

Description

The V2-120B012 Class 2 LED power supply is an efficient power solution for LED signage and other outdoor applications by featuring a wide input voltage range of 100-277VAC with PFC function. The high efficiency of the driver and compact metal case enable them to run cooler, significantly improving reliability and extending product lifetime. To ensure trouble-free operation, protection is provided against input surge, output over current, short circuit, and over temperature, with a waterproof grade of IP67, it is designed to work under a wide range of environmental conditions and protection functions for wide operating temperatures.



Product Features

- Universal input voltage: 90~305Vac;
- Constant voltage output;
- Class 2 power unit, Dual Output;
- 100% full load burn in test;
- Metal Case;
- IP67 design for indoor and outdoor applications;
- Surge protection: 4KV line-line, 6KV line-earth;
- Protections: SCP / OTP / OCP;
- Suitable for dry / damp / wet locations;
- 5 years warranty.

Application

LED signage and other outdoor applications.

Models

Model Number	Input Voltage Range (Vac)	Max Output Power(W)	Output Voltage (Vdc)	Output Current Range (A)	Eff. (Typ.)	PF(Typ.)	THD(Typ.)
V2-120B012	100-277	120	12	(0-5.0)x2	89%	0.95	10%

NOTES:

[1]. All specifications are measured at 25°C ambient temperature, input voltage 277Vac, and the typical value tested at full load, if no specific note.

Input Specifications

Parameter	Min	Typ.	Max	Notes
Input Voltage	100Vac	120/230/277Vac	277Vac	
Voltage Range	90Vac	-	305Vac	
Input Frequency AC	47Hz	50/60Hz	63Hz	
Max Input Current	-	-	1.6A	100Vac& 100%load.
Max Input Power	-	-	150W	100Vac& 100%load.
Leakage Current	-	-	0.70mA	IEC 60598-1;240Vac/60Hz.
Leakage Current	-	-	0.75MIU	UL 8750;277Vac/60Hz.
Inrush Current	-	-	85A	277Vac & 100% load.
Power Factor(PF)	0.94	0.97	0.98	100-240Vac,50-60Hz,75-100% load.
Power Factor(PF)	0.90	0.94	0.95	277Vac,50-60Hz;75-100% load.
Total Harmonic Distortion(THD)	-	5%	15%	100-240Vac,50-60Hz,75-100% load.
Total Harmonic Distortion(THD)	-	10%	20%	277Vac,50-60Hz;75-100% load.
MCB(B16)	-	15	-	120Vac,50-60Hz .
MCB(B16)	-	6	-	230Vac,50-60Hz .
MCB(B16)	-	5	-	277Vac,50-60Hz .

Output Specifications

Parameter	Min	Typ.	Max	Notes
Output Voltage Range	11.64Vdc	12.00Vdc	12.36Vdc	±3%.
Output Current Range	-	-	5A x 2	Dual output
Output ripple & noise(mV)Vp-p	-	150mV	170mV	100% load, Measured by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor.
Startup Overshoot Voltage	-5%	-	5%	100-277Vac,100% Load & LED Load.
Line Regulation	-1%	-	+1%	25°C±10°C ambient temperature, input voltage changes from 100Vac to 277Vac,100% Load.
Load Regulation	-2%	-	+2%	25°C±10°C ambient temperature, load changes from 0% to 100%.
Turn-on Delay Time	-	-	1.0s	120Vac,100% Load.
Turn-on Delay Time	-	-	0.5s	277Vac,100% Load.

General Specifications

parameter	Min	Typ.	Max	Notes
Efficiency@120Vac	85.0%	86.0%	-	Measured at full load and 25°C ambient temperature.
Efficiency@230Vac	87.0%	88.0%	-	Measured at full load and 25°C ambient temperature.
Efficiency@277Vac	87.5%	88.5%	-	Measured at full load and 25°C ambient temperature.
Mean Time Between Failure	-	200Khours	-	277Vac, 25±10°C ambient temperature, 100% load (MIL-HDBK-217).
Lifetime	-	50Khours	-	277Vac&100% load, 75°C case temperature, refer to lifetime vs. Case Temperature curve for details.
Operating Temperature Ta	-40°C	-	+45°C	100-120Vac, refer to Output Power vs. Ambient Temperature curve.
Operating Temperature Ta	-40°C	-	+50°C	120-277Vac, refer to Output Power vs. Ambient Temperature curve.
Operating Tc for Safety Tc_s	-40°C	-	+90°C	
Operating Tc for Warranty Tc_w	-40°C	-	+75°C	5 years warranty case temperature Humidity: 10% to 95% RH.
Storage Temperature Ta	-40°C	-	+90°C	Humidity: 10% to 95% RH.
Altitude	-60m	-	4000m	
Over-Current Protection	5.5*2A	6.5*2A	8*2A	Hiccup mode. The output shall return to normal when the fault condition is removed.
Over Temperature Protection Tc	-	-	95°C	Hiccup mode. The output shall return to normal when the fault condition is removed.
Short Circuit Protection	-	-	-	Hiccup mode. The output shall return to normal when the fault condition is removed.
Dimensions (L*W*H)	174*68*35mm			
Net Weight	790±50g/PCS			
Package(L*W*H)	550*280*140mm; 18PCS/Ctn, Gross Weight:16.0Kg			

