



BIS CE

Product Features

- Universal input voltage / Full range: 90~305Vac;
- Constant power design, output current programming adjustable;
- (M types) off-line programmable, (V types) output current adjustable by built-in potentiometer;
- 3-in-1 dimmable: 0~10Vdc, PWM, Timer dimming. Dim-to-off;
- (M types) Constant lumen output
- Output and Dimming Signal Isolating
- Surge protection: 6KV line-line, 10KV line-earth;
- Protections: Input UVP/OVP, Output SCP/OVP/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 X6I-320W series is a 320W outdoor offline programmable LED driver that operates in constant current with high PF value and universal input voltage range 90~305Vac. Monitored off-line 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, providing maximum flexibility with customized operating settings and intelligent control options for lighting manufacturers, as one driver can be programmed for many different luminaire designs. X6I provides built-in timer dimming schedules that further increase the energy savings and CO₂ reductions achieved with LED lighting. It also helps customers to improve logistics and inventory management. The compact metal case and high efficiency enable the driver to operate with high reliability, and extend product life. Overall protection is provided against lightening surge, input over voltage, input under voltage, 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) [2]	Default Output Current Setting(A)	Typical Efficiency [3]	PF
X6I-320Y457	320	228-457	290-457	0.70-1.10	0.70	94%	0.97

Notes:

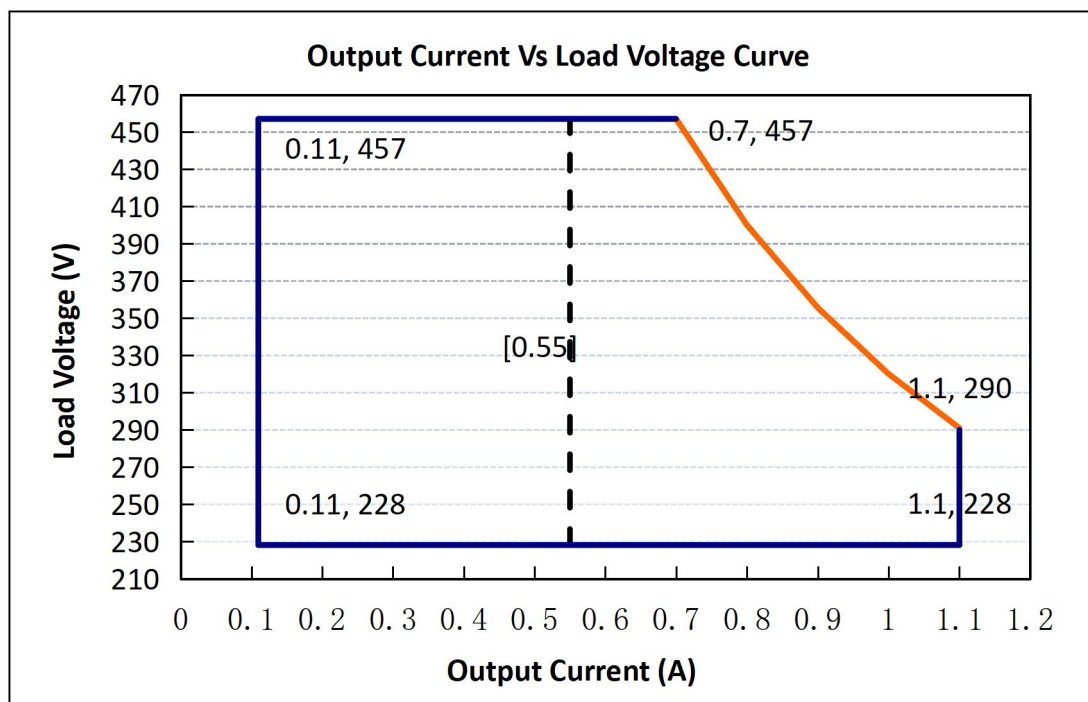
[1]. Y can be M or V. Y=M means dimmable and offline programmable, The adjustable lout range: 10%-100% Imax;

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]. Operating input voltage range: 90-305Vac; 90-120Vac is the safe input voltage range, and refer to the derating curve of 90~120Vac range for derating use.(See the output power vs. input voltage curve below)

[4]. All specifications are measured at 25℃ ambient temperature, input voltage 240Vac, and the typical value tested by full load, if no specific note.

