Product Features

- Universal input voltage / Full range: 90~305Vac;
- Constant power design, output current programming adjustable;
- offline programmable
- 3-in-1 dimmable: 0~10Vdc, PWM, Timer dimming. Dim-to-off;
- Constant lumen output;
- Output and Dimming Signal Isolating;
- 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;
- 7 years warranty.

Application

- Suitable for LED roadway lighting, plant lighting, industrial lighting, landscape lighting, etc.

DESCRIPTION

The X6-600W series is 600W outdoor offline programmable LED driver that operates in constant current with high PF value and universal input voltage range 90~305Vac model. Offline Monitored by dimming cable connected with an USB kit programming device, the fully programmed drivers offer all dimming, dim-to-off, constant lumen output options and a wide range of output current in a single driver, which deliver maximum flexibility with customized operating settings and intelligent control options for lighting manufacturers, as one driver can be programmed for many different luminaire designs. X6 provides built-in timer dimming schedules further increasing the energy savings and CO_2 reductions achieved with LED lighting. It 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, output over 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)	Default Output Current Setting(A)	Typical Efficiency [2]	PF
X6-600M060Z	600	30-60	48-60	10-12.50	11.2	93%	0.96

Notes:

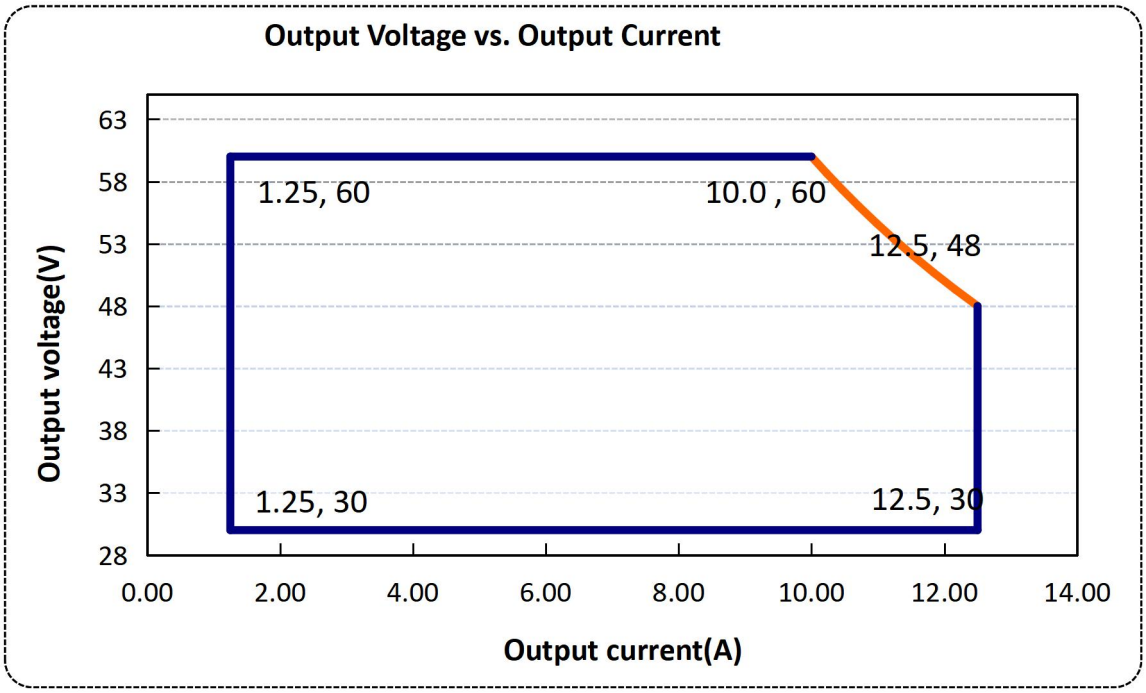
[1]. Z=A12 means the driver with 12V/300mA auxiliary power supply;

[2]. Output current adjustable range with constant power at max output power;

[3]. All specifications are measured at 25℃ ambient temperature, input voltage 230Vac, and the typical value tested by full load, if no specific note.

