

Product Features



- Universal input voltage / Full range: 90~305Vac;
- Constant power design, output current programming adjustable;
- (M types) offline programmable, (V types) output current adjustable by built-in potentiometer;
- 3-in-1 dimmable: 0~10Vdc / PWM/ Timer dimming. Dim-to-off;
- Constant lumen output
- Output and Dimming Signal Isolating
- Surge protection: 5KV line-line, 10KV line-earth;
- Protections: 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 X6-075W series is 75W 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 a 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 CO₂ 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 lightning 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)	Output Current Adjustable Range (A)	Full Power Current Adjustable Range (A) [2]	Default Output Current Setting(A)	Typical Efficiency [3]	Power Factor
							230Vac
X6-075X041	75	20-41	28-41	1.83-2.67	2.10	88%	0.96
X6-075X062	75	38-62	40-62	1.21-1.88	1.40	89%	0.96
X6-075X108	75	54-108	71-108	0.7-1.05	0.70	90%	0.96

Notes:

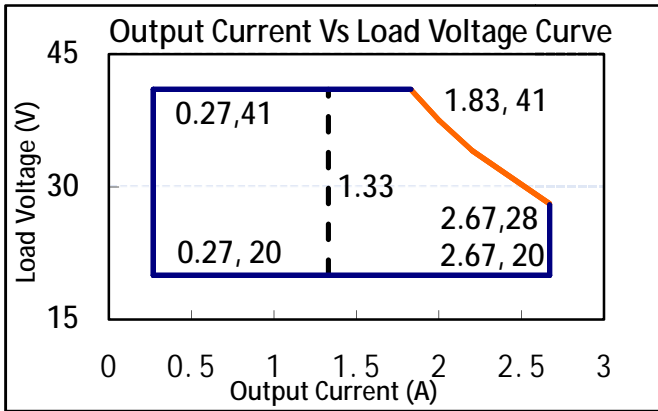
[1]. X can be M or V, X=M means dimmable and offline programmable. The adjustable lout range: 10%-100% I_{max}, X=V means non-dimmable and output current adjusted by built-in potentiometer.

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

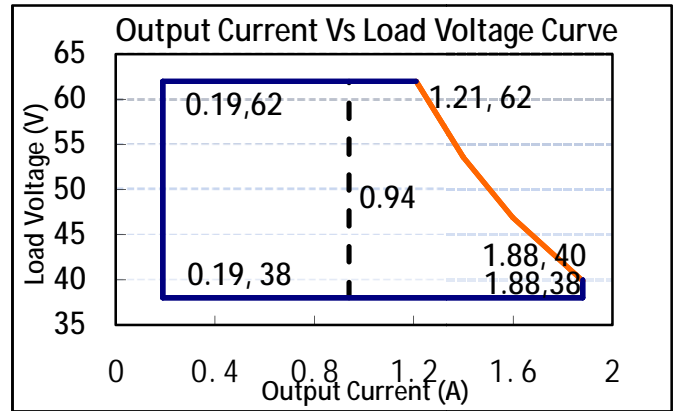
[3]. All specifications are measured at 25°C ambient temperature, input voltage 230Vac, and the typical value tested by full load, if no specific note.

OPERATING AREA I-V

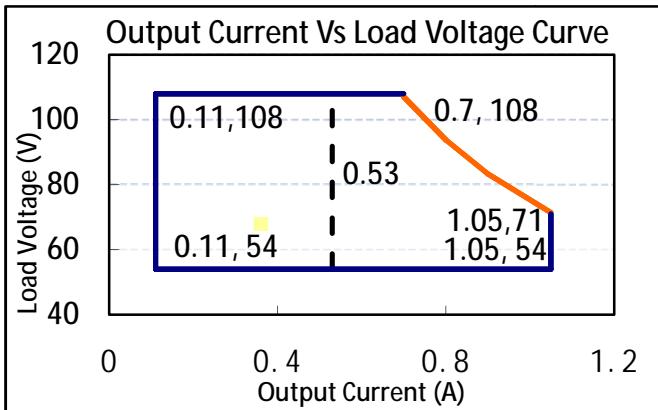
X6-075M041



X6-075M062



MTP-060X108



Notes: X=V is suitable for the right area of the dotted line; X=M is suitable for the solid line contain area.

INPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90Vac	100-277Vac	305Vac	
Input Frequency	47Hz	50/60	63Hz	
Leakage Current	-	-	0.70mA	277Vac/60Hz
Input AC Current	-	-	1.1A	100-277Vac & full load
Inrush Current	-	-	75A	230Vac & full load
Standby Power Consumption			2W	
Power Factor	0.97	0.99	-	115Vac, 50-60Hz, full load
	0.95	0.97		230Vac, 50-60Hz, full load
	0.9	0.92		277Vac, 50-60Hz, full load
THD	-	8%	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%Iset	-	5%Iset	
Output Current Setting Range (A)				The 'M type' adjustable lout range: 10%-100% I _{max} ,
X6-75X041	1.34	-	2.67	
X6-75X062	0.94		1.88	
X6-75X108	0.50		1.05	
Output Current Setting Range with Constant Power				
X6-75X041	1.83	-	2.67	
X6-75X062	1.21		1.88	
X6-75X108	0.70		1.05	
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)				
X6-75X041	-	-	50	
X6-75X062			70	
X6-75X108			120	
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 230Vac, load changes

				from 60% to 100%.
Turn-on Delay Time	-	1S	3S	115Vac, 100% load
	-	0.5S	1S	230Vac, 100% load

GENERAL SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes													
Efficiency @115Vac X6-75X041 $I_o=1.83$ $I_o=2.67$ X6-75X062 $I_o=1.21$ $I_o=1.88$ X6-75X108 $I_o=0.7$ $I_o=1.05$	84% 84%	86% 86%		Measured at full load and 25°C ambient temperature													
Efficiency @230Vac X6-75X041 $I_o=1.83$ $I_o=2.67$ X6-75X062 $I_o=1.21$ $I_o=1.88$ X6-75X108 $I_o=0.7$ $I_o=1.05$	86% 86%	88% 88%	-		Measured at full load and 25°C ambient temperature												
Efficiency @277Vac X6-75X041 $I_o=1.83$ $I_o=2.67$ X6-75X062 $I_o=1.21$ $I_o=1.88$ X6-75X108 $I_o=0.7$ $I_o=1.05$	86% 86%	88% 88%				Measured at full load and 25°C ambient temperature											
Dielectric Strength <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 20%;">Input-Output</td> <td style="width: 10%; text-align: center;">-</td> <td style="width: 10%; text-align: center;">3750Vac</td> <td style="width: 10%; text-align: center;">-</td> </tr> <tr> <td>Input-PE</td> <td style="text-align: center;">-</td> <td style="text-align: center;">1600Vac</td> <td style="text-align: center;">-</td> </tr> <tr> <td>Output-PE</td> <td style="text-align: center;">-</td> <td style="text-align: center;">1600Vac</td> <td style="text-align: center;">-</td> </tr> </table>	Input-Output	-	3750Vac	-			Input-PE	-	1600Vac	-	Output-PE	-	1600Vac	-	-	-	-
Input-Output	-	3750Vac	-														
Input-PE	-	1600Vac	-														
Output-PE	-	1600Vac	-														
Grounding Resistance	-	-	0.1Ω	25A/60S, under 25°C±10°C ambient temperature													
Insulation Resistance	50MΩ	-	-	Input-Output, Input-PE, Output-PE, 500Vdc/60S/25°C/70%RH													
MTBF	-	200000Hrs	-	25°C±10°C ambient temperature,													

				230Vac,80% load (MIL-HDBK-217F)
Lifetime	-	50000Hrs	-	230Vac&100% load, 75°C case temperature, refer to lifetime curve for details
Ambient Temperature	-40°C		+60°C	230Vac&100% load
Operating Case Temperature for Safety Tc_s	-40°C	-	+90°C	
Operating Case Temperature for Warranty Tc_s	-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 (LxWxH)mm	L128.6*W68*H37			
Net Weight	500±100g/PCS			
Package	L500mm*W310mm*H160mm; 20PCS/Ctn, Gross Weight: 8Kg			

DIMMING

Parameter		Min.	Typ.	Max.	Notes
0~10V Absolute Maximum Voltage on the Vdim (+) Pin		-	10V	-	
0~10V Source Current on Vdim(+)Pin		-	0.1mA	0.2mA	
Dimming Output Range	X6-75M041 X6-75M062 X6-75M108	10%Imax	-	100%Imax	I _{max} =2.67A I _{max} =1.88A I _{max} =1.05A
	X6-75M041 X6-75M062 X6-75M108	0.27 0.19 0.11	-	2.67 1.88 1.05	
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		200Hz		2000Hz	
PWM_in Duty Cycle		1%	-	99%	

