

# Specification for Approval

Product Name: 150W outdoor off-line programmable driver  
Product Model: XCP-150M062   
XCP-150V062   
Rev.: G.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.		

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## REVISION HISTORY

Version	Description of Change	Date	Notes
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Specification subject to change without notice

	Before	Now		
A.4	—	Datasheets Release	2020-11-25	
A.5		No:ECL202104106	2021-04-26	Long fu Zhu
B.2		No:ECL202108084	2021-08-25	Jian Zhou
D.2		Update files	2022-10-27	Long fu Zhu
E.2		ECL202211010	2022-11-03	Jian Zhou
F.2		ECL202211069	2022-11-16	Long fu Zhu
F.2		ECL202310029	2023-10-24	Li li lin

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**Product Features**

- Universal input voltage / Full range: 90~305Vac;
- Class II design;
- 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: 1~10Vdc / PWM/ Timer dimming;
- (M types) Constant lumen output;
- Output and Dimming Signal Isolating;
- Surge protection: 6KV 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 a 150W outdoor off-line programmable LED driver that operates in constant current with high PF value and universal input voltage range of 90~305Vac. Monitored off-line 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, 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. XCP provides built-in timer dimming schedules that further increase the energy savings and CO<sub>2</sub> reductions achieved with LED lighting. It also helps customers to improve logistics and inventory management The compact metal case and high efficiency enables the driver to operate with high reliability and extend product life. Overall protection is provided against lightning surge, output over voltage, short circuit, and over temperature, to ensure low failure rate.

**MODELS**

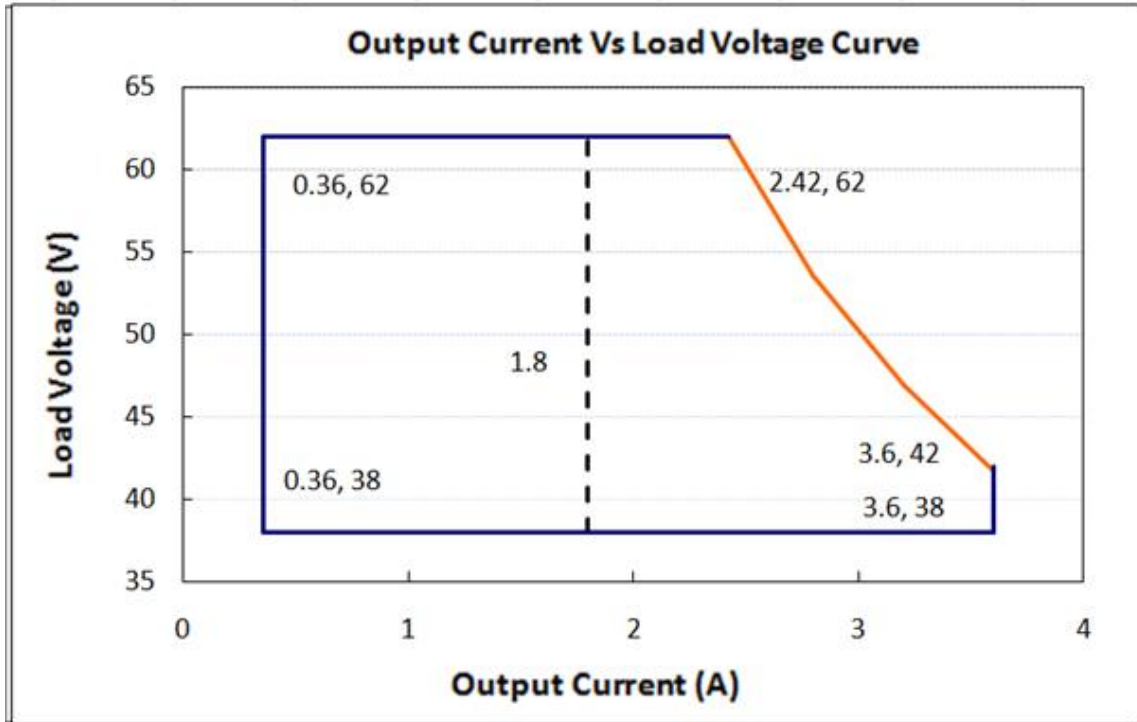
Model Number [1]	Max Output Power (W)	Output Voltage Range (Vdc)	Full Power Output Voltage Range (Vdc)	Full Power Current Adjustable Range (A) [2]	Default Output Current Setting(A)	Typical Efficiency [3]	Power Factor
							230Vac
XCP-150Y062	150	38-62	42-62	2.42-3.60	3.15	91%	0.96

**Notes:**

- [1]. Y can be M or V, Y=M means dimmable and off-line programmable. The adjustable lout range: 10%-100% I<sub>max</sub>, 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**

XCP-150Y062



**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	-	-	0.50mA	277Vac/60Hz			
Input AC Current	-	-	2.0A	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			
	0.92	0.95		277Vac, 50-60Hz, full load			
THD	-	5%	10%	100-240Vac, 50-60Hz, 50%-100% load			
	-	-	15%	277Vac, 50-60Hz, 70%-100% load			
Max. NO. of PSUs on CIRCUIT BREAKER	B10	2	B16	4	B25	6	230V
	C10	4	C16	6	C25	10	

