



Waterproof constant voltage/constant current LED DRIVER

CYX-150 series

Datasheet

CYX-150-XPY

- ◇ Product category: LED waterproof LED DRIVER
- ◇ Version number: R1.0
- ◇ Release date: October 1, 2018

CHUANGLIAN

★ Product Features

- Global applicable wide input voltage range: 90-305VAC
- High power factor up to 0.95
- IP67 protection level
- Three in one dimming (isolated design, switchable)
- Lightning protection: 4KV line to line, 6KV line to ground
- Comprehensive protection function: SCP/OVP/OC/OTP
- Working temperature range: -40 °C~+70 °C
- Five year warranty
















💬 Product Overview

CYX-150-XPY series products are 150W outdoor LED drivers with two output modes: constant voltage and constant current. They have a wide input voltage range, ultra-high power factor, and extremely low THD. This series of products is resistant to high temperatures, with a working environment temperature of up to 70 °C when fully loaded. It is designed specifically for LED lighting such as indoor and outdoor lighting. The adjustable output current function is beneficial for the flexible design of LED lamps, greatly enhancing their versatility. The ultra-high conversion efficiency, compact housing design, good heat dissipation, and all-round protection ensure that this series of products can work stably for a long time.

Application field

LED lighting applications such as road lighting, tunnel lighting, pole lights, stadium lights, landscape lighting, and building lighting

Product naming

CYX-150-X P Y-ZZ

Internal code (blank or alphanumeric combination)

Function code

*:Potentiometer adjustment

B: Three in one dimming

B*: Three in one dimming+potentiometer

PFC function

Output voltage

Output power

Series name

Model list:

Constant pressure type Model	Output power (W)	Output voltage (V _{dc})	Output voltage Adjustable range [2] (V _{dc})	Output current (A)	Power factor [1]	THD [1]	Efficiency @230VAC (Typ.) [1]
CYX-150-12P	150	12	/	0-12.5	>0.95	<10%	≥92%
CYX-150-24P	150	24	/	0-6.25	>0.95	<10%	≥93%
CYX-150-36P	150	36	/	0-4.17	>0.95	<10%	≥92.5%
CYX-150-48P	150	48	/	0-3.14	>0.95	<10%	≥93.5%
CYX-150-52P*	150	52	/	0-2.9	>0.95	<10%	≥93%

Constant pressure type Model	Output power (W)	Output voltage (V _{dc})	Output voltage Adjustable range [2] (V _{dc})	Output current (A)	Power factor [1]	THD [1]	Efficiency @230VAC (Typ.) [1]
CYX-150-36P*[3]	150	18-36	2.50-4.27	0-4.17	>0.95	<10%	≥92%
CYX-150-36PB*	150	18-36	2.50-4.27	0-4.17	>0.95	<10%	≥92%
CYX-150-48P*[3]	150	24-48	1.88-3.15	0-3.15	>0.95	<10%	≥93%
CYX-150-48PB*	150	24-48	1.88-3.15	0-3.15	>0.95	<10%	≥93%

Note: [1] All performance parameters in the entire text are typical values measured at a temperature of 25 °C, rated input voltage, and full load conditions, unless otherwise specified.

[2] Y=*/B/B*, *Potentiometer adjustment; B: Three in one dimming; B *: Three in one dimming+potentiometer

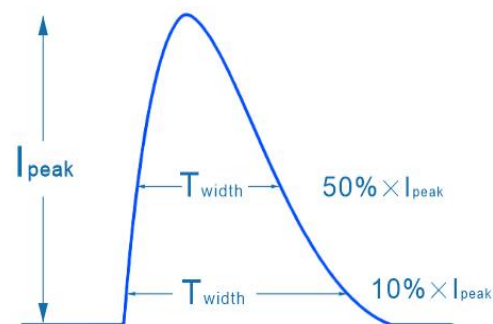
For customized models, please contact our sales personnel or distributor representatives for product related information.

