Description

The X6E series is outdoor programmable LED driver that operates in constant current with high PF value, the X6E series also provide multiple isolated dimming controls,Dim-to-Off. It also helps clients to improve the management of logistics and stock.The compact metal case and high efficiency enables the driver to operate with high reliability. It provides extreme durability with an IP67 rating and extends product lifetime. Overall protection is provided against lightning surge, output over voltage, short circuit and over temperature to ensure low failure rate.

Product Features

- Universal input voltage: 90~305Vac;
- Isolate constant power design;
- 3-in-1 dimmable: 0~10Vdc / PWM/ Timer dimming;
- Off-line programmable with configurable operating windows;
- Programmable Constant Lumen Output (CLO);
- Output and Dimming Signal Isolating;
- High surge protection: 6KV line-line, 10KV line-earth;
- Protections: SCP / OVP / OTP;
- IP67 design for indoor and outdoor applications;
- Suitable for dry / damp / wet locations;
- 5 years warranty;

Application

Road and street lighting,
Tunnel lighting
Area and flood lighting
High-bay 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.)
X6E-100M056-G	100-277	100	28-56	1.78~2.85	2.05	91.0%	0.95	5%

Notes:

[1]. M means 0-10V/PWM dimming.

[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	90Vac	120/ 220~240/ 277Vac	305Vac	
Input Frequency AC	47Hz	50/60Hz	63Hz	
Max Input Current	-	-	1.3A	120Vac&100% load
Max Input Power	-	-	120W	120Vac&100% load
Leakage Current	-	-	0.70mA	IEC 60598-1; 240Vac/60Hz
Inrush Current	-	-	60A	230Vac, 100% load
Power Factor (PF)	0.96	0.98	-	120Vac，50-60Hz，70%-100% load
Power Factor (PF)	0.93	0.95	-	230Vac，50-60Hz，70%-100% load
Power Factor (PF)	0.91	0.93	-	277Vac，50-60Hz，70%-100% load
Total Harmonic Distortion (THD)	-	5%	10%	120-230Vac，50-60Hz，70%-100% load
Total Harmonic Distortion (THD)	-	10%	15%	277Vac，50-60Hz，70%-100% load
MCB(B16)	-	9	-	240Vac; 100%load

Output Specifications

Parameter	Min	Typ.	Max	Notes
Output Voltage Range	28Vdc	-	56Vdc	The full power cannot be lower than 35Vdc
Open Circuit Voltage	-	-	80Vdc	
Output Current Range	0.285A	-	2.85A	Adjustable Output Current with programmer
Full Power Current Range	1.78A	-	2.85A	
Current Accuracy	-5%I_{set}	-	+5%I_{set}	I_{set} is set to the full power range
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%	100-277Vac full load condition, LED load
Line Regulation	-1%	-	+1%	25℃±10℃ ambient temperature, input changes from 200Vac to 264Vac
Load Regulation	-3%	-	+3%	Load varies from 70% to 100% with 230Vac Input at 25℃±10℃ ambient temperature
Turn-on Delay Time	-	-	1.0s	240Vac,100% load

General Specifications

Parameter	Min	Typ.	Max	Notes
Efficiency@230Vac Io=2.85A Io=1.78A	 89.5% 89.5%	 91.0% 91.0%	-	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 75℃，refer to lifetime vs. case temperature curve
Operating Temperature Ta	-40℃	-	+50℃	100~200Vac, Output Power vs. Ambient Temperature curve
Operating Temperature Ta	-40℃	-	+55℃	200~277Vac, Output Power vs. Ambient Temperature curve
Operating Tc for Safety Tc_s	-40℃	-	+90℃	
Operating Tc for Warranty Tc_w	-40℃	-	+75℃	5-year warranty shell temperature,humidity:10% to 95% RH
Storage Temperature Ta	-40℃	-	+85℃	Humidity:5% to 100% RH
Altitude	-60m	-	4000m	
Input Under voltage Protection	-	-	85Vac	Decreases output current or hiccup when the input voltage is lower than protection point.
Over Temperature Protection Tc	-	-	93℃	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)	138*68*35mm			
Net Weight	600±50g/PCS			
Package (L*W*H)	466*282*172mm; 16PCS/Ctn, Gross Weight: 11.5Kg			For reference only