**OUTPUT SPECIFICATIONS**

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%	-	+5%	
Output Current Setting Range(A) XCP-150Y062	0.36	-	3.60	The 'M type' adjustable lout range: 10%-100% I <sub>max</sub> ,
Output Current Setting Range with Constant Power XCP-150Y062	2.42	-	3.60	
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-150Y062	-	-	70V	
Line Regulation	-1%	-	+1%	25°C±10°C ambient temperature, input voltage changes from 100Vac to277Vac.
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 @115Vac XCP-150Y062 I <sub>o</sub> =1.69 I <sub>o</sub> =2.50	87% 86%	89% 88%		Measured at full load and 25°C ambient temperature	
Efficiency @230Vac XCP-150Y062 I <sub>o</sub> =1.69 I <sub>o</sub> =2.50	89% 88%	91% 90%	-	Measured at full load and 25°C ambient temperature	
Efficiency @277Vac XCP-150Y062 I <sub>o</sub> =1.69 I <sub>o</sub> =2.50	89% 88%	91% 90%		Measured at full load and 25°C ambient temperature	
Dielectric Strength	Input-Output	-	3750Vac	-	Max 5mA/60S
	Input-Case	-	3750Vac	-	
	Output- Case	-	1600Vac	-	
Grounding Resistance	-	-	0.1Ω	25A/60S, under 25°C±10°C ambient temperature	
Insulation Resistance	10MΩ	-	-	Input-Output, Input- Case, Output- Case, 500Vdc/60S/25°C/70%RH	
MTBF	-	200000Hrs	-	25°C±10°C ambient temperature, 230vac,80% load (MIL-HDBK-217F)	

Lifetime	-	100000Hrs	-	230Vac&100% load, 75 °C case temperature, refer to lifetime curve f or 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	L173*W68*H37			
Net Weight	810±50g/PCS			
Package	L500mm*W310mm*H160mm; 15PCS/Ctn			

### 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-150M062	10%Imax	-	100%Imax	Imax=3.60A
	XCP-150M062	0.36	-	3.60	
Recommended Dimming Range for 1-10V		1V	-	10V	Default1-10V/ 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		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	√
		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	

