



## Specification for Approval

Product Name: 200 W Outdoor Programmable Driver  
Product Model: XCP-200M286   
XCP-200V286   
Rev. I.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.		

XiLi Songbai Road 1061, Nanshan  
Address: District, Shenzhen City, Guangdong      Post Code: 518108  
Province, P.R.China  
TEL: 0755-27657000      FAX: 0755-27657908  
E-mail: info@mosopower.com      Web site: http://www.mosopower.com

Prepared By	Checked By	Approved By

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### VERSION HISTORY

Rev..	Description of Change		Changed Date	Notes
	Before	After		
A.5	Original Release—		2020-10-22	
B.2		ECL202104106	2021-04-26	Longfu Zhu
C.2		ECL202104007	2021-06-04	Longfu Zhu
D.2		ECL202108085	2021-09-03	Jin feng li
E.2			2022-07-22	Zhu long fu
F.2			2022-07-27	Zhu long fu
G.2		ECL202211010	2022-11-3	Jian Zhou
H.2		ECL202212002	2022-12-01	
I.2		ECL202310029	2023-10-24	Li li lin



### 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;
- Self adapting-midnight dimming;
- 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-200W series is a 200W 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 lightening surge, output over voltage, short circuit, and over temperature, to ensure low failure rate.

### MODELS

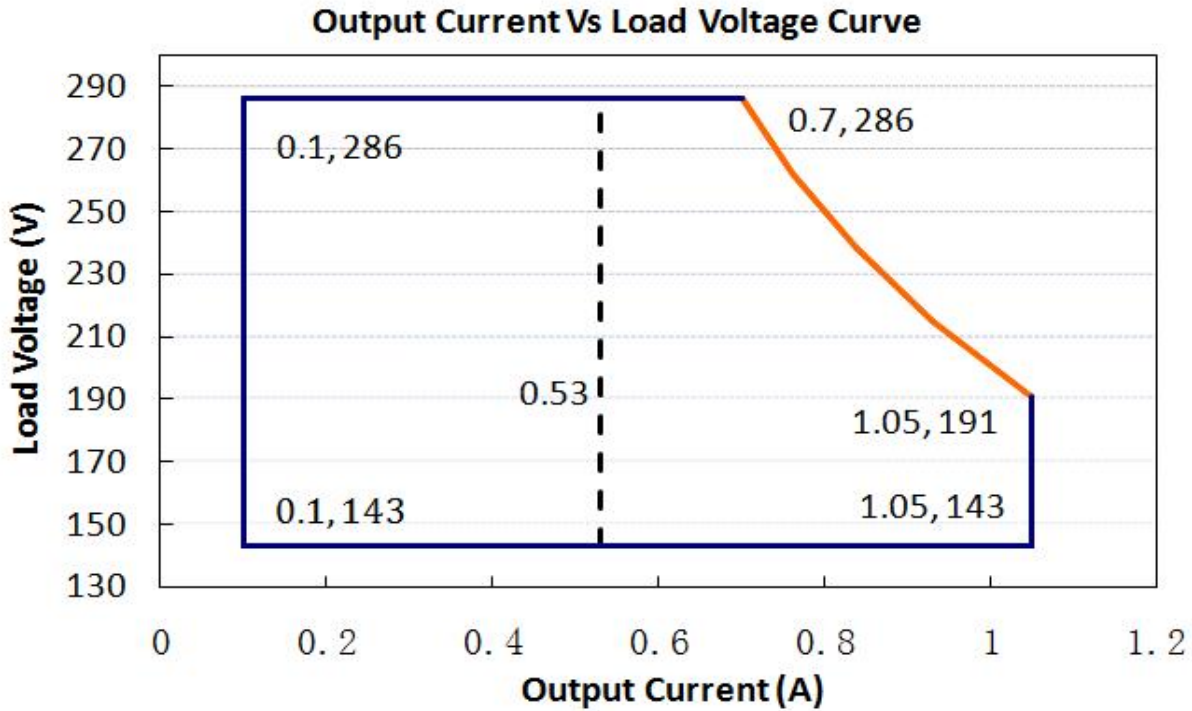
Model Number [1]	Max Output Power (W)	Output Voltage Range (Vdc)	Full Power Output Voltage Range (Vdc)	Full Power Current Adjustable Range (A) [2]	Default Output Current Setting(A)	Typical Efficiency [3]	PF
XCP-200Y286	200	143-286	191-286	0.7-1.05	0.7	92%	0.97

#### 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-200Y286



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	-	-	2.8A	100-277Vac & full load			
Inrush Current	-	-	75A	230Vac & full load			
Standby Power Consumption			1W	230Vac/50Hz			
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, 70%-100% load			
	-	-	15%	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%Iset	-	5%Iset	
Output Current Setting Range (A) XCP-200Y286	0.53	-	1.05	The 'M type' adjustable lout range: 10%-100% I <sub>max</sub> .
Output Current Setting Range with Constant Power XCP-200Y286	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) XCP-200Y286	-	-	300	
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	-	0.5S	2S	115Vac, 100% load
	-	-	0.5S	230Vac, 100% load