SAFTY 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	

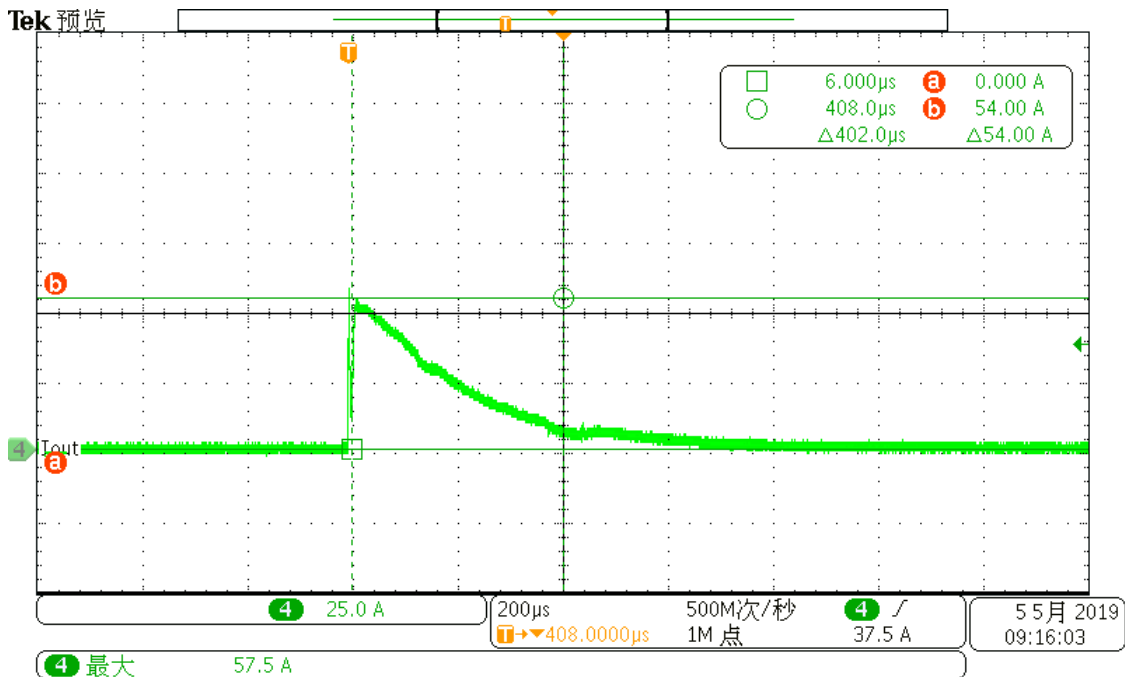
EMC COMPLIANCE

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	

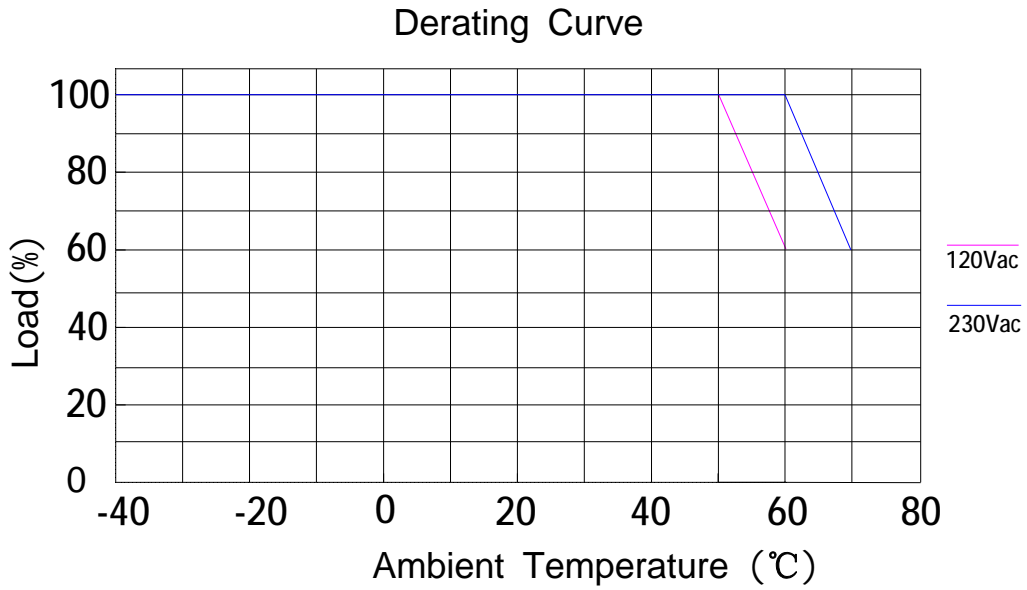
NOTE:

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.