Safety Specification

Dielectric Strength(Input-Output)	-	1600Vac	-	60S, Current not exceeding 5mA.
Dielectric Strength(Input-Ground)	-	1600Vac	-	60S, Current not exceeding 5mA.
Dielectric Strength(Output-Ground)	-	500Vac	-	60S, Current not exceeding 5mA.
Grounding Resistance	-	-	0.1Ω	25°C±10°C Ambient Temperature, pass 40A Current, 120s.
Insulation Resistance	10MΩ	-	-	Input-Output, Input-PE,Output-PE, 500Vdc/60s/25°C.

Safety Compliance

Safety Category	Standards	Approved	Notes
CCC	GB19510.1,GB19510.14		
CE	EN61347-1, EN61347-2-13		
CE	EN62493		
ENEC	EN62384		
CB	EN62384		
BIS	IS 15885(PART 2/SEC 13)		
UL	UL 8750	√	
CUL	CSA C22.2 No.250.13	√	
KC	K61347-1, K61347-2-13		
PSE	J61347-1, J61347-2-13		
SAA	AS/NZS IEC 61347.2.13		
SAA	AS/NZS 61347.1		

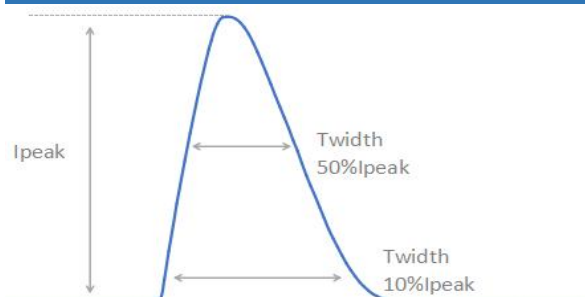
EMC Compliance

EMC Category	Standards	Approved	Notes
CCC	GB/T 17743, GB 17625.1		
CE	EN 55015		
CE	EN 61000-3-2, EN 61000-3-3		
CE	EN61000-4-2,3,4,5,6,11		
CE	EN 61547		
KC	K61547		
KC	K00015		
PSE	J55015		
FCC	FCC part 15	√	
Surge Shock Immunity			
Ringing Wave			

RoHS

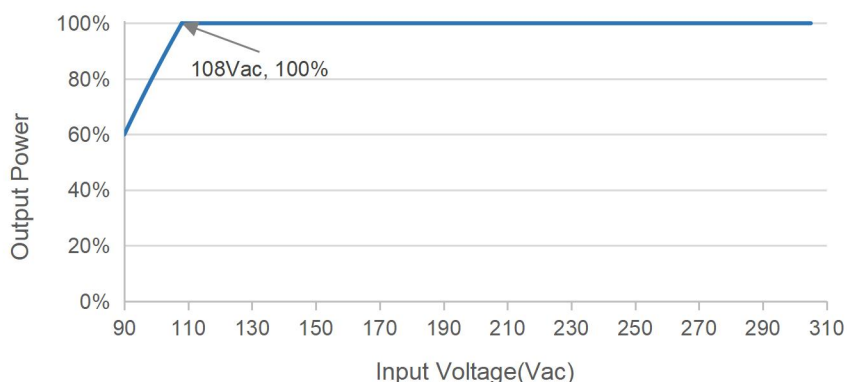
Our products comply with RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Inrush Current

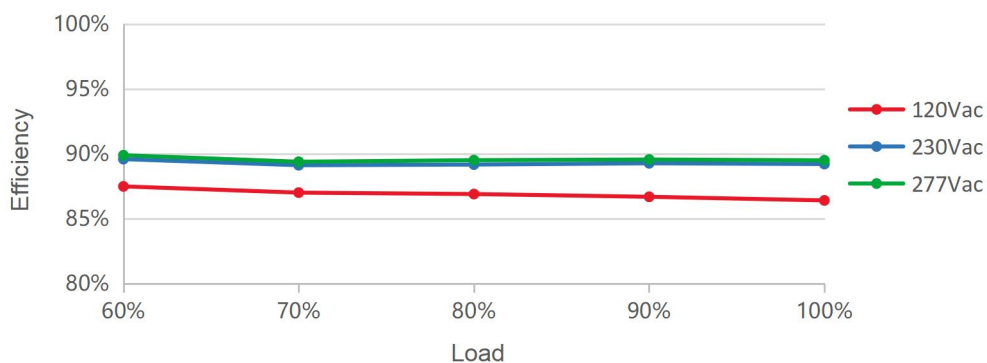


V_{in}	I_{peak}	$T(@10\% \text{ of } I_{peak})$	$T(@50\% \text{ of } I_{peak})$
120Vac	29A	790us	254us
230Vac	62A	636us	260us
277Vac	78A	582us	256us

