X6 VS Series 12W driver

MOSO®
Stock Code: 002660

Description

The X6 VS series is intelligent constant current driver with ultra-high PF. This driver is designed for urban public lighting applications such as rail traffic and airport stations. High efficiency and simple metal shell filling design, so that the product has excellent heat dissipation performance and IP65 rating, effectively extend the service lifetime and suitable for wet environment. Overall protection is provided against lightning surge, input under voltage, output over voltage, short circuit and over temperature to ensure high reliability and low failure rate.

Product Features

- Universal input voltage:176~264Vac;
- Isolate constant power design;
- Flicker free, ripple current 5%;
- Adjustable output current with potentiometer;
- Surge protection: DM 2KV, CM 4KV;
- Protections: Input UVP, output SCP / OVP / OTP;
- IP65
- 5 years warranty;

Application

Rail traffic
Airport station
Commercial lighting

Models

Model Number	Input Voltage Range (Vac)	MAX Output Power (W)	Output Voltage Range (Vdc)	Full Power Output Current Range (A)	Default Current(A)	Eff. (Typ.)	PF(Typ.)	THD(Typ.)
X6-012V048-S	176-264	12	24-48	0.25~0.30	0.24	86%	0.97	5%

NOTES:

[1]. V means non-dimmable, adjustable output current with potentiometer;

[2]. All specifications are measured at 25℃ ambient temperature, input voltage 230Vac, and the typical value tested at full load, if no specific note.

Input Specifications

Parameter	Min	Typ.	Max	Notes
Input Voltage Range	176Vac	220-240Vac	264Vac	
Input Frequency AC	47Hz	50/60Hz	63Hz	
Max Input Current	-	-	0.1A	220Vac，100% load
Max Input Power	-	-	16W	220Vac，100% load
Leakage Current	-	-	0.70mA	IEC60598-1;240Vac/60Hz,
Inrush Current	-	-	0.12A^2S	240Vac, Ta=25℃（cold start）
Power Factor (PF)	0.95	0.97	-	230Vac, 50Hz, 70%-100% load
Total Harmonic Distortion (THD)	-	5%	10%	230Vac, 50Hz, 70%-100% load
MCB(B16)	-	26	-	230Vac；100% load

Output Specifications

Parameter	Min	Typ.	Max	Notes
Output Voltage Range	24Vdc	-	48Vdc	
Open Circuit Voltage	-	-	65Vdc	
Output Current Range (Iset)	0.15A	-	0.30A	Adjustable output current with potentiometer
Current Accuracy	-5%Iset	-	+5%Iset	
Total Output Current Ripple (pk-pk)	-	5%	10%	20MHz BW full load＆LED load the LED load ripple is slightly different for different leds
Startup Overshoot Current	-	-	10%	220-240Vacfull load condition, LED load
Line Regulation	-3%	-	+3%	25℃±10℃ambient temperature, input changes from 200Vac to 264Vac
Load Regulation	-3%	-	+3%	Load varies from 70% to 100% with 230VacInput at 25℃±10℃ ambient temperature
Turn-on Delay Time	-	-	1.5s	240Vac,100% load

General Specifications

Parameter	Min	Typ.	Max	Notes
Efficiency @230Vac Io=0.30A	85%	86%	-	100% load，25℃ambient temperature
Mean Time Between Failure	-	200Khours	-	25℃±10℃ambient temperature，230Vac，80% load condition(MIL-HDBK-217/SR-332)
Lifetime	-	50Khours	-	230Vac&100% load, Tc<65℃
Operating Temperature Ta	-40℃	-	+50℃	Refer to Output Power vs. Ambient Temperature curve
Operating Tc for Safety Tc_s	-40℃	-	+75℃	
Operating Tc for Warranty Tc_w	-40℃	-	+65℃	5 years warranty case temperature Humidity: 10% to 95% RH
Storage Temperature Ta	-40℃	-	+85℃	Humidity: 5% to 100% RH
Altitude	-60m	-	4000m	
Input Under voltage Protection	135Vac	150Vac	160Vac	Turn off the output or hiccup when the input voltage falls below protection voltage.
Over Temperature Protection Tc	-	70℃	-	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	-	-	-	Constant current mode. The output shall return to normal when the fault condition is removed.
Dimensions (L*W*H)	129*42.5*36mm			
Net Weight	480±50g/PCS			
Package (L*W*H)	488*298*200mm; 24PCS/Ctn, Gross Weight: 12.5Kg			