OPERATING AREA I-V

X6-600M060Z



INPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90Vac	120-277Vac	305Vac	
Input Frequency	47Hz	50/60	63Hz	
Leakage Current	-	-	0.75mA	277Vac/60Hz
Input AC Current	-	-	7.5A	100-277Vac &full load
Inrush Current	-	-	50A	230Vac & full load
Power Factor	0.97	0.99	-	120Vac, 50-60Hz,full load
	0.95	0.97		230Vac, 50-60Hz, full load
	0.90	0.9		277Vac, 50-60Hz, full load
THD	-	10%	15%	100-240Vac,50-60Hz, 70%-100% load
	-	-	20%	277Vac, 50-60Hz, 70%-100% load

OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%	-	5%	
Output Current Setting Range (A) X6-600M060Z	1.25		12.50	The 'M type' adjustable Iout range: 10%-100% Imax
Output Current Setting Range with Constant Power (A) X6-600M060Z	11.2		12.50	
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%	100~277Vac &100% Load, load is LED
No Load Output Voltage (V) X6-600M060Z			60	
Line Regulation	-3%	-	3%	25℃±10℃ ambient temperature, input voltage changes from 100Vac to277Vac.
Load Regulation	-3%	-	3%	25℃±10℃ambient temperature, Input Voltage 230Vac, load changes from 60% to 100%.
Turn-on Delay Time	-	-	3S	120Vac,100% load
	-	-	0.5S	230Vac,100% load

GENERAL SPECIFICATIONS

Parameter		Min.	Typ.	Max.	Remark
Efficiency @120Vac X6-600M060Z I_O=10A		89%	91%	-	Measured at full load and 25℃ambient temperature
Efficiency @230Vac X6-600M060Z I_O=10A		92%	93%	-	Measured at full load and 25℃ambient temperature
Efficiency @277Vac X6-600M060Z I_O=10A		92%	93%	-	Measured at full load and 25℃ambient temperature
AUX. Power(Optional)		10.8V	12V	13.2V	Only for A12 version
		0	-	300mA	
Dielectric Strength	Input-Output	-	3750Vac	-	Max 5mA/60S
	Input-PE	-	1600Vac	-	
	Output-PE	-	1600Vac	-	
Grounding Resistance		-	-	0.1Ω	25A/60S, under 25℃±10℃ ambient temperature
Insulation Resistance		10MΩ	-	-	Input-Output, Input-PE, Output-PE, 500Vdc/60S/25℃/70%RH
MTBF		-	200000Hrs	-	25℃±10℃ambient temperature, 230Vac,80% load (MIL-HDBK-217F)
Lifetime		-	70000Hrs	-	230Vac&100% load, 75℃ case temperature, refer to lifetime curve for details
Ambient Temperature		-40℃		+45℃	230Vac&100% load

Operating Case Temperature for Safety Tc_s	-40℃	-	+90℃	
Operating Case Temperature for Warranty Tc_s	-40℃	-	+75℃	7 years warranty case temperature Humidity: 10% to 95% RH
Storage Temperature	-40℃	-	+85℃	Humidity: 5% to 100% RH
Dimensions (LxWxH)mm	L276*W144*H47.5mm;			
Net Weight	3600±100g/PCS			
Package	L465xW400xH210mm 5PCS/Ctn, Gross Weight: 19Kg			

DIMMING

Parameter		Min.	Typ.	Max.	Notes
0~10V Absolute Maximum Voltage on the Vdim (+) Pin		-	10V	-	
0~10V Source Current on Vdim(+)Pin		-	0.2mA	0.4mA	
Dimming Output Range	X6-600M060Z	10% I_{max}	-	100% I_{max}	I_{max}=12.50A
	X6-600M060Z	1.25	-	12.5	
Recommended Dimming Range for 0-10V		0V	-	10V	Default 0-10V/ PWM Dimming(0-10V,0-9V,0-5V,0-3.3V 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		2000Hz	
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	
ENEC		EN62384	
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	√

