

Specification for Approval

Product Name: 320 WOutdoor Programmable Driver
Product Model: XCP-320M457 ☒
XCP-320V457 ☐
XCP-320M457A12 ☐
Rev. F.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
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Prepared By	Checked By	Approved By

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VERSION HISTORY

[illegible]



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, Timer dimming;
- (Mtypes) Constant lumen output;
- Self adapting-midnight dimming;
- 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-320 series is 320W 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 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]	PF
XCP-320Y457	320	228-457	290-457	0.7-1.10	1.05	93%	0.97

Notes:

[1]. Y can be M or V. Y=M means dimmable and offline programmable, The adjustable lout range: 10%-100% Imax;

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

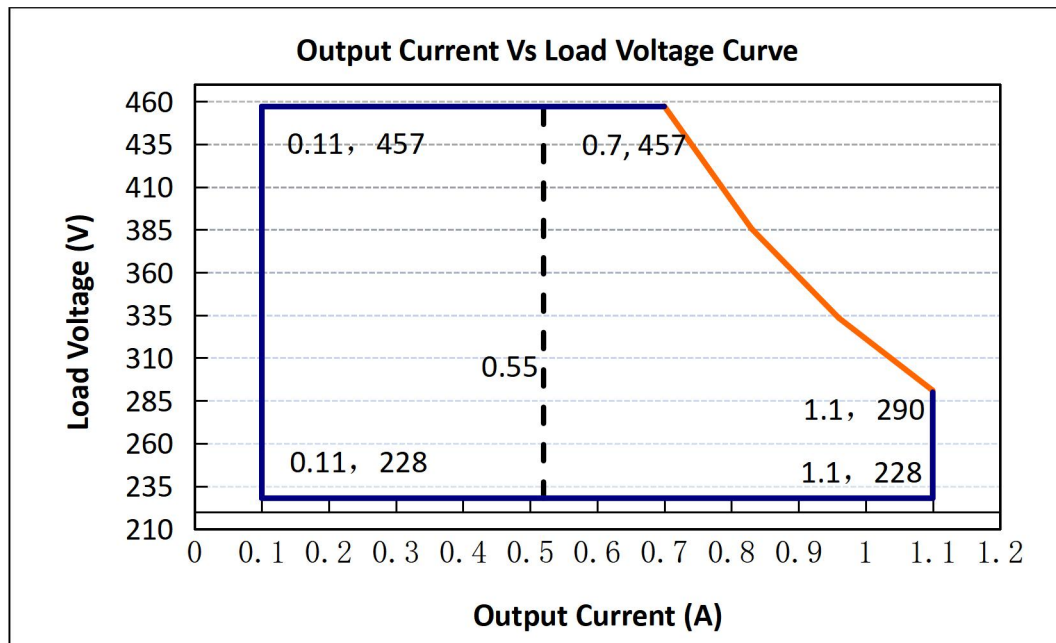
[2]. Output current adjustable range with constant power at max output power;

[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-320Y457



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	-		-		4.2A		100-277Vac & full load
Inrush Current	-		-		4.5A ² S		230Vac & full load
Standby Power Consumption					1W		230Vac/50 Hz
Power Factor	0.97		0.99		-		120Vac, 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, full load
	-		-		15%		277Vac, 50-60Hz, full load
Max. NO. of PSUs on CIRCUIT BREAKER	B10	1	B16	1	B25	2	230Vac
	C10	1	C16	2	C25	3	

OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%	-	+5%	
Output Current Setting Range(A) XCP-320Y457	0.55	-	1.10	The 'M type' adjustable lout range: 10%-100% I _{max} .
Output Current Setting Range with Constant Power XCP-320Y457	0.70	-	1.10	
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-320Y457	-	-	480	
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	120Vac, 100% load
	-		2S	230Vac, 100% load
12V auxiliary output voltage	11.4V	12V	12.6V	XCP-320M457A12
12V auxiliary output source current	0mA	-	300mA	

GENERAL SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Efficiency @120Vac XCP-320Y457 I _o =0.70 I _o =1.10	87% 87%	89% 89%		Measured at full load and 25°C ambient temperature
Efficiency @230Vac XCP-320Y457 I _o =0.70 I _o =1.10	90% 90%	92% 92%	-	Measured at full load and 25°C ambient temperature
Efficiency @277Vac XCP-320Y457 I _o =0.70 I _o =1.10	91% 91%	93% 93%		Measured at full load and 25°C ambient temperature
Dielectric Strength	Input-Output	-	3750Vac	Max 5mA/60S
	Input-Case	-	3750Vac	
	Output-Case	-	1600Vac	

XCP Series-320W Outdoor Off-line Programmable Driver

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	-	100000Hrs	-	230Vac&100% load, 75℃ case temperature, refer to lifetime curve for details
Ambient Temperature	-40℃		+60℃	230Vac&100% load
Operating Case Temperature for Safety Tc_s	-40℃	-	+90℃	
Operating Case Temperature for Warranty Tc_s	-40℃	-	+75℃	5 years warranty case temperature Humidity: 10% to 95% RH
Storage Temperature	-40℃	-	+85℃	Humidity: 5% to 100% RH
Dimensions (L*W*H)mm	L231*W98*H42mm			
Net Weight	1700±100g/PCS			
Package	L615mmxW375mmxH166mm;10PCS/Ctn, Gross Weight: 19.6Kg			

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-320M457	10%Imax	-	100%Imax	Imax=1.10A
	XCP-320M457	0.11A	-	1.10A	
Recommended Dimming Range for 1-10V		1V	-	10V	Default 1-10V/ PWM Dimming (1-10V, 1-9V, 1-5V, 1-3.3V Positive and Reverse Logic can be customized as request)
PWM_in High Level		9.7V	-	10.3V	
PWM_in Low Level			1V	1.3V	
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	/