◎ Input Specification:

Parameters	Min.	Typ.	Max.	Notes
Input AC Voltage	90 V _{ac}		305 V _{ac}	
Rated Input AC Voltage	100 V _{ac}		277 V _{ac}	
Input Frequency	47 Hz		63 Hz	
Maximum Input Current			1.7A	120Vac/full load
			0.85 A	230Vac/full load
			0.75A	277Vac/full load
PFC		0.97		120Vac,50%~100% load
		0.95		230Vac,50%~100% load
		0.91		277Vac,75%~100% load
THD		10%		120Vac,50%~100% load
		10%		230Vac,50%~100% load
		10%		277Vac,75%~100% load
Standby power			0.5 W	Dimming to critical output (dimming model)

◎ Input surge current:

Input voltage	120 V		230 V		277 V	
I _{peak}	/		60A		/	
T _{width@50%×I_{peak}}	/		300μS		/	
T _{width@10%×I_{peak}}	/		/		/	
Circuit breaker model	B16	C16	B16	C16	B16	C16
Configurable quantity (Same model power supply)	/	/	4	7	/	/



◎ Output Specifications:

Parameters (Constant voltage model)	Min.	Typ.	Max.	Notes
Output Voltage Tolerance	-3%		+3%	All model
Line Regulation	-0.5%		+0.5%	All model
Load Regulation	-2%		+2%	All model
Ripple and noise(pk-pk) ^[4]		200mV		CYX-150-12P
		250mV		CYX-150-24P CYX-150-36P CYX-150-48P
		300mV		CYX-150-52P
Turn On Delay Time			1000ms	120Vac, full load
			500ms	230Vac, full load
Rise Time			100ms	120Vac/230Vac, full load
Output overshoot voltage			5%×Vo	120Vac/230Vac, full load

Parameters (Constant current model)	Min.	Typ.	Max.	Notes
Output current accuracy	-5%		+5%	All model
Line Regulation	-0.5%		+0.5%	All model
Load Regulation	-2%		+2%	All model
No-load output voltage			42	CYX-150-36P* CYX-150-36PB*
			56	CYX-150-48P* CYX-150-48PB*
Ripple and noise(pk-pk) ^[4]		5%×Io	10%×Io	All model
Turn On Delay Time			1000ms	120Vac, full load
			500ms	230Vac, full load
Rise Time			50ms	120Vac/230Vac, full load
Output overshoot voltage			10%×Io	120Vac/230Vac, full load

Note [4]: Ripple noise testing method for switching power supplies: Test on the output terminal side of the power supply. During the test, add a 47uF electrolytic capacitor and a 0.1uF high-frequency capacitor at the end of the test line. The test line uses a 20 ± 2cm twisted pair cable, and the oscilloscope bandwidth is set to 20MHz. The oscilloscope probe needs to remove the probe cap and ground clamp;

From power on to 10% output current "(The time it takes for the cursor to detect the input voltage and establish it until the output voltage rises to 90% is the starting time, and for lighting constant current power supplies, the starting time is when the current rises to 10%)

◎ Efficiency:

Parameters	Min.	Typ.	Max.	Notes
Efficiency@230 V _{ac}				
CYX-150-12P	91%	92%		Ambient temp. 25±5°C, full load
CYX-150-24P	92%	93%		
CYX-150-36P	91.5%	92.5%		
CYX-150-48P	92.5%	93.5%		
CYX-150-52P	92%	93%		
CYX-150-36P*	91%	92%		
CYX-150-36PB*	91%	92%		
CYX-150-48P*	92%	93%		
CYX-150-48PB*	92%	93%		

◎ General Specifications:

Parameters		Min.	Typ.	Max.	Notes
Dielectric Strength ^[5]	Input-Outupt	3750 V _{ac}			Last for 60s, leakage current < 10mA
	Input-PE	1600 V _{ac}			
	Output-PE	500 V _{ac}			
	Input to adjust light	3750 V _{ac}			
	Output and adjust light	500 V _{ac}			
	Adjust the light for the shell	500 V _{ac}			
Insulation Resistance	Input-Outupt	100MΩ			Test Voltage: 500V _{dc}
	Input-PE	100MΩ			
	Output-PE	100MΩ			
Leakage current			0.75 mA		UL8750; 277Vac/ 60Hz
			0.7 mA		IEC60598-1; 240Vac/ 60Hz
Working Temp.		-40℃		+70℃	Refer to "Derating Curve"
Working Humidity		20%RH		95%RH	Non-condensing
Storage Temp.		-40℃		+85℃	
Storage Humidity		10%RH		95%RH	Non-condensing
Altitude				5000 m	When the altitude exceeds 2000m, the temperature drops by 3.5 °C/1000m
Temperature coefficient		-0.03%/℃		0.03%/℃	0~50℃
MTBF		250000 h			230Vac,Ambient temp. 25℃, 80% load, MIL-HDBK-217F
Life time			100000 h		Tc<80℃
Safety shell temp.				90℃	
Warranty shell temp.				80℃	The warranty shell temp. corresponding to the 5-year warranty
Size		178×66×35.5mm			CYX-150-XP
		193×66×35.5mm			CYX-150-XP*/PB*
Weight			760g		CYX-150-XP
			820g		CYX-150-XP*/PB*
Package		20PCS/16Kg/CTN, Carton size: 350(L)*250(W)*185(H)mm			
		20PCS/17Kg/CTN, Carton size: 350(L)*250(W)*185(H)mm			

Note [5]: 1. During the withstand voltage test of the product, it is necessary to short-circuit the L and N wires, the positive and negative output wires, and the positive and negative dimming wires.
2. The minimum isolation withstand voltage of this product is 3750Vac. If higher testing standards are used, please contact our sales representative or FAE

◎Protection:

Parameters		Min.	Typ.	Max.	Notes
Under voltage protection	Protection voltage	70V _{ac}	80V _{ac}	90V _{ac}	The input voltage is lower than the protection voltage, and the output is turned off
	Recovery voltage	75V _{ac}	85V _{ac}	95V _{ac}	Self recovery mode Input voltage higher than recovery voltage, driver restarts
Over voltage protection	CYX-150-XP	115%		140%	Hiccup mode, when the fault is resolved, the output automatically returns to normal
	CYX-150-XP*/PB*				Constant current mode, adaptive output voltage
Over current protection	CYX-150-XP	110%		150%	Hiccup mode, when the fault is resolved, the output automatically returns to normal
	CYX-150-XP*/PB*	110%		150%	Constant current limit, when the fault is resolved, the output automatically returns to normal
Over Temp. Protection (Tc/°C)		90	100	110	Hiccup mode, when the fault is resolved, the output automatically returns to normal
Short circuit protection		When there is a short circuit fault at the output terminal, the power output is protected When the short circuit fault is resolved, the power supply automatically returns to normal output			

◎Safety:

Safety	Country/Territory	Item	Standards
UL/CUL	USA/Canada	Safety Standard	UL 8750
			CAN/CSA C22.2 No. 205.13
CE	Europe		EN 61347-1,EN 61347-2-13
CB	CB Countries		IEC 61347-1,IEC 61347-2-13
CCC	China		GB 19510.1,GB 19510.14

◎EMC:

EMI Category ^[6]	Country/Territory	Item	Standards/Criteria	
FCC	USD/Canada	Conducted Emission	FCC part 15(ANSI C63.4)	Class B
		Radiated Emission	FCC part 15(ANSI C63.4)	Class B
CE	Europe	Conducted Emission	EN 55015	Class B
		Radiated Emission	EN 55015	Class B
		Harmonic current emissions	EN 61000-3-2	Class C
		Voltage Flicker	EN 61000-3-3	
CCC	China	Conducted Emission	GB/T 17743	Class B
		Radiated Emission	GB/T 17743	Class B
		Harmonic current emissions	GB/T 17625.1	Class C

