X7 CW 150W LED Driver

MOSO®
Stock Code: 002660

Description

The X7 CW series is outdoor programmable LED driver that operates in constant current with high PF value. It is designed for street and tunnel light dimming and color temperature adjustment. Support reverse dimming, reverse 10-1V/5-1V can be set. 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 and over temperature to ensure low failure rate.



Product Features

- Universal input voltage: 90~305Vac;
- Isolated constant current design;
- Brightness and color temperature are independently adjustable;
- Two-way output, one to adjust brightness, one to adjust color temperature;
- Total output power 60W; Maximum output per way 60W;
- Single circuit down to 0% at 10% total current, color temperature adjustable;
- Online programming; reverse 10-1V/5-1V optional;
- Output current programming adjustable;
- Protections: OVP / OTP;
- High surge protection: 6KV line-line, 10KV line-earth;
- Dimming wire protection: 220~240Vac;
- IP67 design for indoor and outdoor applications;
- 5 years warranty.

Application

Tunnel lighting

Models

Model Number	Input Voltage Range (Vac)	Max Output Power (W)	Way	Output Voltage Range (Vdc)	Full Power Output Current Range (A)	Default Current(A)	Eff. (Typ.)	PF(Typ.)	THD(Typ.)
X7-150M052CW	90-305	150	1	32-56	0.43-4.30	3.1A	91%	0.96	5%
			2	32-56	0.43-4.30	0			

Notes:

[1]. M means 0-10V/PWM dimming, CW means color temperature adjustable.

[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	120/277Vac	305Vac	Derate to 80% @<120Vac
Input Frequency AC	47Hz	50/60Hz	63Hz	
Max Input Current	-	-	2.1A	120-264Vac & 100% Load
Max Input Power	-	-	180W	
Leakage Current	-	-	0.7mA	IEC 60598-1; 264Vac/60Hz
Inrush Current	-	-	75A	240Vac, 100% Load
Power Factor (PF)	0.96	0.98	-	120Vac, 50-60Hz,70~100% Load
Power Factor (PF)	0.94	0.96	-	230Vac, 50Hz,70~100%Load
Total Harmonic Distortion (THD)	-	5%	10%	120-220Vac,50-60Hz, 70~100% Load
Total Harmonic Distortion (THD)	-	8%	10%	230Vac, 50-60Hz, 70%-100% Load
MCB(B16)	-	3	-	230Vac； 100% Load

Output Specifications

Parameter	Min	Typ.	Max	Notes
Output Voltage Range V+/V1-	32Vdc	-	56Vdc	
Output Voltage Range V+/V 2-	32Vdc	-	56Vdc	
Open Circuit Voltage	-	-	80Vdc	
Output Current Range	0.43A	-	4.30A	Total current for two ways
Current Accuracy	-5%Ioset	-	+5%Ioset	
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 & 100% 100%， 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 230Vac, input at 25 ℃±10 ℃ ambient temperature, Load changes from 70% to 100%
Turn-on Delay Time	-	-	1s	120V/220Vac, 100% Load

General Specifications

Parameter	Min	Typ.	Max	Notes
Efficiency @120Vac Io=3.10A	86%	88%	-	100% load, 25℃ ambient temperature
Efficiency @120Vac Io=4.30A	84%	86%	-	100% load, 25℃ ambient temperature
Efficiency @220Vac Io=3.10A	89%	91%	-	100% load, 25℃ ambient temperature
Efficiency @220Vac Io=4.30A	88%	90%	-	100% load, 25℃ ambient temperature
Operating Temperature Ta	-	200Khours	-	25℃ ±10℃ambient temperature · 230Vac · 80% load condition (MIL-HDBK-217F)
Operating Temperature Ta	-	50Khours	-	230Vac & 100% load, Tc 75℃ · refer to lifetime vs. case temperature curve
Operating Tc for Safety Tc_s	-40℃	-	+55℃	
Operating Tc for Warranty Tc_w	-40℃	-	+90℃	
Storage Temperature Ta	-40℃	-	+75℃	5-year warranty shell temperature,humidity:10% to 95% RH
Altitude	-40℃	-	+85℃	Humidity:5% to 100% RH
Input Under voltage Protection	-60m	-	4000m	
Over Temperature Protection Tc	-	90℃	-	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	-	-	-	Output cannot be short circuit
Dimensions (L*W*H)	L190*W68*H37			
Net Weight	870±50g/PCS			
Package (L*W*H)	L502*W372*H222mm;15PCS/Ctn, Gross Wight: 13.05kg			For reference only