OPERATING AREA I-V

Notes:

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	90Vac		120-277Vac		305Vac		Rated Input Voltage is 240Vac Refer to the derating curve
Input Frequency	47Hz		50/60Hz		63Hz		
Leakage Current	-		-		0.70mA		277Vac/50Hz
Input AC Current	-		3.0A		3.4A		120Vac & full load
	-		1.5A		1.7A		240Vac & full load
Input AC Power	-		-		355W		240Vac & full load
Inrush Current	-		-		4.5A ² S		240Vac & full load
Standby Power Consumption					2.5W		240Vac/50 Hz @25°C
Input Under Voltage Protection	50Vac		75Vac		90Vac		Turn off the output or hiccup when the input voltage falls below protection voltage.
Power Factor	0.97		0.99		-		120Vac, 50-60Hz, full load
	0.95		0.97				240Vac, 50-60Hz, full load
	0.92		0.95				277Vac, 50-60Hz, full load
THD	-				15%		120-277Vac, 50-60Hz, full load
Max. NO. of PSUs on CIRCUIT BREAKER	B10	1	B16	1	B25	2	240Vac
	C10	1	C16	2	C25	3	

OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%	-	+5%	
Output Current Setting Range (A) X6I-320M457	0.11	-	1.10	The 'M type' adjustable lout range: 10%-100% I _{max} ,
Output Current Setting Range(A) X6I-320V457	0.55	-	1.10	The 'V type' adjustable lout by built-in potentiometer.
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(Vdc) X6I-320Y457	-	-	480	
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	3s	120Vac,100% load
	-		2s	240Vac,100% load

GENERAL SPECIFICATIONS

Parameter		Min.	Typ.	Max.	Notes
Efficiency @120Vac X6I-320Y457 I _o =0.70 I _o =1.10		89.0% 88.5%	91.0% 90.5%		Measured at full load and 25°C ambient temperature
Efficiency @240Va X6I-320Y457 I _o =0.70 I _o =1.10		92.5% 91.5%	94.5% 93.5%		Measured at full load and 25°C ambient temperature
Efficiency @277Vac X6I-320Y457 I _o =0.70 I _o =1.10		92.5% 91.5%	94.5% 93.5%		Measured at full load and 25°C ambient temperature
Dielectric Strength	Input-Output	-	3750Vac	-	Max 5mA/60s
	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/SR-332)
Lifetime		-	50000Hrs	-	240Vac&100% load, 75°C case temperature, refer to lifetime curve for details
Ambient Temperature		-20°C		+55°C	240Vac&100% load
Operating Case Temperature for Safety T _{c_s}		-20°C	-	+90°C	
Operating Case Temperature for Warranty T _{c_w}		-20°C	-	+75°C	5 years warranty case temperature Humidity: 10% to 95% RH

Storage Temperature	-20℃	-	+85℃	Humidity: 5% to 100% RH
Altitude	-60m	-	4000m	
Dimensions (LxWxH)mm	L231*W98*H42mm			
Net Weight	1700±100g/PCS			
Package	L615mmxW375mmxH166mm; 10PCS/Ctn, Gross Weight:18.8 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	X6I-320M457	10% I _{max}	-	100% I _{max}	I _{max} =1.10A
	X6I-320M457	0.11A	-	1.10A	
Recommended Dimming Range for 0-10V		0V	-	10V	Default 1-10V/ 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	
Dimming On Voltage(V)		0.5V		0.8V	
Dimming Off Voltage(V)		0.3V		0.5V	
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	
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	
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 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	Basic
Dimming	Double	/	Basic	Basic
LED Output	Double	Basic	/	Basic
Case	Basic	Basic	Basic	/