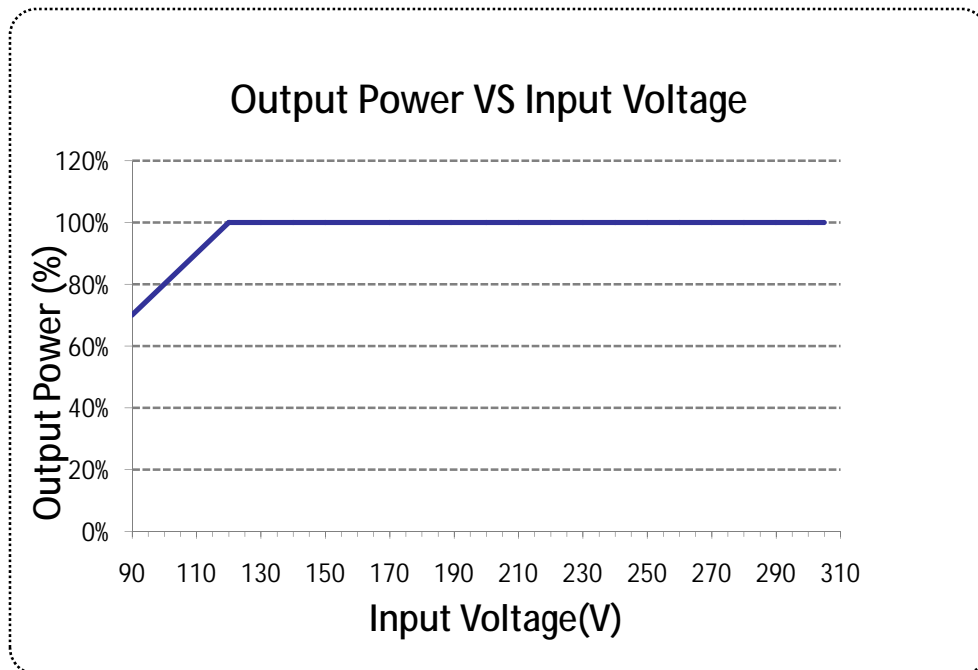
INRUSH CURRENT WAVEFORM



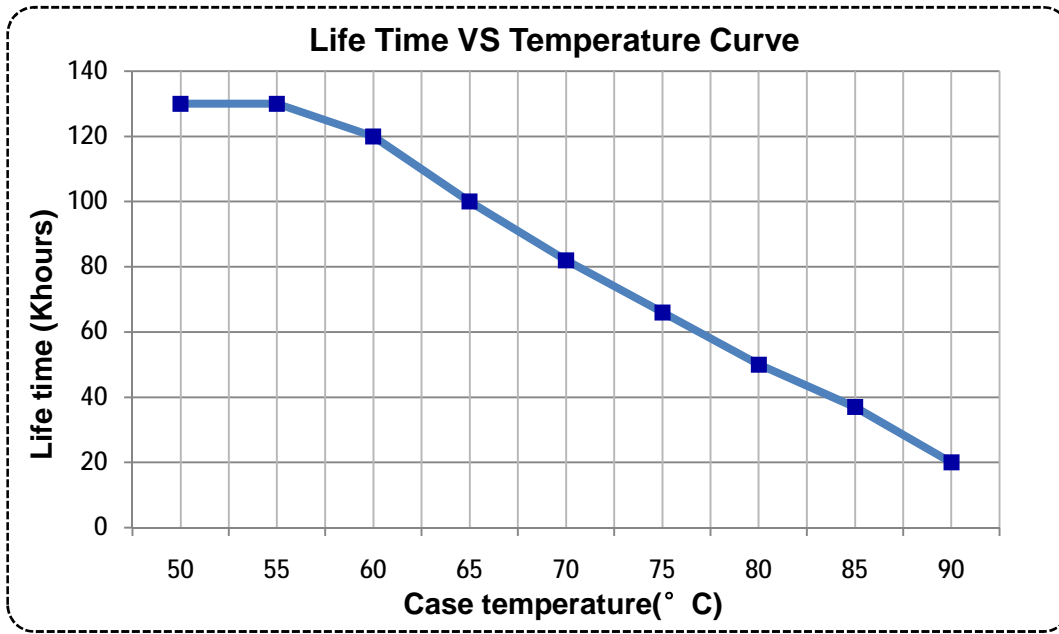
DERATING CURVE



OUTPUT POWER VS INPUT VOLTAGE

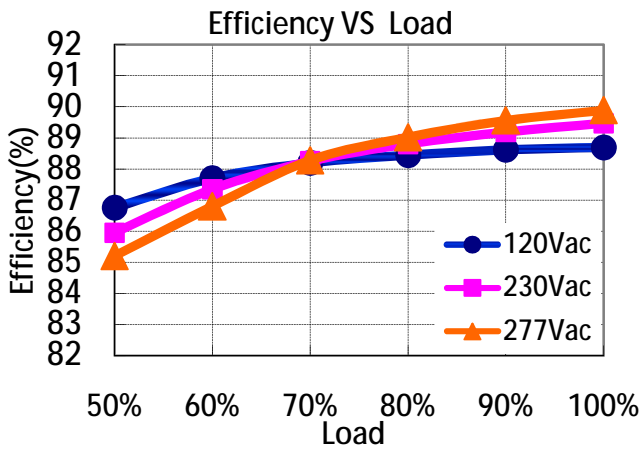


LIFETIME VS CASE TEMPERATURE