Dimming

Parameter	Min	Typ.	Max	Notes
Absolute Maximum Voltage	-	12V	16V	
Source Current on Vdim (+)Pin	-	150uA	200uA	
Suggest Dimming Input 0-10V for CCT	0V	-	10V	
V+/V1-: Turn-on Voltage	0.9V	1.0	1.1V	CCT Open: output current max
V+/V1-: Turn-off Voltage	0.7V	0.8	0.9V	
V+/V2-: Turn-on Voltage	8.9V	9.0	9.1V	CCT Open: no output
V+/V2-: Turn-off Voltage	9.1V	9.2	9.3V	
Suggest Dimming Input 0-5V for CCT	0V	-	5.0V	
V+/V1-: Turn-on Voltage	0.6V	0.7	0.8V	CCT Open: output current max
V+/V1-: Turn-off Voltage	0.4V	0.5	0.6V	
V+/V2-: Turn-on Voltage	4.2V	4.3	4.4V	CCT Open: no output
V+/V2-: Turn-off Voltage	4.4V	4.5	4.6V	
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	10%	-	99%	
PWM for color	0%	-	10%	
V+/V1-: Turn-on Duty Cycle	9%	10%	11%	CCT Open: output current max
V+/V1-: Turn-Off Duty Cycle	7%	8%	9%	
V+/V2-: Turn-on Duty Cycle	89%	90%	91%	CCT Open: no output
V+/V2-: Turn-Off Duty Cycle	91%	92%	93%	
10-1V reverse dimming	1V	-	10V	Dimming open , V+/V1- Max. current
5-1V reverse dimming	1V	-	5V	Dimming open , V+/V1- Max. current
10-1V/5-1V reverse color	-	-	-	CCT has no changes

Note:

[1]. Dimming voltage accuracy is ±0.05V

[2]. Dimming adjusts output current range; CCT regulates current ratio of two channels.

Safety Specification

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）	-	1600Vac	-	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/NZS IEC 61347.2.13		
SAA	AS/NZS 61347.1		

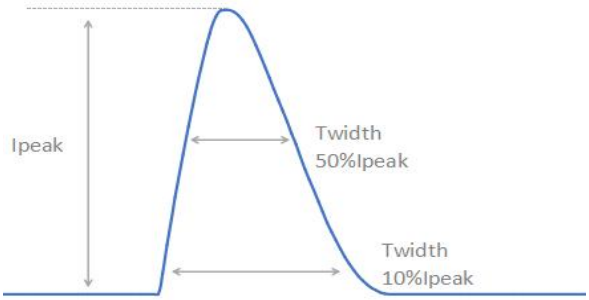
EMC Compliance

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	ANSI/C82.77-5-2017		
Ringing Wave			

RoHS

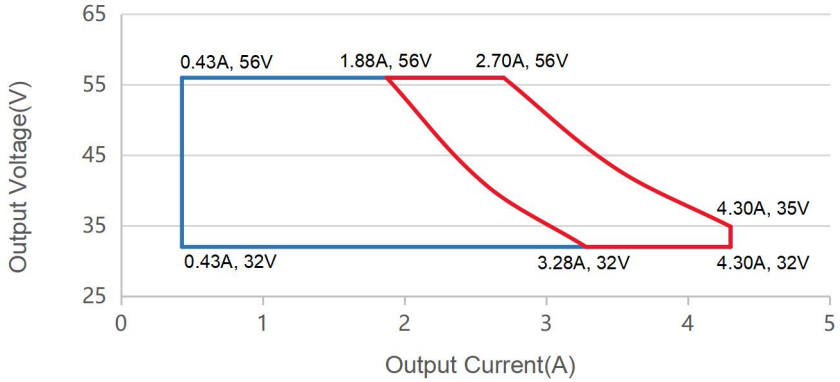
Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.