## GENERAL SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Efficiency @115Vac XCP-200Y286 I <sub>o</sub> =0.70 I <sub>o</sub> =1.05	88% 88%	89% 89%		Measured at full load and 25°C ambient temperature
Efficiency @230Vac XCP-200Y286 I <sub>o</sub> =0.70 I <sub>o</sub> =1.05	91% 91%	92% 92%	-	Measured at full load and 25°C ambient temperature
Efficiency @277Vac XCP-200Y286 I <sub>o</sub> =0.70 I <sub>o</sub> =1.05	91% 91%	92% 92%		Measured at full load and 25°C ambient temperature
Dielectric Strength	Input-Output	-	3750Vac	-
	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 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	L193.6*W68*H39			
Net Weight	940±100g/PCS			
Package	L502mm*W372mm*H222mm; 15PCS/Ctn: 15.7KG			

### 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-200M286	10%Imax	-	100%Imax	Imax=1.05A
	XCP-200M286	0.105A	-	1.05A	
Recommended Dimming Range for 1-10V	1V	-	10V	Default 1-10V/ PWM Dimming(1-10V,1-9V,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	√
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	

### 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	/

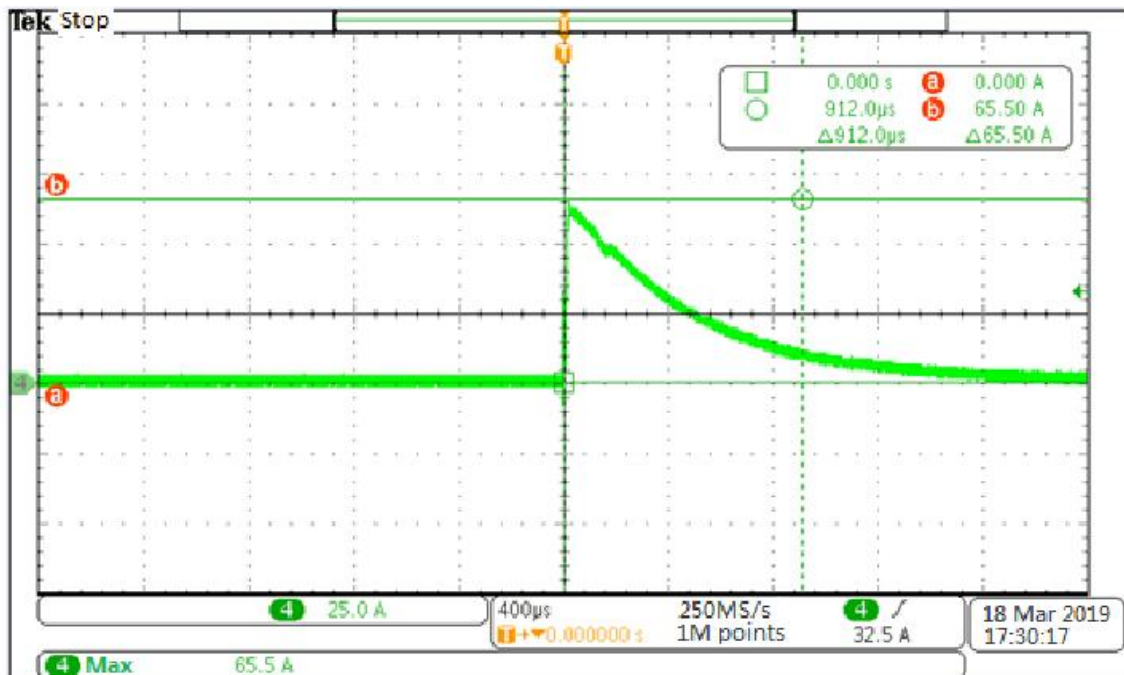
### EMC COMPLIANCE

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, 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.