Dimming

Parameter	Min	Typ.	Max	Notes
Absolute Maximum Voltage	-	10V	15V	On the Vdim (+) Pin
Source Current on Vdim (+)Pin	-	200uA	400uA	
Dimming Range	10% I_{max}	-	100% I_{max}	I_{max} is set to the full power range
Suggest Dimming Input 0-10V	0V	-	10V	
Turn-on Voltage	0.7V	0.9	1.0V	
Turn-off Voltage	0.5V	0.6	0.7V	Afterglow may appear after switching off.It is necessary to conduct grounding test with lighting fixture.
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%	
Turn-on Duty Cycle	7%	-	10%	
Turn-Off Duty Cycle	5%	-	7%	Afterglow may appear after switching off.It is necessary to conduct grounding test with lighting fixture.
Timer dimming	-	-	-	3 types, which is set by software
Output lumen compensation	-	-	-	Constant lumen output function

Safety Specifications

Parameter	Min	Typ.	Max	Notes
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
Dielectric Strength（Input-Dimming）	-	3750Vac	-	60S，Current not exceeding 5mA
Dielectric Strength（Dimming-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, EN62493	√	
ENEC	EN61347-1, EN61347-2-13, EN62384	√	
CB	IEC61347-1, IEC61347-2-13	√	
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 61347.2.13, AS/NZS 61347.1	√	
EAC	ГОСТ Р МЭК 61347-1 ГОСТ IEC 61347-2-13	√	

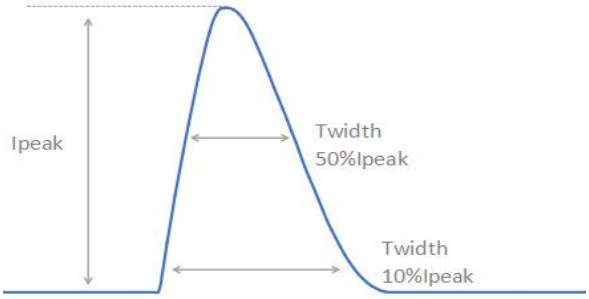
EMC Compliance

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			
EAC	ГОСТ IEC 62493, СТБ ЕН 55015 ГОСТ IEC 61547	√	
EAC	ГОСТ 30804.3.2 (IEC 61000-3-2) ГОСТ 30804.3.3 (IEC 61000-3-3)	√	

RoHS

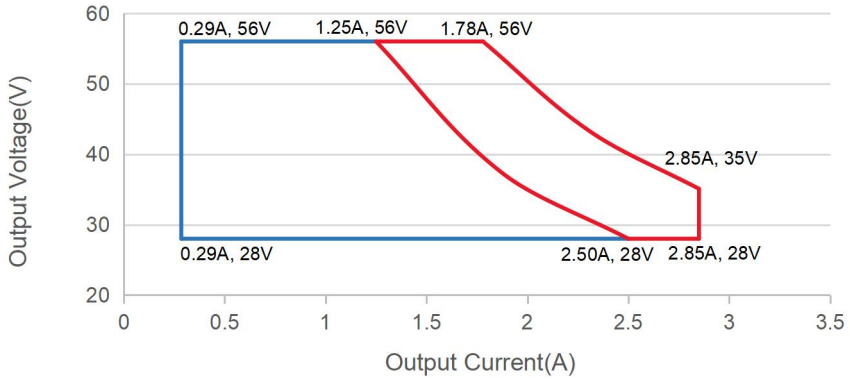
Our products comply with RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Inrush Current



