Specification for Approval

Product Name: 150W outdoor off-line programmable driver

Product Model: XCP-150M214 ☑
XCP-150V214 ☐

Rev. C.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

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REVISION HISTOR

Version	Description of Change		Date	Notes
	Before	Now		
A.3	Original Release—		2020-11-14	
B.2		ECL202104106	2021-04-26	Longfu Zhu
C.2		ECL202108085	2021-09-03	Jin feng li

XCP Series-150W Outdoor Off-line Programmable Driver

Product Features：

- Universal input voltage / Full range: 90~305Vac;
- Class II design;
- Constant power design, output current programming adjustable;
- (M types) offline programmable, (V types) output current adjustable by built-in potentiometer;
- 3-in-1 dimmable: 1~10Vdc, PWM, Positive and negative logic, Timer dimming;
- (M types)Constant lumen output, daily log;
- Output and Dimming Signal Isolating;
- Surge protection: 5KV line-line;
- 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 XCP-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, 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. XCP 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)	Output Current Adjustable Range (A)	Full Power Current Adjustable Range (A) [2]	Default Output Current Setting(A)	Typical Efficiency [3]	Power Factor
XCP-150Y214	150	107-214	143-214	0.70-1.05	0.7	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% Imax;

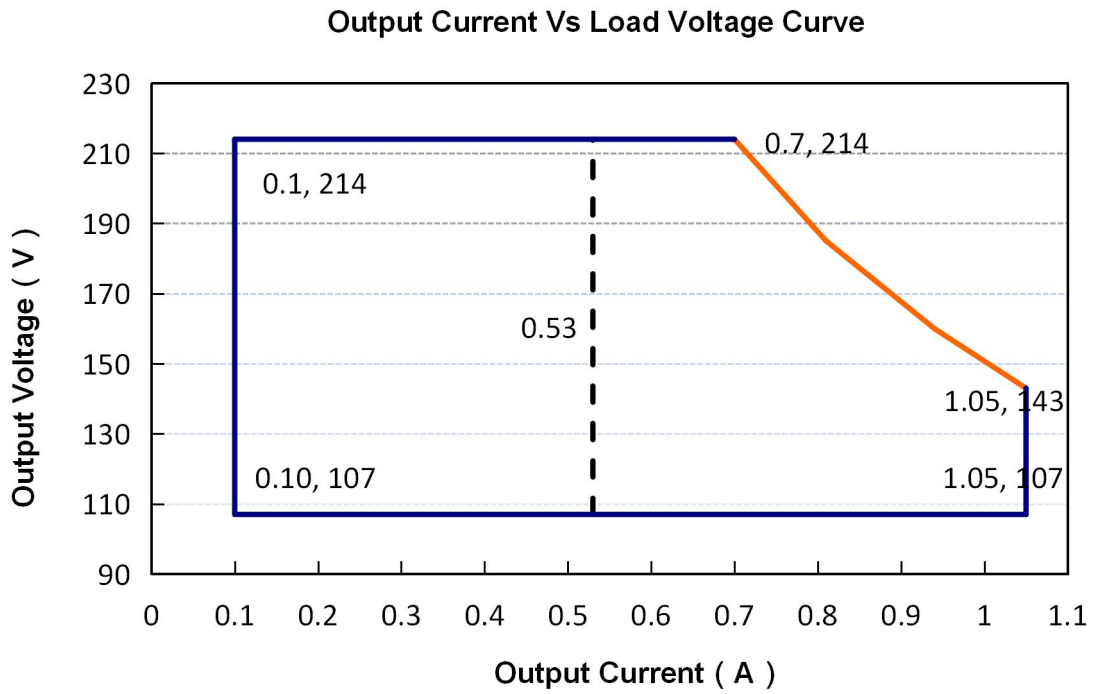
Y=V means non-dimmable and output current adjusted by built-in potentiometer.

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

[3]. 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

XCP-150Y214



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	-		-		0.70mA		277Vac/60Hz
Input AC Current	-		-		2.0A		100-277Vac &full load
Inrush Current	-		-		75A		230Vac & full load
Standby Power Consumption					2W		230Vac/50Hz
Power Factor	0.97		0.99		-		120Vac, 50-60Hz,full load
	0.95		0.97				230Vac, 50-60Hz, full load
	0.93		0.95				277Vac, 50-60Hz, full load
THD	-		5%		10%		100-240Vac,50-60Hz, 70%-100% load
	-		-		10%		277Vac, 50-60Hz, 70%-100% load
Max. NO. of PSUs on CIRCUIT BREAKER	B10	2	B16	4	B25	6	230Vac
	C10	4	C16	6	C25	10	

OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%	-	5%	
Output Current Setting Range (A)	0.53	-	1.05	The 'M type' adjustable Iout range: 10%-100% Imax,
Output Current Setting Range with Constant Power	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 XCP-150Y214	-	-	240	
Line Regulation	-1%	-	1%	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	-	1S	2S	120Vac,100% load
	-	-	0.5S	230Vac,100% load