Inrush Current

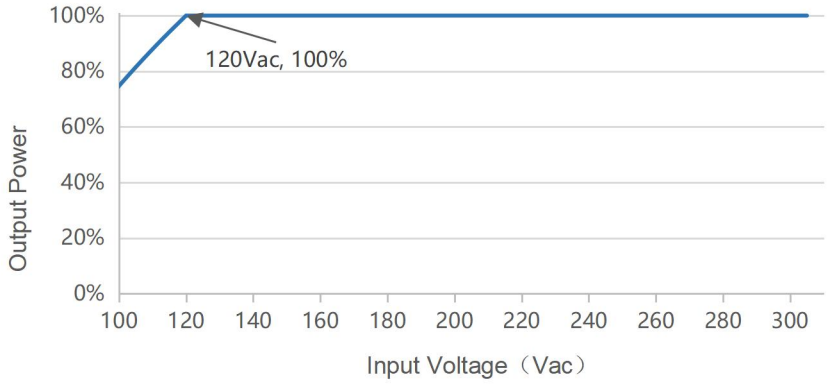


Vin	Ipeak	T(@10% of Ipeak)	T(@50% of Ipeak)
230Vac	59A	640uS	300uS

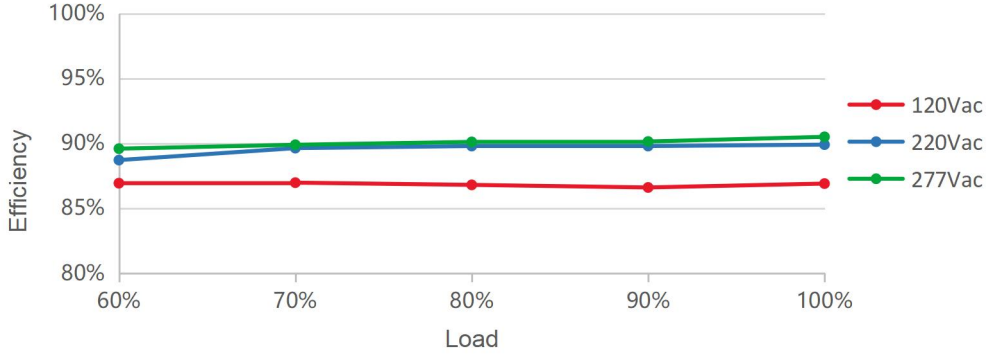
Output Voltage vs. Output Current



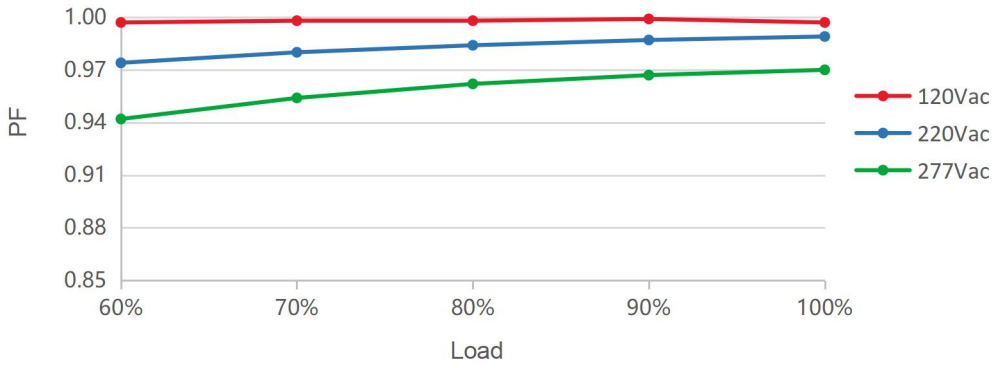
Output Power vs. Input Voltage



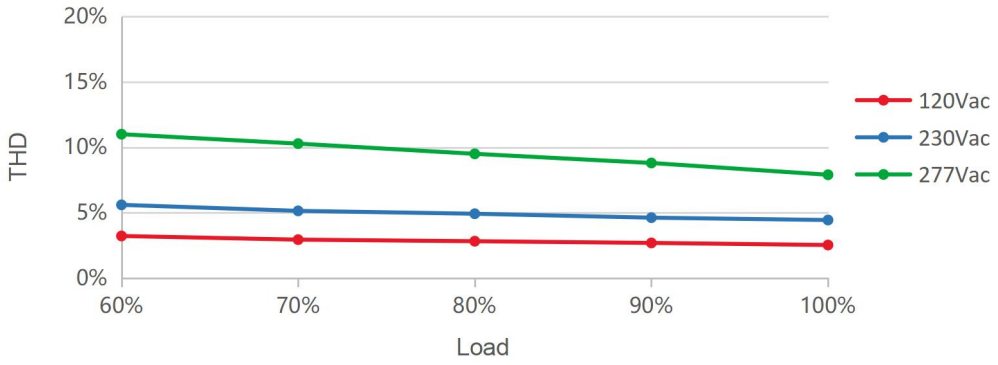
Efficiency vs. Load



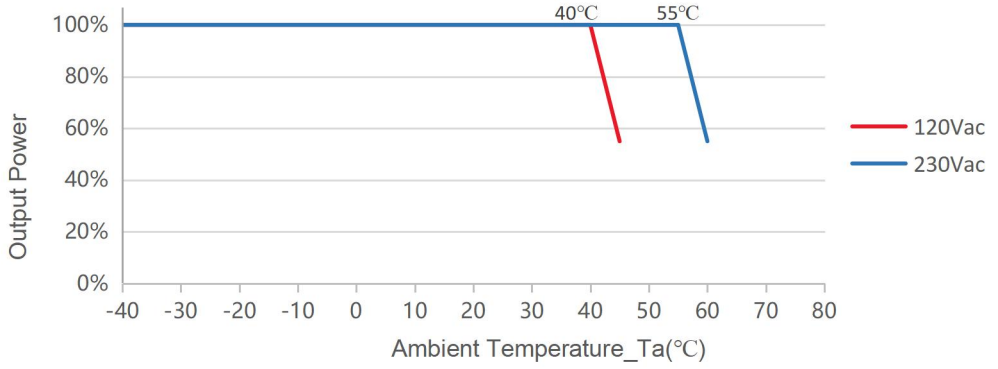
PF vs. Load



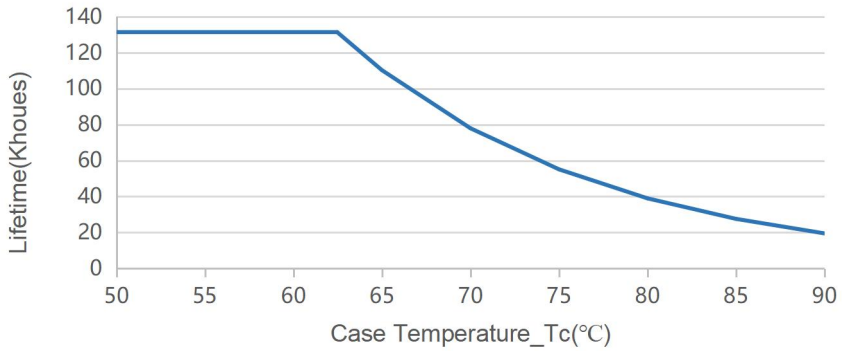
THD vs. Load



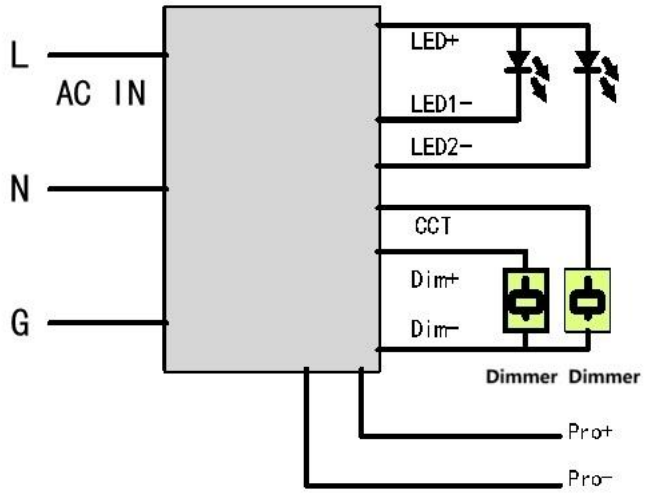