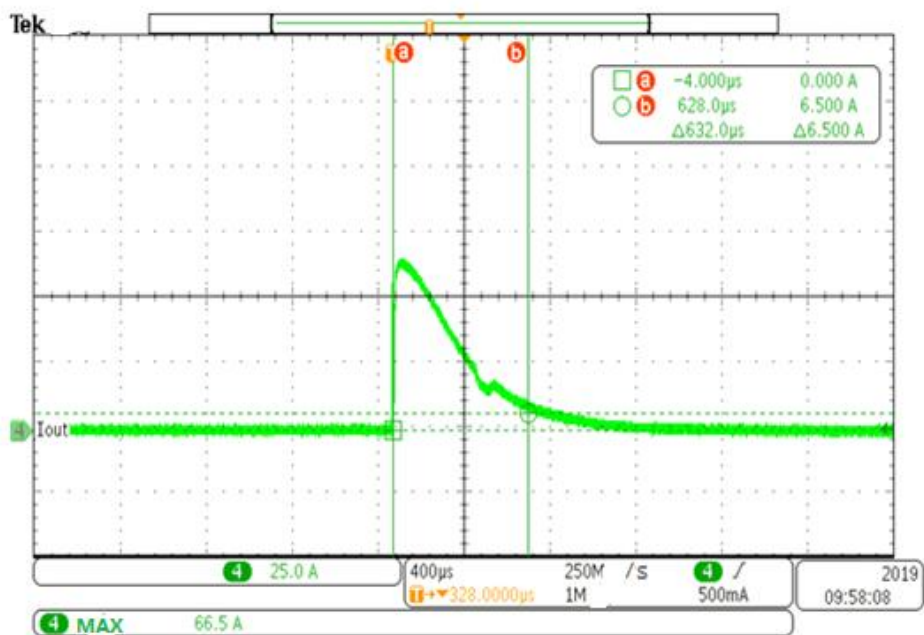
EMC COMPLIANCE

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	

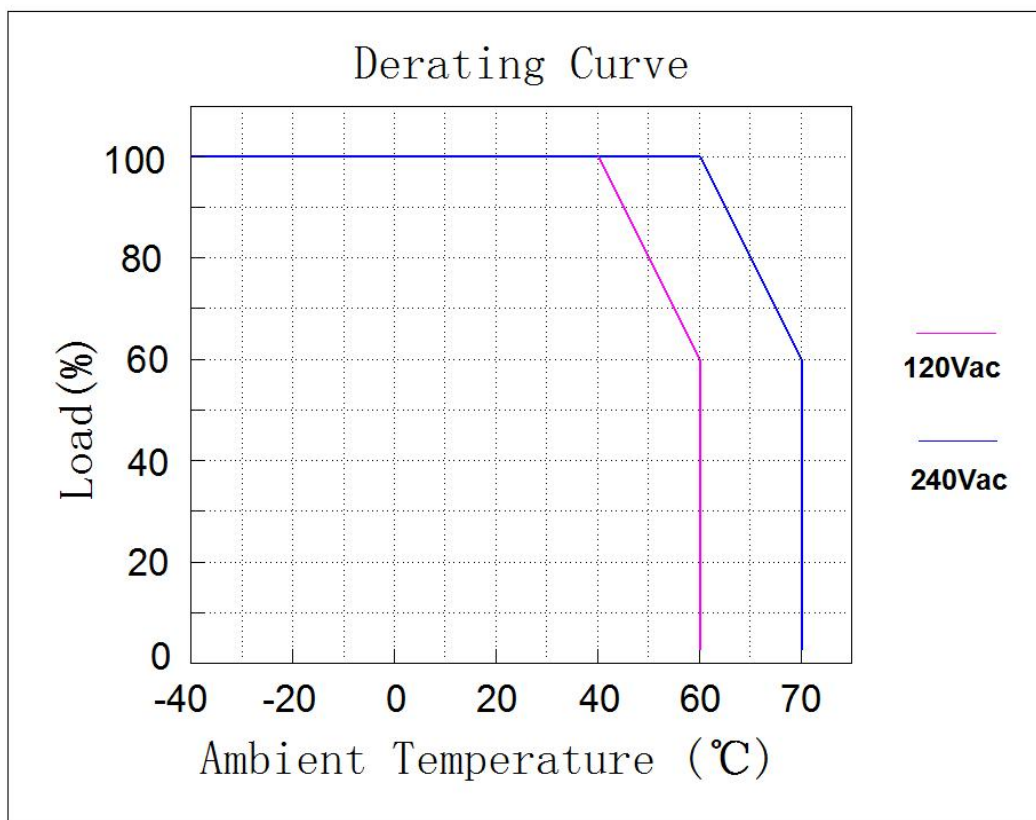
NOTE:

This LED driver meets the EMI specifications above, but as a component of a luminaire, 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.