GENERAL SPECIFICATIONS

Parameter		Min.	Typ.	Max.	Notes
Efficiency @120Vac XCP-150Y214 I_O=0.70 I_O=1.05		88% 87%	90% 89%		Measured at full load and 25℃ambienttemperature
Efficiency @230Vac XCP-150Y214 I_O=0.70 I_O=1.05		91% 90%	93% 92%	-	Measured at full load and 25℃ambient temperature
Efficiency @277Vac XCP-150Y214 I_O=0.70 I_O=1.05		91% 90%	93% 92%	-	Measured at full load and 25℃ambient temperature
Dielectric Strength	Input-Output	-	3750Vac	-	Max 5mA/60S
	Input-case	-	3750Vac	-	
	Output- case	-	1600Vac	-	
Grounding Resistance		-	-	0.1Ω	25A/60S, under 25℃±10℃ ambient temperature
Insulation Resistance		10MΩ	-	-	Input-Output, Input- case, Output- case, 500Vdc/60S/25℃/70%RH
MTBF		-	200000Hrs	-	25℃±10℃ambient temperature, 230Vac,80% load (MIL-HDBK-217F)
Lifetime		-	50000Hrs	-	230Vac&100% load, 75℃ case temperature, refer to lifetime curve for details

Ambient Temperature	-40℃		+60℃	Reference derating curve
Operating Case Temperature for Safety Tc_s	-40℃	-	+90℃	
Operating Case Temperature for Warranty Tc_s	-40℃	-	+75℃	5years warranty case temperature Humidity: 10% to 95% RH
Storage Temperature	-40℃	-	+85℃	Humidity: 5% to 100% RH
Dimensions (L*W*H)mm	L173.6*W68*H37			
Net Weight	810±50g/PCS			
Package	L500mm*W310mm*H160mm; 15PCS/Ctn, Gross Weight: 13.62kg			

DIMMING

Parameter		Min.	Typ.	Max.	Notes
1~10V Absolute Maximum Voltage on the Vdim (+) Pin		-	10V	-	
1~10V Source Current on Vdim(+)Pin		-	200uA	400uA	
Dimming Output Range	XCP-150M214	10%Imax	-	100%Imax	I_{max}=1.05A
	XCP -150M214	0.1	-	1.05	
Recommended Dimming Range for 1-10V		1V	-	10V	Default 1-10V/ 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%	

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	ГОСТР МЭК 61347-1-2011 ГОСТIEC 61347-2-13-2013 ГОСТIEC 62493-2014 СТБ ЕН 55015-2006 ГОСТIEC 0805 ГОСТ 30804.3.2-2013 (IEC61000-3-2:2009) ГОСТ 30804.3.3-2013 (IEC61000-3-3:2008)	