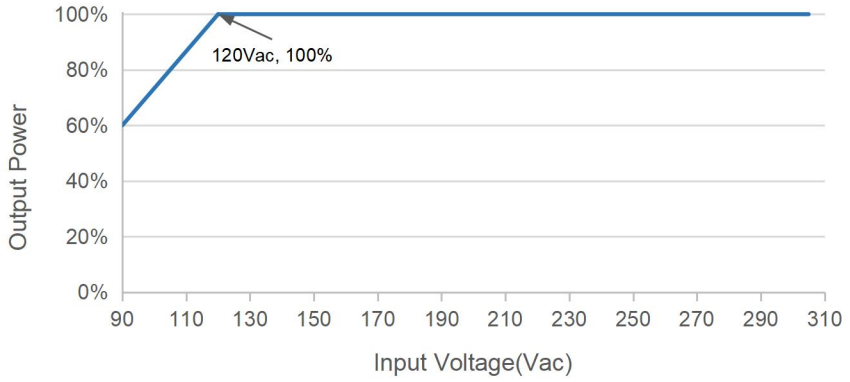
Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
230Vac	52A	610μs	280μs

Output Voltage vs. Output Current

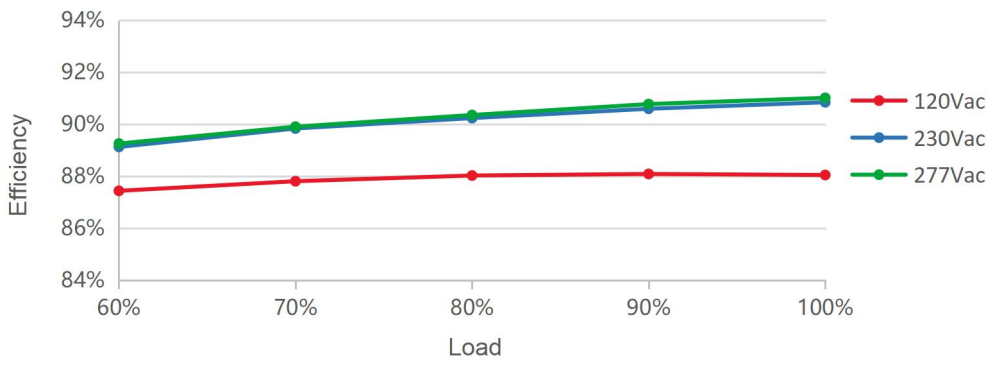


Red curve: good performance area

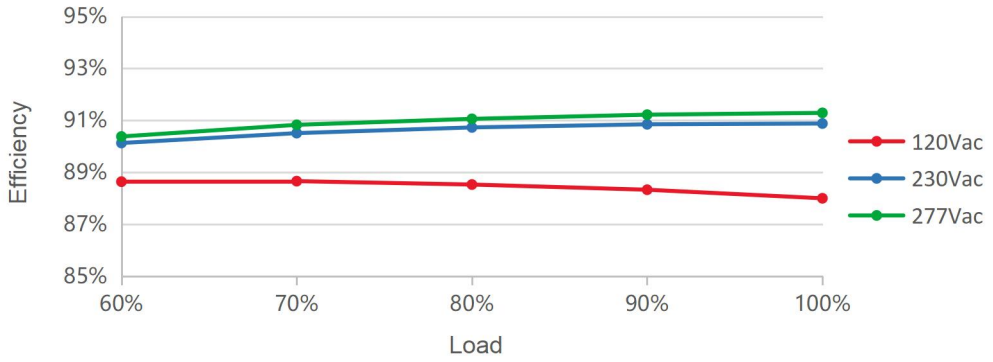
Output Power vs. Input Voltage



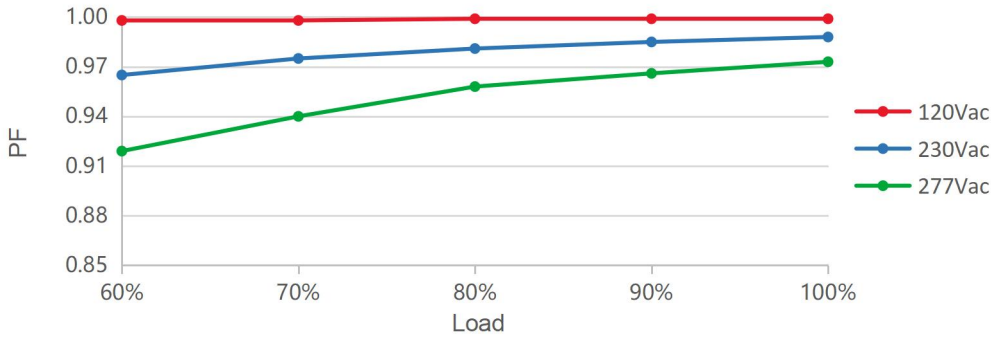
Efficiency vs. Load (Io=1.78A)



