



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;
- (M types) 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 X6-150W series is 150W 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 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.

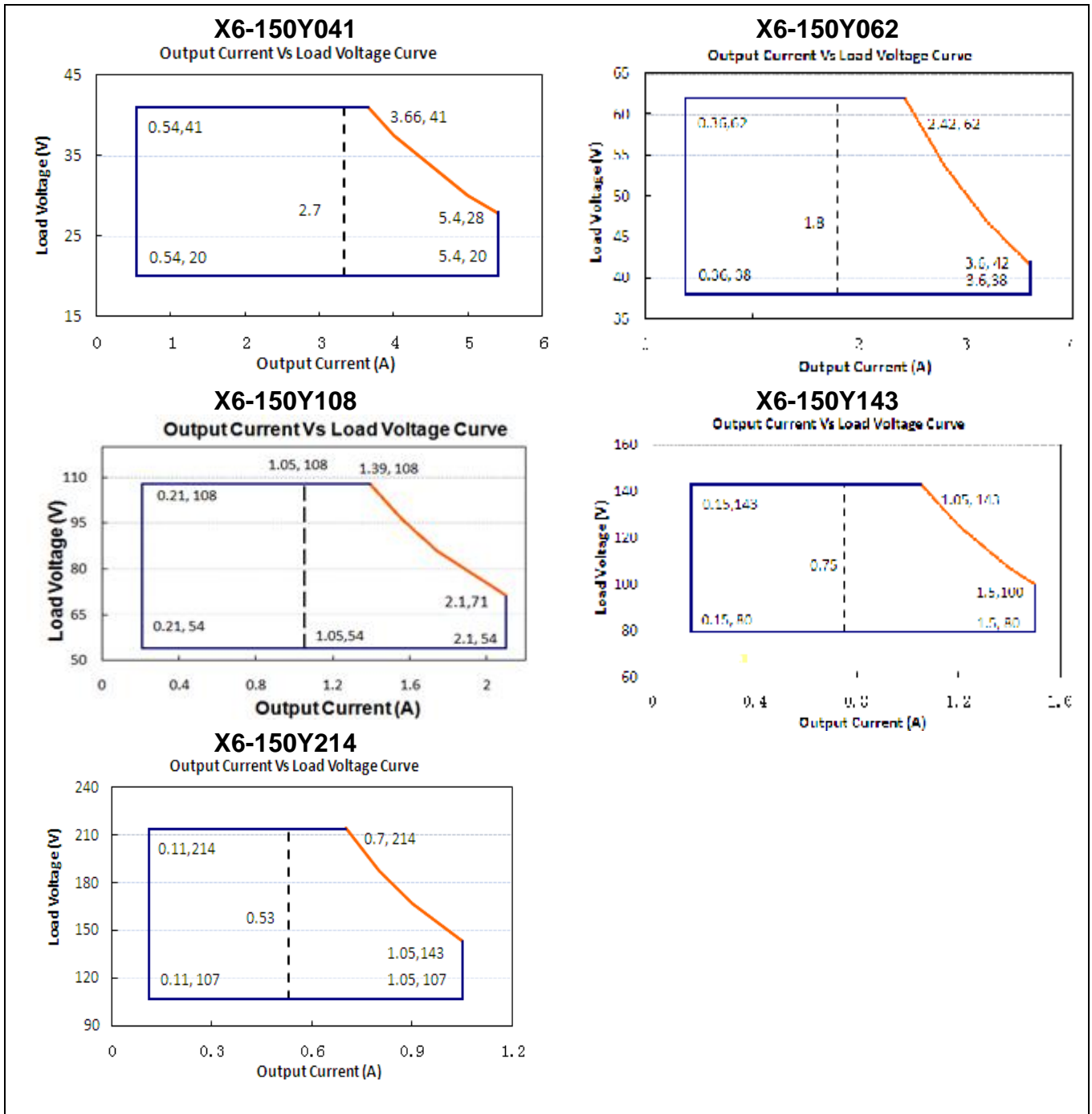
MODELS

Model Number [1]	Max Output Power (W)	Output Voltage Range (Vdc)	Full Power Output Voltage Range (Vdc)	Full Power Current Adjustable Range (A) [2]	Default Output Current Setting(A)	Typical Efficiency [3]	Power Factor
X6-150Y041	150	20-41	28-41	3.66-5.40	4.20	91%	0.97
X6-150Y062	150	38-62	42-62	2.42-3.60	3.15	91%	0.97
X6-150Y108	150	54-108	71-108	1.40-2.10	2.10	91%	0.96
X6-150Y143	150	80-143	100-143	1.05-1.5	1.05	92%	0.97
X6-150Y214	150	107-214	143-214	0.70-1.05	0.70	92%	0.97

Notes:

- [1]. Y can be M or V. Y=M means dimmable and offline programmable, The adjustable I_{out} range: 10%-100% I_{max};
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 230Vac, and the typical value tested by full load, if no specific note.

OPERATING AREA I-V



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	100-277Vac	305Vac	
Input Frequency	47Hz	50/60	63Hz	
Leakage Current	-	-	0.75mA	277Vac/60Hz
Input AC Current	-	-	2.0A	100-277Vac & full load
Inrush Current	-	-	75A	230Vac & full load
Standby Power Consumption			3W	Dim to off
Power Factor	0.97	0.99	-	115Vac, 50-60Hz, full load
	0.95	0.97		230Vac, 50-60Hz, full load
	0.92	0.95		277Vac, 50-60Hz, full load
THD	-	5%	10%	100-240Vac, 50-60Hz, 50%-100% load
	-	-	15%	277Vac, 50-60Hz, 70%-100% load

OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%	-	5%	
Output Current Setting Range (A)				The 'M type' adjustable lout range: 10%-100% I _{max} ,
X6-150Y041	2.70		5.40	
X6-150Y062	1.80		3.60	
X6-150Y108	1.05	-	2.10	
X6-150Y143	0.75		1.50	
X6-150Y214	0.53		1.05	
Output Current Setting Range with Constant Power				
X6-150Y041	3.66		5.40	
X6-150Y062	2.42	-	3.60	
X6-150Y108	1.39		2.10	
X6-150Y143	1.05		1.50	
X6-150Y214	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				
X6-150Y041	-	-	50	
X6-150Y062			70	

X6-150Y108			120	
X6-150Y143			160	
X6-150Y214			240	
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	2S	115Vac, 100% load
	-	-	0.5S	230Vac, 100% load

GENERAL SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Efficiency @120Vac				
X6-150Y041				Measured at full load and 25°C ambient temperature
Io=3.66	87%	89%		
Io=5.40	86%	88%		
X6-150Y062				
Io=2.42	87%	89%	-	
Io=3.60	86%	88%		
X6-150Y108				
Io=1.39	88%	90%		
Io=2.10	88%	90%		
X6-150Y143				
Io=1.05	88%	90%		
Io=1.50	88%	90%		
X6-150Y214				
Io=0.70	88%	90%		
Io=1.05	87%	89%		
Efficiency @230Vac				
X6-150Y041				Measured at full load and 25°C ambient temperature
Io=3.66	89%	91%		
Io=5.40	88%	90%		
X6-150Y062				
Io=2.42	89%	91%	-	
Io=3.60	88%	90%		
X6-150Y108				
Io=1.39	90%	91%		
Io=2.10	90%	91%		
X6-150Y143				
Io=1.05	90%	92%		
Io=1.50	90%	92%		
X6-150Y214				
Io=0.70	91%	93%		
Io=1.05	90%	92%		
Efficiency @277Vac				
X6-150Y041				Measured at full load and 25°C ambient temperature
Io=3.66	89%	91%		
Io=5.40	88%	90%		
X6-150Y062				
Io=2.42	89%	91%	-	
Io=3.60	88%	90%		
X6-150Y108				

$I_o=1.39$ $I_o=2.10$ X6-150Y143 $I_o=1.05$ $I_o=1.50$ X6-150Y214 $I_o=0.70$ $I_o=1.05$	90%	91%			
	90%	91%			
	90%	92%			
	90%	92%			
	91%	93%			
	90%	92%			
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	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 (L*W*H)mm	L173.6*W68*H37				
Net Weight	800±100g/PCS				
Package	L500mm*W370mm*H160mm; 10PCS/Ctn, Gross Weight: 9kg				

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	X6-150M041 X6-150M062 X6-150M108 X6-150M143 X6-150M214	10%Imax	-	100%Imax	$I_{max}=5.40A$ $I_{max}=3.60A$ $I_{max}=2.10A$ $I_{max}=1.50A$ $I_{max}=1.05A$
	X6-150M041 X6-150M062 X6-150M108 X6-150M143 X6-150M214	0.54 0.36 0.21 0.15 0.11	-	5.40 3.60 2.10 1.50 1.05	
Recommended Dimming Range for 0-10V	0V	-	10V	Default 0-10V/ PWM Dimming(0-10V,0-9V,0-5V,0-3.3V and Forward and reverse dimming 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%		

SAFTY 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	

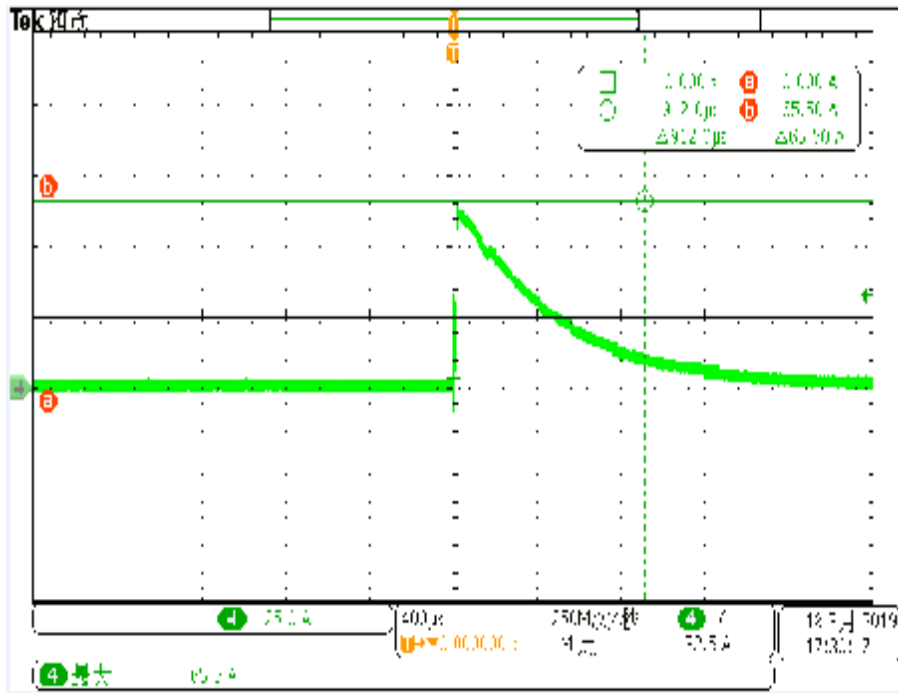
EMC COMPLIANCE

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	

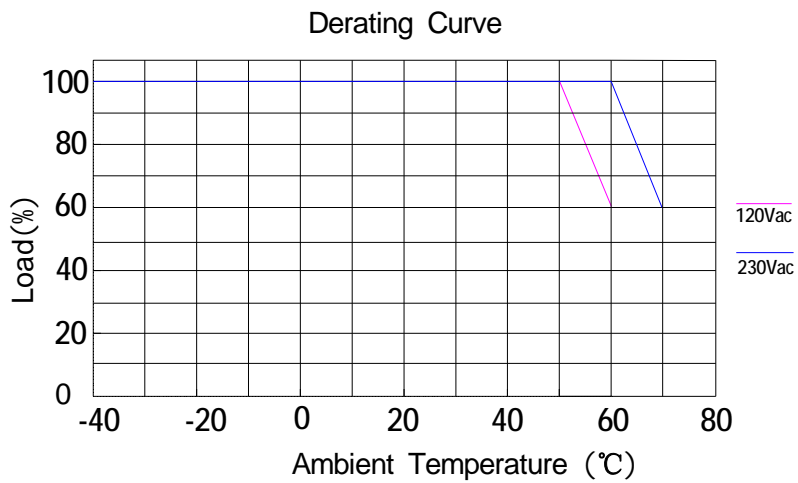
NOTE:

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.