Insulation

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	/

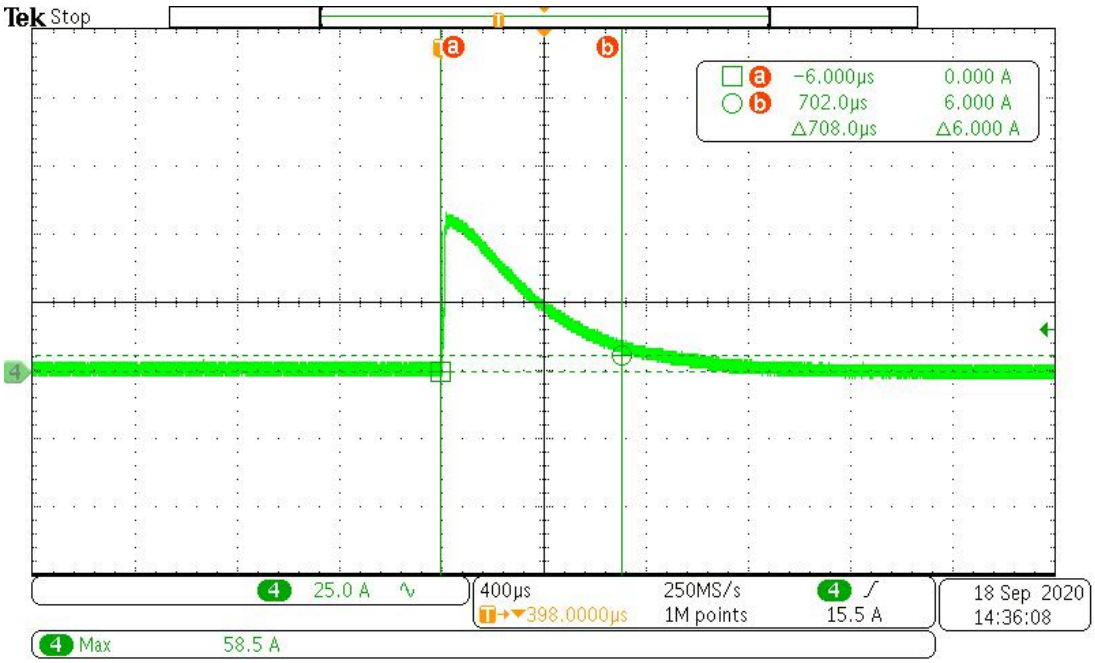
EMC COMPLIANCE

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

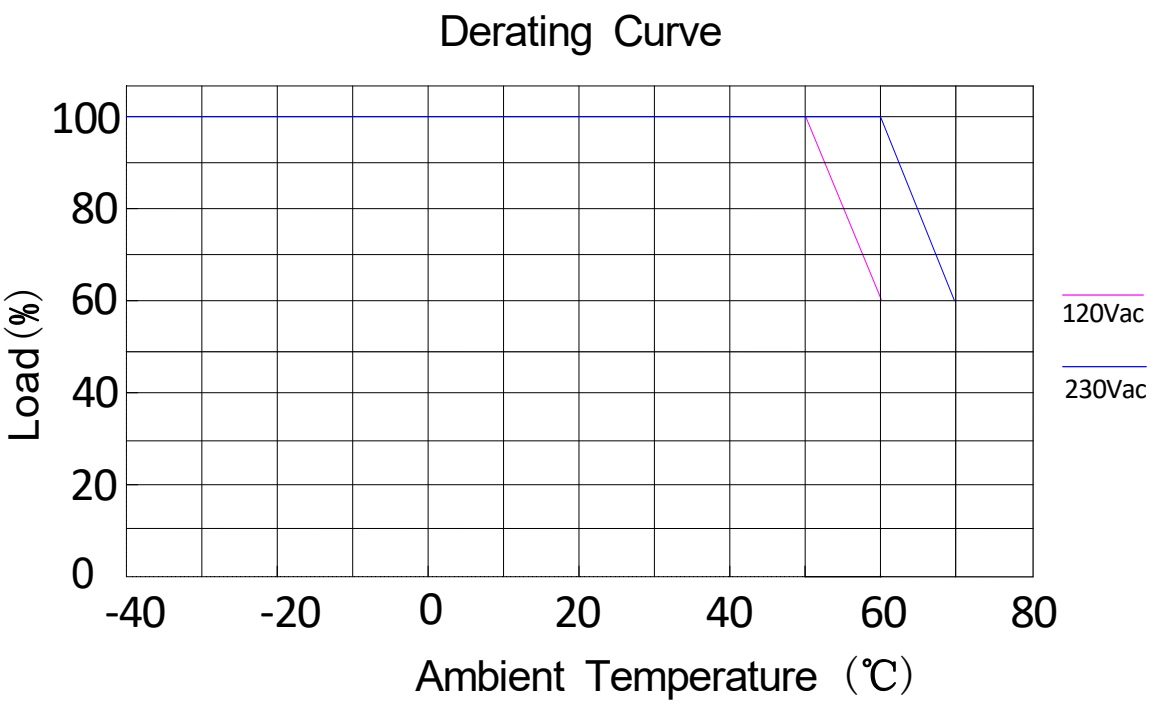
NOTE:

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.