Output Power vs. Ambient Temperature



Lifetime vs. Case Temperature

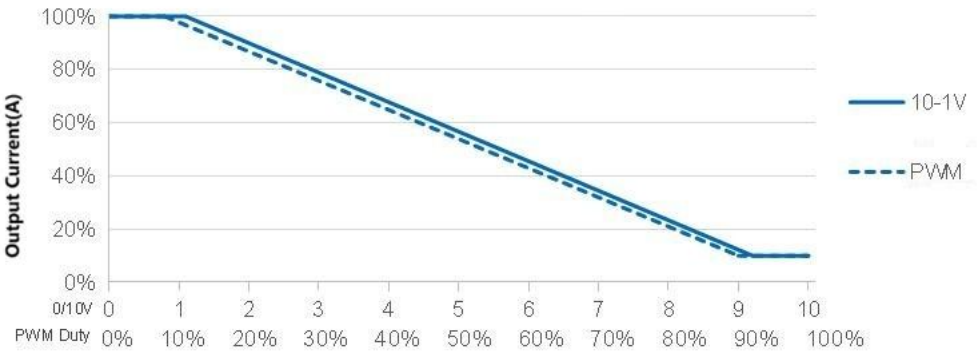


Dimming & CCT Wiring diagram

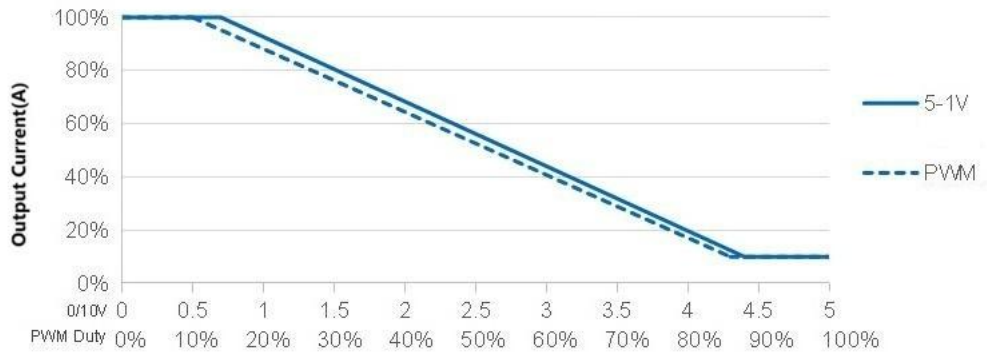


10-1V /5-1V /PWM Dimming

1. Reverse 10-1V

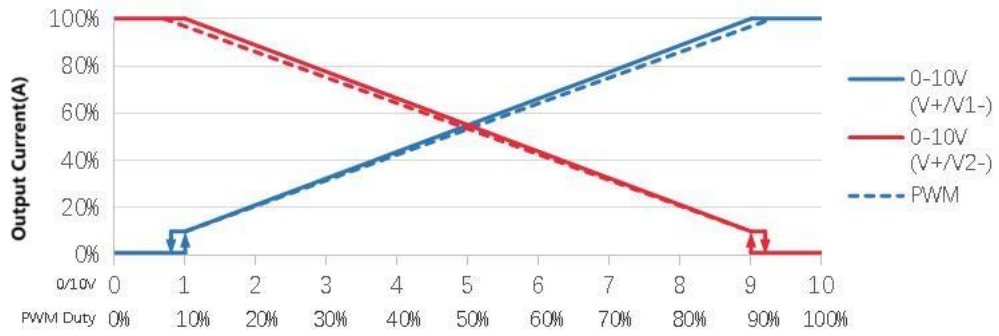


2. Reverse 5-1V

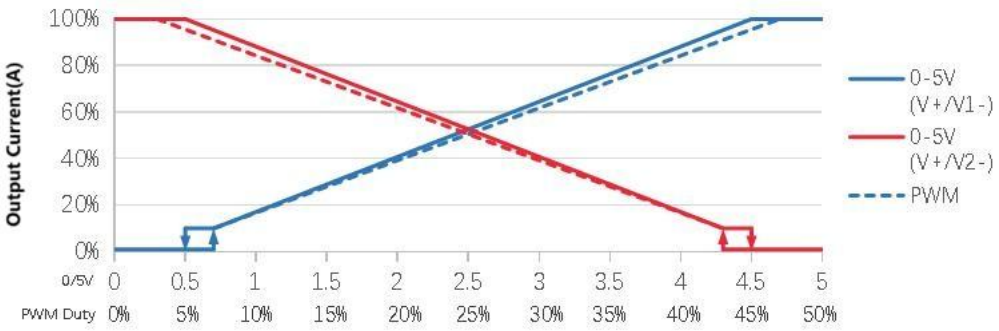


CCT

1. 0-10V



2. 0-5V



Programming

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

Programming mode 1



Visual Intelligent Programming