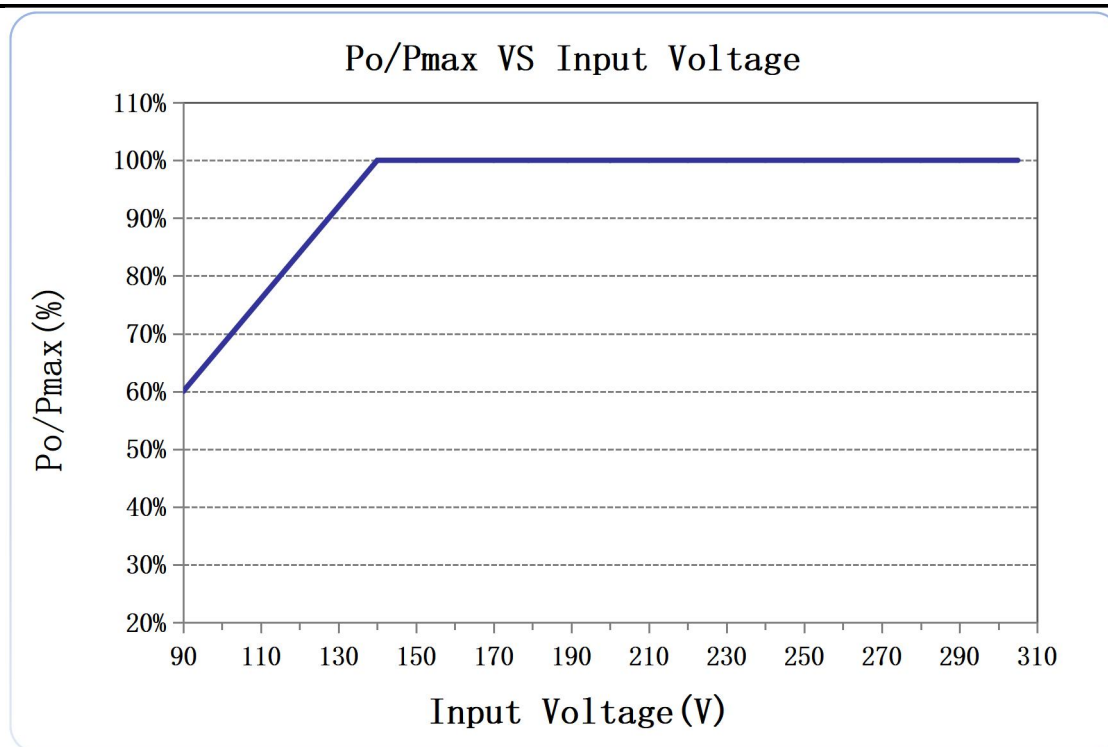
INRUSH CURRENT WAVEFORM



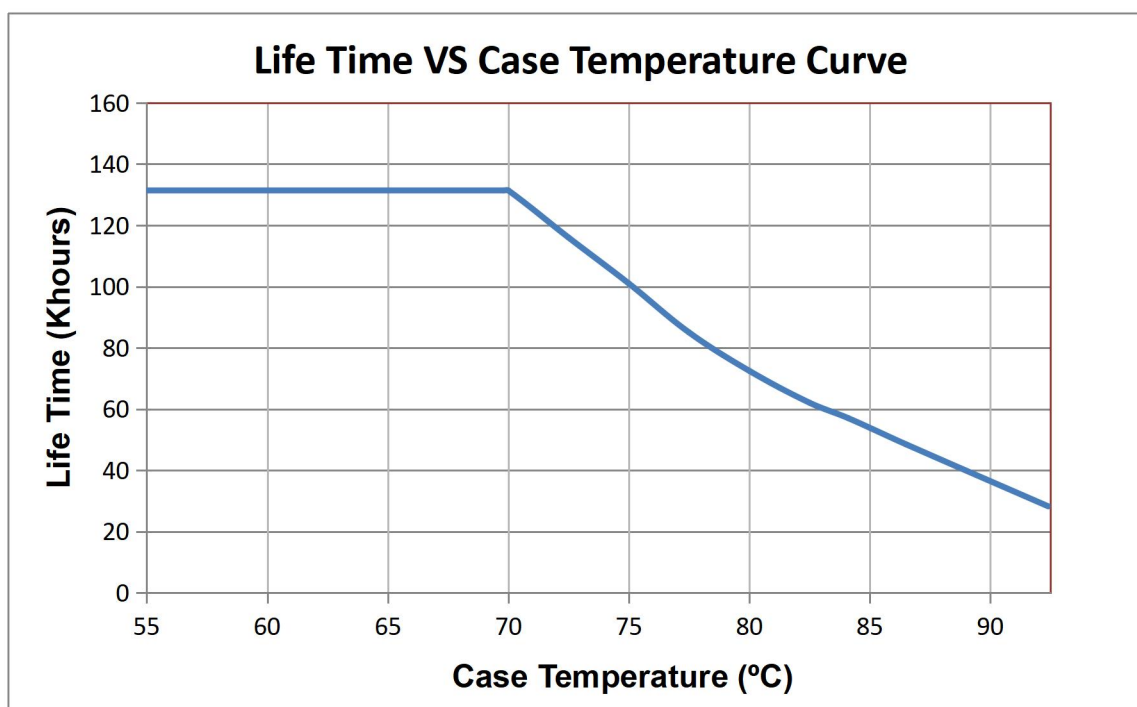
DERATING CURVE



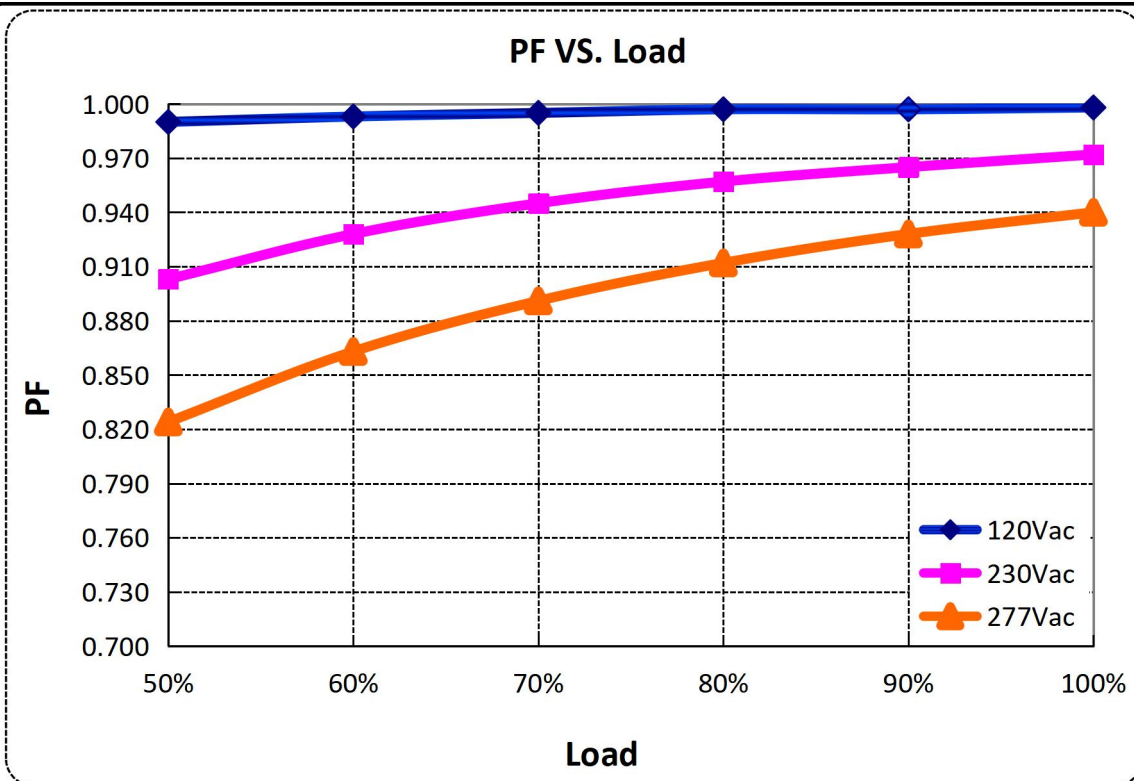
OUTPUT POWER VS INPUT VOLTAGE



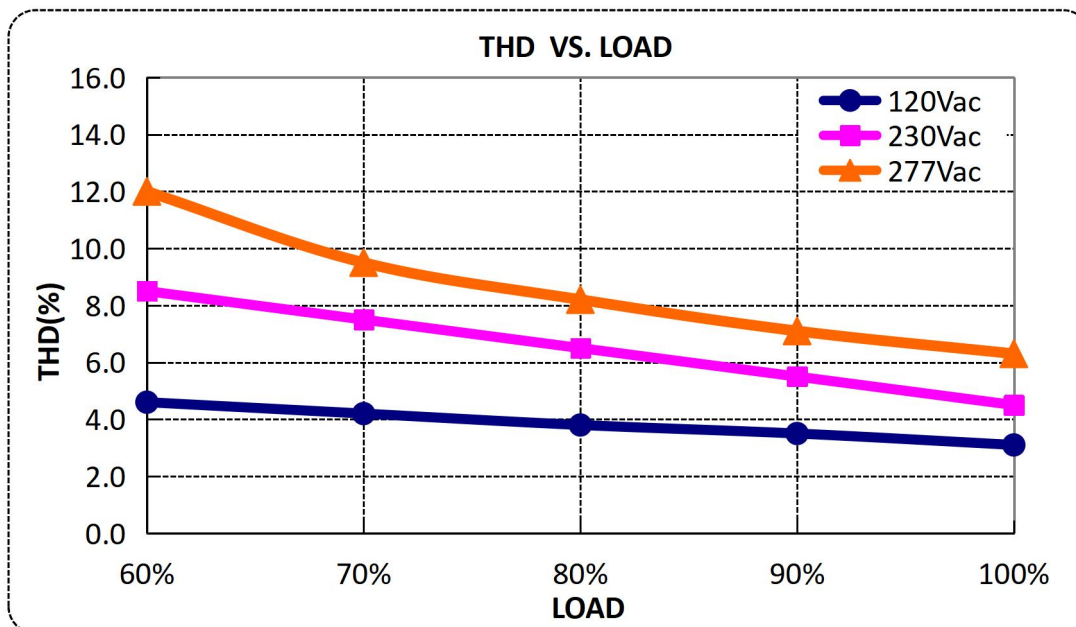