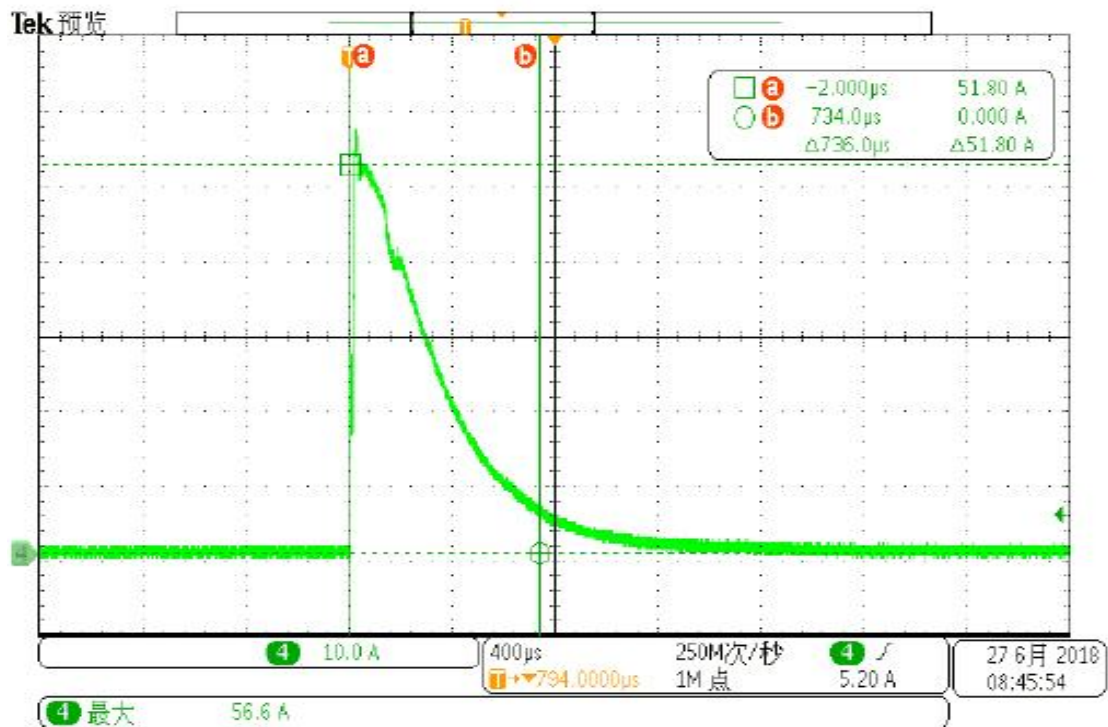
EMC COMPLIANCE

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

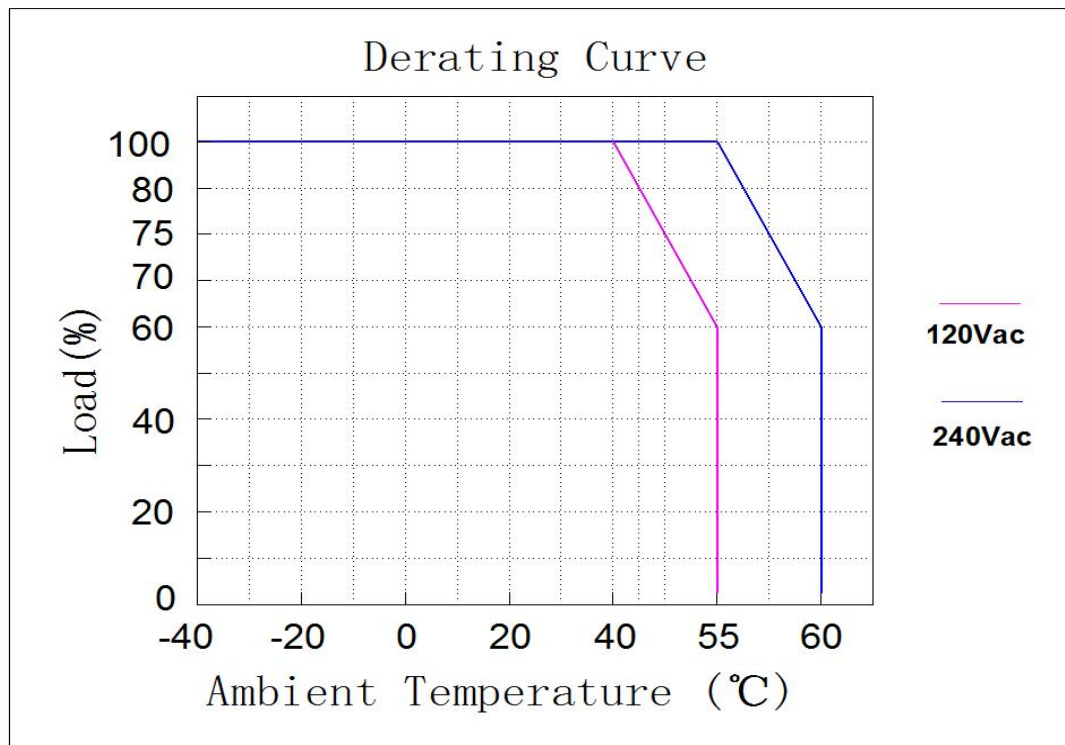
NOTE:

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 the LED driver, other devices connected to the driver, and on the luminaire itself.