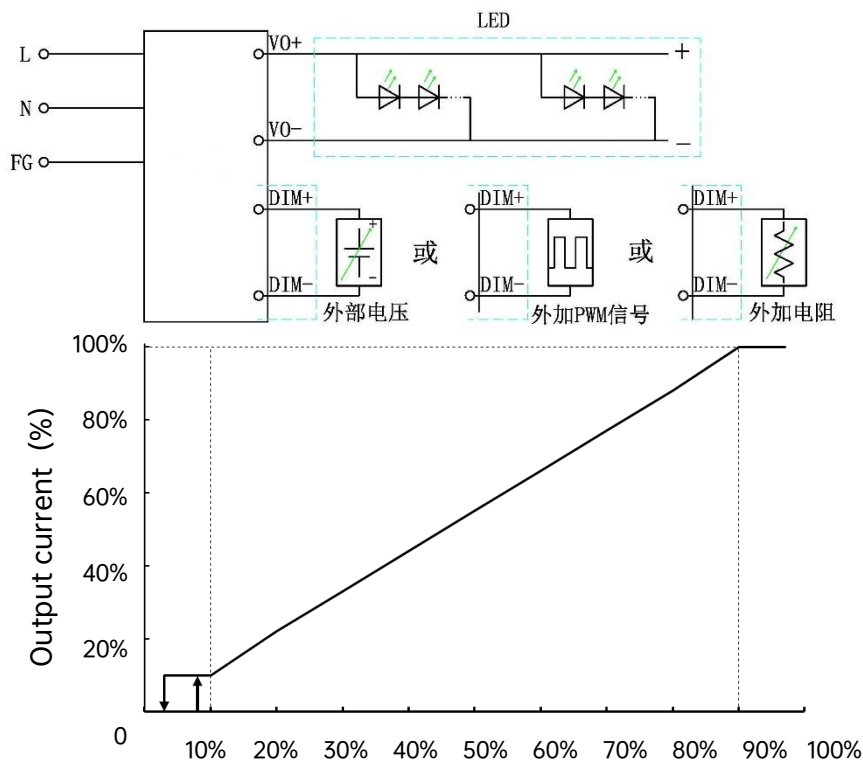
EMI Category	Country/Territory	Item	Standards/Criteria		
CE	Europe	Electro-static Discharge	EN 61000-4-2	Air 8 kV / Contact 6 kV	Criteria A
		Radiated Susceptibility	EN 61000-4-3	80MHz-1GHz 10V/m	Criteria B
		Electrical Fast Transient	EN 61000-4-4	±2KV	Criteria B
		Surge Immunity	EN 61000-4-5	CM±6KV/DM ±4KV	Criteria A
		Conducted Emission Immunity	EN 61000-4-6	10Vr.m.s	Criteria B
		Power Frequency Magnetic Field Immunity	EN 61000-4-8	30A/m, continuous	Criteria A
		Voltage Dips, Drops and Interruptions Immunity	EN 61000-4-11	Drop 100%,0.5 periods	Criteria B
				Drop 20%,250 periods	Criteria B
				Drop 30%,25 periods	Criteria B
				Interrupt 100%,250 periods	Criteria C

Note [6]: 1. The power supply meets EMI standards, but as a part of the lighting fixture or lighting system, EMI related confirmation needs to be conducted in conjunction with the fixture (terminal equipment, system).