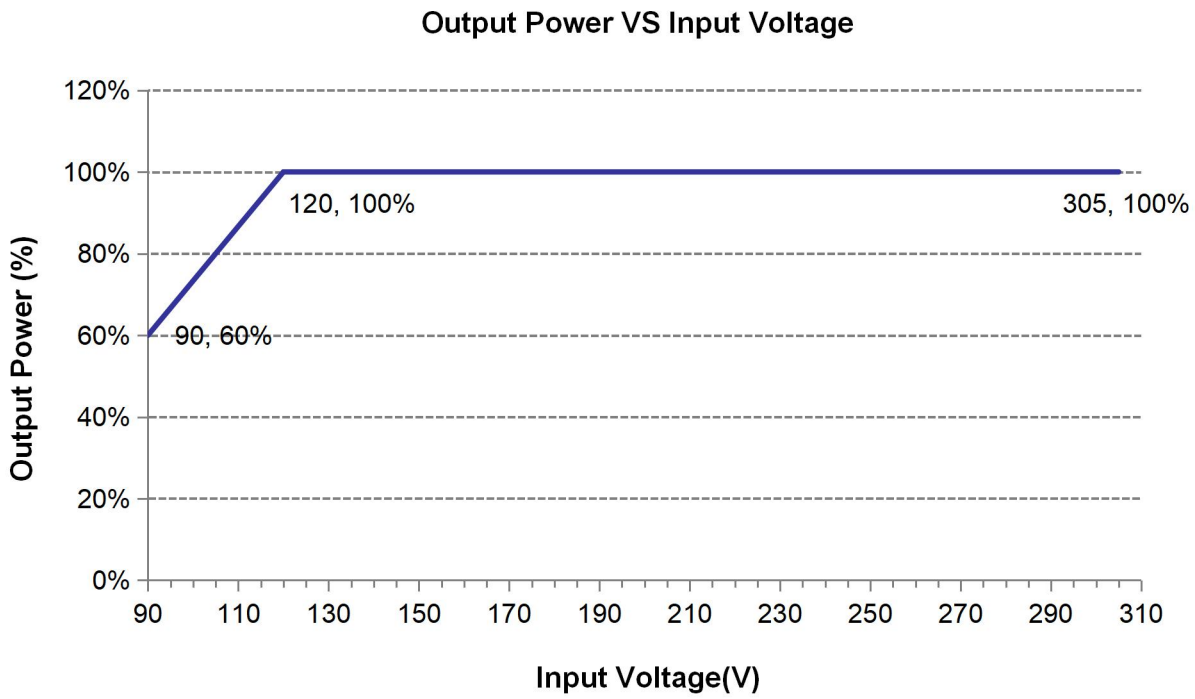
INRUSH CURRENT WAVEFORM



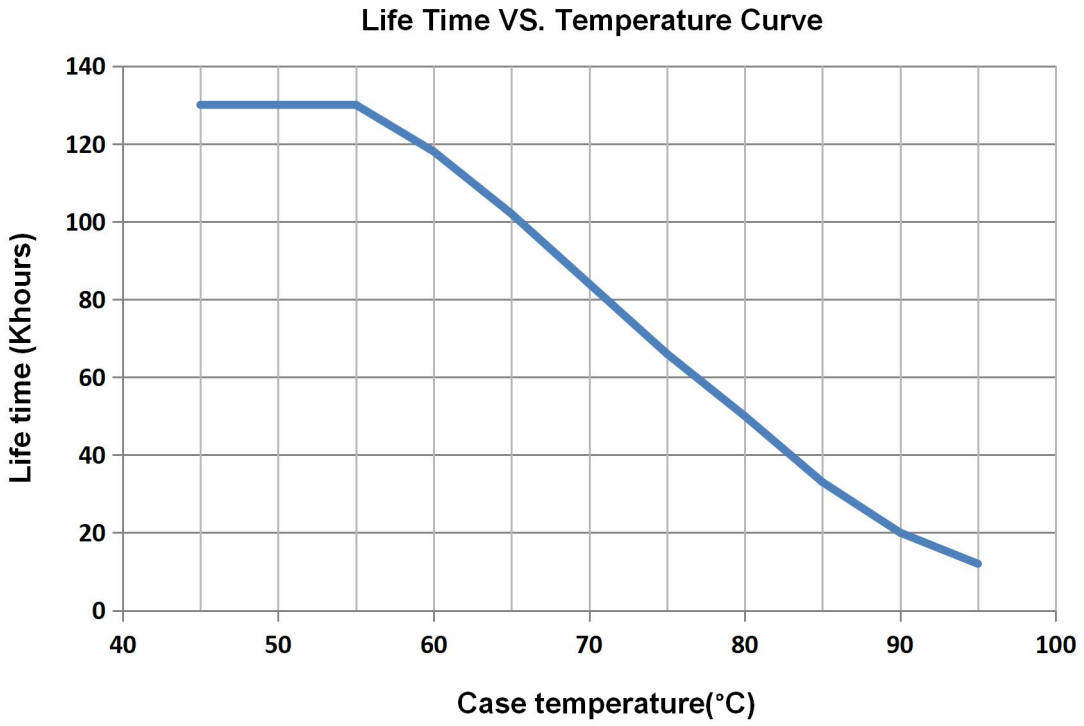
DERATING CURVE



OUTPUT POWER VS INPUT VOLTAGE

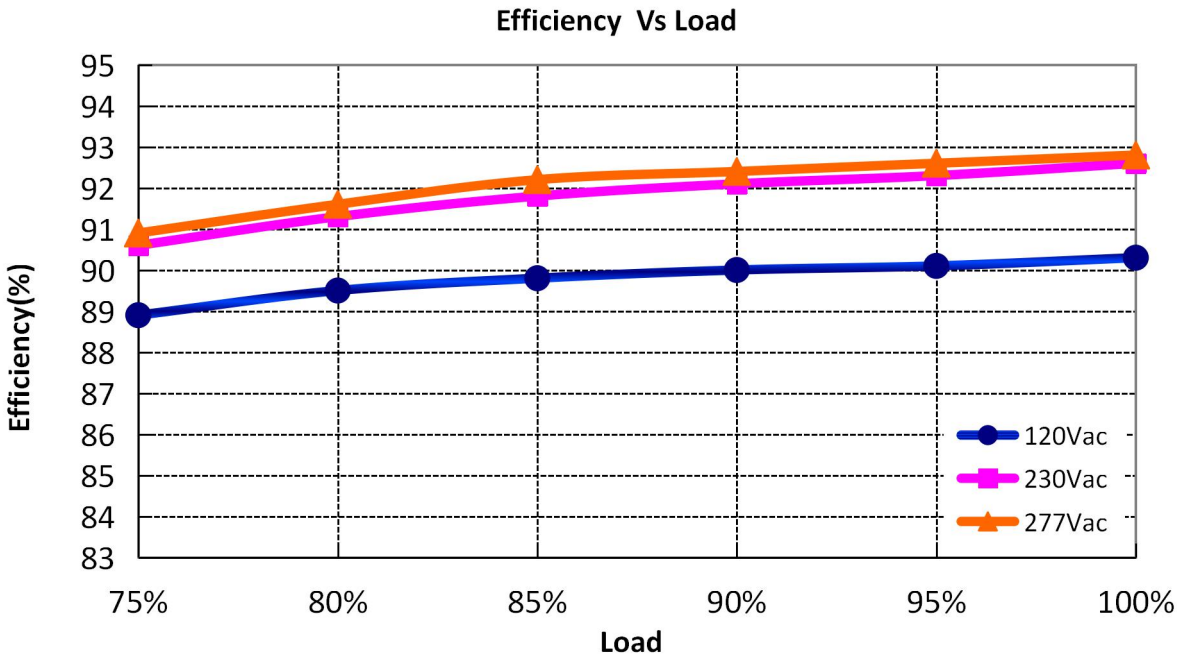