**Isolation conditions**

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	/

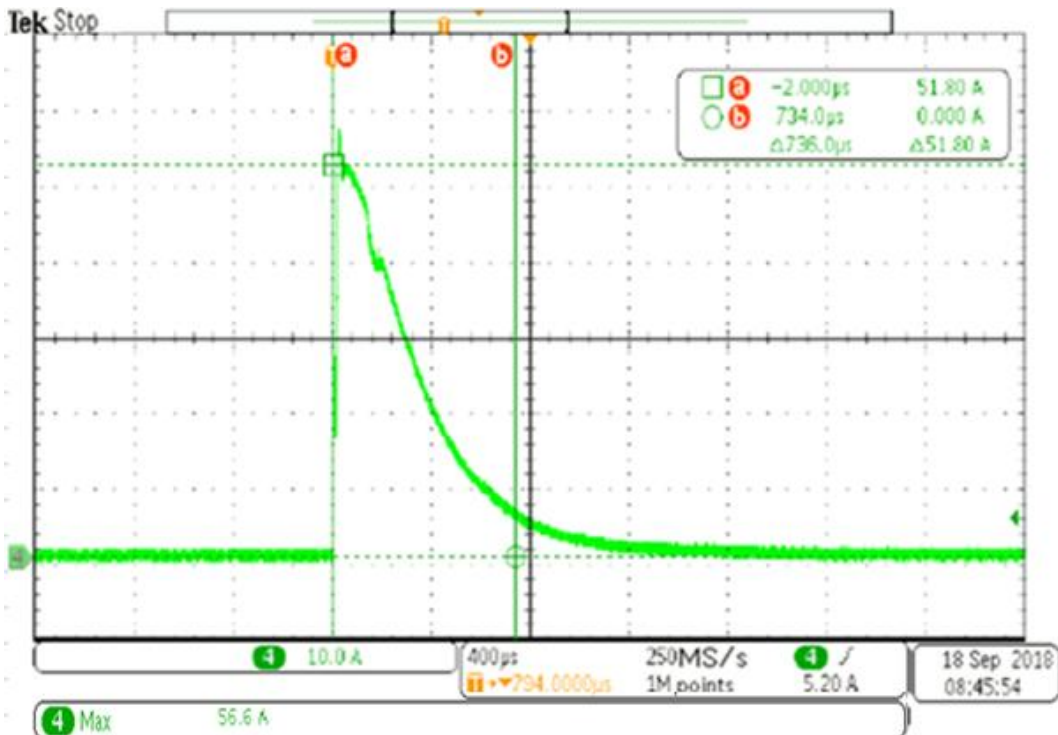
**EMC COMPLIANCE**

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:**

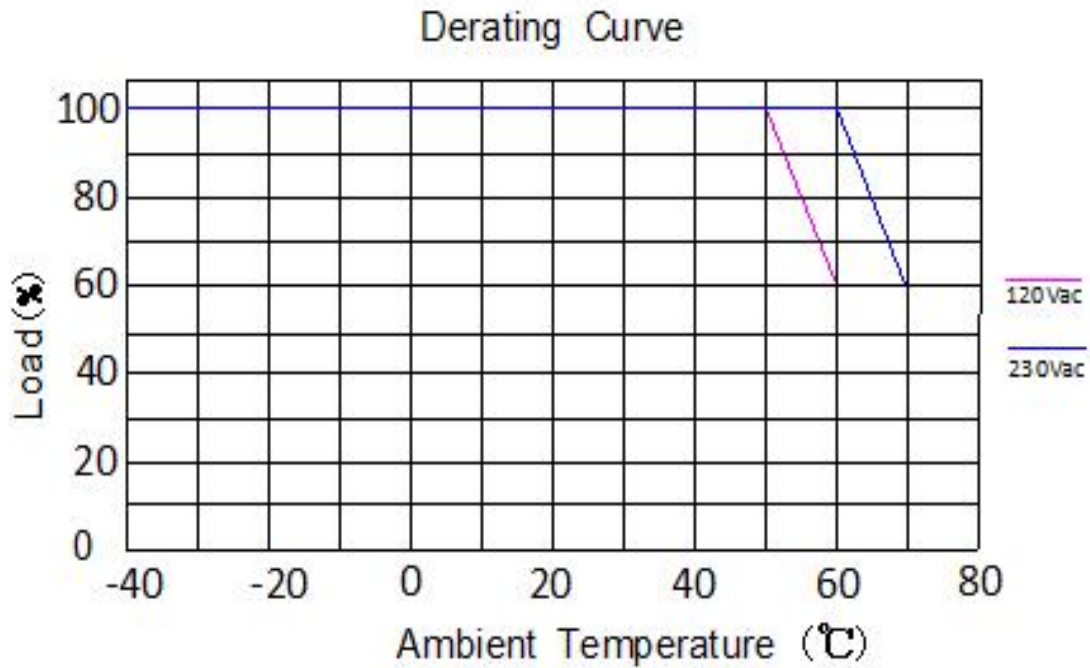
This LED driver meets the EMI specifications above, but as a component of a luminaire, the end customer need to identify the EMI performance of a luminaire including the LED driver, other devices connected to the driver, and on the luminaire itself.