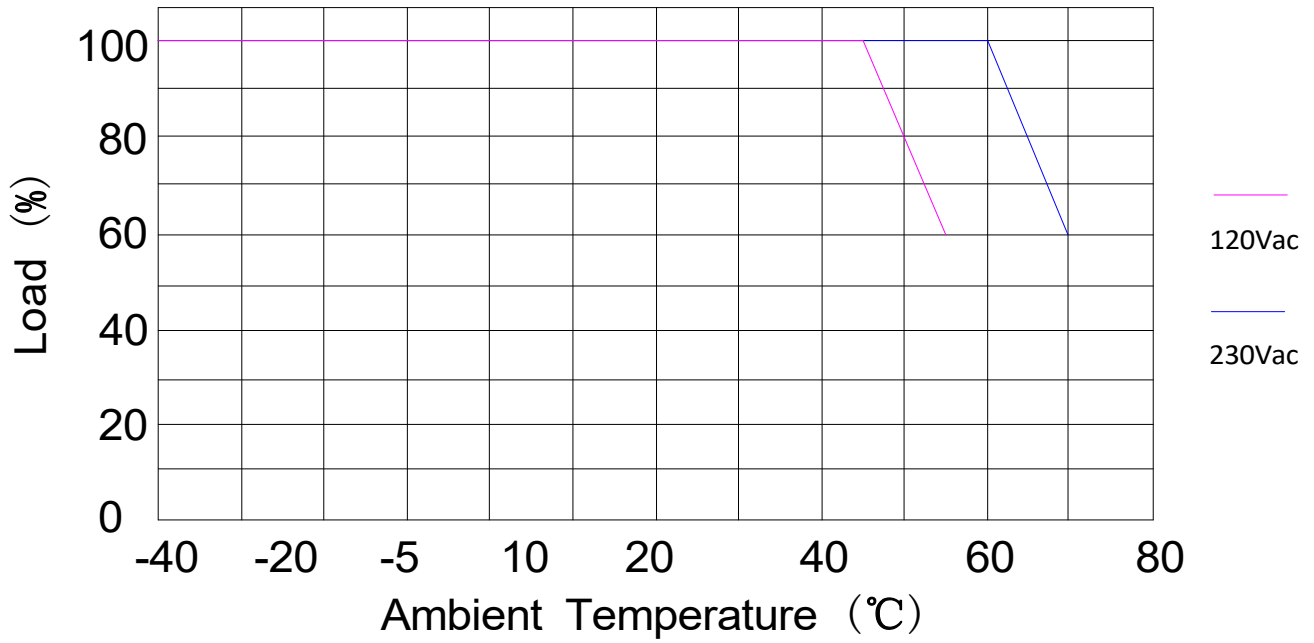
### INRUSH CURRENT WAVEFORM



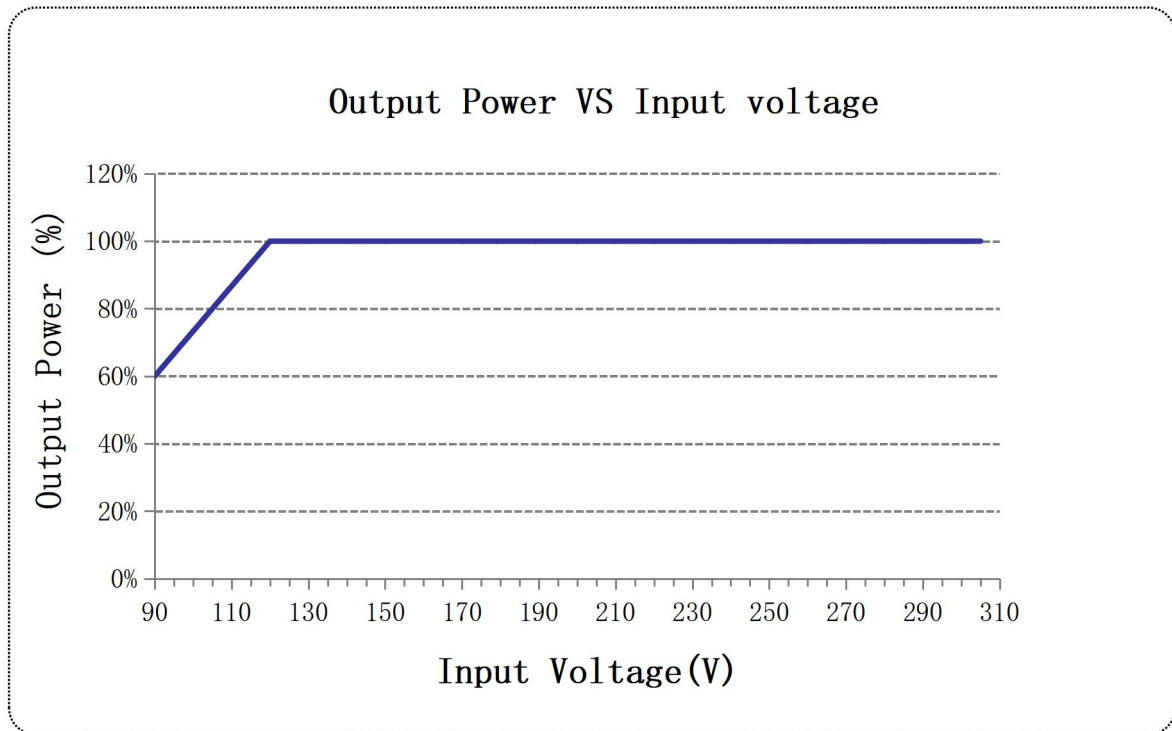


### DERATING CURVE

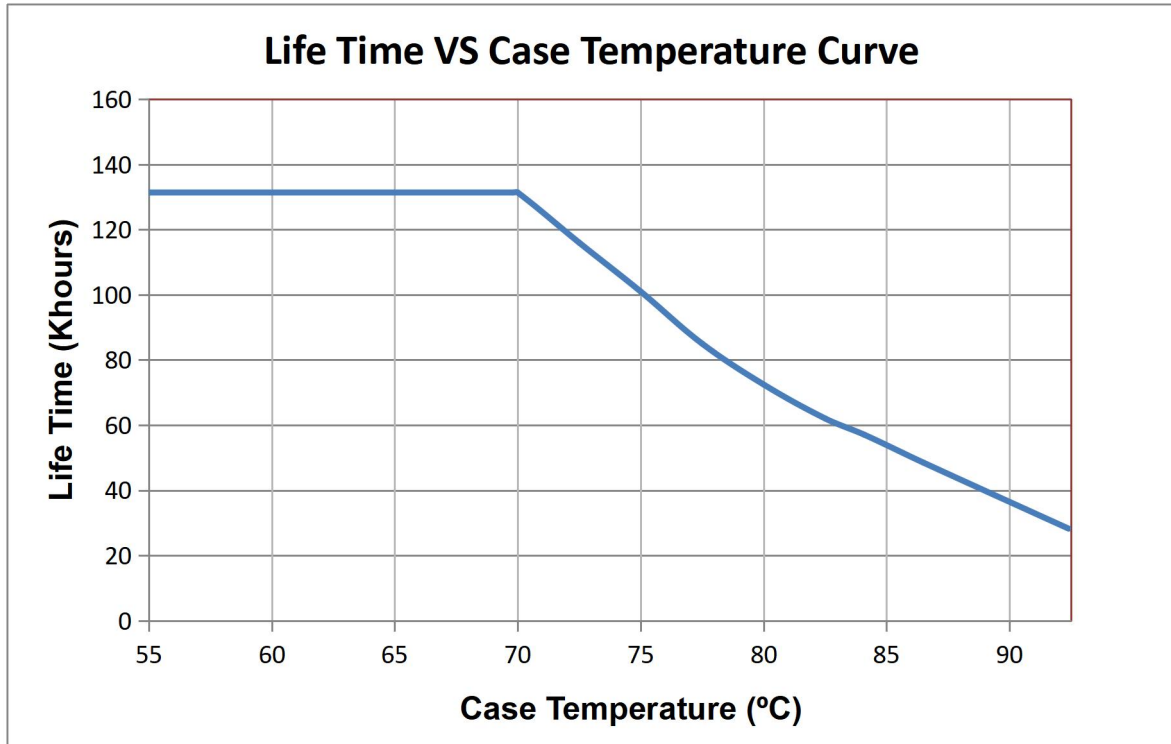