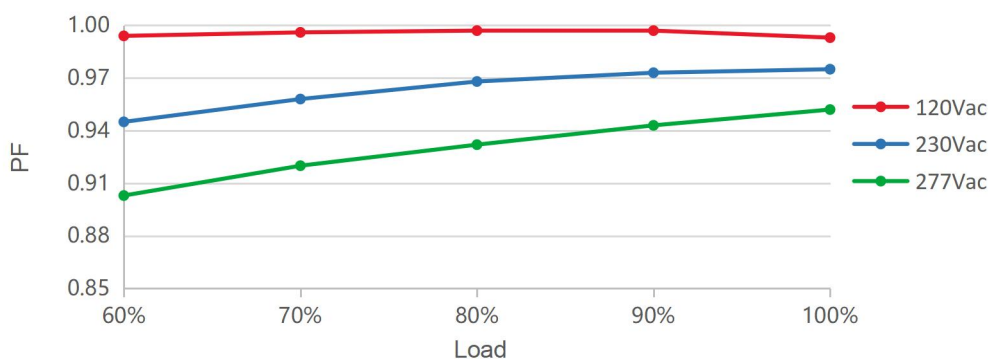
Output Power vs. Input Voltage



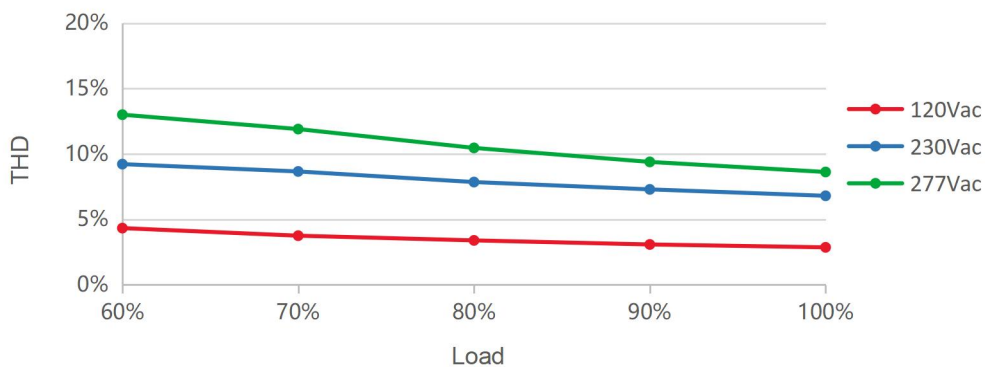
Efficiency vs. Load



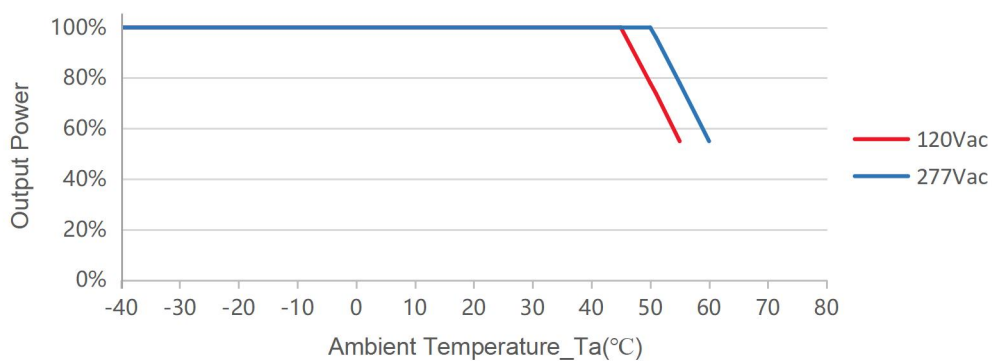
PF vs. Load



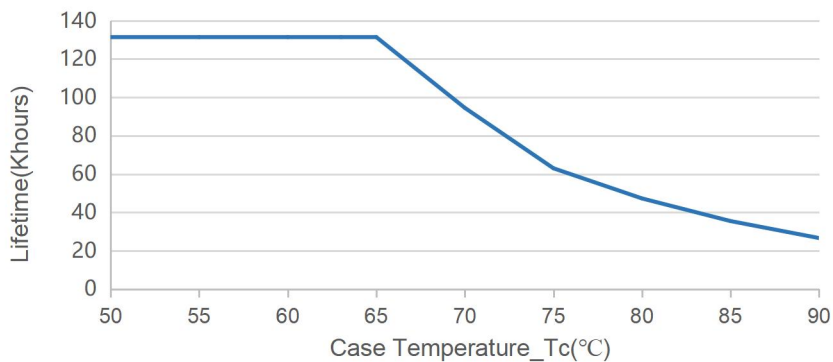
THD vs. Load



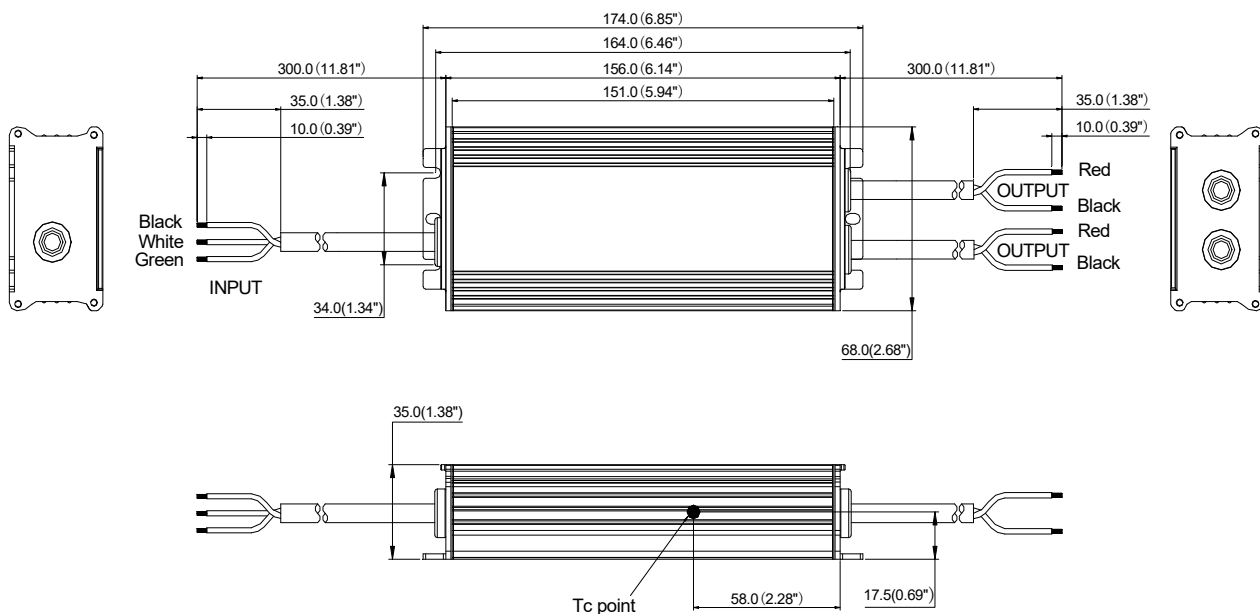
Output Power vs. Ambient Temperature



Lifetime vs. Case Temperature



Mechanical Outline



Specification

Input	UL SJOW 18AWG*3C Ø7.8mm L=300±20mm	UL
Output	UL SJOW 18AWG*2C*2 Ø7.3mm L=300±20mm	UL
Dual outputs cannot be used in parallel , Vo+ 1&Vo +2 don't connect together.		

Label

INPUT L BLACK G GREEN N WHITE	V2-120B012 Constant voltage type LED DRIVER	 	OUTPUT 1. RED Vo+ BLACK Vo- 2. RED Vo+ BLACK Vo- Output: Class 2				
	<table border="1"> <tr> <td>INPUT</td> <td>100-277V~50/60Hz, 1.6A Max, PF:0.95, 150W Max</td> </tr> <tr> <td>OUTPUT</td> <td>Two channels output Single channel: 5A Max, 60W Output voltage: 12V_{nom} Total Max.Power: 120W</td> </tr> <tr> <td>t_c:90°C</td> <td>t_a:50°C</td> </tr> </table>	INPUT		100-277V~50/60Hz, 1.6A Max, PF:0.95, 150W Max	OUTPUT	Two channels output Single channel: 5A Max, 60W Output voltage: 12V _{nom} Total Max.Power: 120W	t _c :90°C
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t _c :90°C	t _a :50°C						

Version

A.1	First release	2023-02-13
B.2	ECL202302024	2023-02-17
C.2	ECL202304044	2023-04-25

Specification for Approval

Product Name: 120W Constant Voltage Driver

Product Model: V2-120B012

Rev: C.2

XiLi Songbai Road 1061,
Address: Nanshan District, Shenzhen City, Post Code: 518108
Guangdong 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

Specification for Approval

Product Name: 120W Constant Voltage Driver

Product Model: V2-120B012

Rev: C.2

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,
 Address: Nanshan District, Shenzhen City, Post Code: 518108
 Guangdong 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