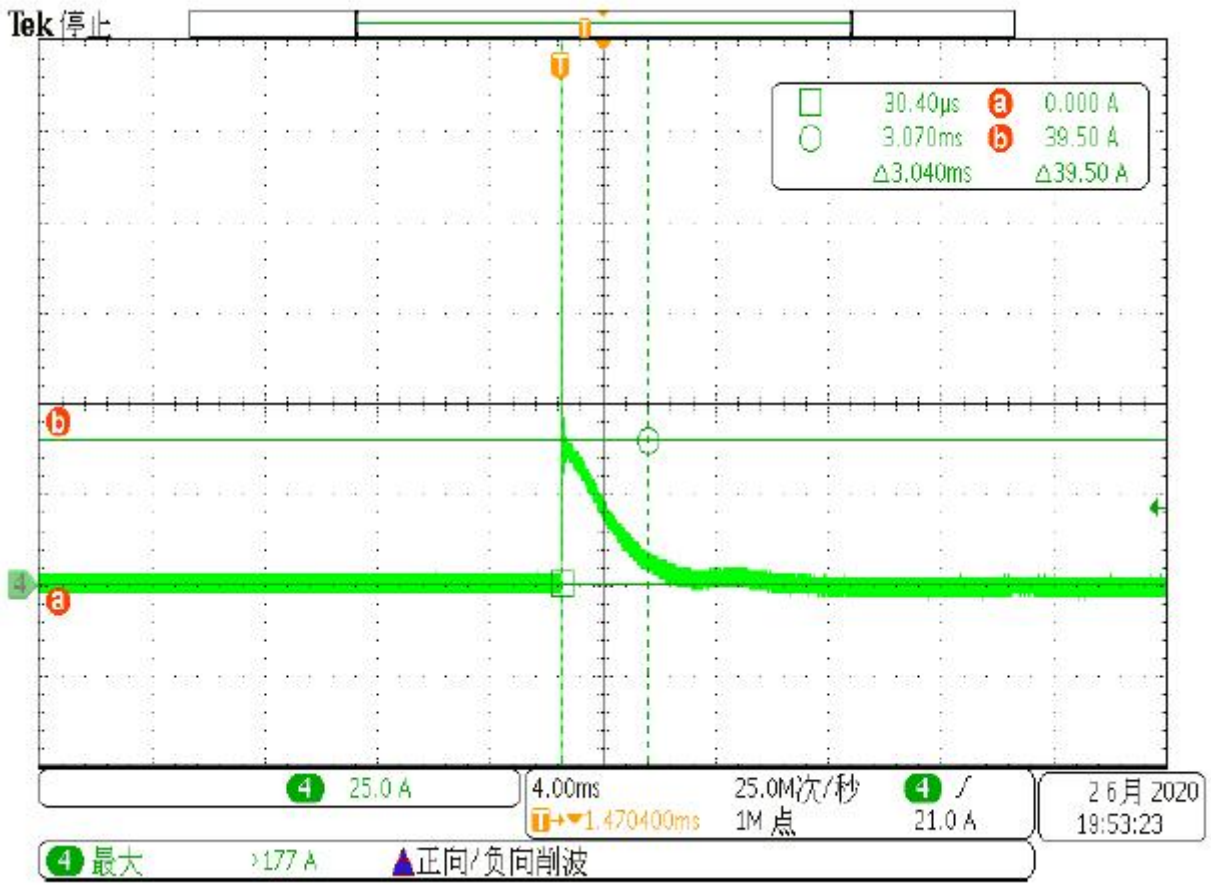
EMC COMPLIANCE

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	
KC	South Korea	K61547	
		K00015	
PSE	Japan	J55015	
FCC	USA	FCC part 15	√

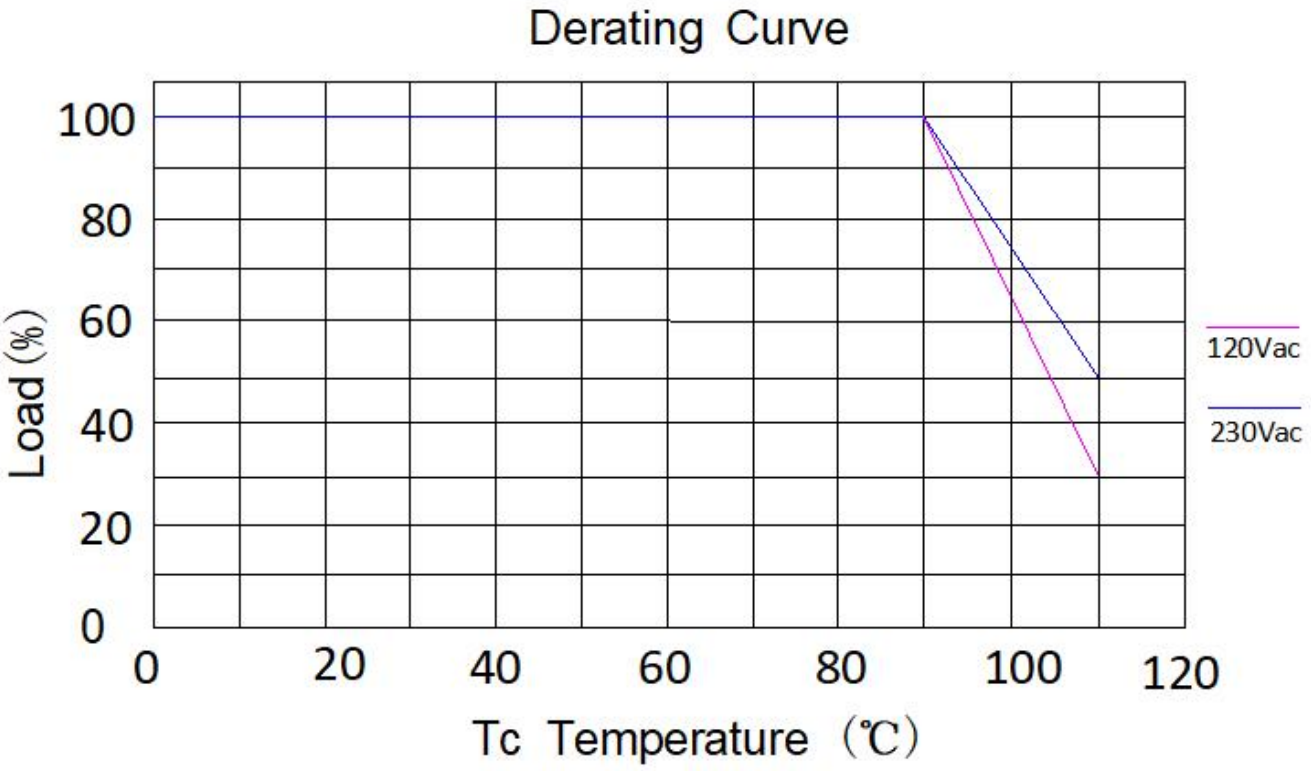
NOTE:

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.

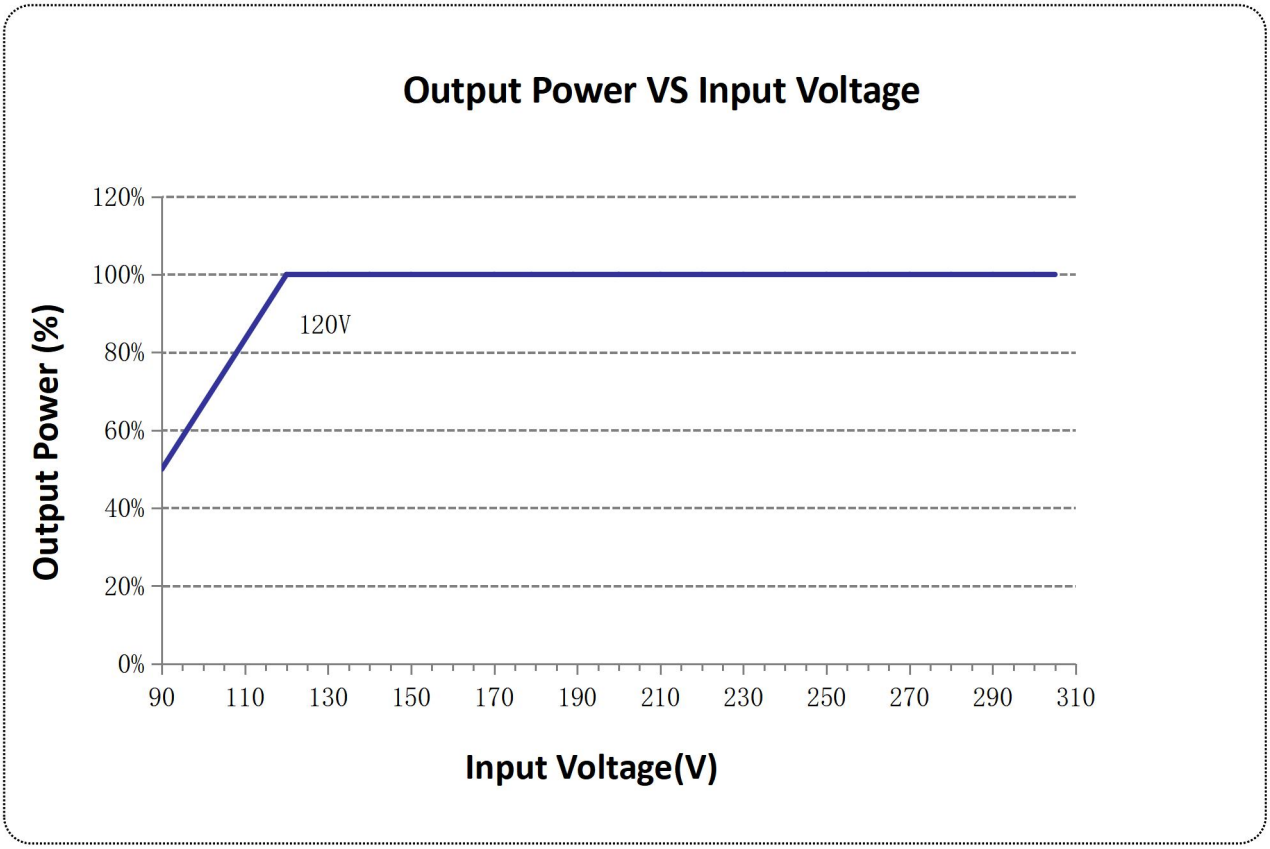
INRUSH CURRENT WAVEFORM



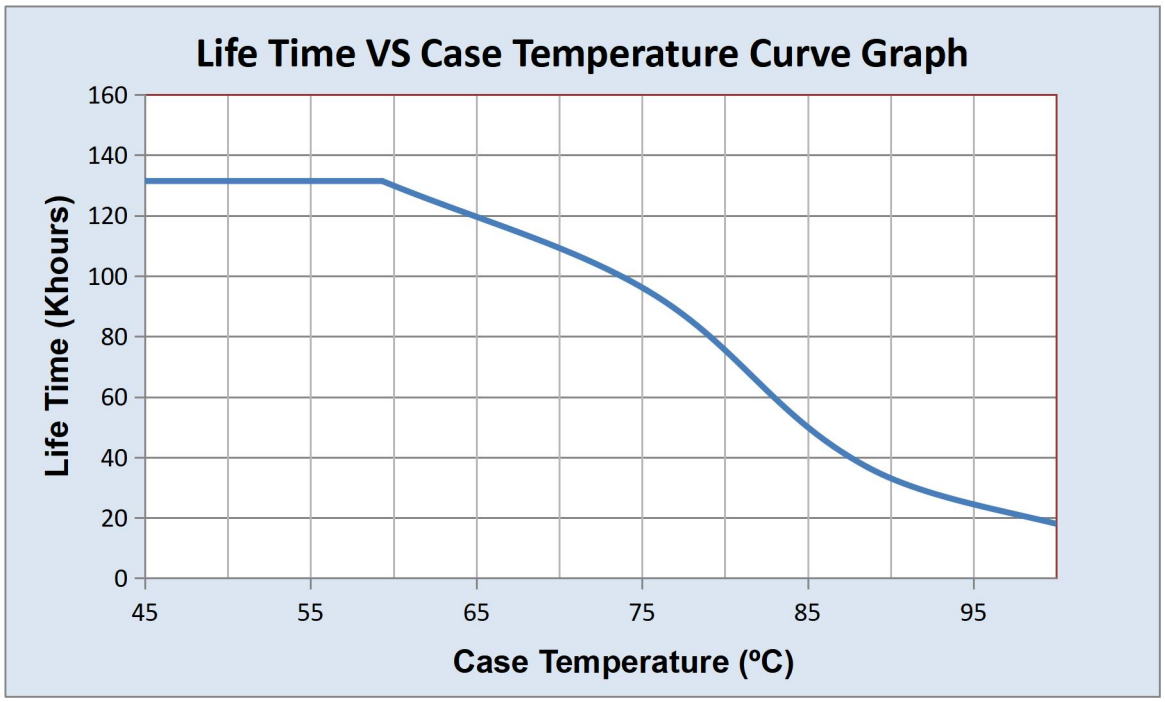
DERATING CURV



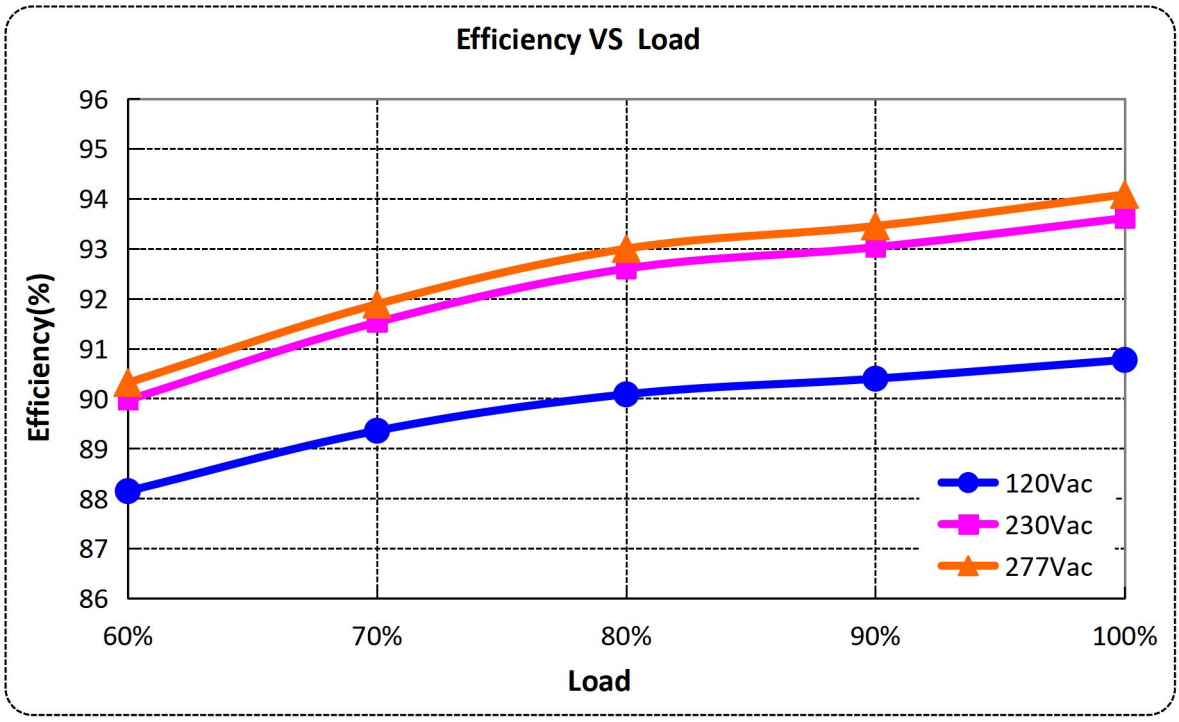
OUTPUT POWER VS INPUT VOLTAGE



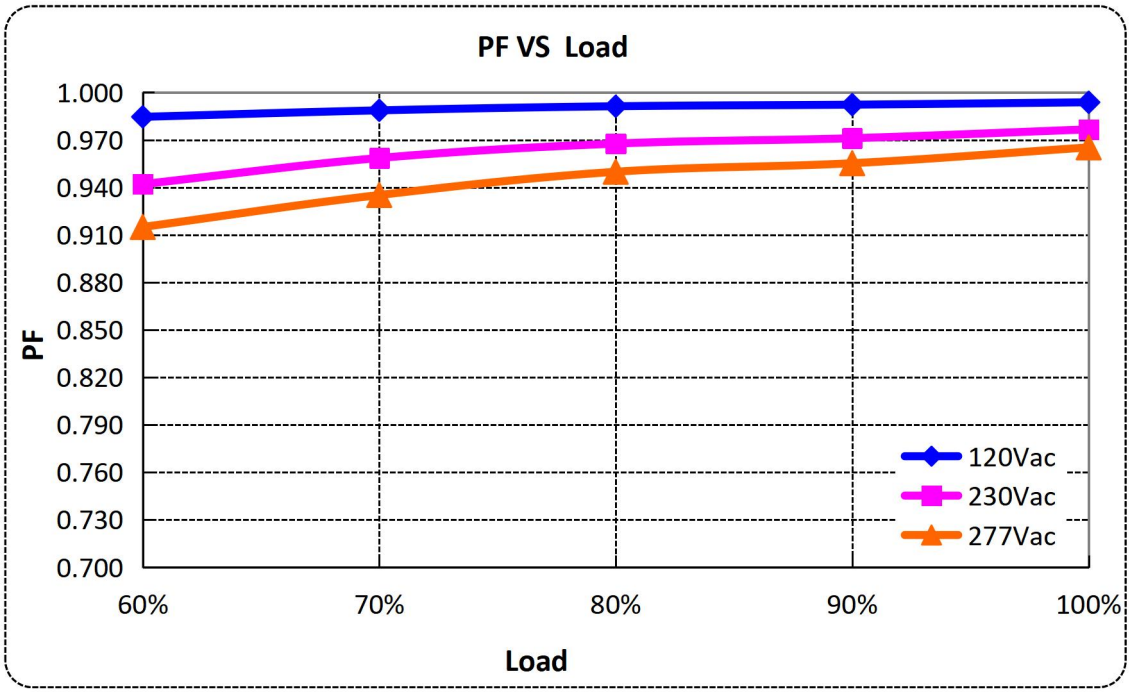
LIFETIME VS CASE TEMPERATURE



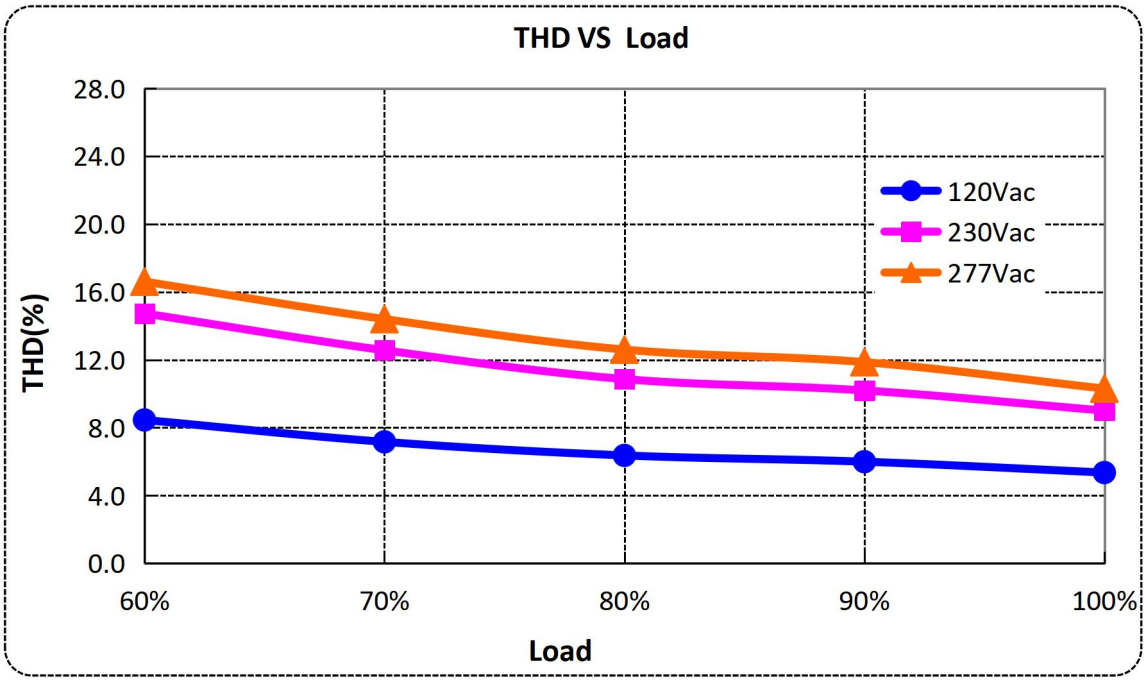
EFFICIENCY VS LOAD