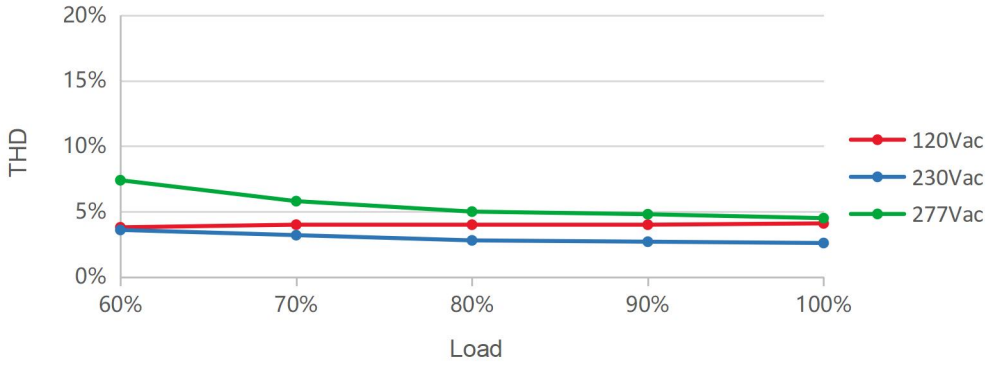
Efficiency vs. Load (Io=2.85A)