**INRUSH CURRENT WAVEFORM**

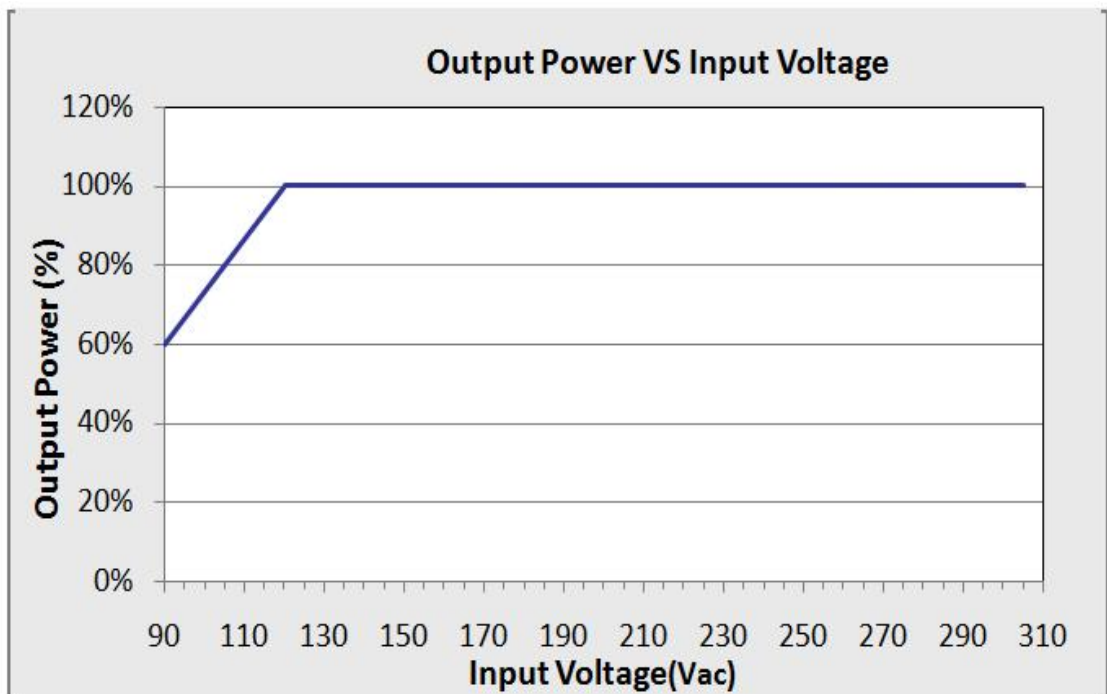




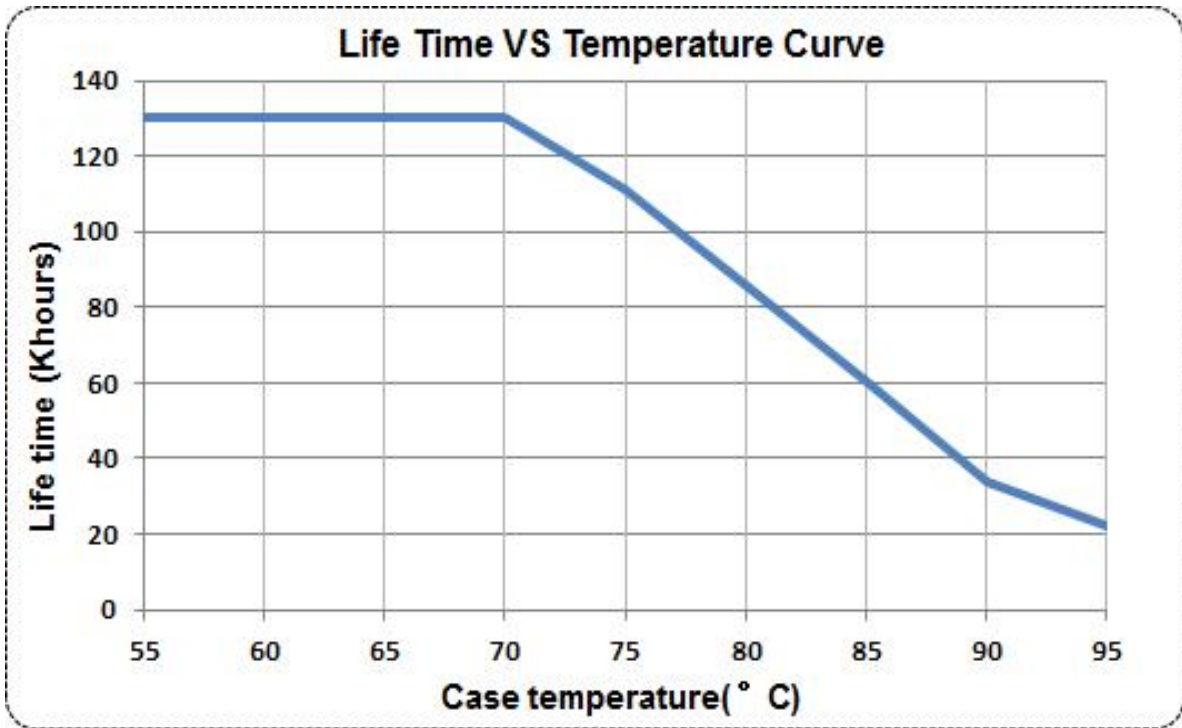
**DERATING CURVE**



**OUTPUT POWER VS INPUT VOLTAGE**

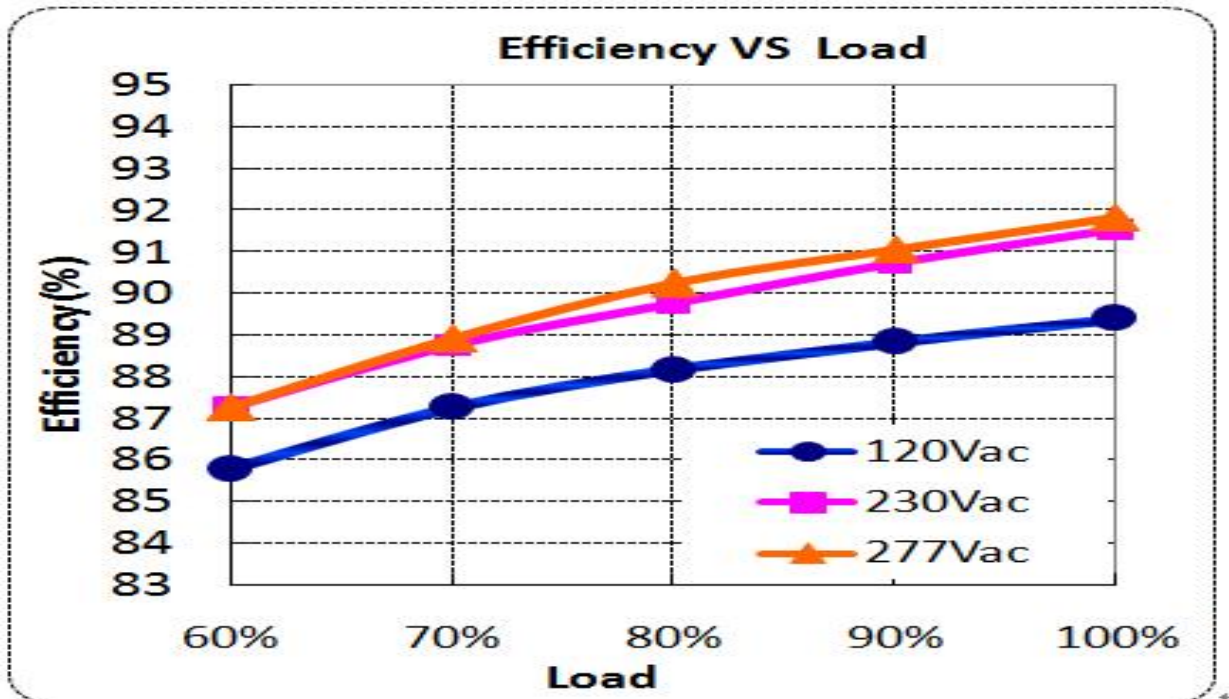