LIFETIME VS CASE TEMPERATURE

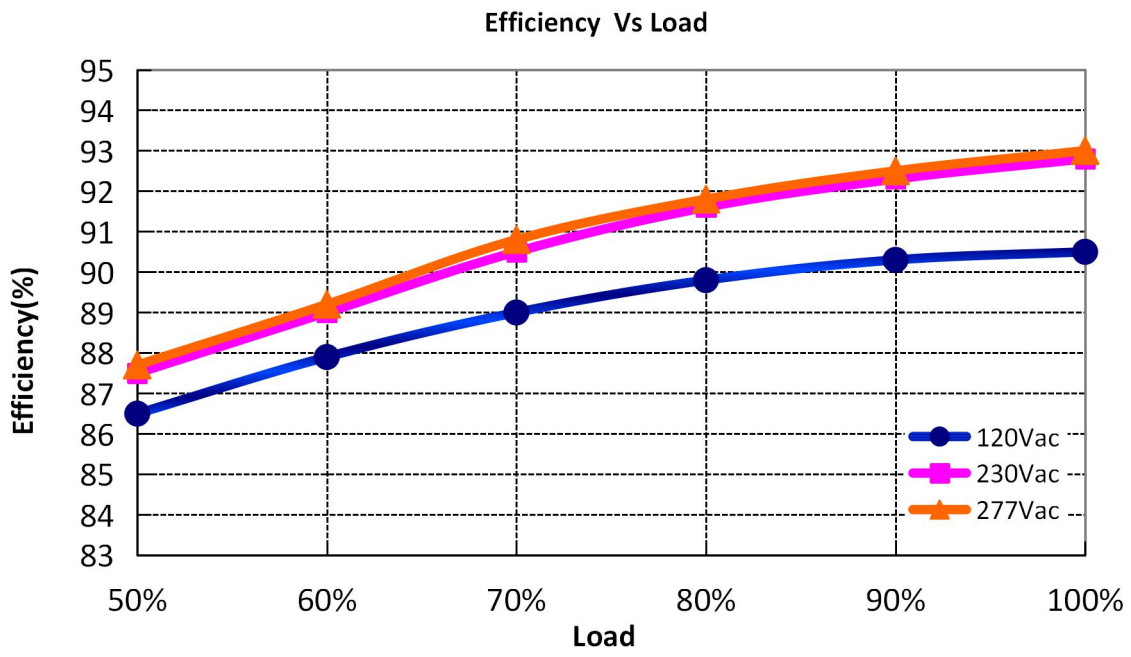


EFFICIENCY VS LOAD

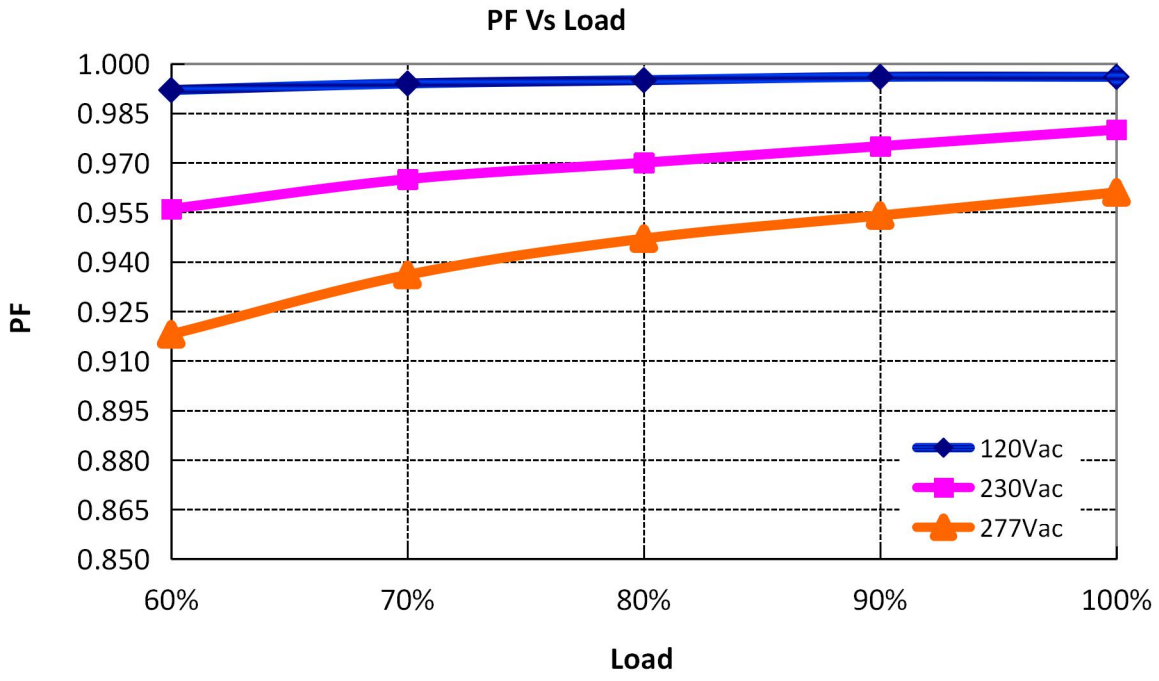
Io=1.05A



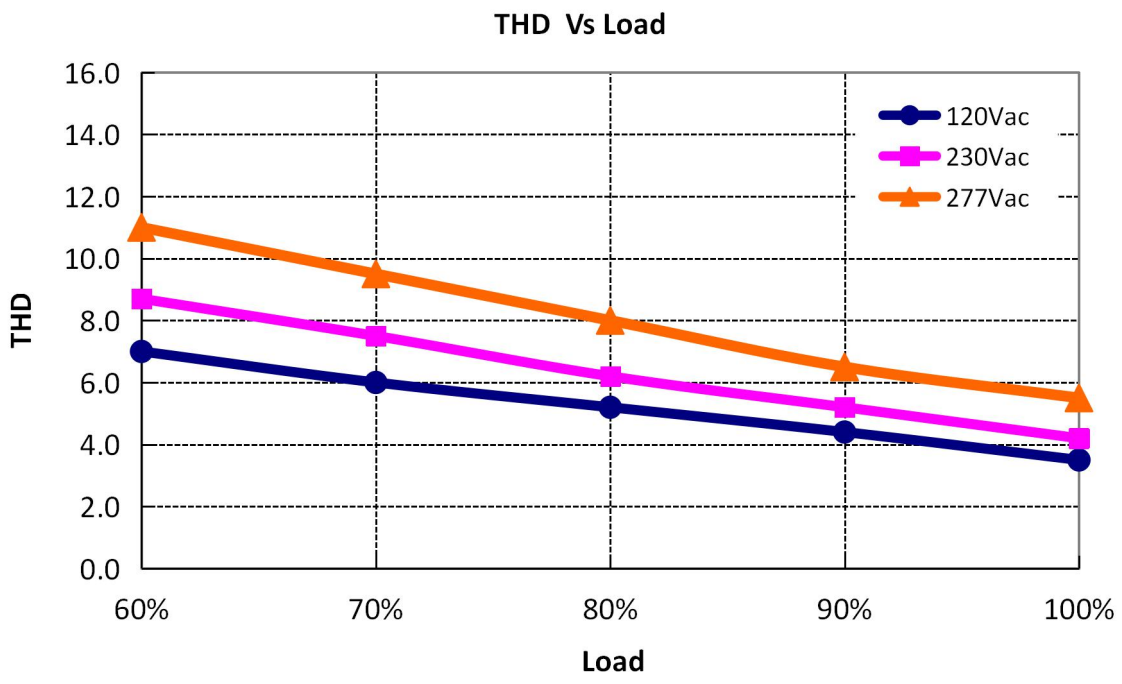
Io=0.70A



