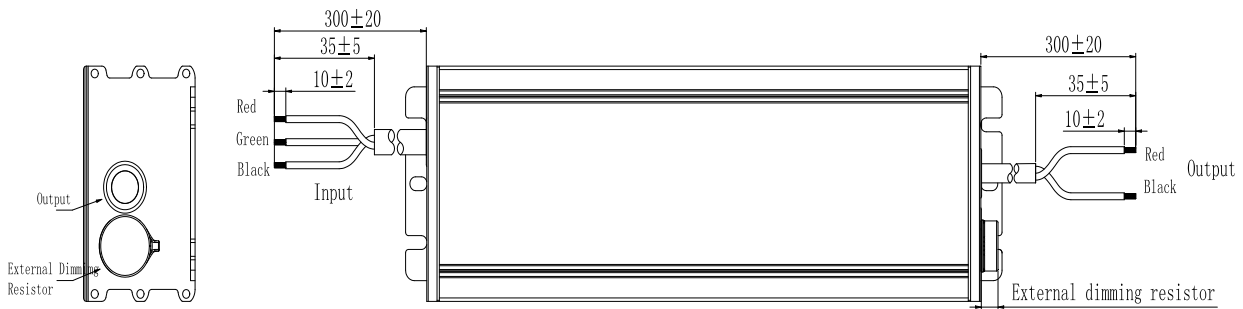
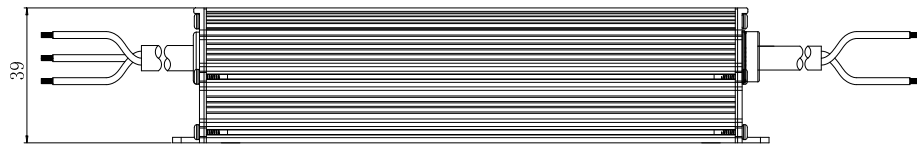
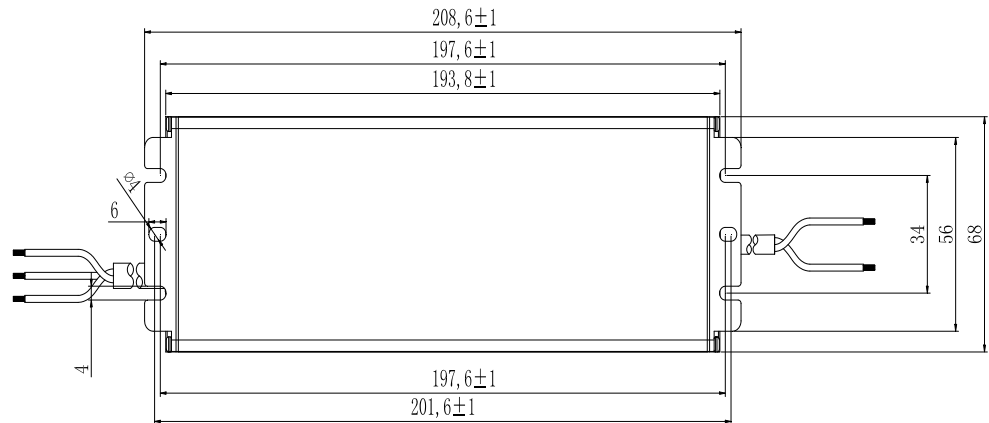
Dim to off model is realized by decreasing the output voltage, the power supply still has residual voltage when dim to off, so the start up voltage of the lamp should be higher than residual voltage.

### MECHANICAL OUTLINE

#### X6-240M062-I types

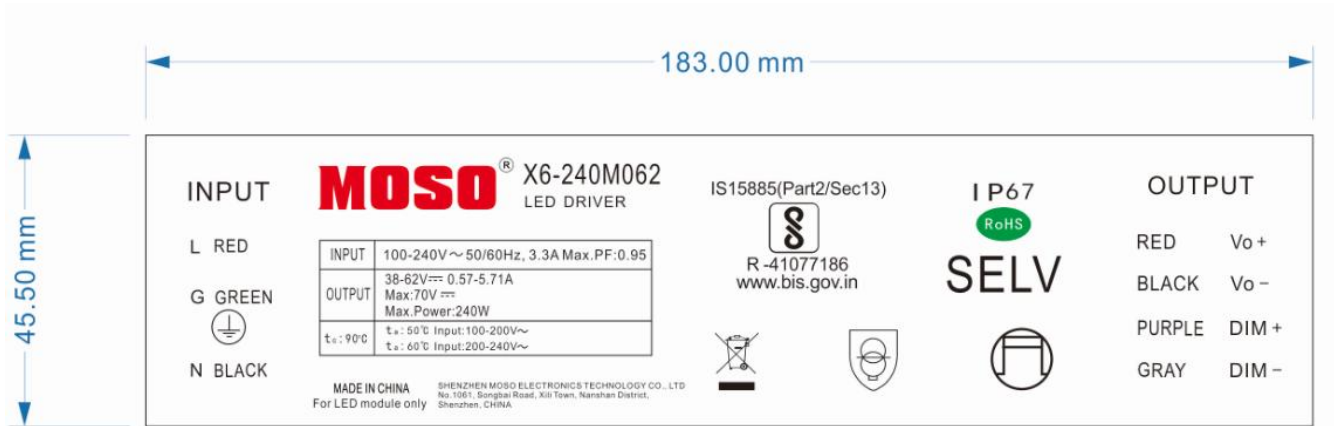


### X6-240M062-I types



Wire	Specification	Note
Input	BIS 9968 3*1.0mm <sup>2</sup> L=300±20mm	For BIS
Output	BIS 9968 2*1.0mm <sup>2</sup> L=300±20mm	For BIS
Dimming	UL2733 22AWG*2C external diameter: 5.45mm L=350±20mm	Y=M

### LABEL





## Specification for Approval

Product Name: 240W outdoor off-line programmable driver  
Product Model: X6-240M062-I BIS   
X6-240V062-I BIS   
Rev. B.2

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

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Prepared By	Checked By	Approved By