LIFETIME VS CASE TEMPERATURE

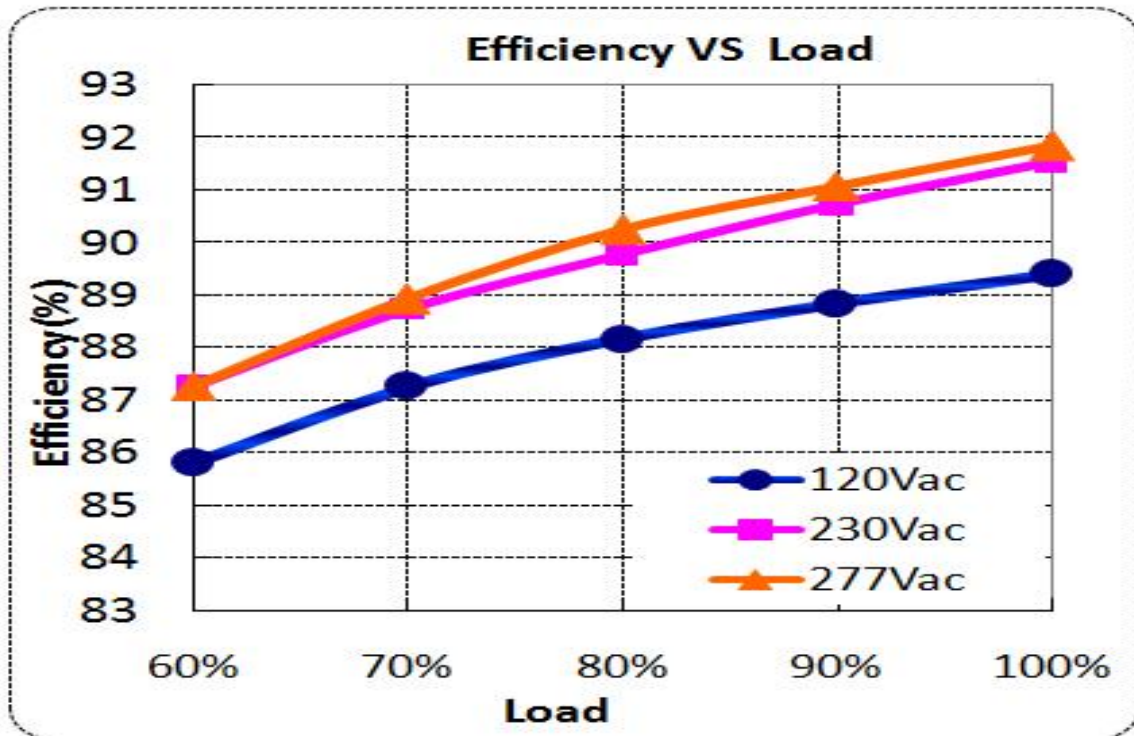


EFFICIENCY VS LOAD

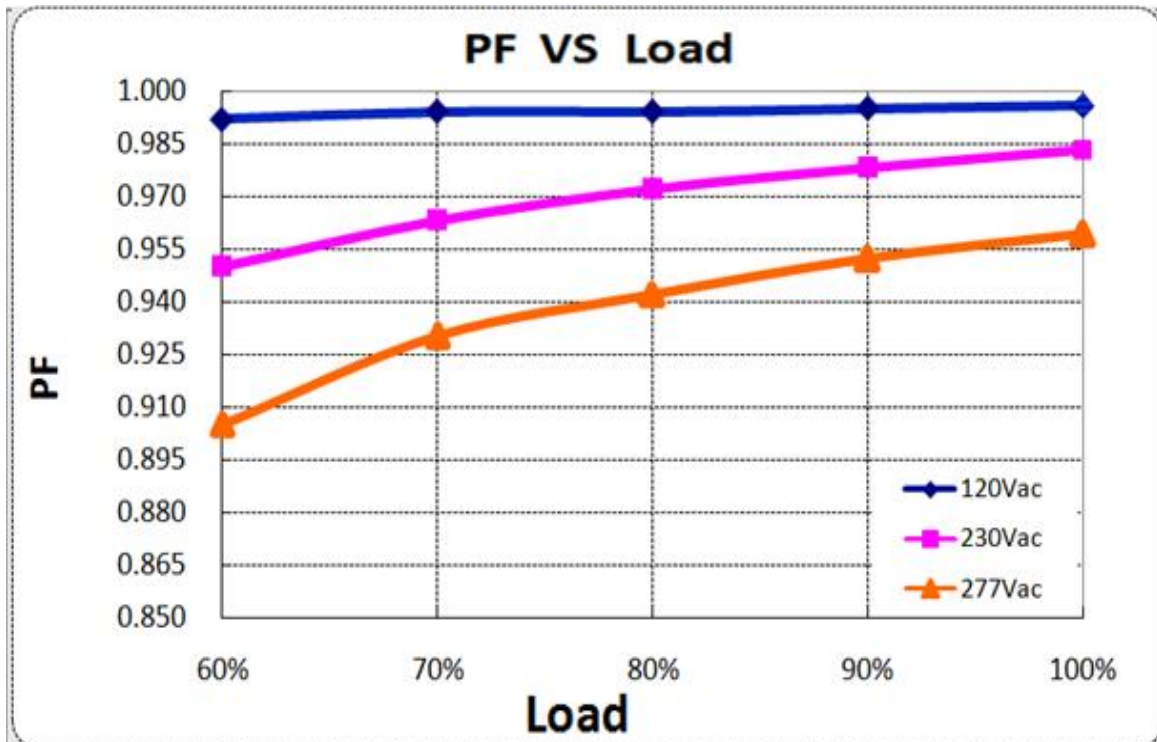
XCP-150Y062 (Io=2.42A)