#### Derating Curve



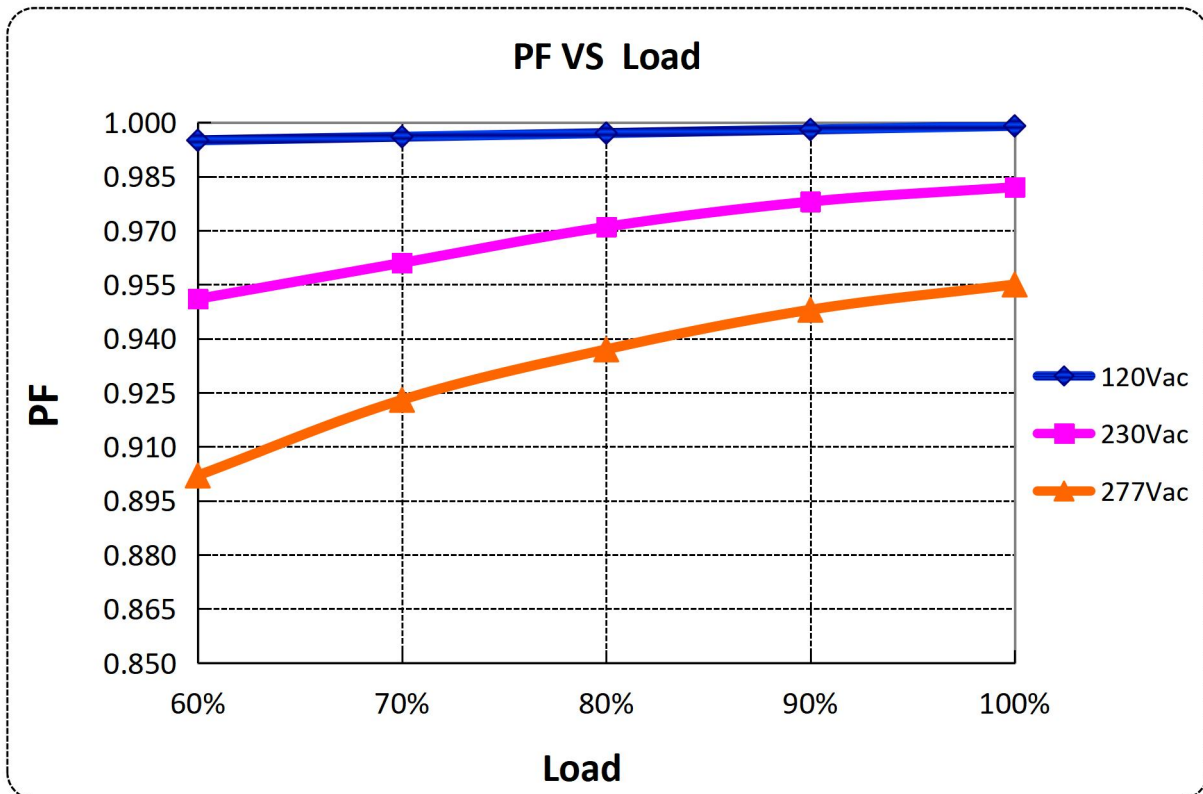
### OUTPUT POWER VS INPUT VOLTAGE



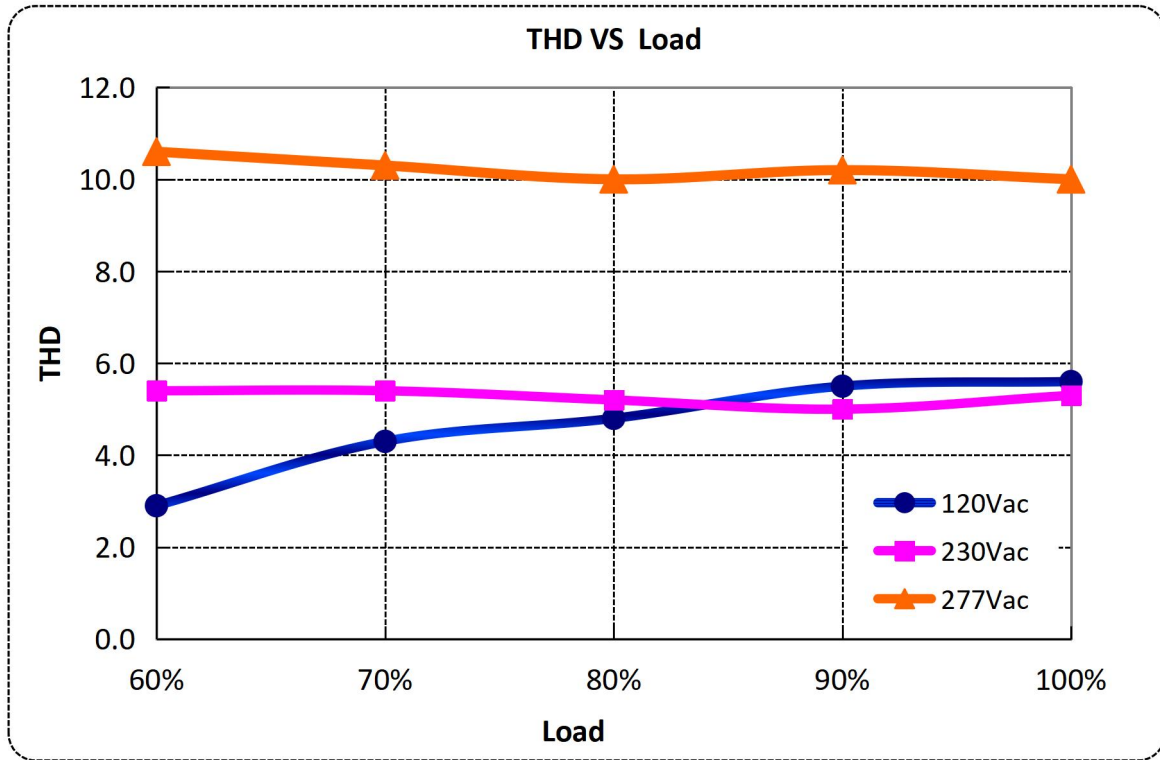
### LIFE TIME VS CASE TEMPERATURE