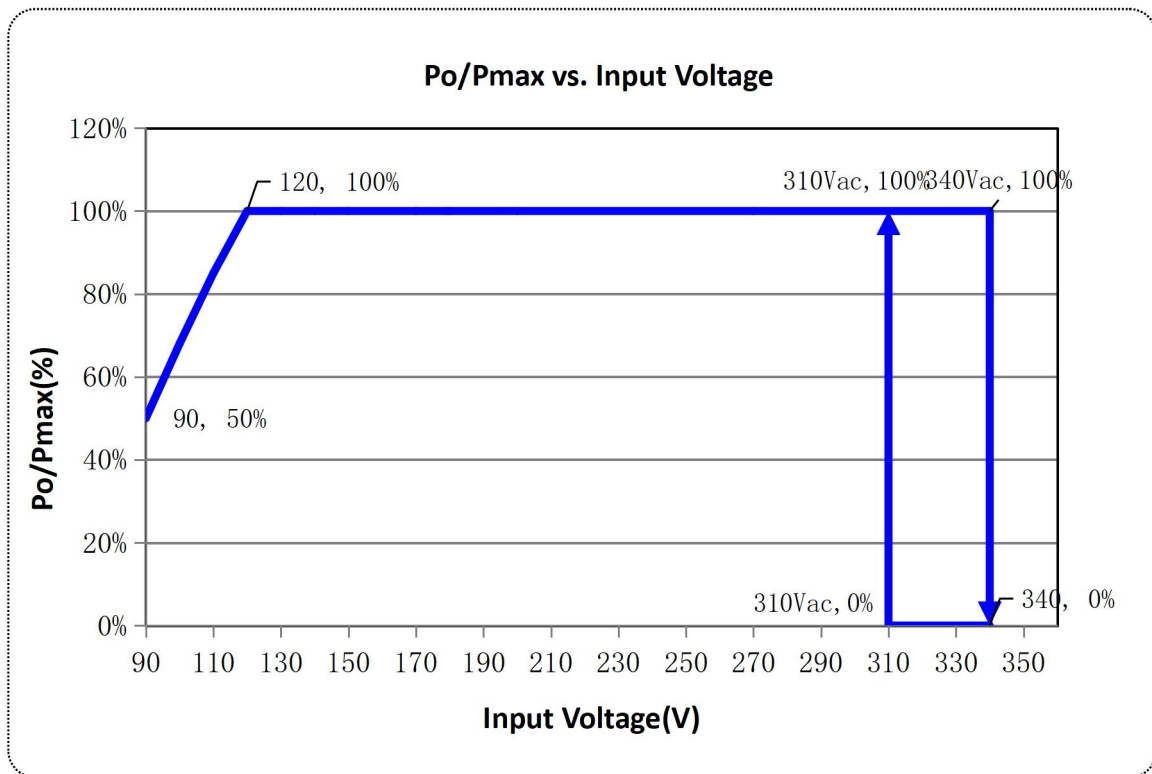
INRUSH CURRENT WAVEFORM



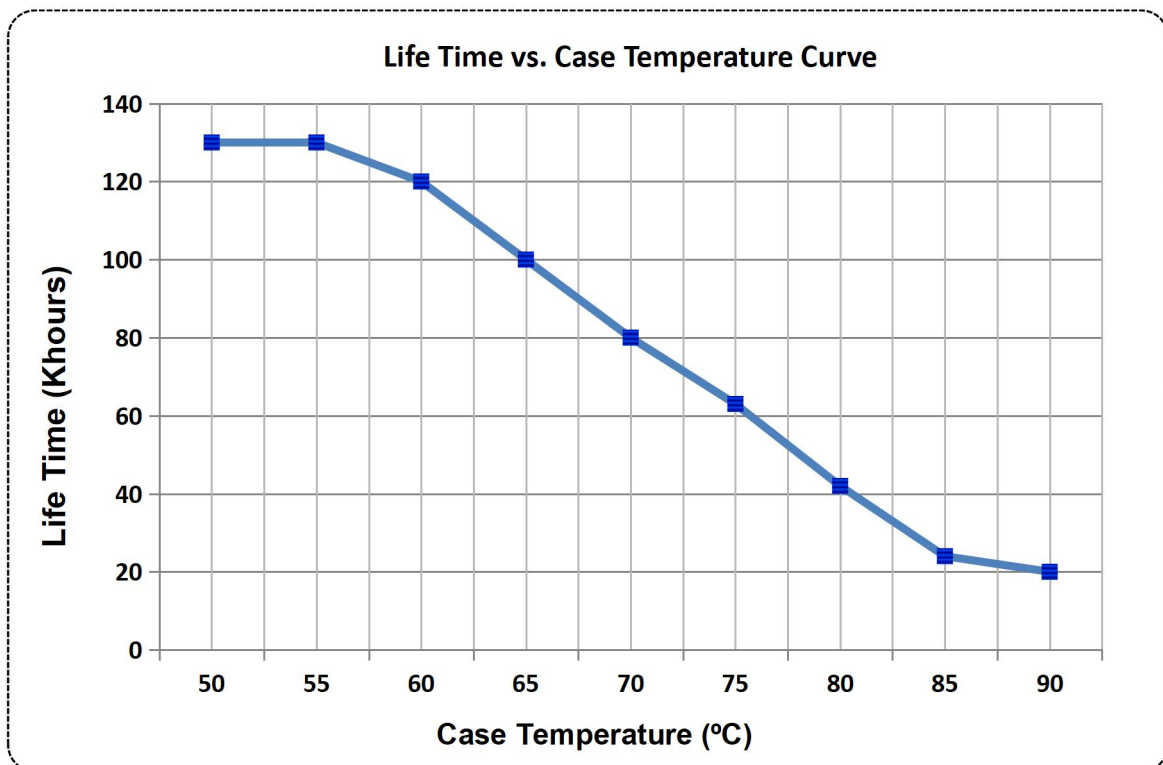