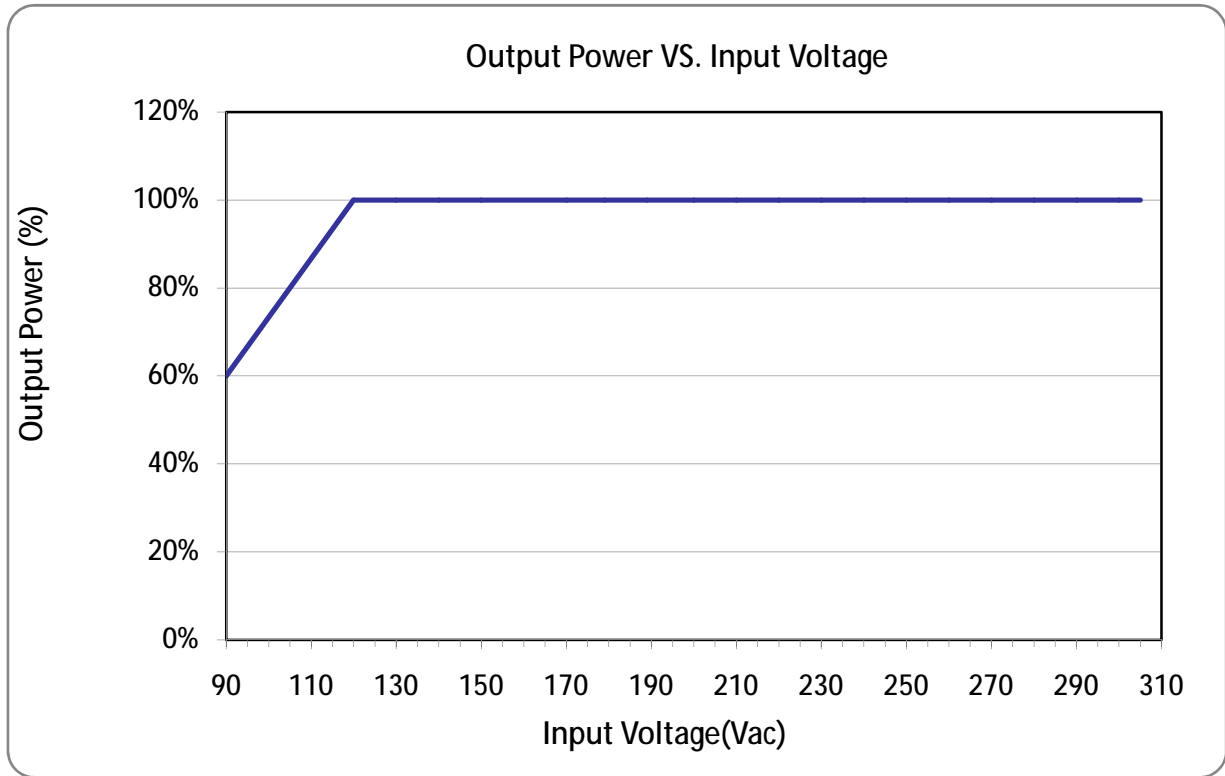
INRUSH CURRENT WAVEFORM



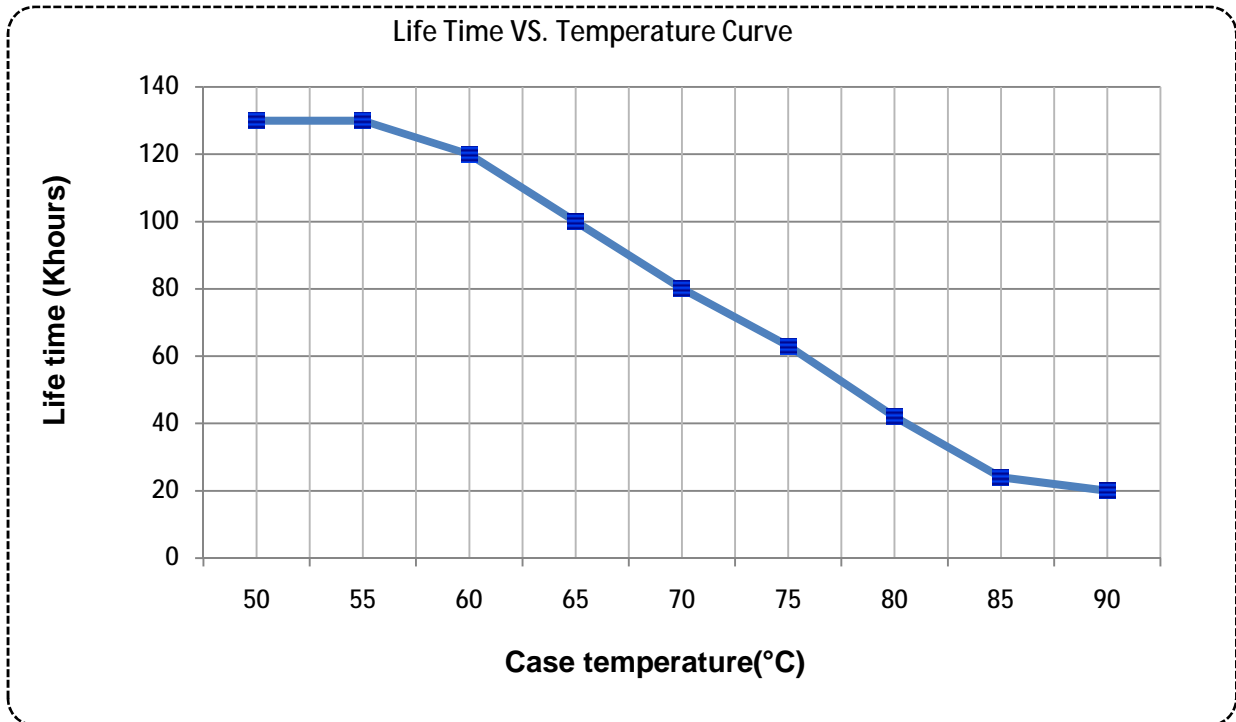
DERATING CURVE



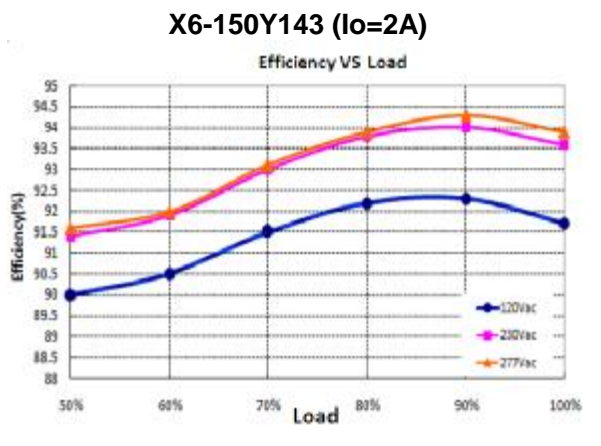
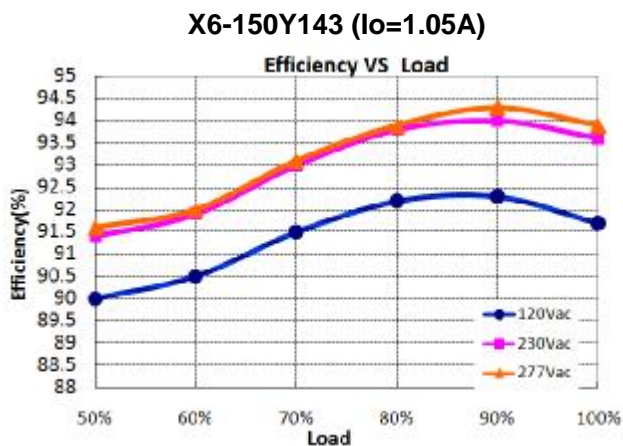
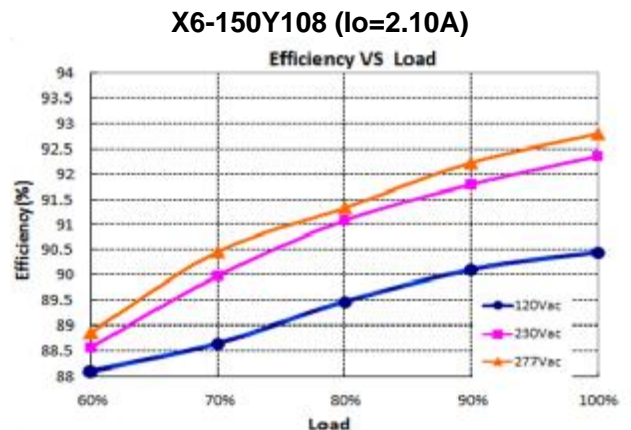