◎ Overview of Dimming Function:

Parameters	Min.	Typ.	Max.	Notes
Max withstand voltage of dimming interface	-10V _{dc}		-20V _{dc}	
0-10V dimming signal input	0V _{dc}		10V _{dc}	
PWM high level		10V _{dc}		
PWM low level		0V _{dc}		
PWM frequency	800Hz		2000Hz	
PWM duty cycle	0		100%	
Resistance dimming	0Ω		100kΩ	When N power dimming interfaces are connected in parallel Output current=1/N resistance value
Dimming interface current		100μA		0-10V online output current
Dimming Range	8%		100%	Adjustable dimming and cutoff output

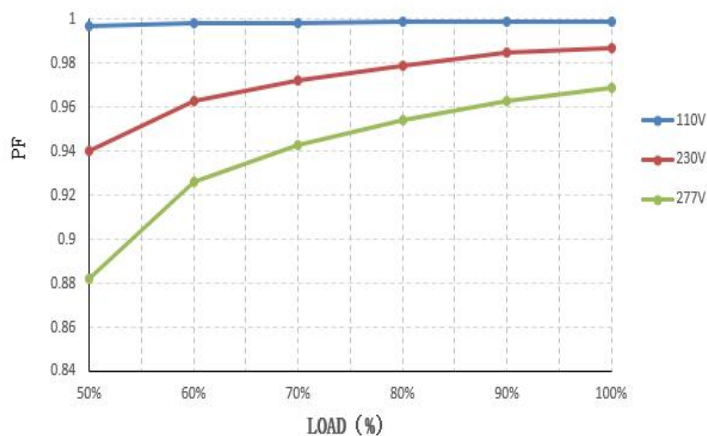


Dimming signal (5V or 10V analog voltage, 10V PWM signal, 0-100K resistor;)

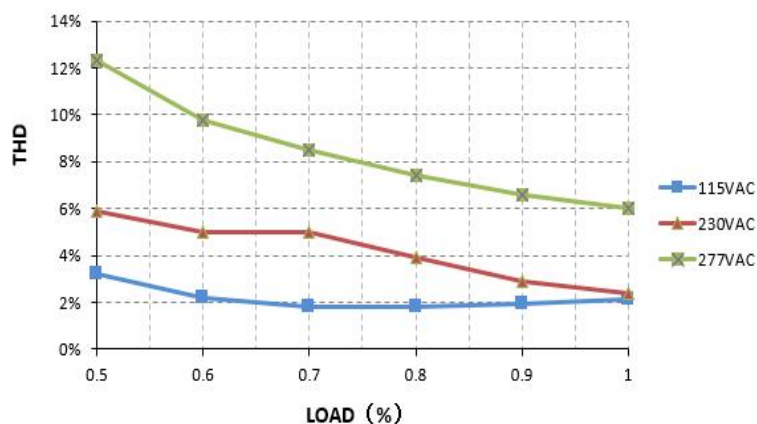
When the dimming signal is 100%, the corresponding analog signal is 5V or 10V, PWM is 100%, resistance is 100K, and so on for other percentages
Note: Dimming function is only applicable to constant current models

◎ Characteristic curve:

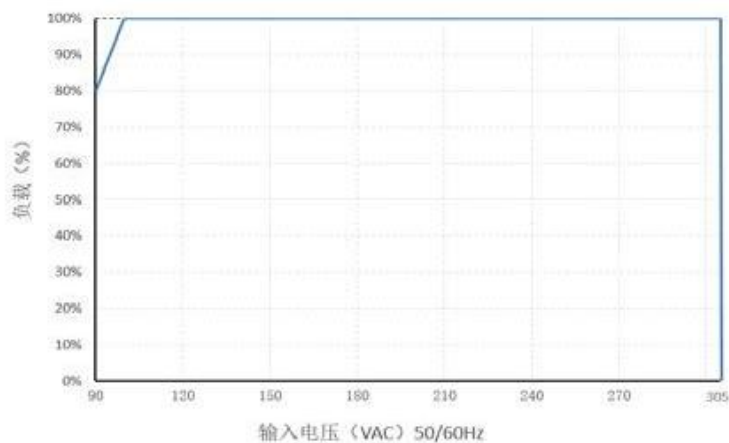
PFC VS Output load



THD VS Output load

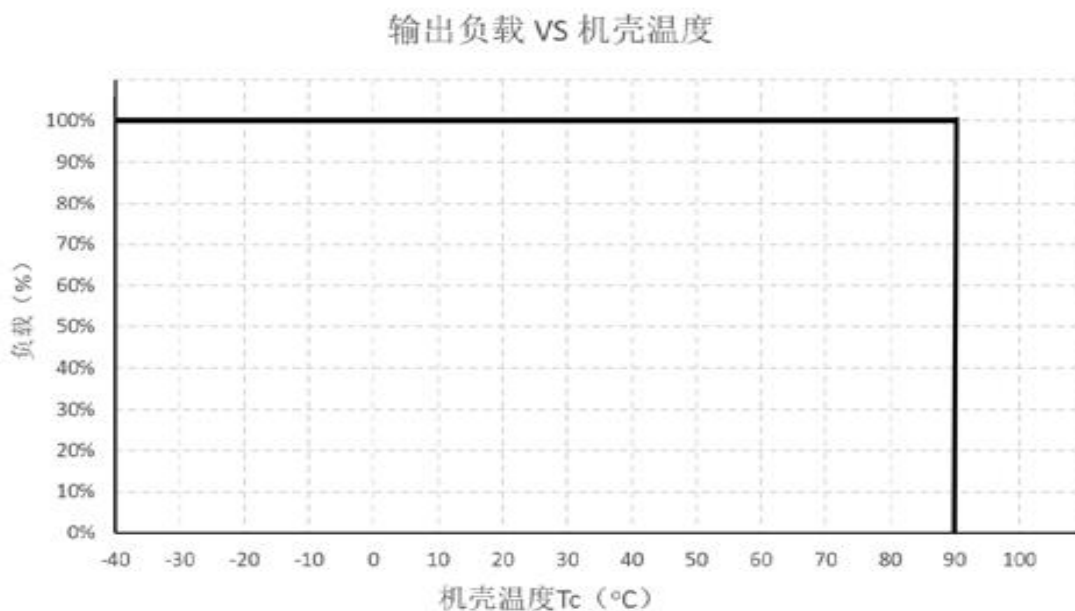


Input voltage VS Output load

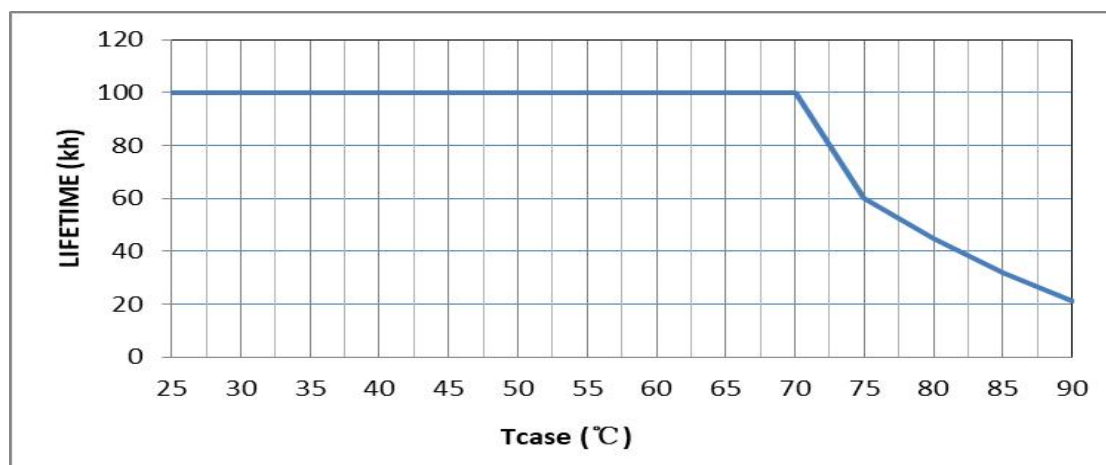


◎ Characteristic curve:

Shell temp. vs Output load



Shell temp. vs Lifespan

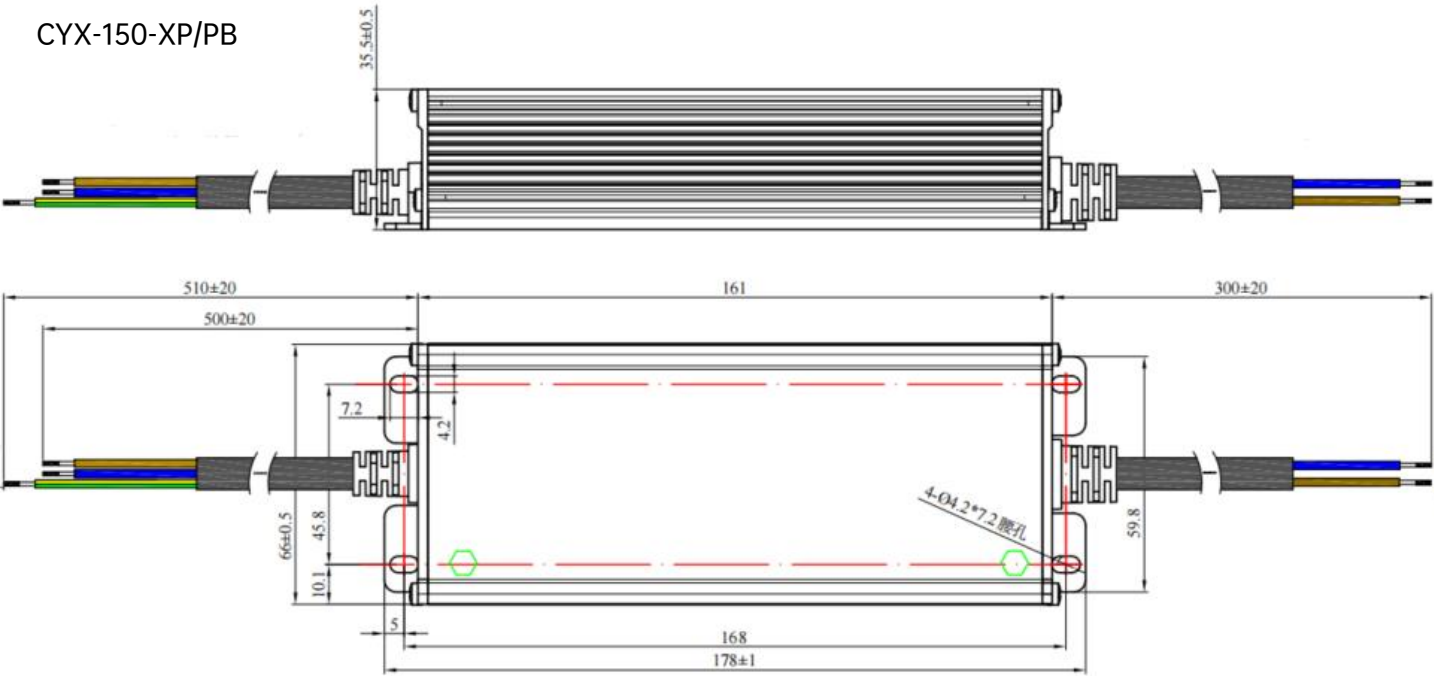


◎Size of mechanism:

Model	Specifications	
CYX-150-XPY (Global)	Input line	SJOW, H05RN-F 3G1.00mm outer diameter: 8.3mm L=500 ± 20mm, stripped 35mm, tinned 10mm, brown, blue, yellow green
	Output line	SJOW+H05RN-F 2 × 1.5mm2 outer diameter: 7.8mm L=300 ± 20mm, stripped 35mm, tin immersed 10mm, brown, blue
	Adjust the light (If any)	UL21996 2 × 22AWG, outer diameter: 5.0mm L=350 ± 20mm, stripped 35mm, tinned 10mm, purple and gray

Note: Different output voltages or models, wire lengths, and thicknesses may vary. For details, please consult our sales representative or FAE

CYX-150-XP/PB



CYX-150-XP*/PB*