DERATING CURVE

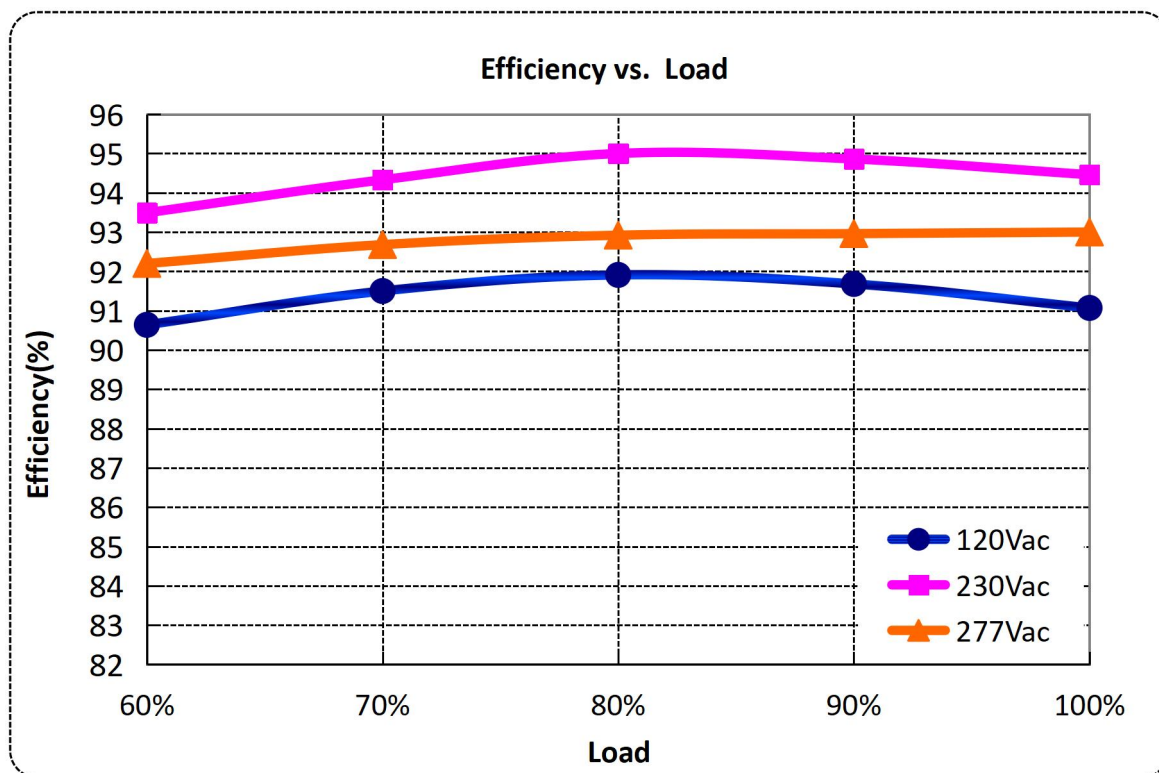
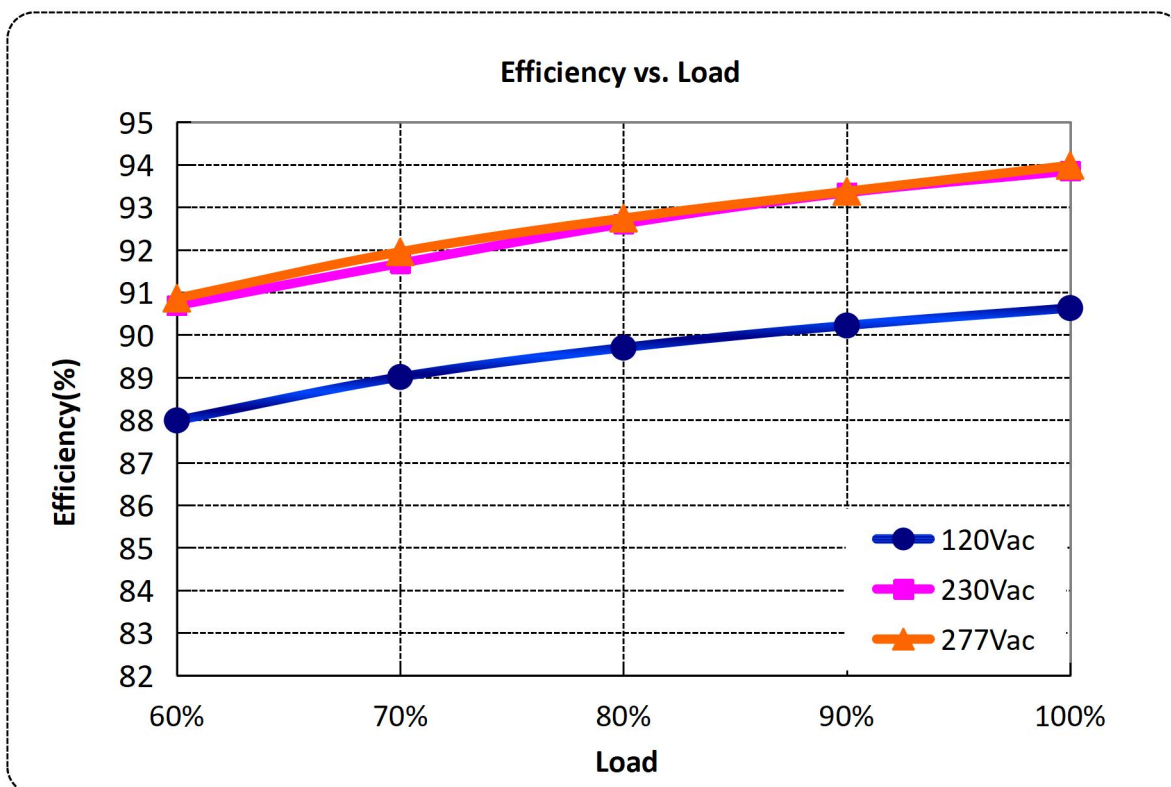