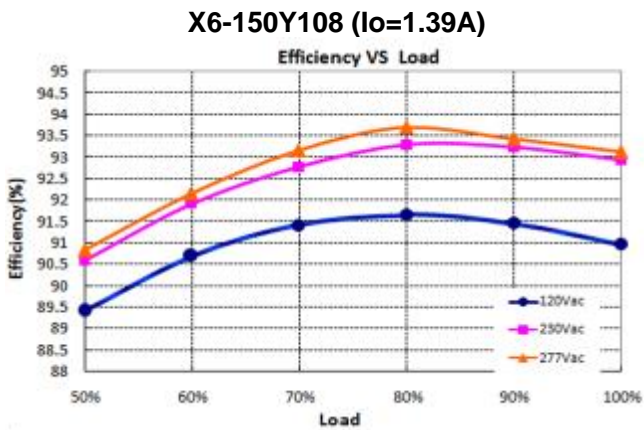
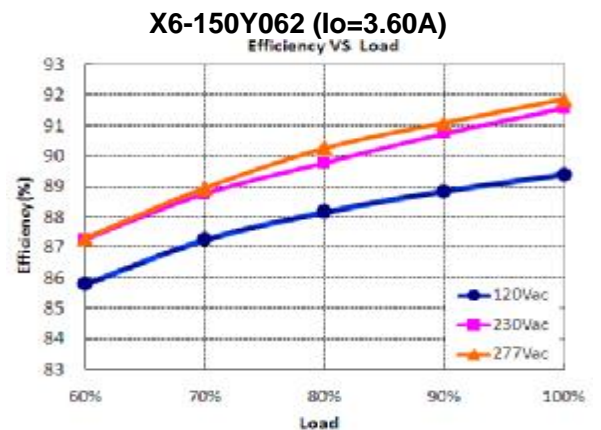
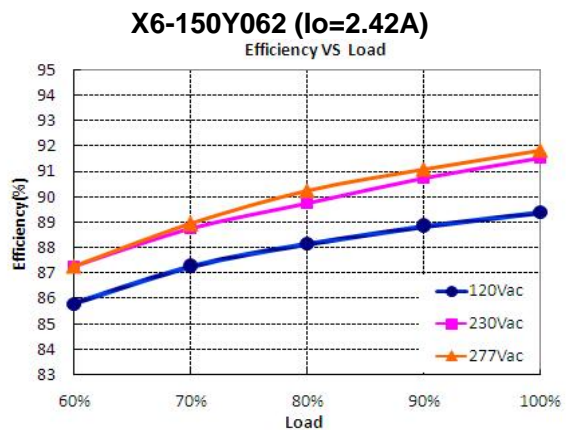
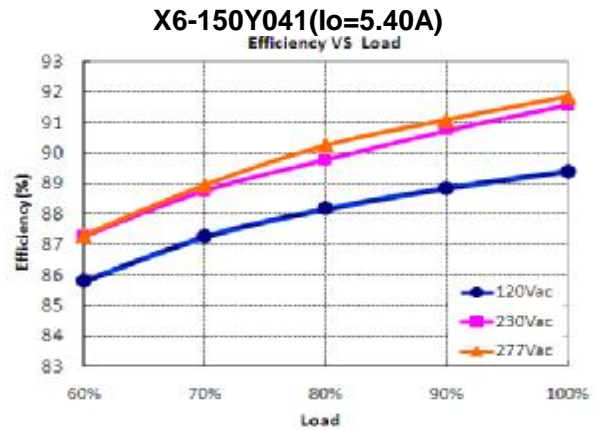
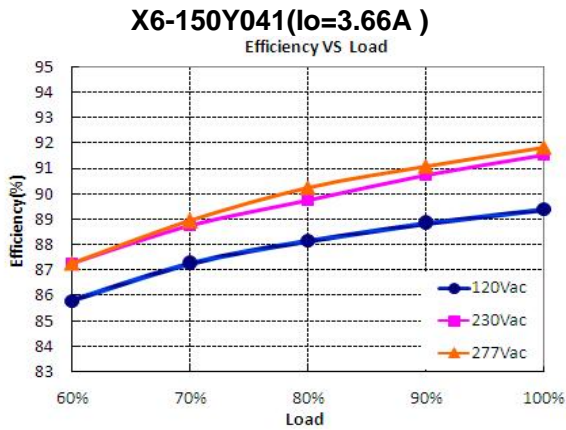
OUTPUT POWER VS INPUT VOLTAGE