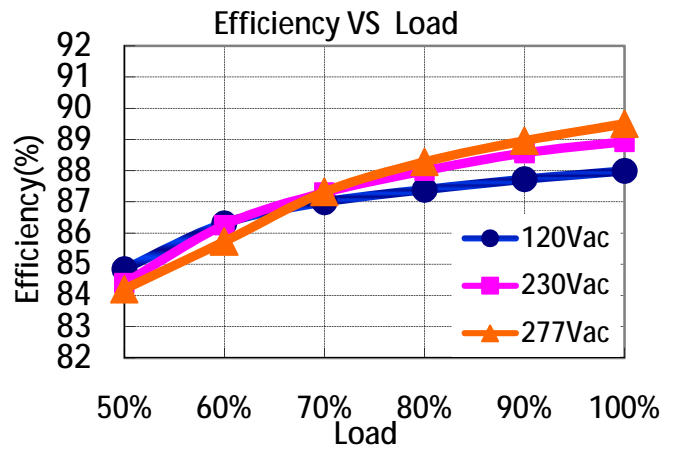


EFFICIENCY VS LOAD

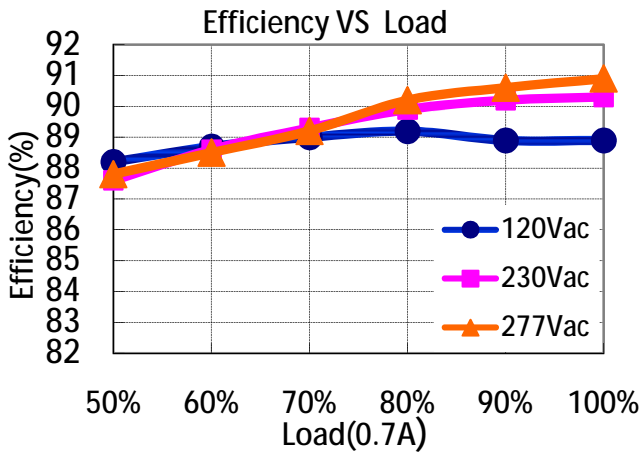
X6-75X062 (Io=1.21A)



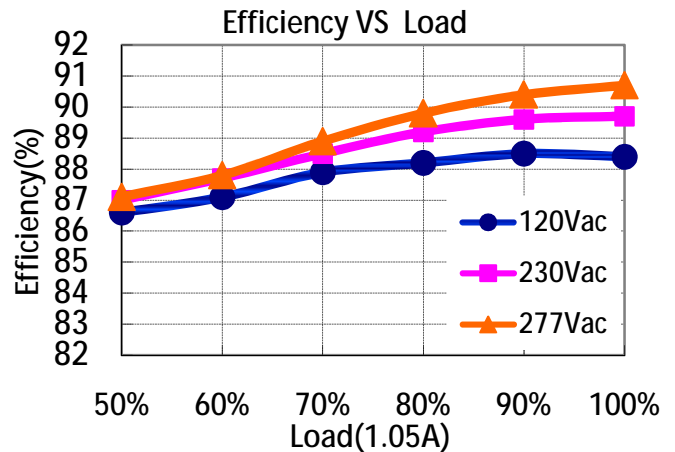
X6-75X062 (Io=1.88A)



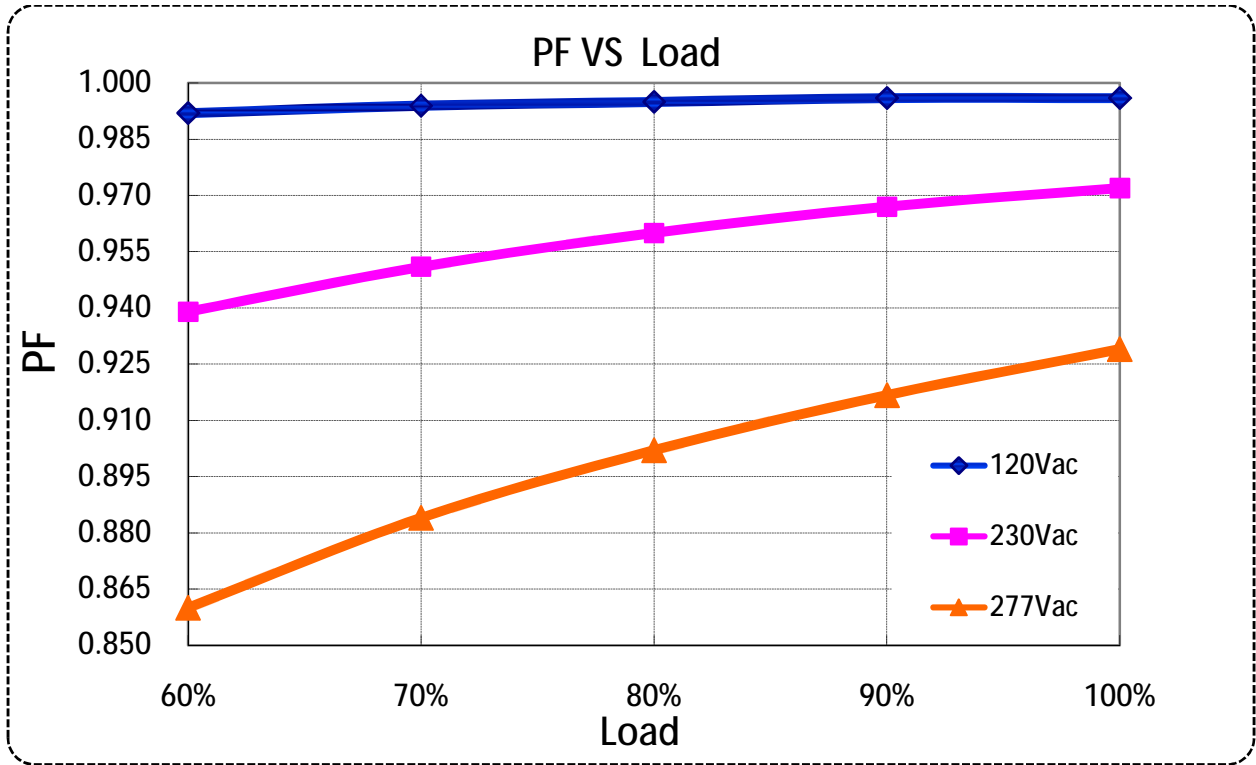
X6-75X108 (Io=0.7A)