Safety Specification

Dielectric Strength（Input-Output）	-	3750Vac	-	60s，Current not exceeding 5mA
Dielectric Strength（Input-Ground）	-	1875Vac	-	60s，Current not exceeding 5mA
Dielectric Strength（Output-Ground）	-	500Vac	-	60s，Current not exceeding 5mA
Grounding Resistance	-	-	0.1Ω	25℃±10℃ Ambient Temperature, pass 25A Current, 60s.
Insulation Resistance	10MΩ	-	-	Input-Output, Input-PE, Output-PE, 500Vdc/60s/25℃

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		
	AS/NZS 61347.1		

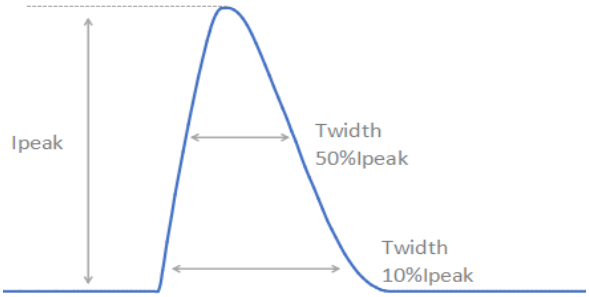
EMC Compliance

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	ANSI/C82.77-5-2017		
Ringing Wave			

RoHS

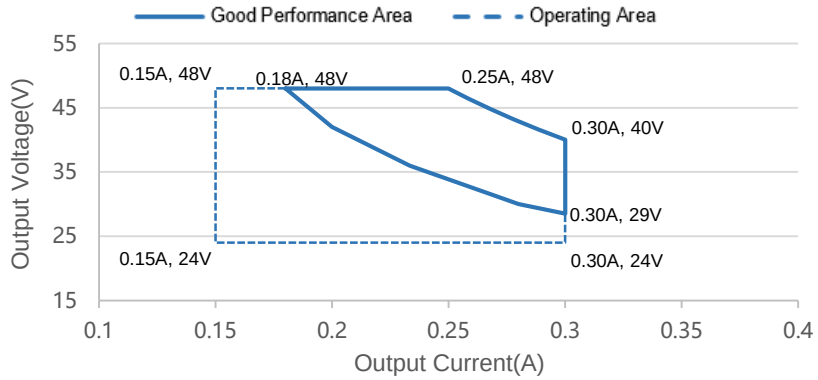
Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.