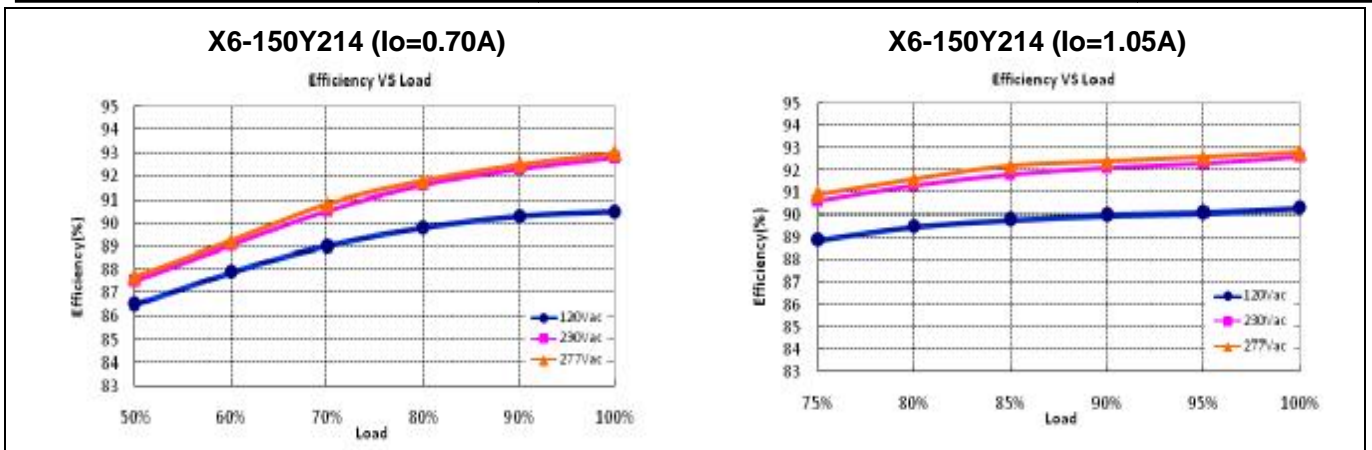


LIFETIME VS CASE TEMPERATURE

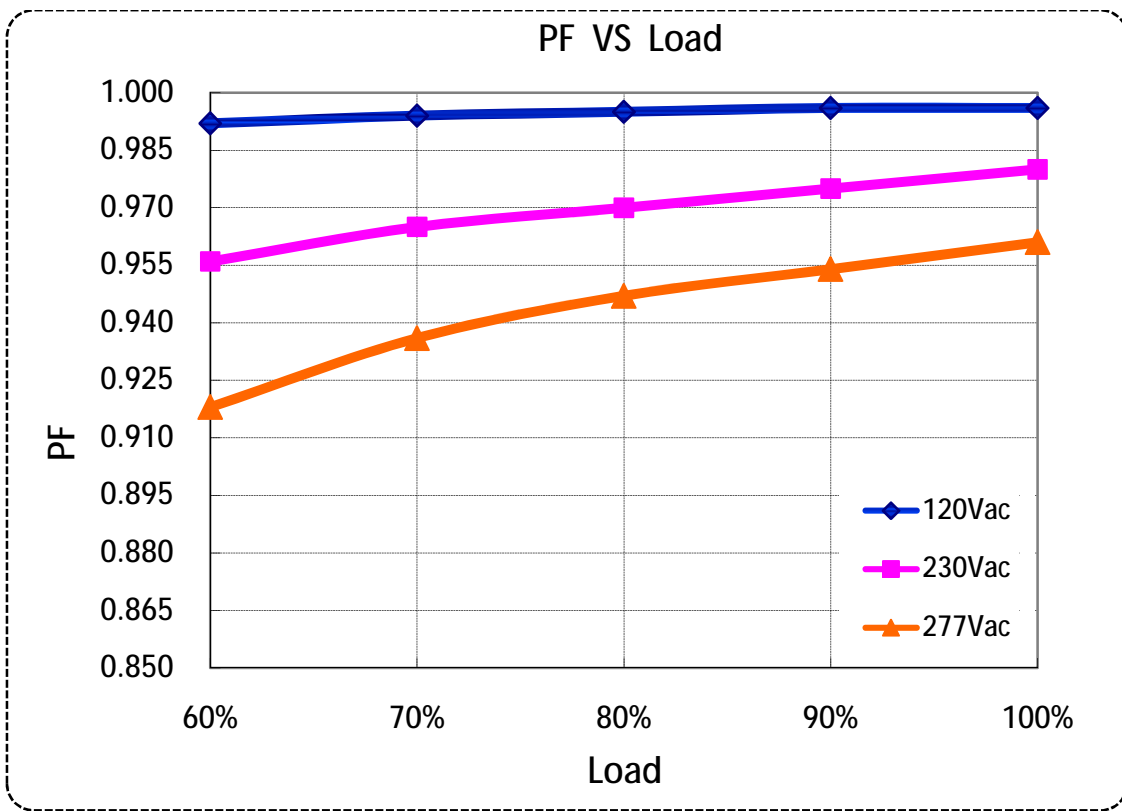


EFFICIENCY VS LOAD

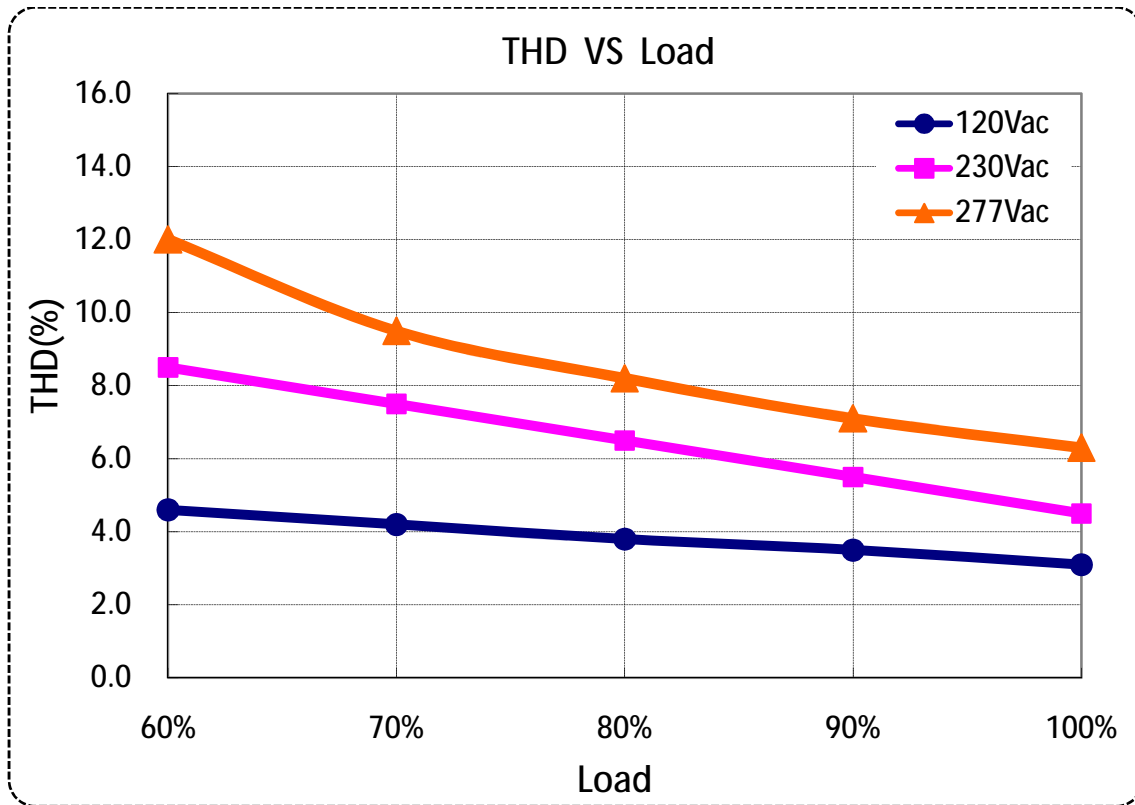




POWER FACTOR VS LOAD



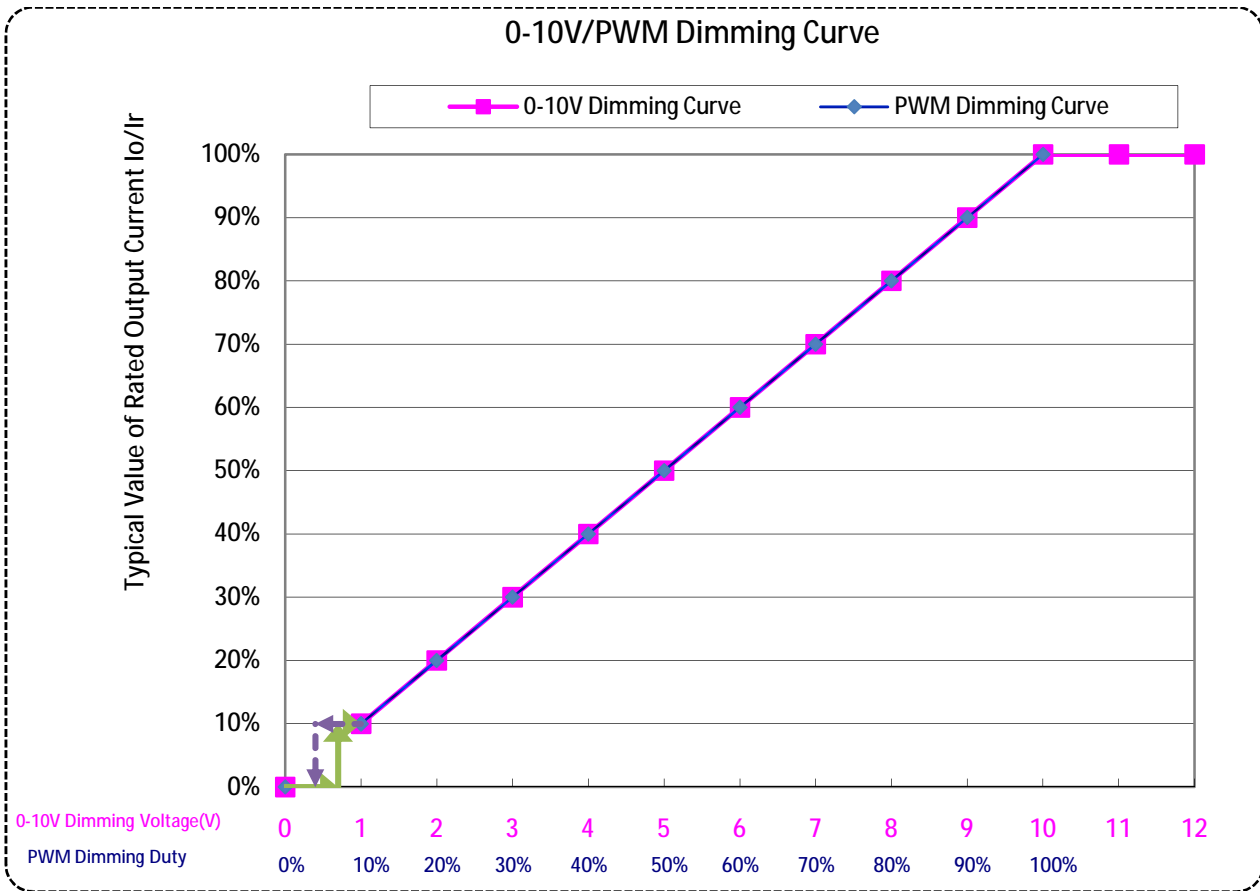
TOTAL HARMONIC DISTORTION



PROTECTIONS

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

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.

Programming Connection Diagram



Software programming interface

LED Driver Programming Utility(V0.4.43.7 Pro1 VIP)

MOSO 茂硕电源 Succeed

U-I Curve

U(V)

300
270
240
210
180
150
120
90
60
30
0

0 10 20 30 40 50 60 70 80 90 100 I(%)

Vmax=214V
Vmin=107V
(213V max @ Iset 705mA)

--- Constant power — Program work area

Model: X6-150M214

Read Default

Import

Save

Programming

Download to offline programmer

Lock

Signal Dimming Timer Dimming Constant Lumen Output Data Record

Set time(percent)

Step	Hour	Minute	Power (%)
Step0	0	0	0
Step1	4	0	100
Step2	4	0	50
Step3	2	0	80
Step4	1	0	90
Step5	1	0	100
Step6	0	0	0
Step7	0	0	0