POWER FACTOR VS LOAD



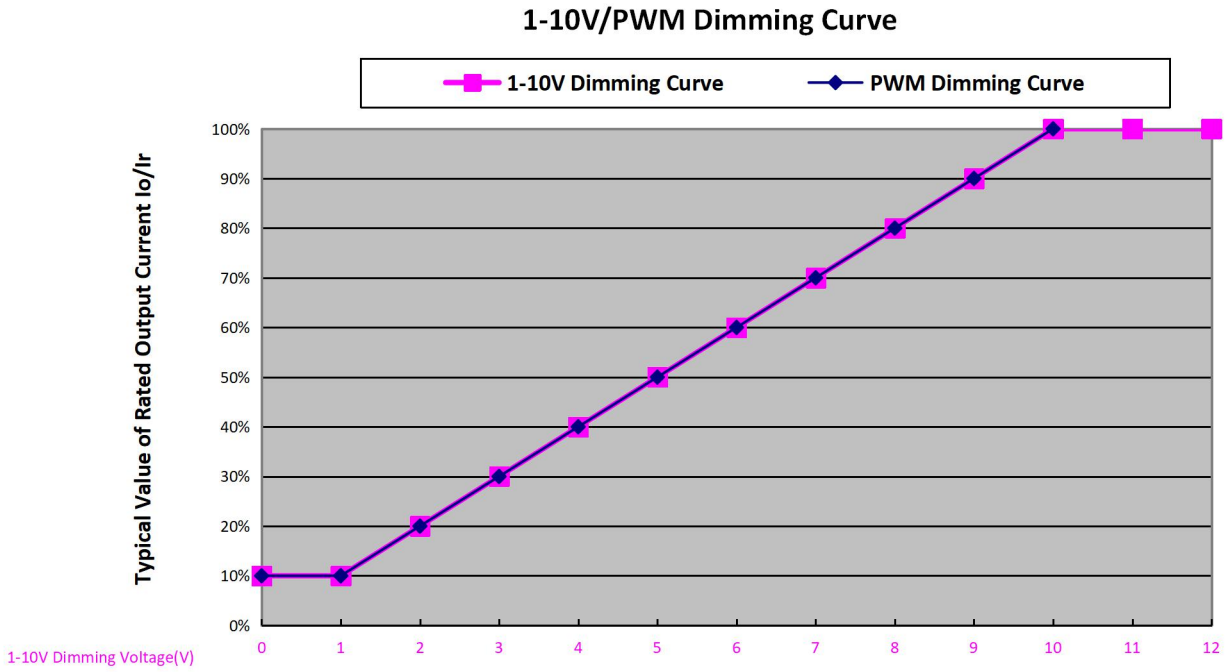
TOTAL HARMONIC DISTORTION



PROTECTIONS

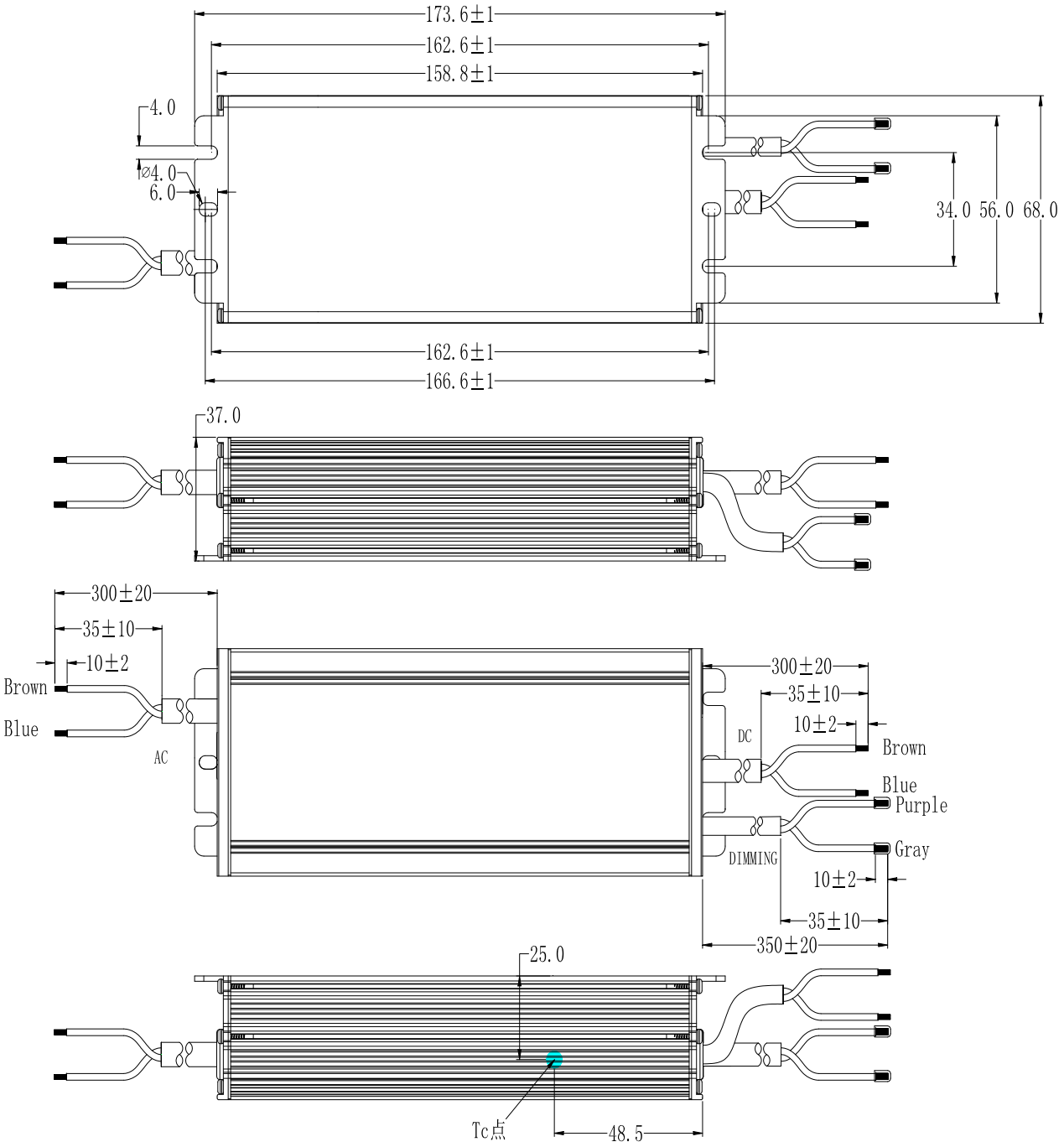
Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	Constant current mode and auto recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Output over Voltage Protection	Run into protection model when output voltage exceeds limit, and return to normal when the fault.