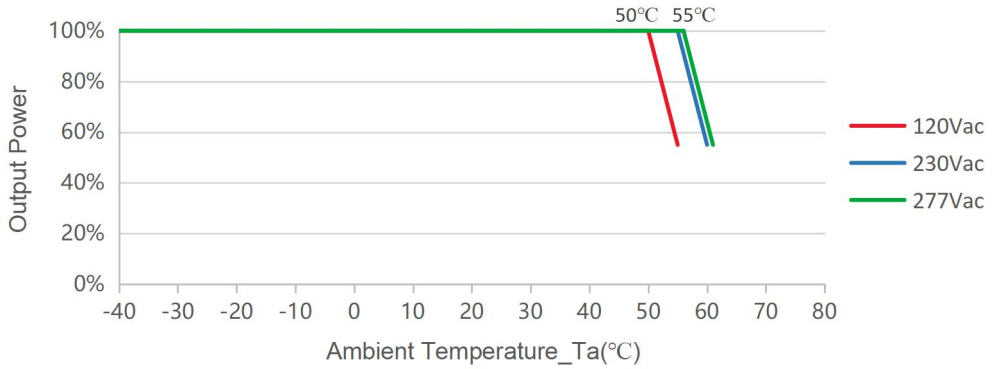
PF vs. Load



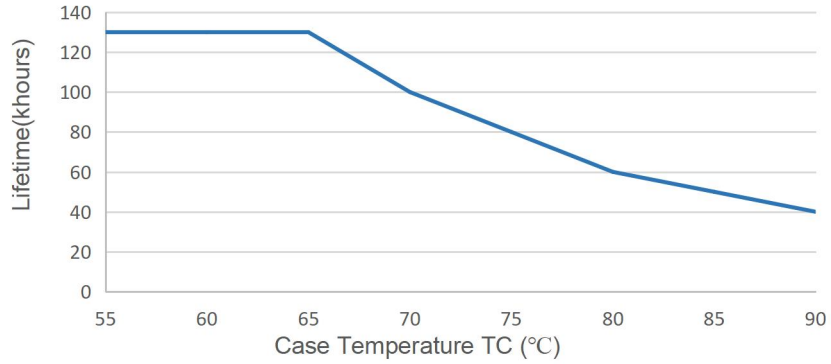
THD vs. Load



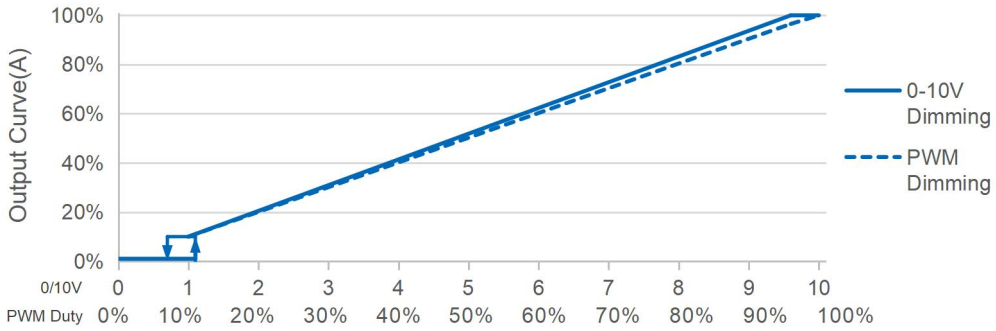
Output Power vs. Ambient Temperature



Lifetime vs. Case Temperature



0-10V/PWM Dimming



Note:

Afterglow may appear after switching off dimming due to the difference of lamp panel. Thus, lighting fixture grounding test is suggested.

Off-line Programming

User-friendly connection of programming without necessary to power on device(suitable for X6, X6S, X6I,X6E Series).

Programming mode I

Visual Intelligent Programming

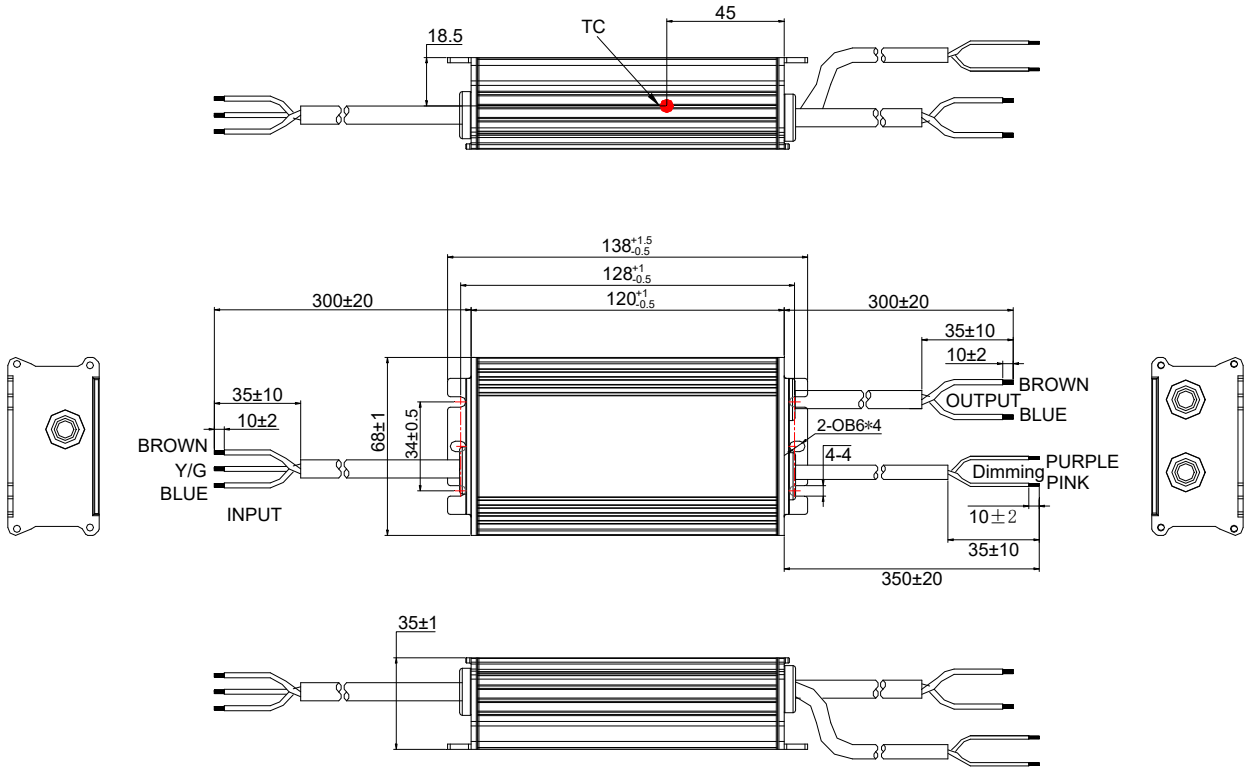
1. Set the output parameters through the control signal line 0-3.3V/0-5V/0-9V/0-10V optional.
2. Timer dimming. Set the timer control function, support up to 7 segments;
3. Set output CLO;
4. Read the recorded system parameters; Record the working time working temperature, and software version information of the LED driver.
5. Configure the driving parameters. After setting is completed, then click the configuredparameters to complete programming.
6. Download it to the offline programmer.