### POWER FACTOR VS LOAD

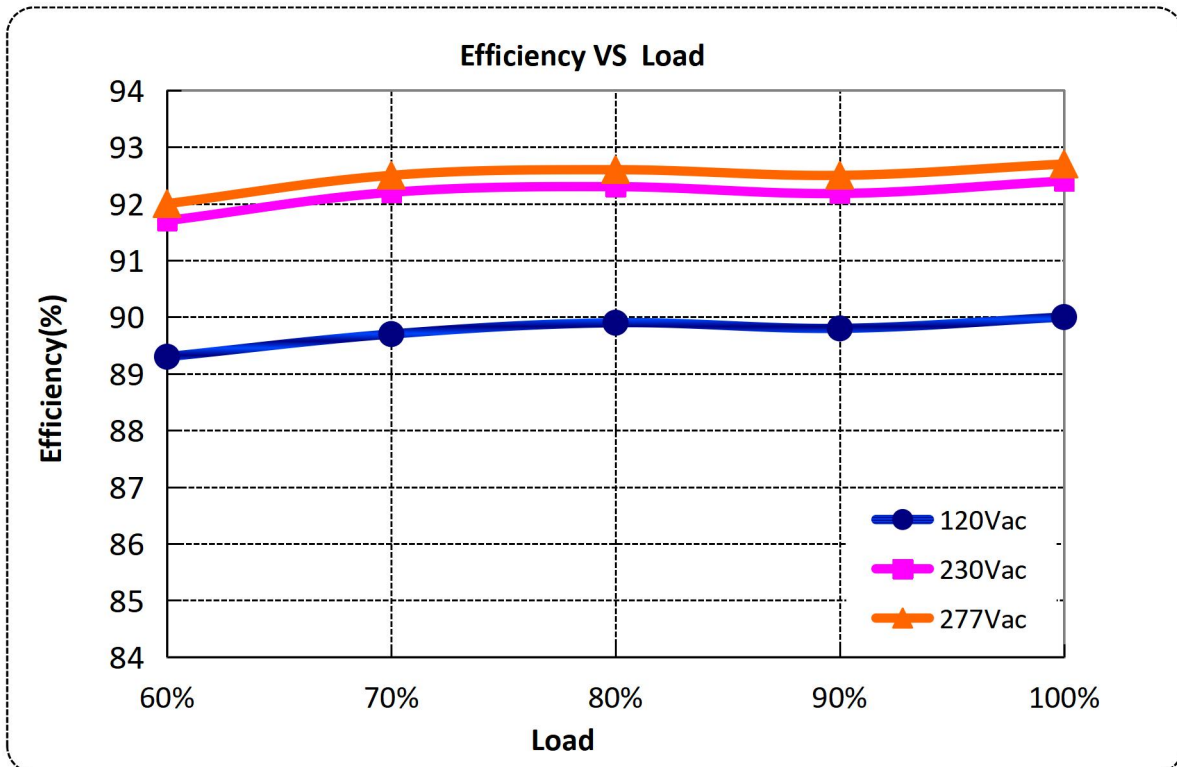


### TOTAL HARMONIC DISTORTION

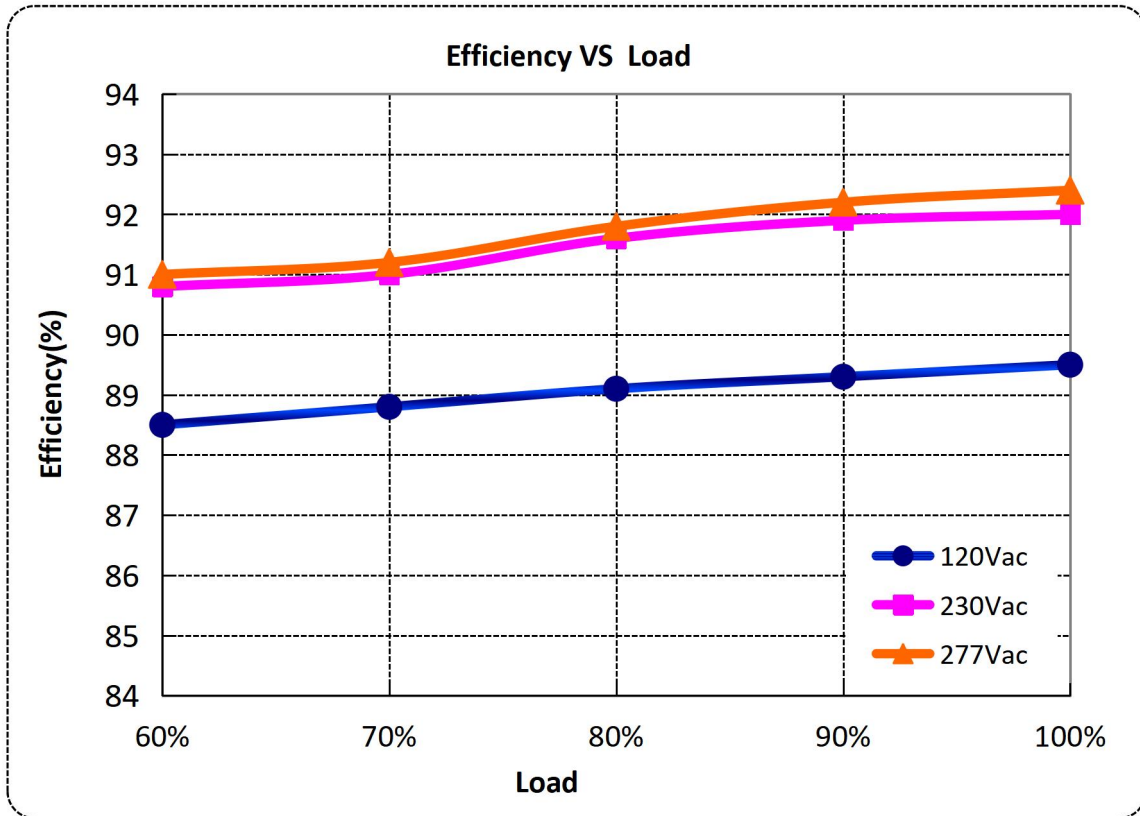


### EFFICIENCY VS LOAD

$I_o=0.7A$