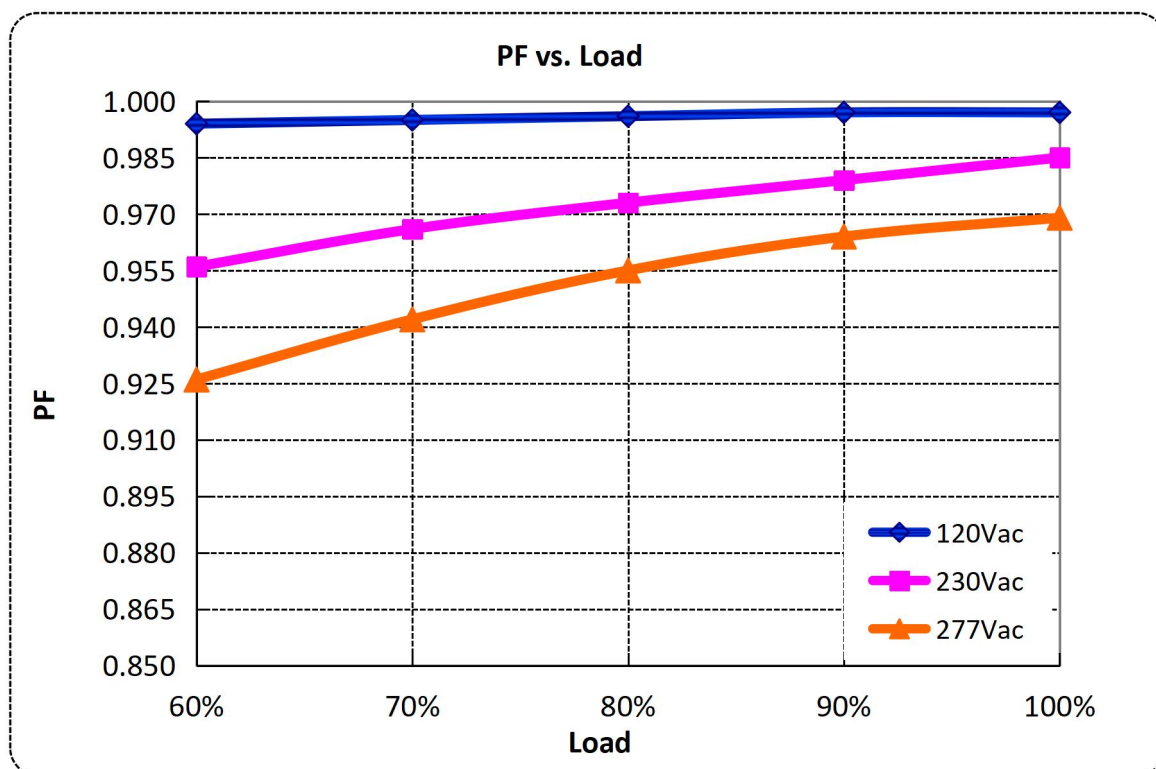
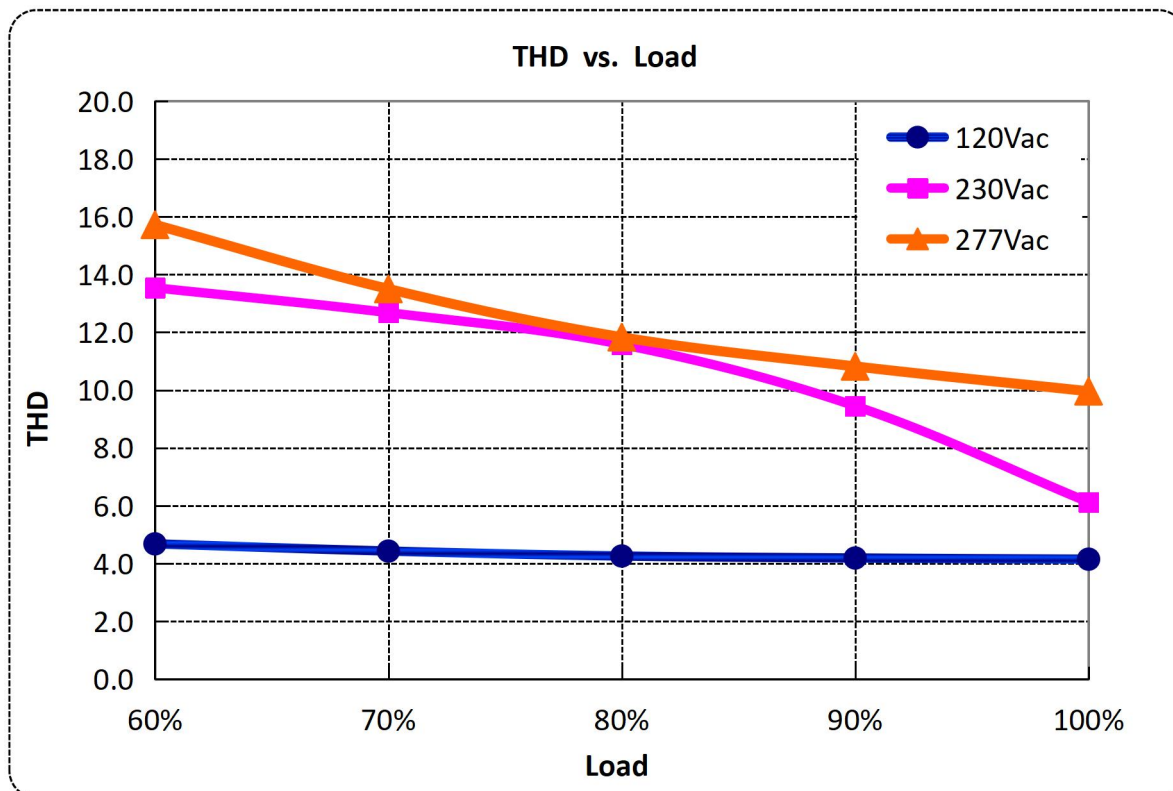
OUTPUT POWER vs. INPUT VOLTAGE