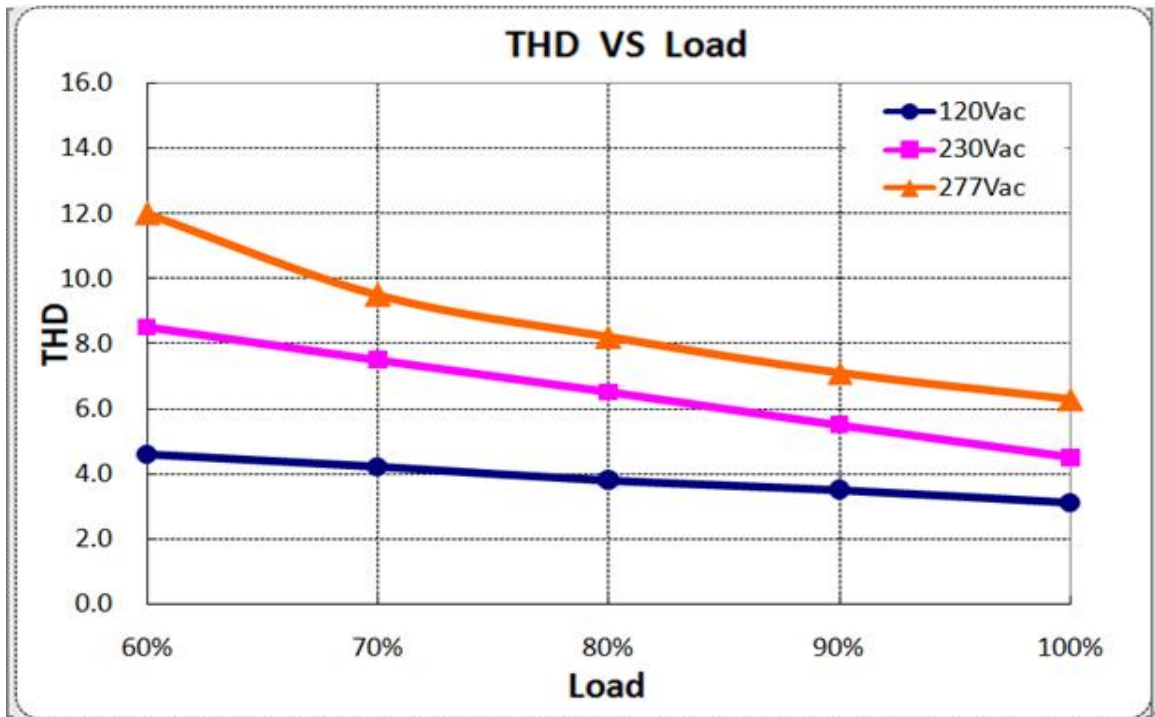
XCP-150Y062(Io=3.60A)



**POWER FACTOR VS LOAD**



**TOTAL HARMONIC DISTORTION**

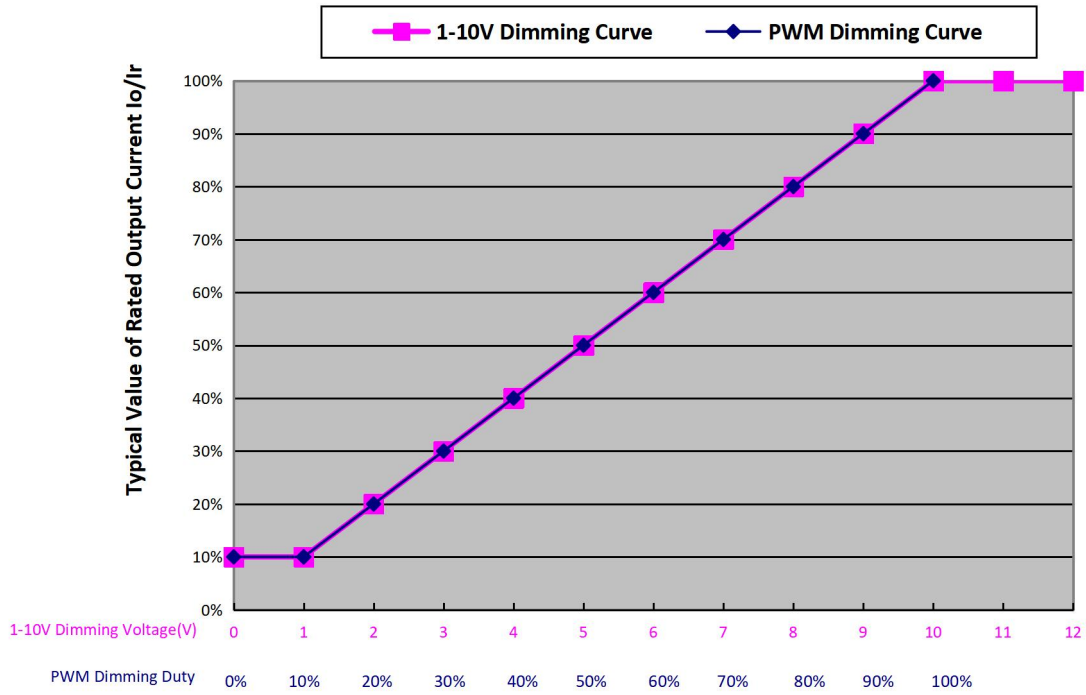


**PROTECTIONS**

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 mode when output voltage exceeds limit, and return to normal when the fault is eliminated and restart the power supply.