LIFETIME VS CASE TEMPERATURE



POWER FACTOR VS LOAD

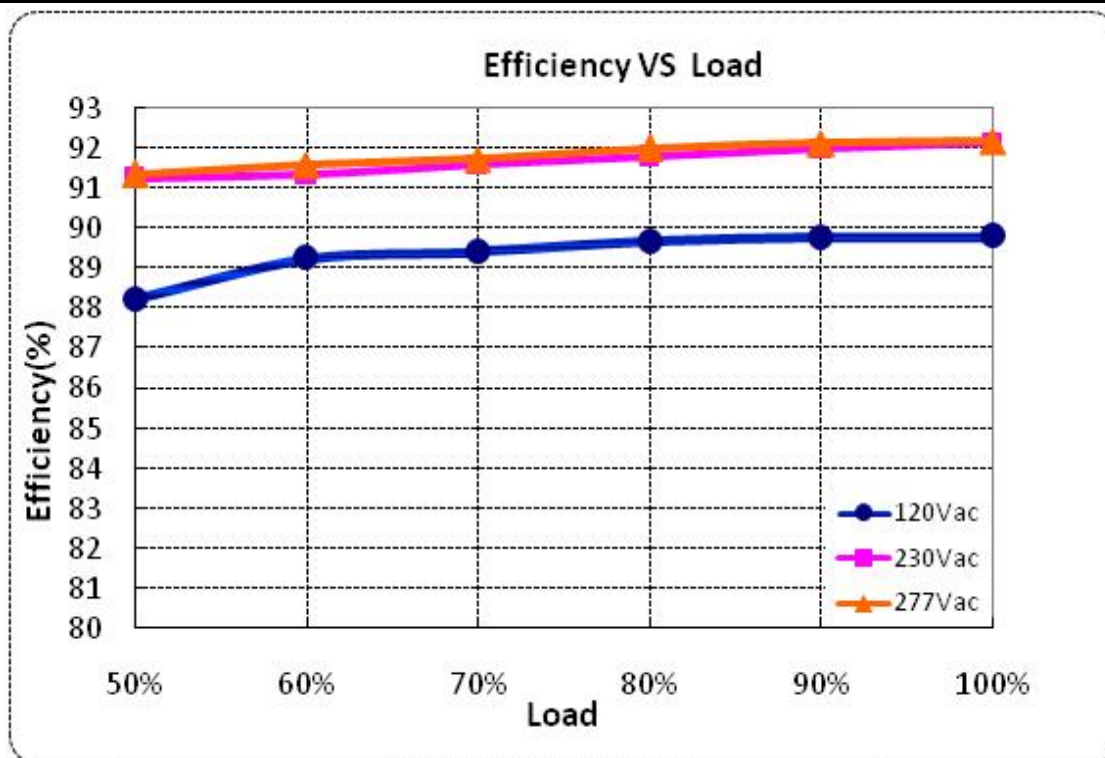


TOTAL HARMONIC DISTORTION

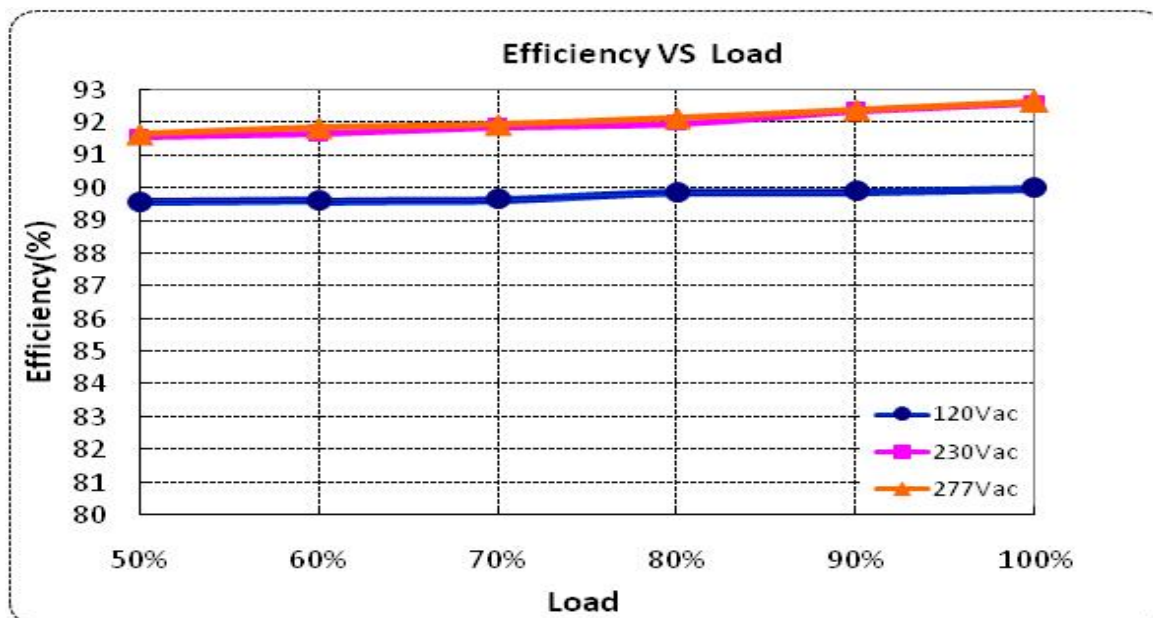


EFFICIENCY VS LOAD

$I_o=0.7A$



Io=1.10A

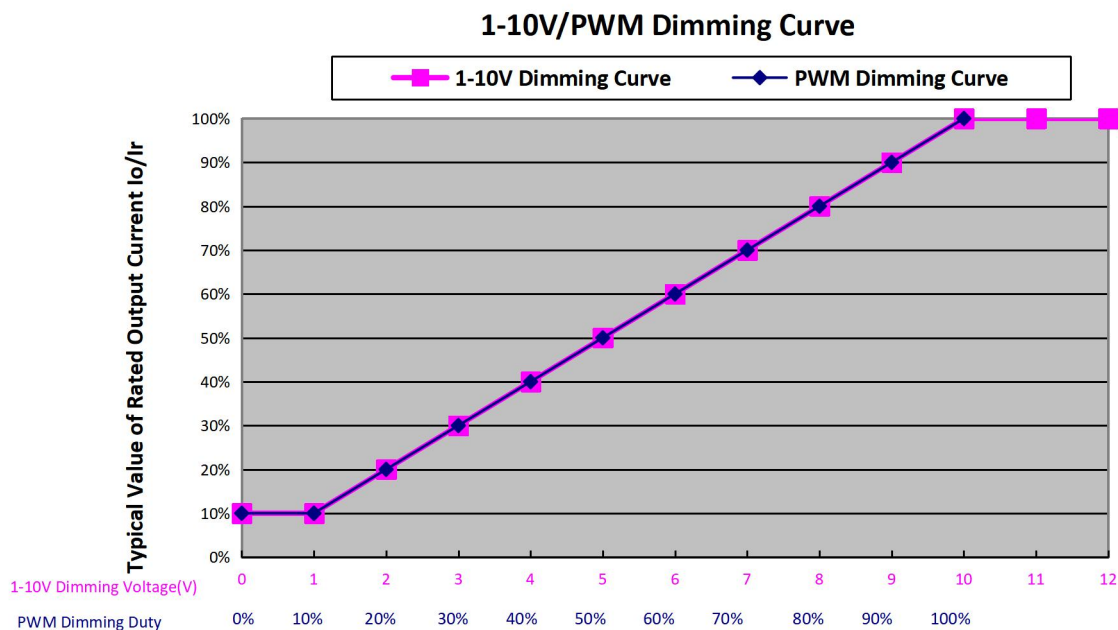


PROTECTIONS