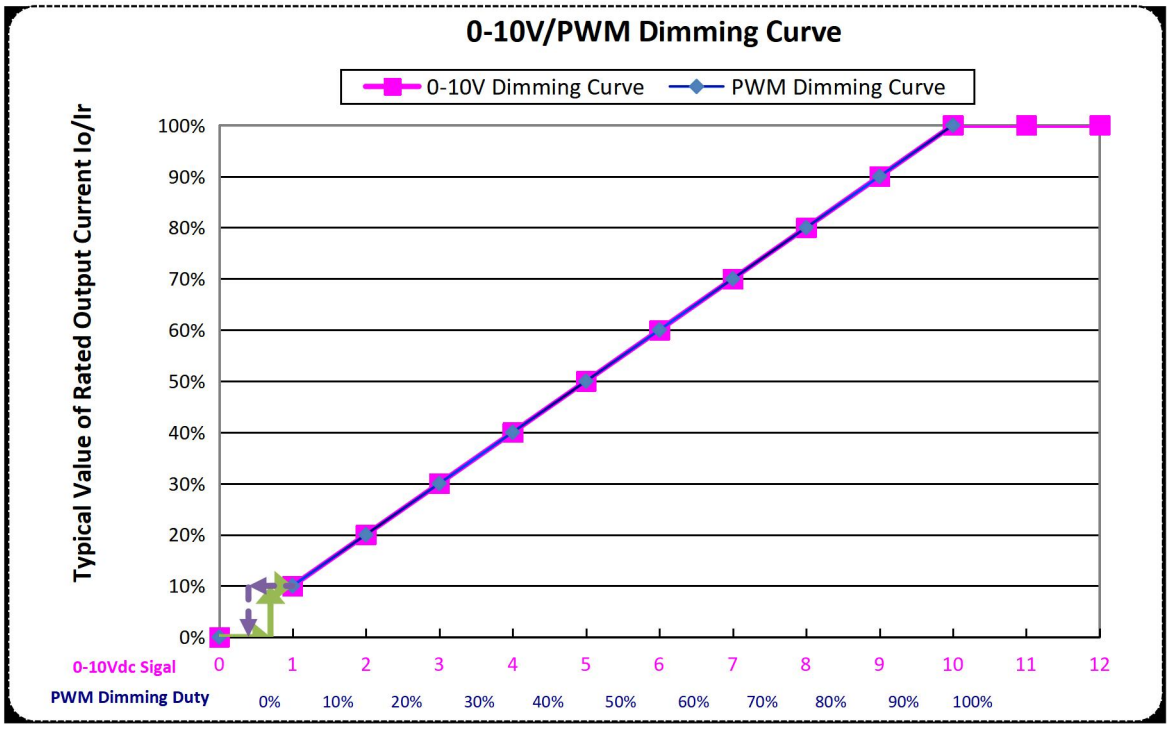
POWER FACTOR VS LOAD



TOTAL HARMONIC DISTORTION



0-10V/PWM DIMMING

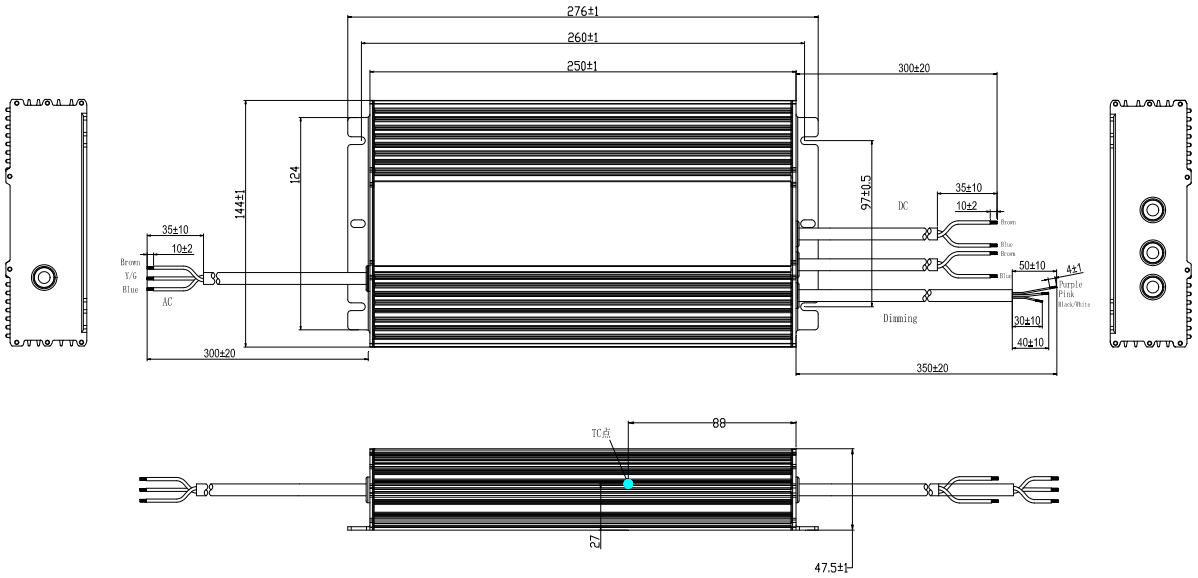


PROTECTIONS

Parameter	Notes
Over Temperature	Decreases output current, returning to normal after over temperature is removed.
Short Circuit	Constant current 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.