1-10V/PWM DIMMING

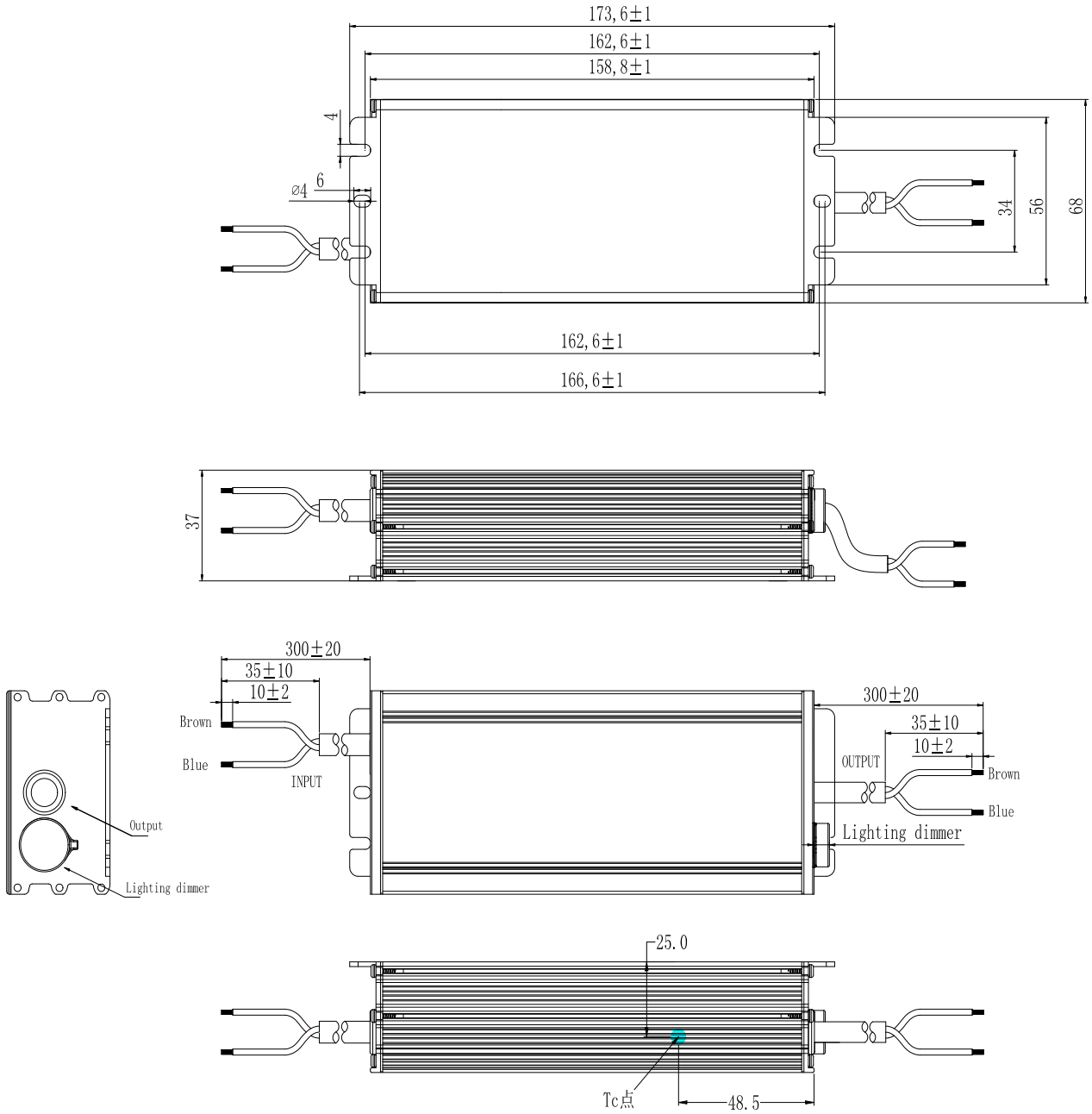


MECHANICAL OUTLINE

XCP-150M214 Types



XCP-150V214 Types

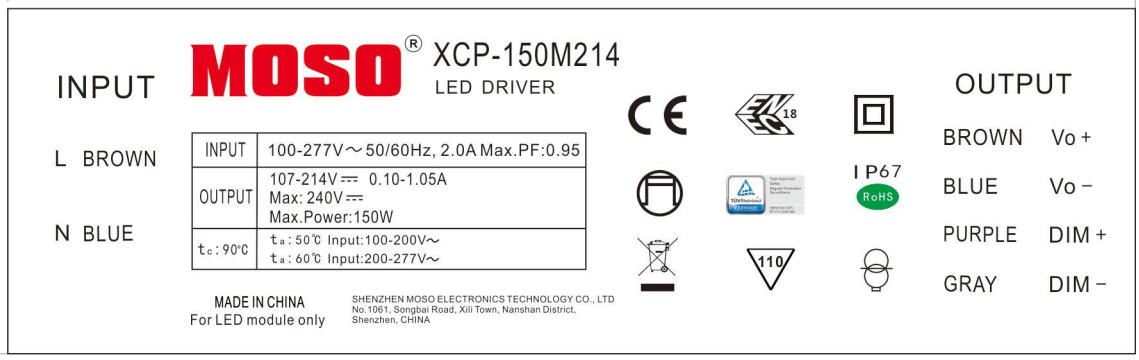


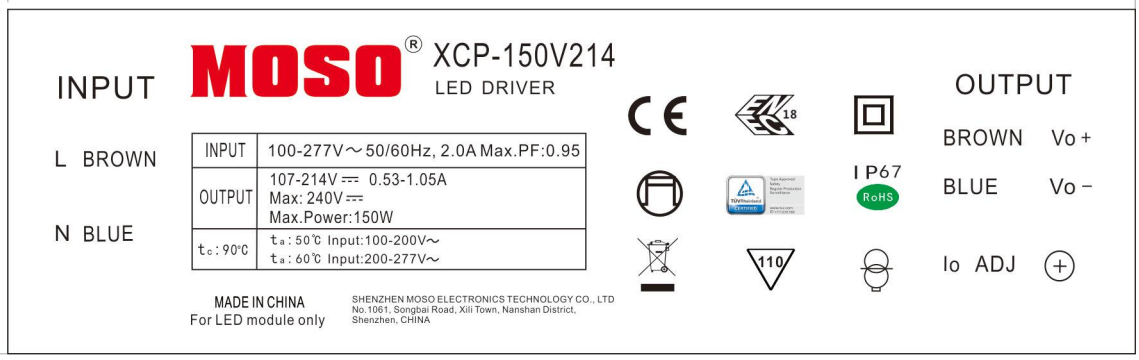
Wire	Specification	Note
Input	3C+VDE*2C external diameter: 6.9mm L=300±20mm peel length 35mm, Tin-dip length 10mm	CCC/CE
Output	3C+VDE *2C external diameter:6.9mm L=300±20mm peel length 35mm, Tin-dip length 10mm	CCC/CE
Dimming	UL2733 22AWG*2C external diameter: 5.45mm L=350±20mm peel length 35mm, Tin-dip length 10mm	Y=M

LABEL

149.00 mm

45.50 mm



149.00 mm

45.50 mm