Parameter	Notes
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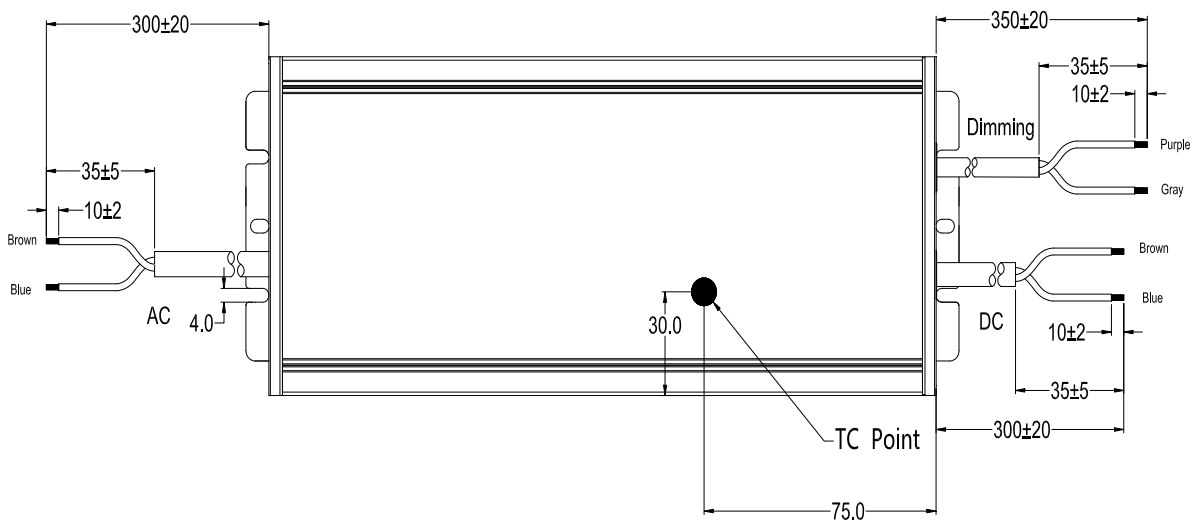
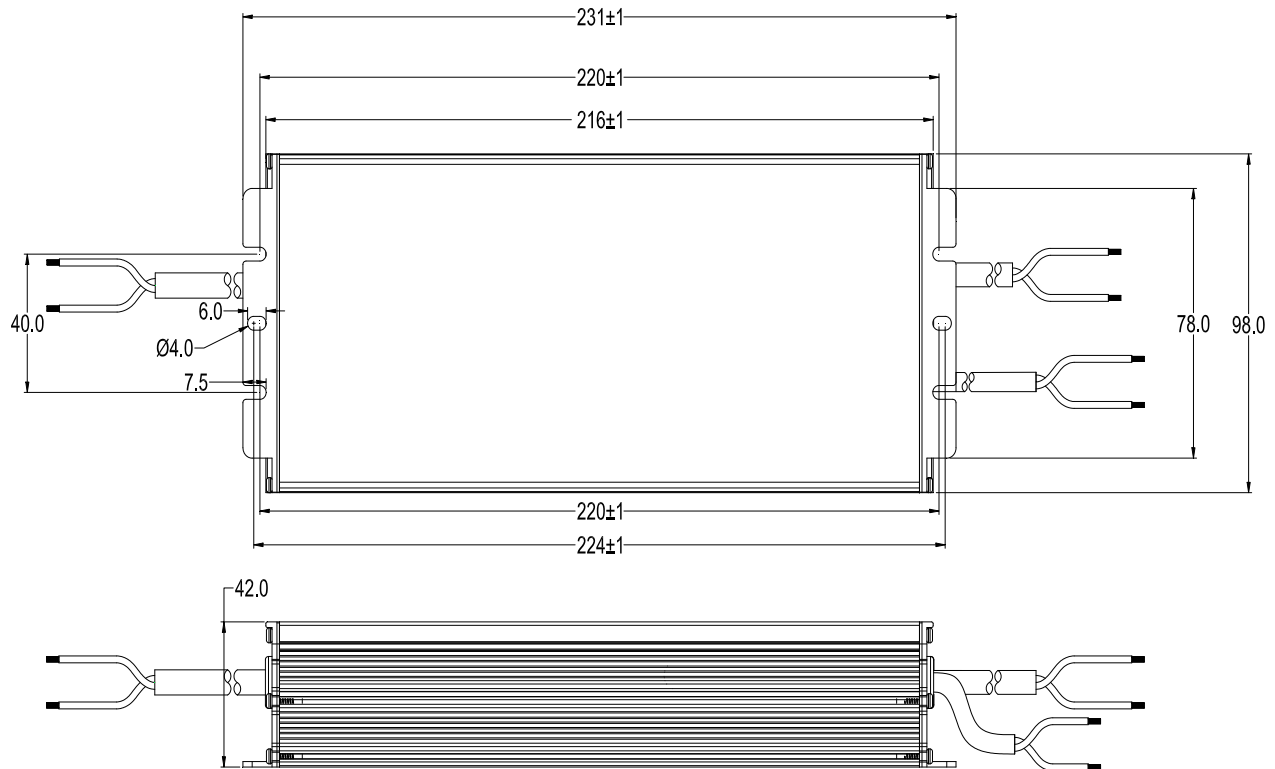
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	When the short circuit occurs, the input power is reduced and the product enters the constant current output mode or locked mode. When the short circuit is released, restart the input to recover.
Over Voltage Protection	Run into protection model when output voltage exceeds limit, and return to normal when the fault