Over Voltage	Run into protection model when output voltage exceeds limit, and return to normal when the fault condition is removed.

MECHANICAL OUTLINE

X6-600M060A12 types



Wire	Specification	Note
Input	SJOW 17AWG*3C external diameter: 8.3mm L=300±20mm;	
Output	SJOW 14AWG*2C external diameter: 7.7mm L=300±20mm;	
Dimming	UL2733 22AWG*2C external diameter: 5.45mm L=350±20mm;	M types
Dimming	UL 21996 22AWG*3C external diameter: 5.0mm L=350±20mm	A12 types

LABEL

REVISION HISTORY

Version	Description of Change		Changed Date	Notes
	Before	Now		
A.1		Datasheets Release	2021-12-25	
B.2		ERL202304073	2023-07-11	Jiang zhi

Specification for Approval

Product Name:	600W outdoor off-line programmable driver
Product Model:	X6-600M060A12P ☑
Rev.	B.2
Sample Date:	_

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 Province, P.R.China
Post Code: 518108
TEL: 0755-27657000
FAX: 0755-27657908
E-mail: info@mosopower.com
Web site: http://www.mosopower.com

Prepared By	Checked By	Approved By

Product Specification

Product Name: 600W outdoor off-line programmable driver

Product Model: X6-600M060A12P ☑

Rev. B.2

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Prepared By	Checked By	Approved By