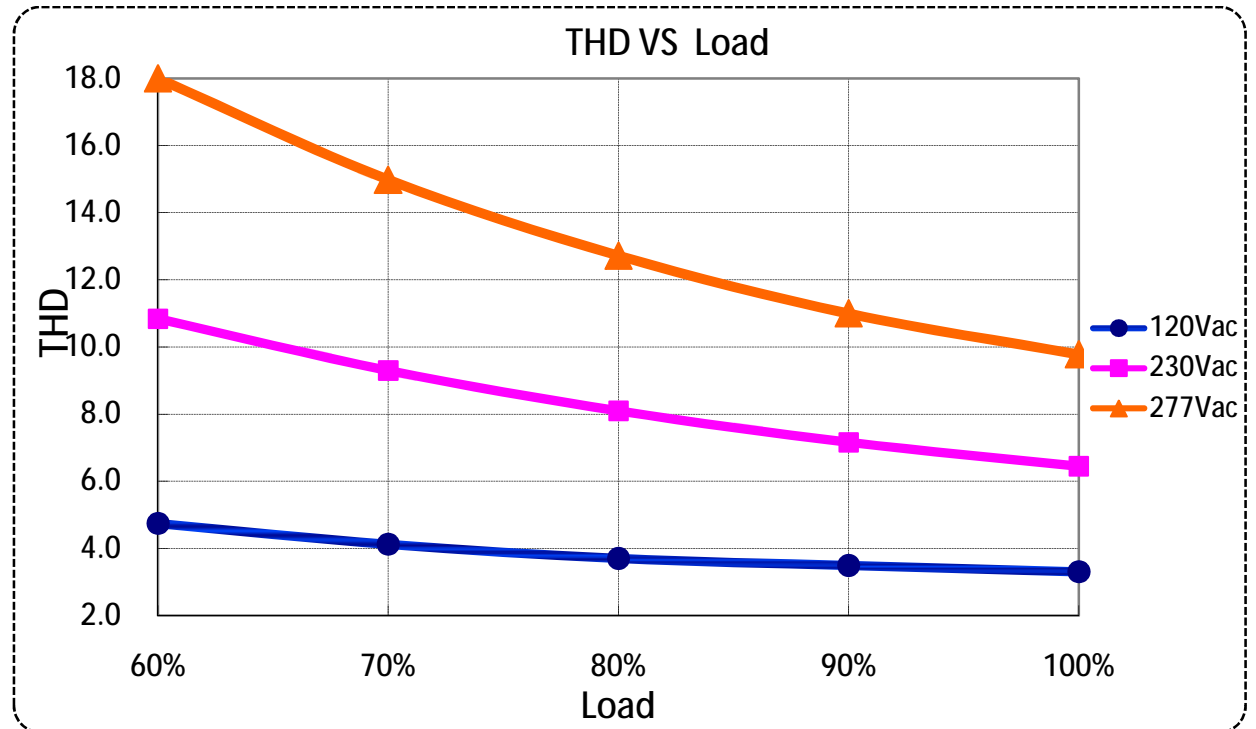
X6-75X108 (Io=1.05A)