Self Adapting-Percent

Reference day: 3 days

Self Adapting-Midnight

Reference day: 3 days

Midnight: 00:00

Initial time: 12 h 00 m

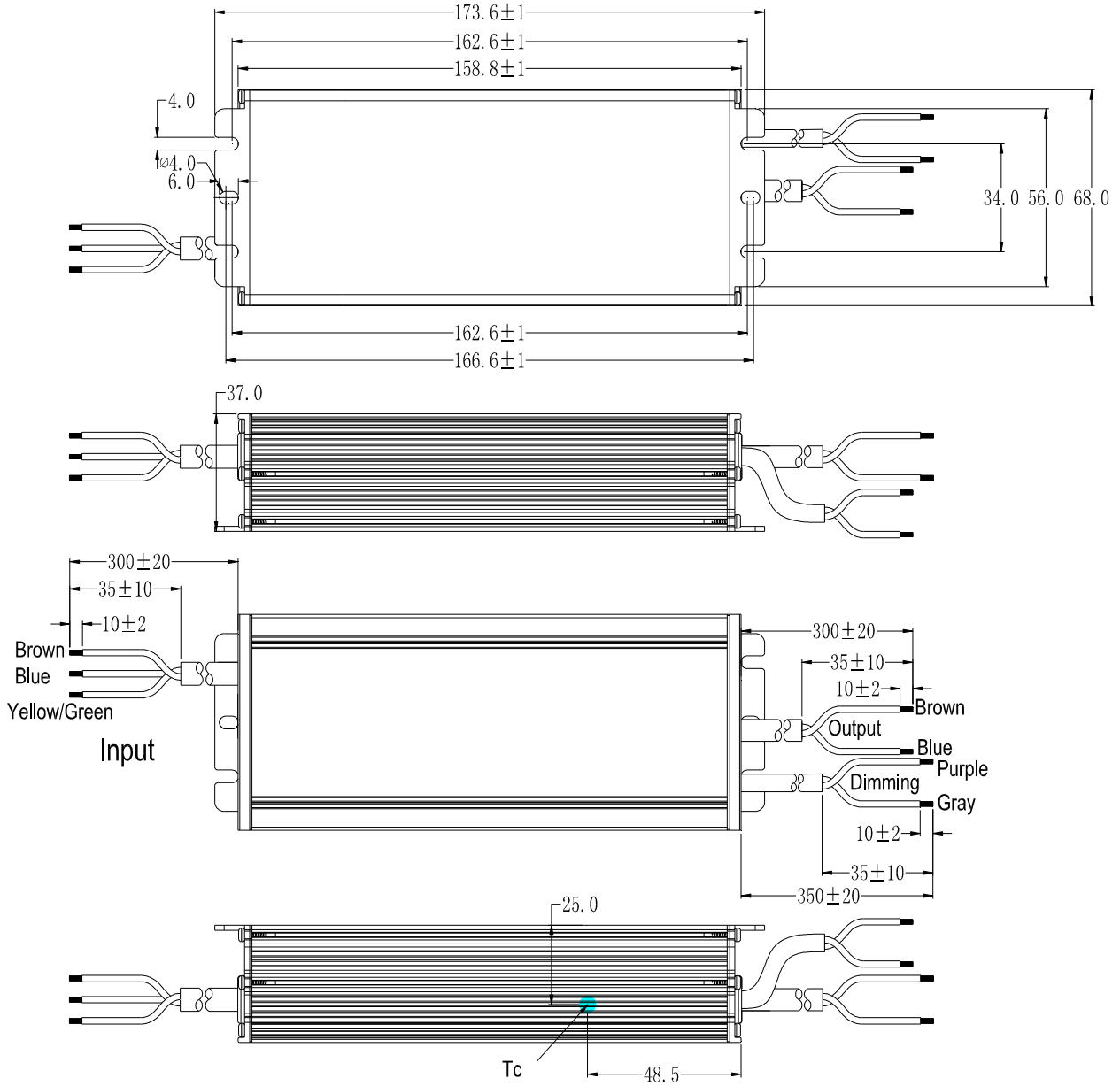
Actual time: 12h 0m

Default

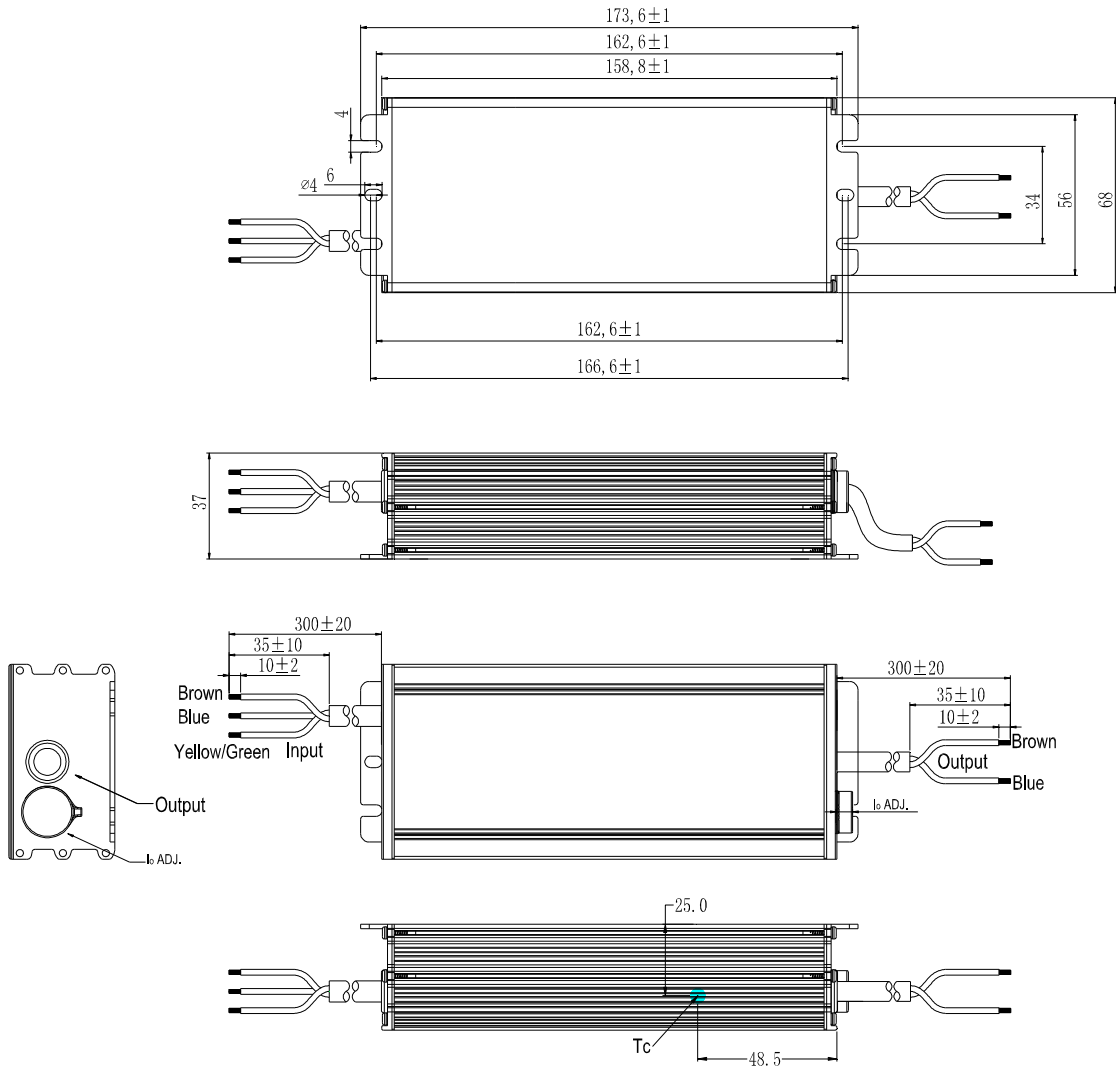
Please refer to [MOSO LED Driver Programming software installation and use instructions](#) for more details.

MECHANICAL OUTLINE

X6-150M Types



X6-150V 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±20mm, peel length 35mm, Tin-dip 10mm	

REVISION HISTORY

Version	Description of Change		Date	Notes
	Before	Now		
A.1	—	Datasheets Release	2020-01-22	