Io=1.05A

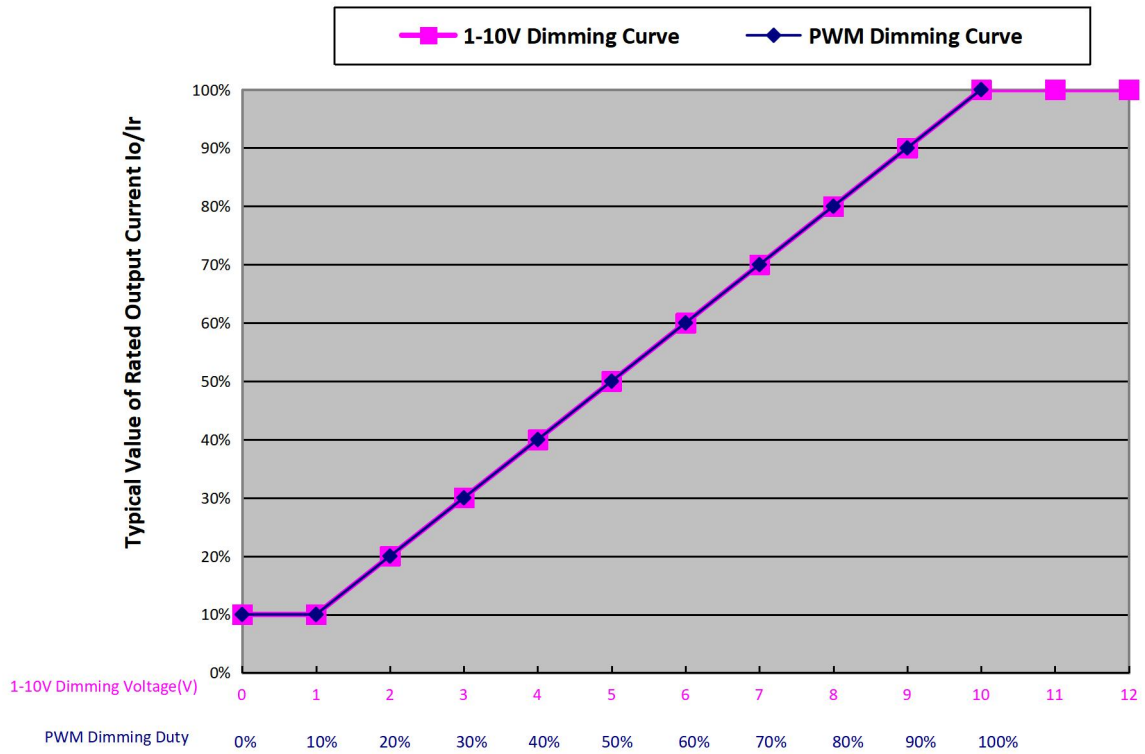


### PROTECTIONS

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.
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.