POWER FACTOR VS LOAD



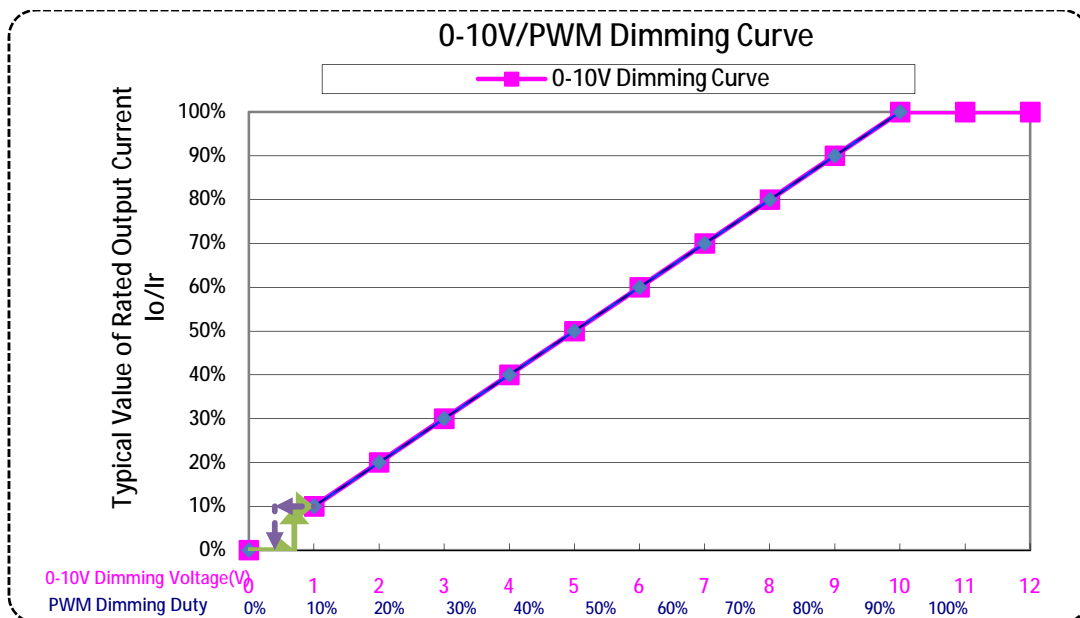
TOTAL HARMONIC DISTORTION



PROTECTIONS

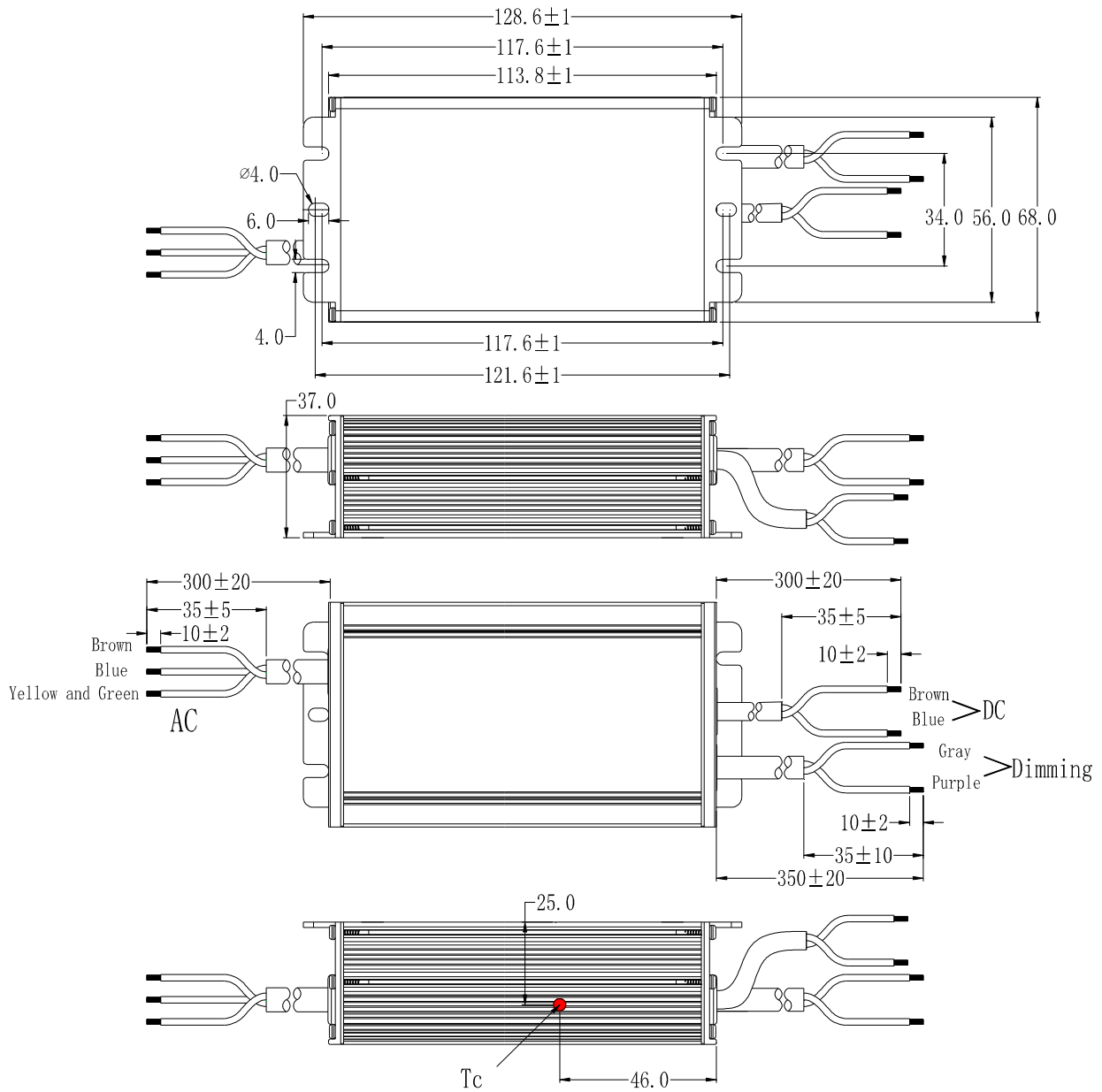
Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed. The max derating could be met Max Temperature 85°C and Max Humidity 85%.
Short Circuit Protection	Hiccup mode and auto recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Voltage Protection	Run into protection model when output voltage exceeds limit, and return to normal when the fault