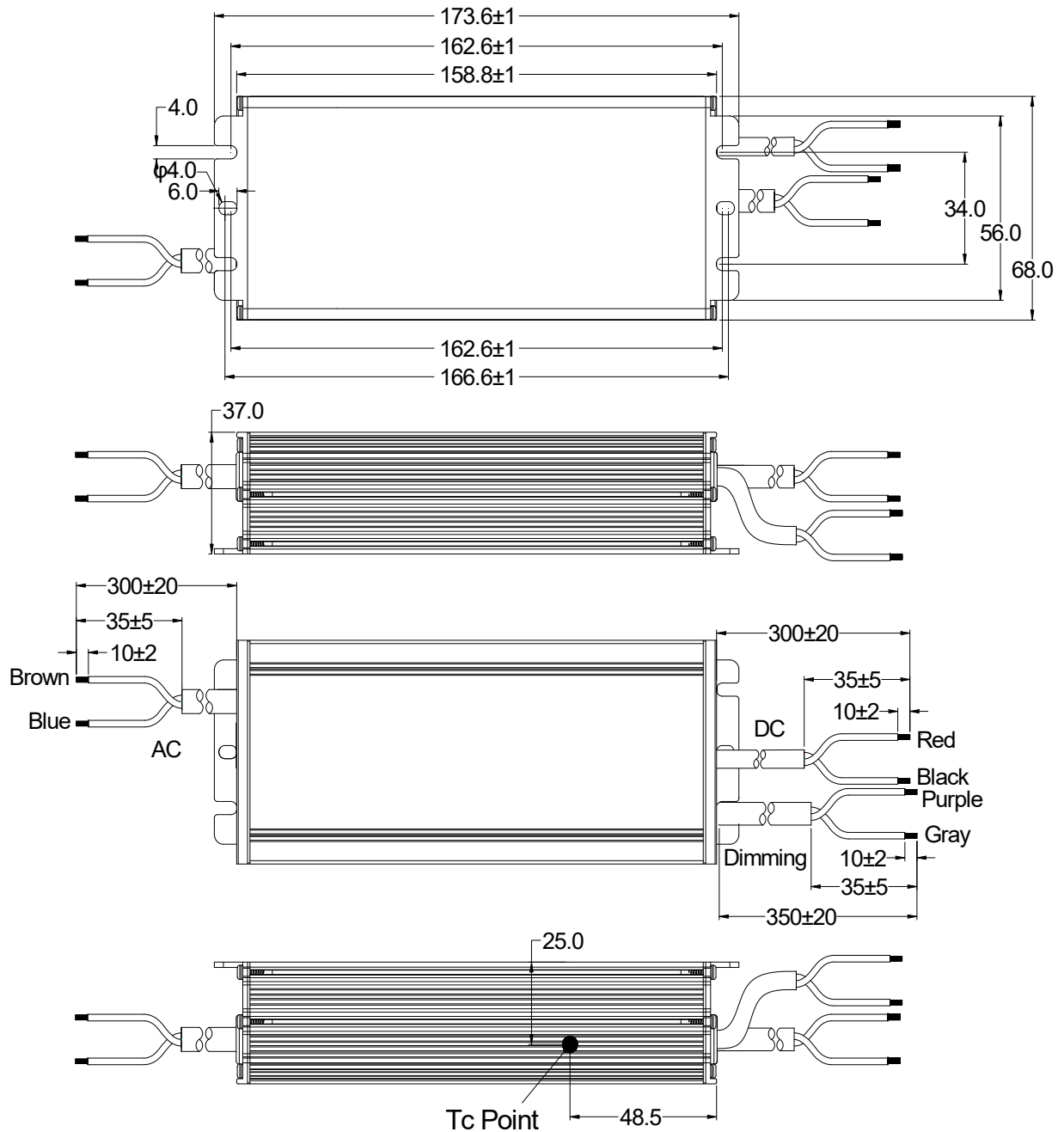
**1-10V/PWM DIMMING**

**1-10V/PWM Dimming Curve**

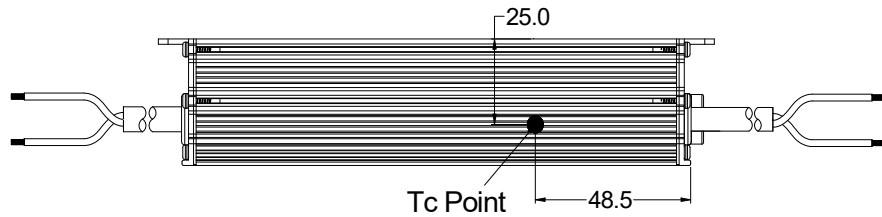
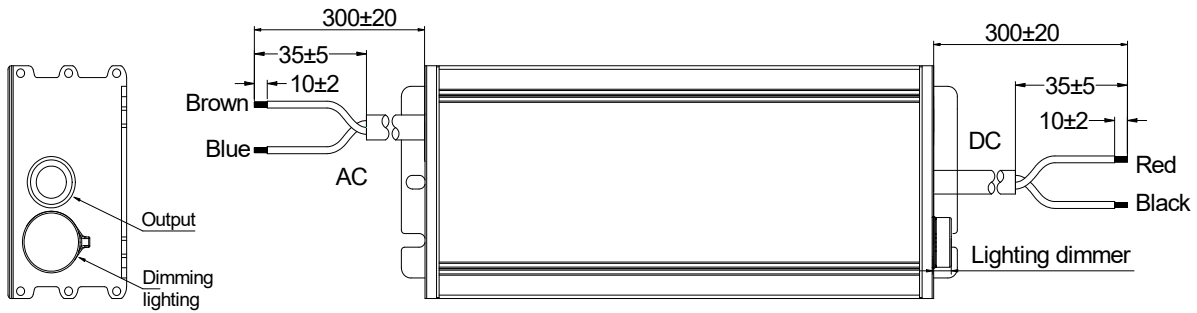
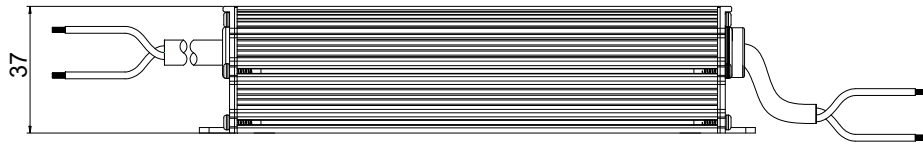
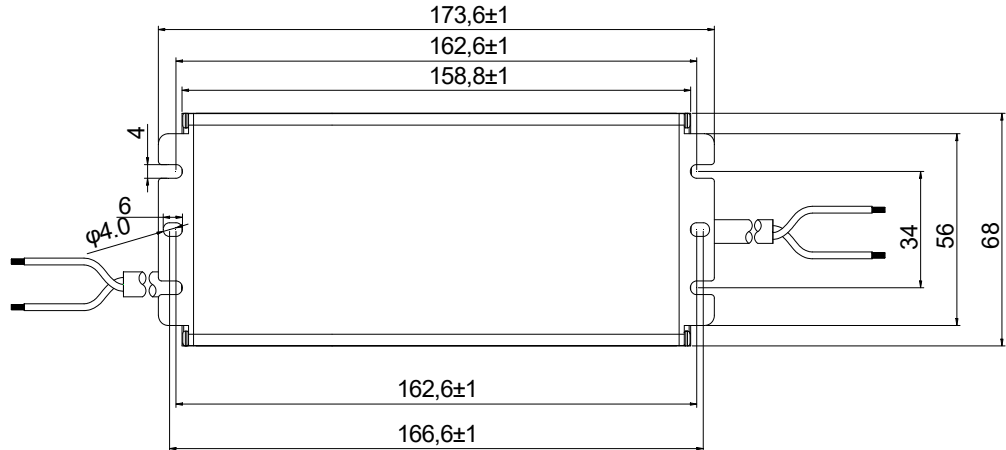


**MECHANICAL OUTLINE**

**XCP-150M062 types**



**XCP-150V062 types**



Wire	Specification	Note
Input	CCC+VDE H05RN-F *2C L=300±20mm	CCC/CE
Output	SJOW 18AWG *2C L=300±20mm	UL
Dimming	UL 2733 22AWG *2C L=350±20mm	Y=M

**LABEL**

**XCP-150M062**

	149.00 mm								
45.50 mm	<b>INPUT</b>	<b>XCP-150M062</b> LED DRIVER	     	<b>OUTPUT</b> RED Vo+ BLACK Vo- PURPLE DIM+ GRAY DIM-					
	L BROWN  N BLUE	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">INPUT</td> <td>100-277V~50/60Hz, 2.0A Max.PF:0.95</td> </tr> <tr> <td>OUTPUT</td> <td>38-62V== 0.36-3.60A Max: 70V== Max.Power:150W</td> </tr> <tr> <td>t<sub>c</sub>: 90°C</td> <td>t<sub>a</sub>: 50°C Input:100-200V~ t<sub>a</sub>: 60°C Input:200-277V~</td> </tr> </table>	INPUT	100-277V~50/60Hz, 2.0A Max.PF:0.95	OUTPUT	38-62V== 0.36-3.60A Max: 70V== Max.Power:150W	t <sub>c</sub> : 90°C	t <sub>a</sub> : 50°C Input:100-200V~ t <sub>a</sub> : 60°C Input:200-277V~	MADE IN CHINA For LED module only