1-10V/PWM DIMMING

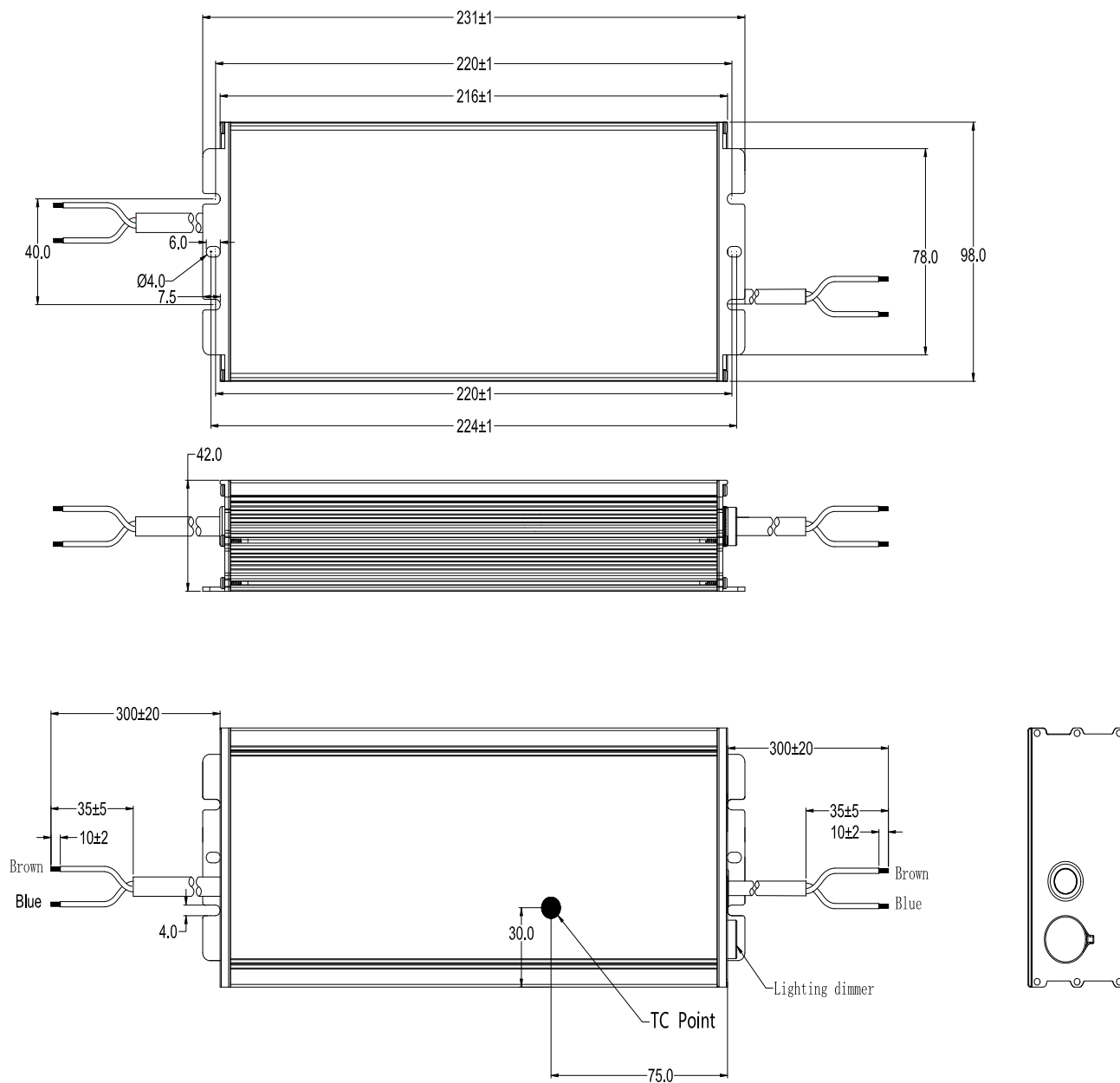


MECHANICAL OUTLINE

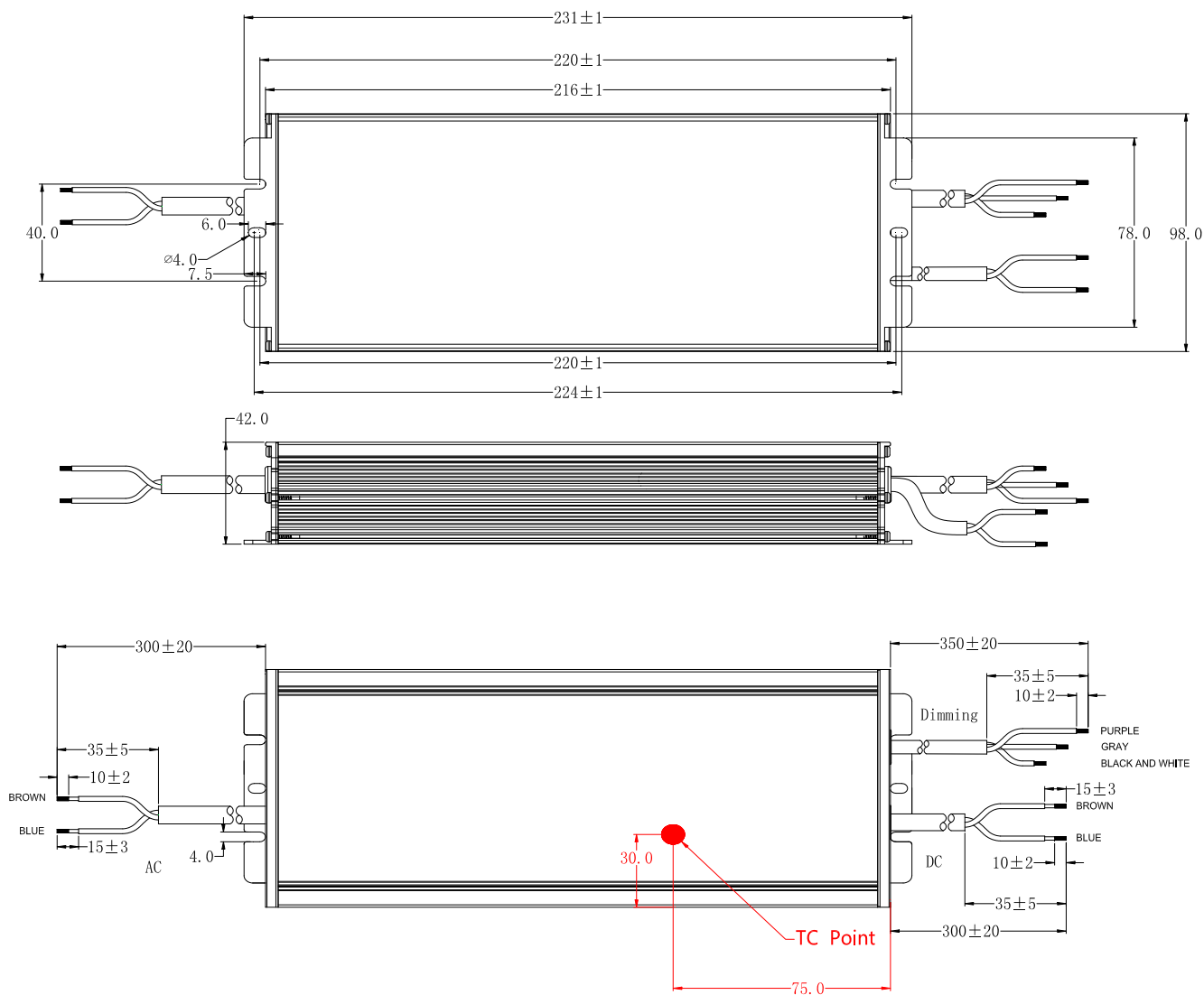
XCP-320M457 types



XCP-320V457 types



XCP-320M457A12



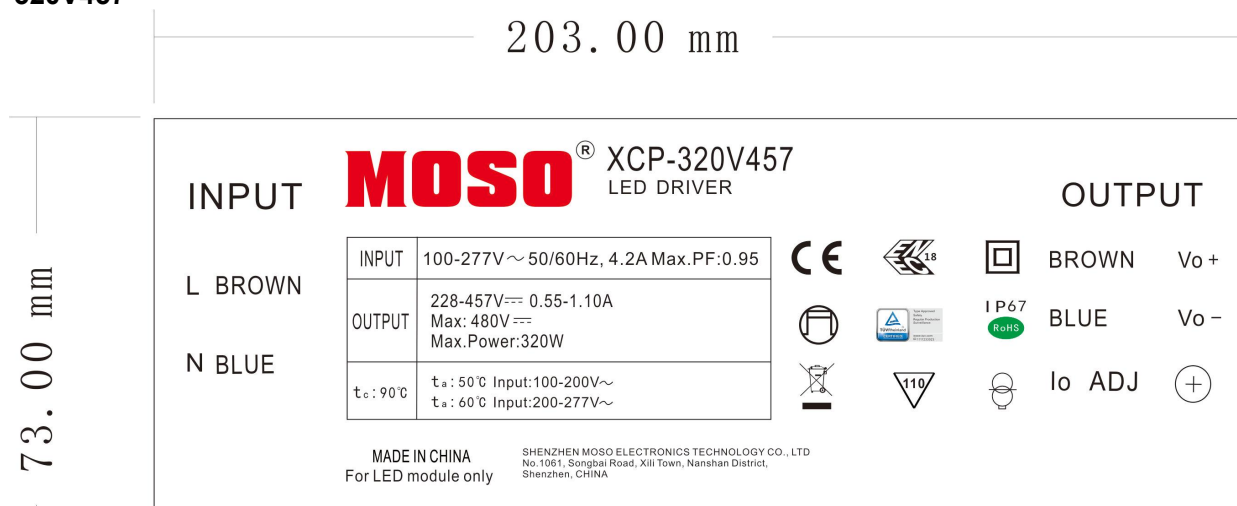
Wire	Specification	Note
Input	3C+VDE 2*1.0mm ² external diameter:6.9mm L=300±20mm, peel length 35mm, Tin-dip length 10mm	For CCC/CE
Output	3C+VDE 2*1.0mm ² external diameter: 6.9mm L=300±20mm, peel length 35mm, Tin-dip length 10mm	For CCC/CE
Dimming	UL2733 22AWG*2C external diameter: 5.45mm L=350±20mm, peel length 35mm, Tin-dip 10mm	XCP-320M457
	UL21996 22AWG*3C external diameter: 5.0mm L=350±20mm, peel length 50mm, Tin-dip 4mm	XCP-320M457A12

LABEL

XCP-320M457



XCP-320V457



XCP-320M457A12