0-10V/PWM DIMMING

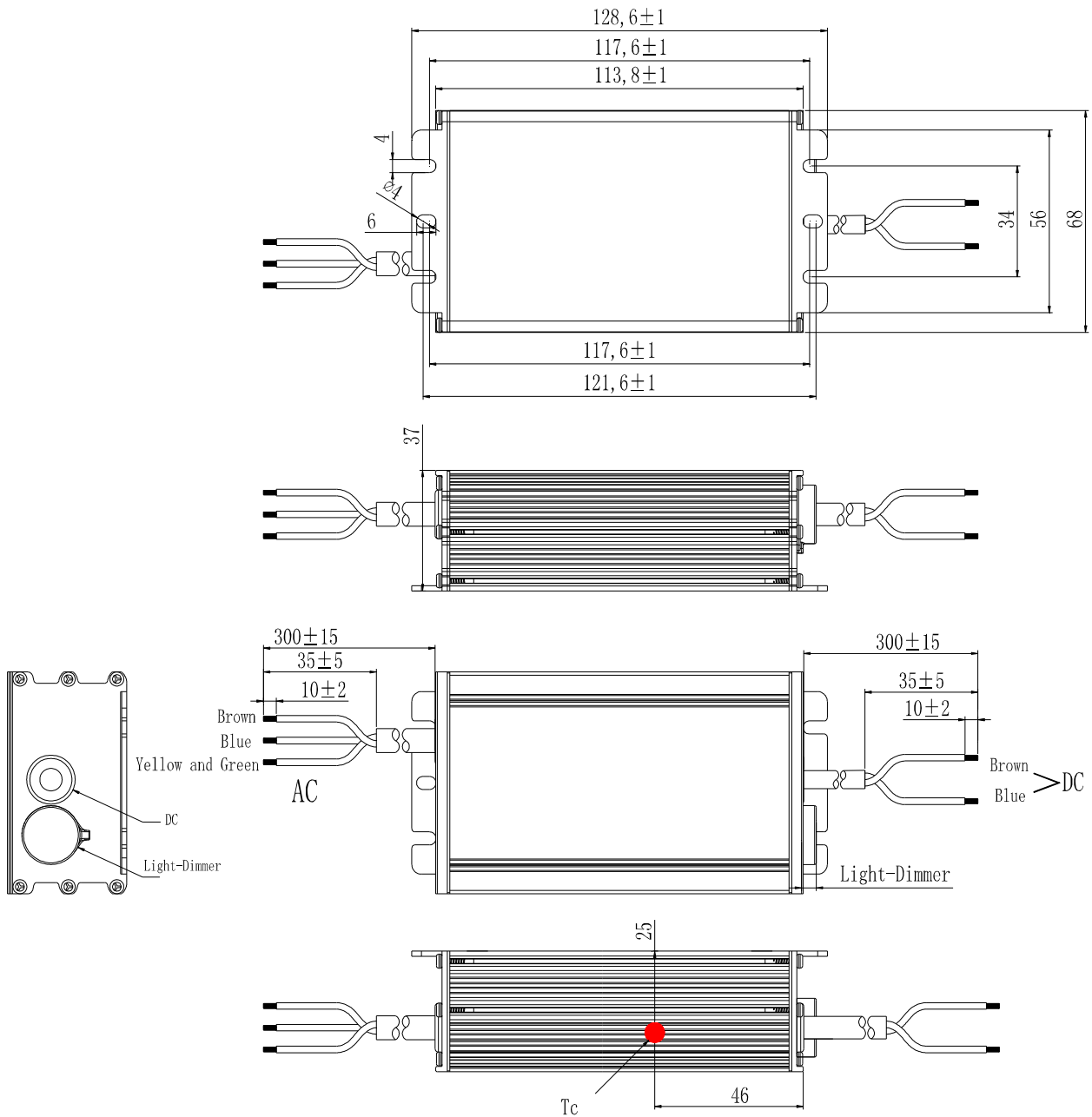


MECHANICAL OUTLINE

X6-075M types



X6-075V types



Wire	Specification	Note
Input	17AWG*3C SJOW external diameter: 8.3mm L=300±20mm peel length 35mm, Tin-dip length 10mm	for CCC/CE/UL
Output	17AWG*2C SJOW external diameter: 7.7mm L=300±20mm peel length 35mm, Tin-dip length 10mm	for CCC/CE/UL
Dimming	UL2733 22AWG*2C external diameter: 5.45mm L=350±10mm peel length 35mm, Tin-dip length 10mm	X = M

REVISION HISTORY



X6 Series - 75W Off-line Programmable Driver

Version	Description of Change		Date	Notes
	Before	Now		
A.1	—	Datasheets Release	2019-03-16	