INPUT	100-277V~50/60Hz, 2.0A Max.PF:0.95								
OUTPUT	38-62V== 0.36-3.60A Max: 70V== Max.Power:150W								
t <sub>c</sub> : 90°C	t <sub>a</sub> : 50°C Input:100-200V~ t <sub>a</sub> : 60°C Input:200-277V~								

**XCP-150V062**

	149.00 mm								
45.50 mm	<b>INPUT</b>	<b>XCP-150V062</b> LED DRIVER	     	<b>OUTPUT</b> RED Vo+ BLACK Vo- Io ADJ (+)					
	L BROWN  N BLUE	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">INPUT</td> <td>100-277V~50/60Hz, 2.0A Max.PF:0.95</td> </tr> <tr> <td>OUTPUT</td> <td>38-62V== 1.80-3.60A Max: 70V== Max.Power:150W</td> </tr> <tr> <td>t<sub>c</sub>: 90°C</td> <td>t<sub>a</sub>: 50°C Input:100-200V~ t<sub>a</sub>: 60°C Input:200-277V~</td> </tr> </table>	INPUT	100-277V~50/60Hz, 2.0A Max.PF:0.95	OUTPUT	38-62V== 1.80-3.60A Max: 70V== Max.Power:150W	t <sub>c</sub> : 90°C	t <sub>a</sub> : 50°C Input:100-200V~ t <sub>a</sub> : 60°C Input:200-277V~	MADE IN CHINA For LED module only
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