Programming mode 2

Instructions of one touch programmer:

1. Open the software interface and download the program to the offline programmer.
2. Connect the dimming wire with the programmer, press the programmer button,the programmer will give you asubtle reminder “(Beep) ” to tell you the installation completed.

Mechanical Outline

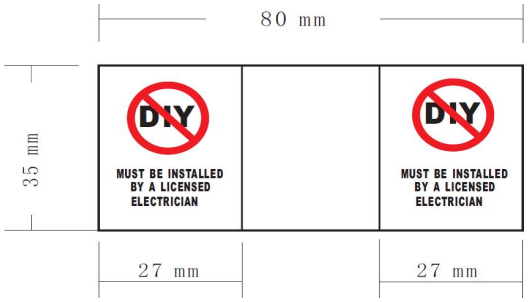


Specification

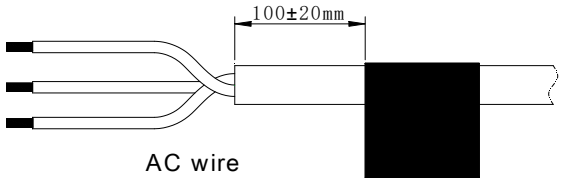
Input	CCC+VDE+SAA H05RN-F 3*1.0 mm² L=300±20mm	CCC/CE/SAA
Output	CCC+VDE+SAA H05RN-F 2*1.0 mm² L=300±20mm	CCC/CE/SAA
Dimming	UL 2733 2*22AWG L=350±20mm	UL

AC wire labels

For AC wire label:



The labels stick location as below:



Label


INPUT
L (BROWN 棕)
G (Y/G 黄/绿)
N (BLUE 蓝)
中国制造
仅适用LED模块
MADE IN CHINA
For LED module only
MOSO®
Uout(最大电压):80V ⎓
X6E-100M056-G 恒流型, 内置防雷管
LED DRIVER Constant current type
LED 控制装置 Integrated SPD
INPUT (输入)
100-240V/277V～ 50/60Hz, 120W Max. 1.3A Max.
PF:(Pout≥72W)= 0.85C- 0.95
100-240V～ For CCC Certification range CCC认证范围
100-277V～ For EU Certification range 欧盟认证范围
OUTPUT (输出)
28-56V ⎓, 0.285-2.85A Max. 100W
tc:90℃
ta:50℃ Input:100-200V～
ta:55℃ Input:200-240/277V～
IP67
RoHS
SELV
110
OUTPUT
(BROWN 棕) Vo +
(BLUE 蓝) Vo -
(PURPLE 紫) DIM+
(PINK 粉) DIM-
EESS-240104-0
深圳茂硕电子科技有限公司/深圳市南山区西丽松白路1061号
SHENZHEN MOSO ELECTRONICS TECHNOLOGY CO., LTD
No.1061, Songbai Road, Xili Town, Nanshan District,
Shenzhen, CHINA

Version

A.1	First release	2024-03-29

Specification for Approval

Product Name： 100W LED Driver

Product Model： X6E-100M056-G

Rev： A.1

Address:XiLiSongbai 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

Specification for Approval

Product Name： 100W LED Driver

Product Model： X6E-100M056-G

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:XiLiSongbai Road 1061, Nanshan District, Shenzhen City, Guangdong, China

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Prepared By	Checked By	Approved By