LIFETIME vs. CASE TEMPERATURE



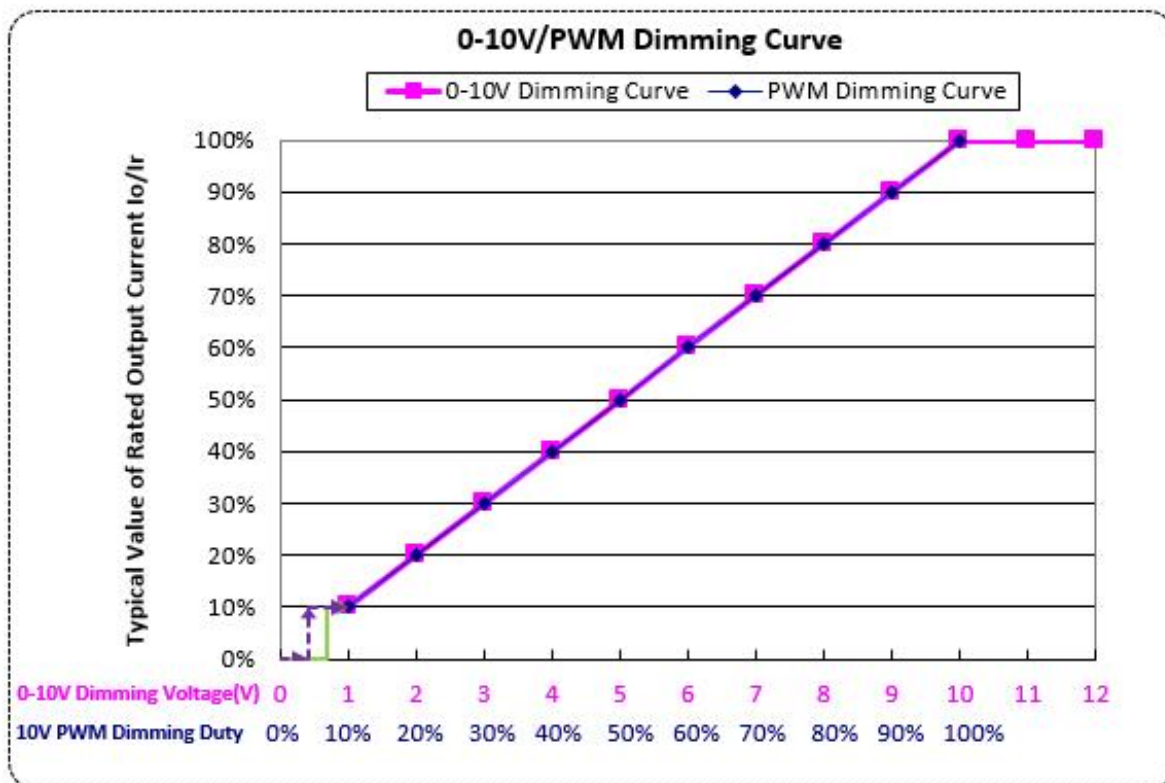
EFFICIENCY vs. LOAD**X6I-320Y457 (Io=0.70A)****X6I-320Y457 (Io=1.10A)**