1. Set the output parameters through the control signal line 10V-1V/5V-1 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 configured parameters to complete programming.
6. Download it to the offline programmer.

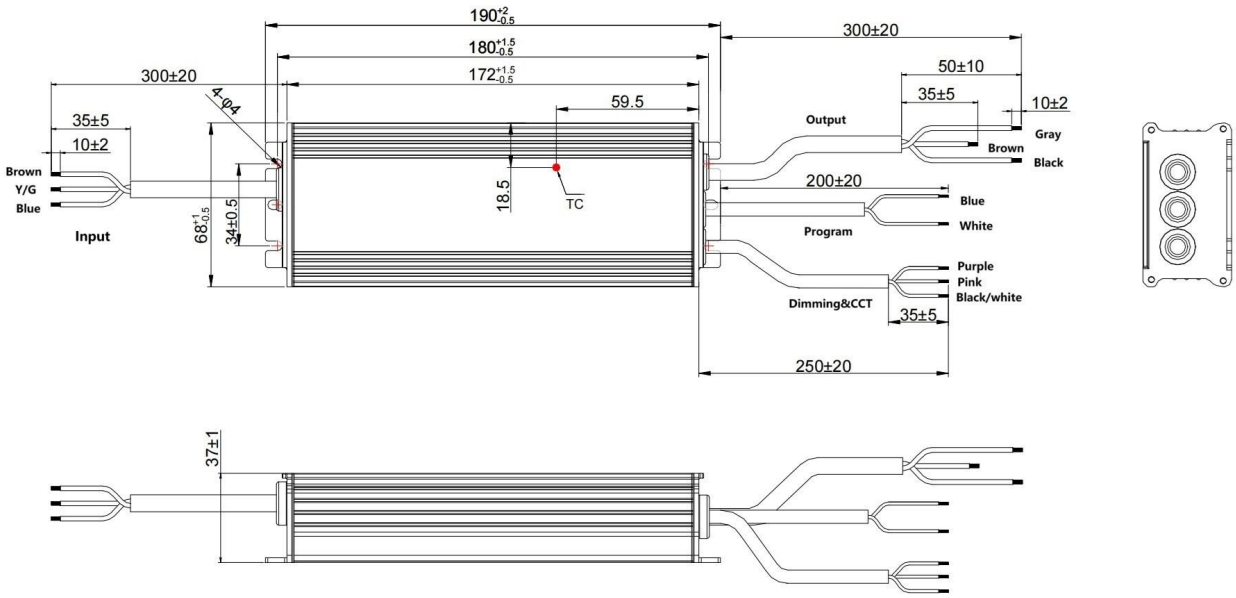
Programming mode 2



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 a subtle reminder “(Beep)” to tell you the installation completed.

Mechanical Outline



Specification

Input	CCC+VDE 3*1.0MM^2 L=300±20mm	CCC/CE
Output	CCC+VDE 3*1.0MM^2 L=300±20mm	CCC/CE
Program	21996 22AWG*2C L=200±20mm	
Dimming, CCT	UL21996 22AWG*3C L=250±20mm	UL

Version

A.1	First release	2024-12-16

Specification for Approval

Product Name: 150W LED Driver

Product Model: X7-150M056CW

Rev: A.1

Address: XiLiSongbai Road 1061, Nanshan District, Shenzhen City, Guangdong, 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: 150W LED Driver

Product Model: X7-150M056CW

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.		

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Prepared By	Checked By	Approved By