Inrush Current

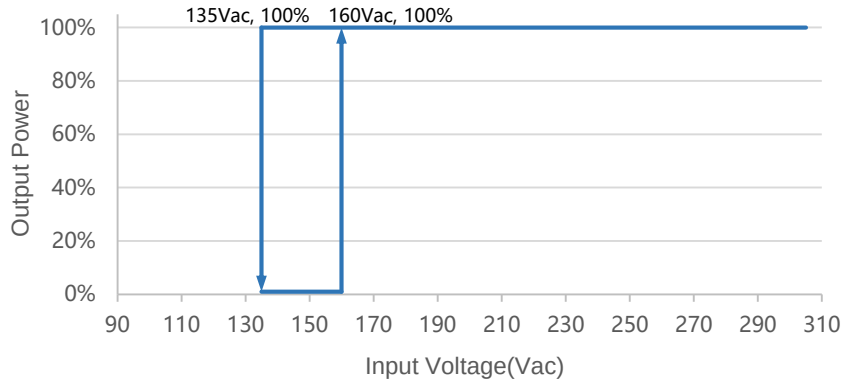


Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
230Vac	26.5A	240uS	138uS

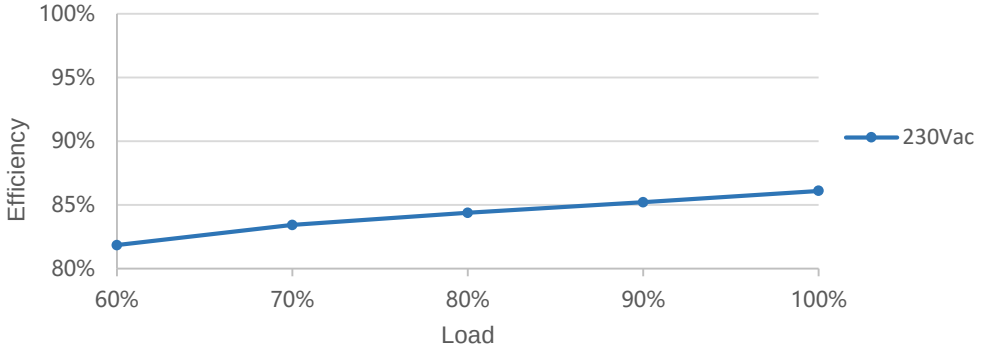
Output Voltage vs. Output Current



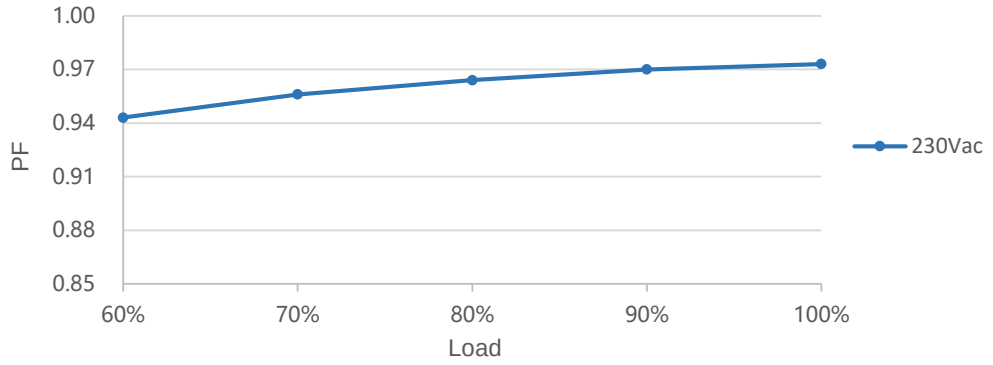
Output Power vs. Input Voltage



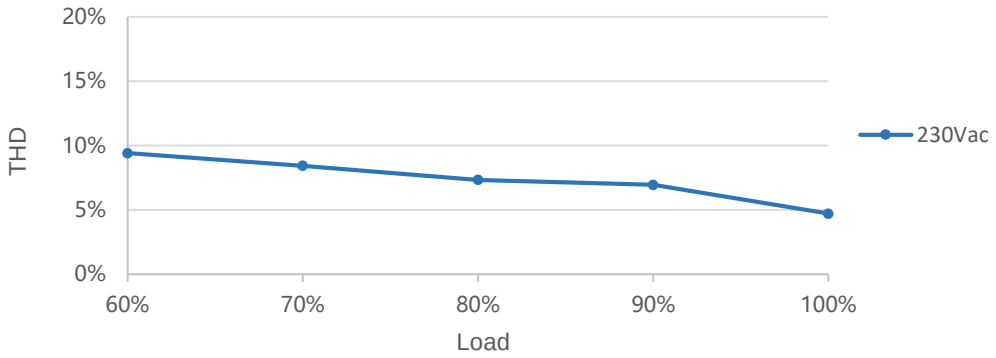
Efficiency vs. Load



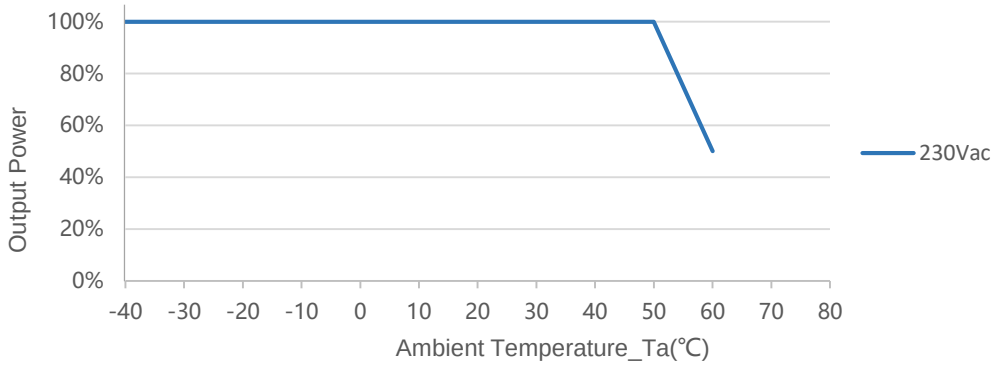
PF vs. Load



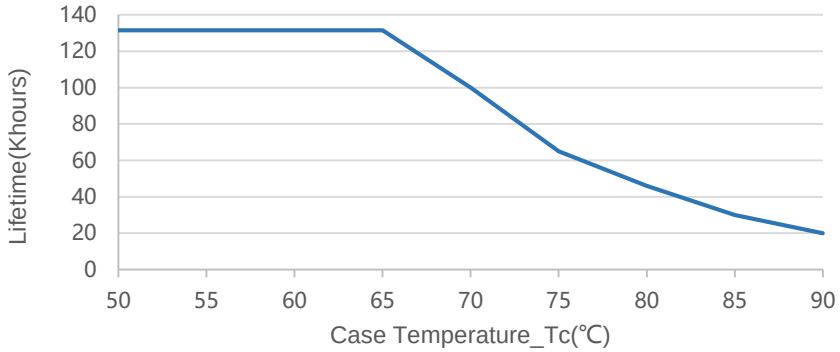
THD vs. Load



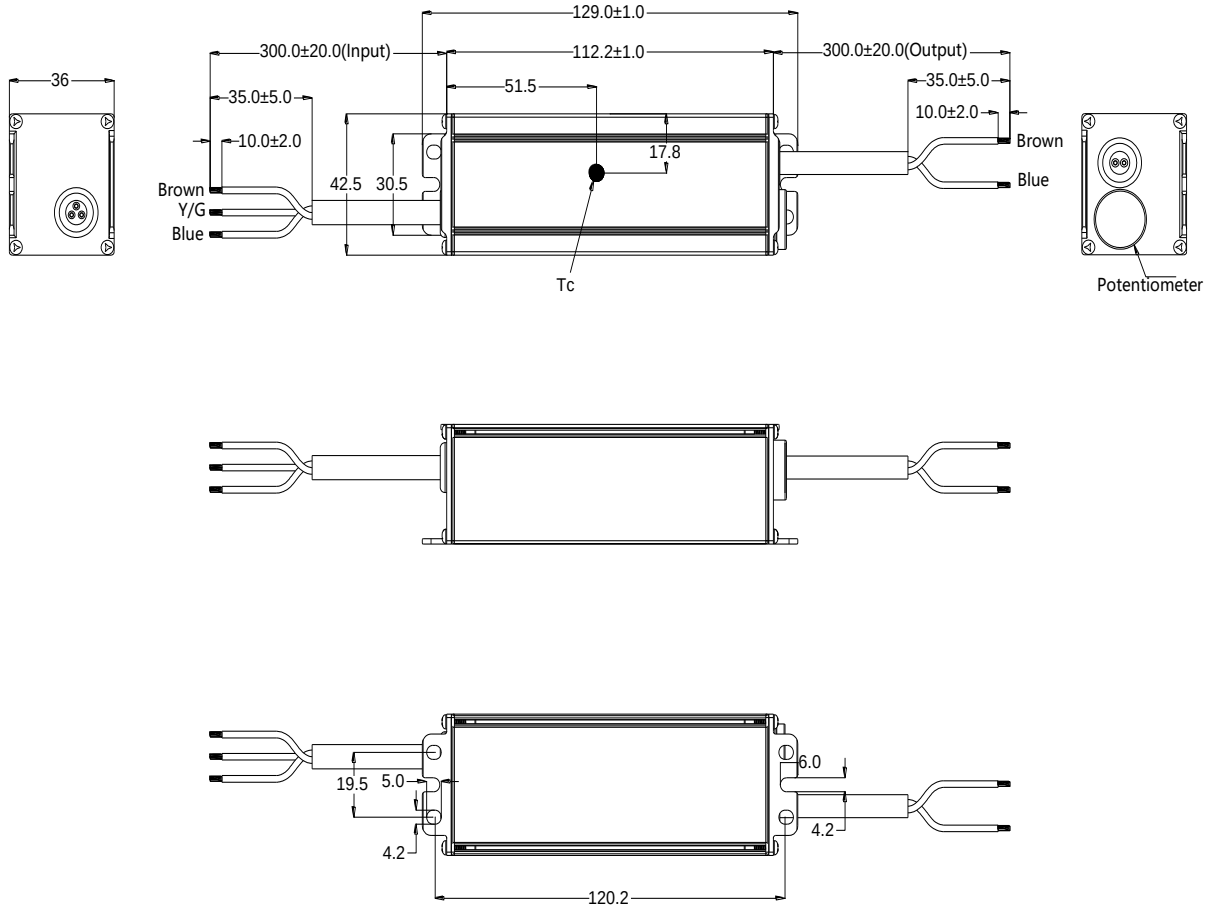
Output Power vs. Ambient Temperature



Lifetime vs. Case Temperature



Mechanical Outline



Specification

Input	CCC+VDE H05RN-F 3x1.0mm² L=300±20mm	CCC/CE
Output	CCC+VDE H05RN-F 2x1.0mm² L=300±20mm	CCC/CE

Version

A.1	First release	2024-05-09

Specification for Approval

Product Name: 12W LED Driver

Product Model: X6-012V048-S

Rev: A.1

Address: XiLi Songbai Road 1061, Nanshan District, Shenzhen City, Guangdong, China
Tel: 0755-27657000
FAX: 755-27657908
E-mail: info@mosopower.com
Web Site: http://www.mosopower.com

Prepared By	Checked By	Approved By

MOSO®
Stock Code: 002660

Specification for Approval

Product Name: 12W LED Driver

Product Model: X6-012V048-S

Rev: A.1

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, China
Tel: 0755-27657000
FAX: 755-27657908
E-mail: info@mosopower.com
Web Site: http://www.mosopower.com

Prepared By	Checked By	Approved By