POWER FACTOR vs. LOAD**TOTAL HARMONIC DISTORTION**

PROTECTIONS

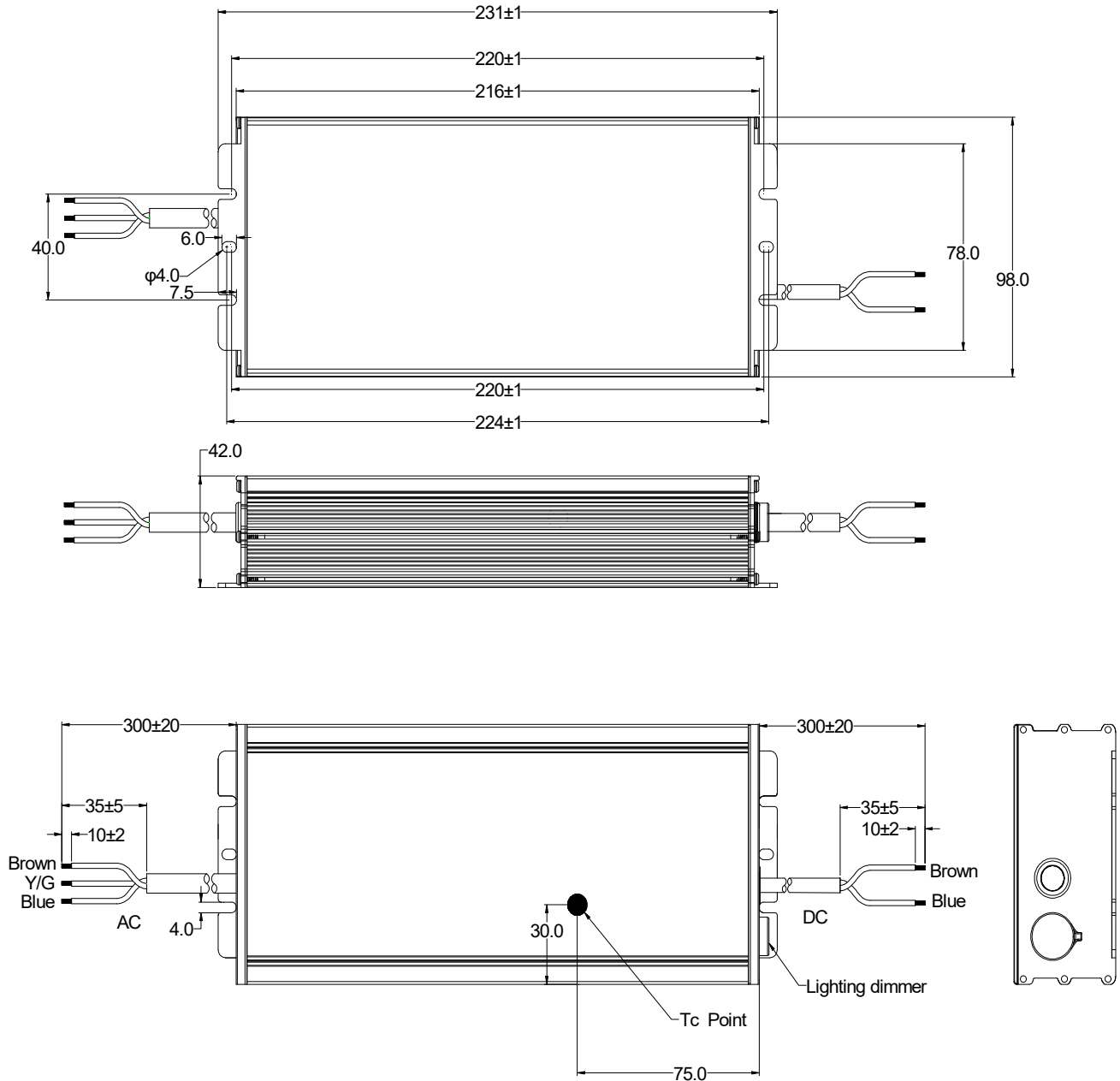
Parameter		Min.	Typ.	Max.	Notes
Input Over Voltage Protection	Input Protection Voltage	320Vac	340Vac	380Vac	Turn off the output when the input voltage exceeds protection voltage.
	Recovery Voltage	300Vac	310Vac	320Vac	Auto Recovery. The driver will restart when the input voltage falls below recovery voltage.
	Max. of Input Over Voltage	-	-	440Vac	The driver can survive for 48 hours with input over-voltage of 440Vac.
Over Temperature Protection		Decreases output current, returning to normal after over temperature is removed.			
Short Circuit Protection		When the short circuit occurs, the input power is reduced and the product enters the constant current output mode or locked mode. When the short circuit is released, restart the input to recover.			
Output Over Voltage Protection		Run into protection mode when output voltage exceeds limit, and return to normal when the fault is eliminated and restart the power supply.			

0-10V/PWM DIMMING



MECHANICAL OUTLINE

X6I-320V457



Wire	Specification	Note
Input	SJOW 17AWG*3C L=300±20mm	CCC/CE/UL
Output	SJOW 17AWG*2C L=300±20mm	CCC/CE/UL

Specification for Approval

Product Name: 320W outdoor off-line programmable driver

Product Model: X6I-320M457 ☐
X6I-320V457 ☒

Rev: Initial version

Sample Date: —

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

Product Specification

Product Name: 320W outdoor off-line programmable driver

Product Model: X6I-320M457 ☐

X6I-320V457 ☒

Rev: Innitial version

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Prepared By	Checked By	Approved By