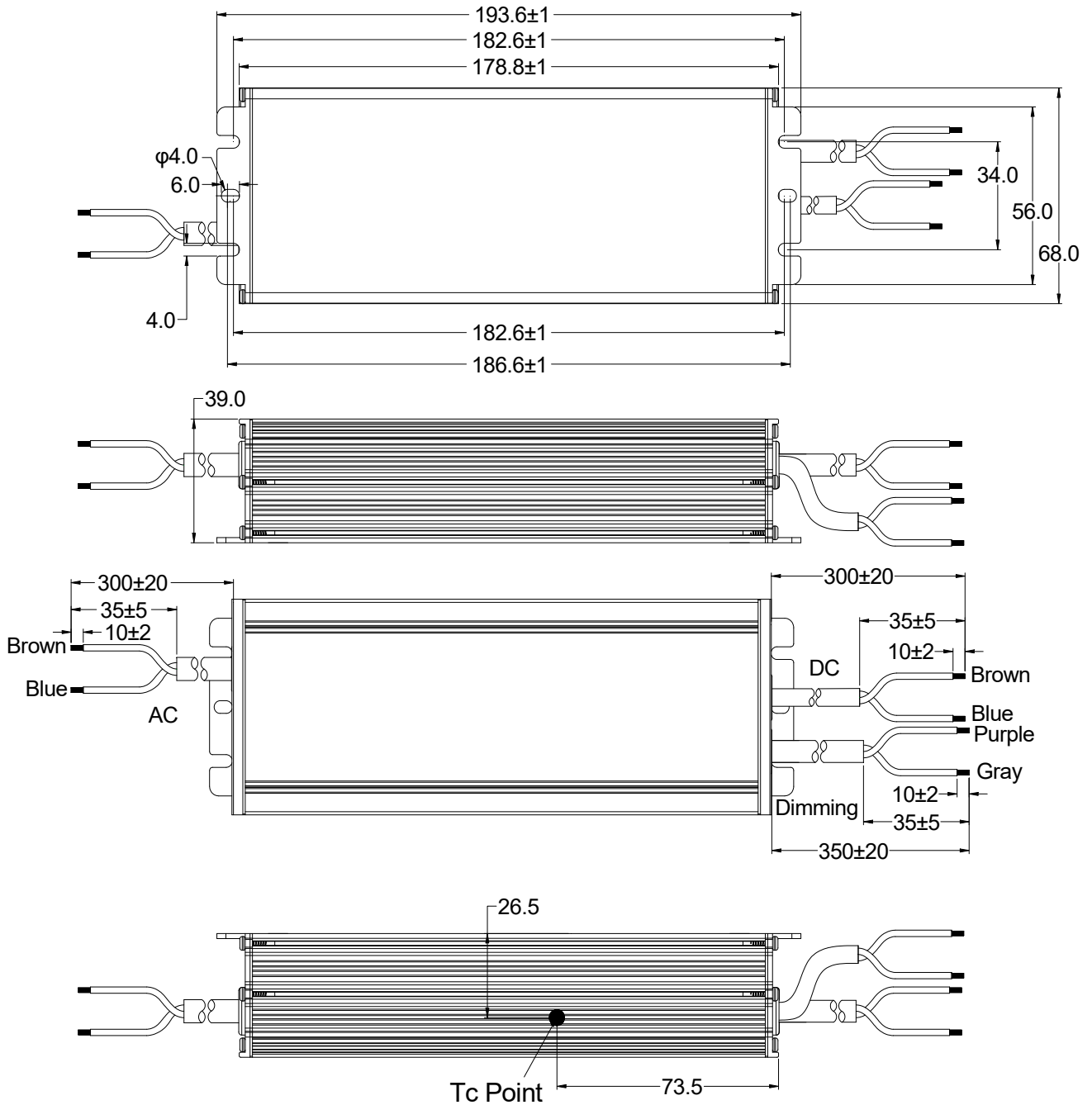
### 1-10V/PWM DIMMING

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

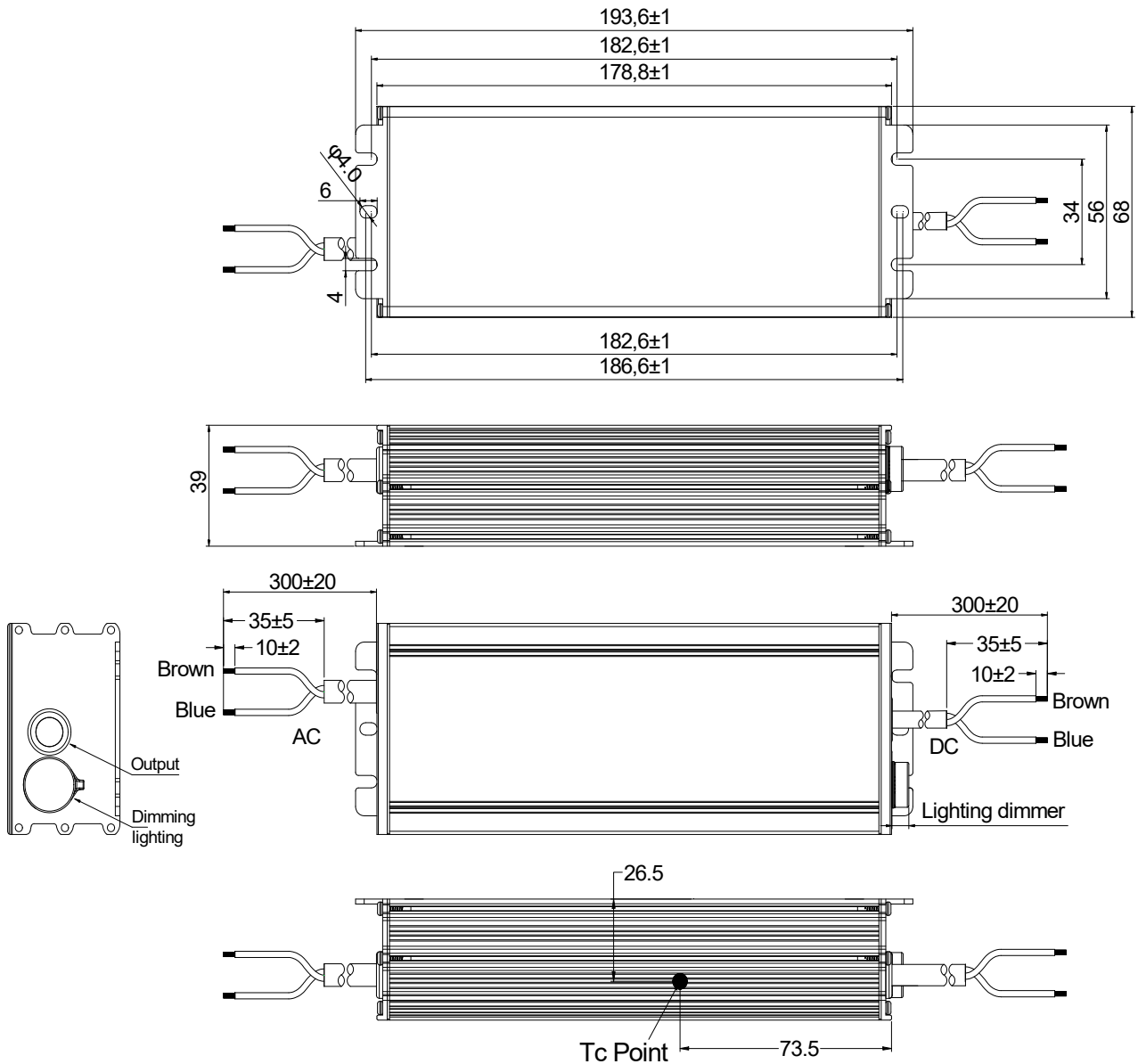


### MECHANICAL OUTLINE

#### XCP-200M286 types



### XCP-200V286 types



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

### LABEL

#### XCP-200M286

45.50 mm

169.00 mm

<b>INPUT</b>  L BROWN  N BLUE	<b>XCP-200M286</b> LED DRIVER	    	<b>OUTPUT</b>  BROWN Vo +  BLUE Vo -  PURPLE DIM +  GRAY DIM -						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">INPUT</td> <td>100-277V~ 50/60Hz, 2.8A Max.PF:0.95</td> </tr> <tr> <td>OUTPUT</td> <td>143-286V --- 0.10-1.05A Max: 300V --- Max.Power:200W</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, 2.8A Max.PF:0.95	OUTPUT	143-286V --- 0.10-1.05A Max: 300V --- Max.Power:200W	t <sub>c</sub> : 90°C	t <sub>a</sub> : 50°C Input:100-200V~ t <sub>a</sub> : 60°C Input:200-277V~		
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MADE IN CHINA For LED module only      SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD No.1061, Songbai Road, Xili Town, Nanshan District, Shenzhen, CHINA									

#### XCP-200V286

45.50 mm

169.00 mm

<b>INPUT</b>  L BROWN  N BLUE	<b>XCP-200V286</b> LED DRIVER	    	<b>OUTPUT</b>  BROWN Vo +  BLUE Vo -  Io ADJ (+)						
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MADE IN CHINA For LED module only      SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD No.1061, Songbai Road, Xili Town, Nanshan District, Shenzhen, CHINA									