

## DESCRIPTIONS

QPLCO-200W-180-260V-ADJ is a constant current LED driver with 3 versions: 3-in-1 dimming, 3-in-1 dimming + 12V AUX power supply and non-dimmable. It has high efficiency, high PF and low THD. There is a potentiometer at the top of LED driver which is used to adjust the output current (power). Besides, it conforms to the latest European ErP standard and North America DLC standard

## → APPLICATION

- Shoebox light
- High bay light
- Flood light
- Wall light



## → FEATURES

- High efficiency up to 95%
- Adjustable output current via a potentiometer
- THD <15%
- P3 versions: 3-in-1 dimming, non-dimmable and 3-in-1 dimming + 12V AUX power supply.
- Equipped with selectable light sensor module (FAA/FAC)
- Can be dimmed to off without afterglow
- Flicker free
- Surge protections: L-N: 6kV & L/N-GND: 6kV
- IP54



→ **Technical data**

Model		QPLCO-200W-180-260V-ADJ
<b>Output</b>	Output Current	Adjustable via the potentiometer
		650-900mA
		Adjustable via the DIP switch (optional)
		70%-100% @maximum output current (it is set by client and is for FAA/FAC series only)
	Output Voltage	180-260Vdc (LED)
	Output Power	200W max.
	Current Tolerance	± 5%
	Startup Time	120Vac <1S; 230Vac <0.5S @full load
Temperature Drift	± 3% @Tc 25-75 °C	
<b>Input</b>	Input Voltage	100-277Vac (voltage limit: 90-305Vac)
	DC Input Voltage	141-276Vdc
	Input Current	2.6A max.
	PF	≥0.98/120Vac @full load; ≥0.95/230Vac @full load
	THD	≤15% @full load
	Efficiency	≥92.5%/120Vac @240Vdc/0.83A; ≥94.5%/230Vac @240Vdc/0.83A
	Inrush Current	<80A/350uS @230Vac
	Standby Power Consumption	≤0.5W @220Vac
<b>12V AUX Power Supply (FAA Series)</b>	Output Voltage	+12Vdc (11-14V)
	Output Current	200mA max.
	Dynamic Load	Please make sure that the dynamic load matches for the LED driver.
	Ripple Voltage	≤1V
<b>Protections</b>	Surge	L-N: 6kV (2Ω), L/N-PE: 6kV (12Ω)
	Open Circuit	Open circuit voltage ≤310Vdc
	Short Circuit	≤15W (The LED driver will recover by itself and will not be damaged even in the state of short circuit for a long time.)
<b>Environment Descriptions</b>	Casing Temperature	-40 °C - +90 °C @120-277Vac
	Operating Humidity	0-95%RH (without condensation)
	Storage Temperature/ Humidity	-40 °C - 80 °C (6 months in Class II environment); 0-95%RH (without condensation)
	Atmospheric Pressure	86-106kPa

## → ELECTRICAL CHARACTERISTICS

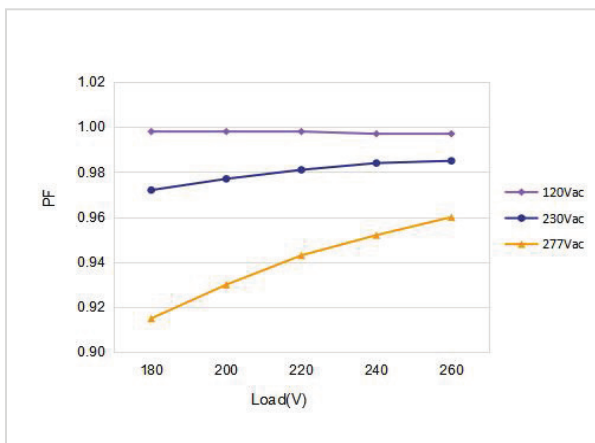
<b>Safety and EMC</b>	Certifications	TUV-ENEC, RCM, CE, CB, SAA, FCC, UL
	Withstanding Voltage	L-N/PG: 1.5kVac, <5mA, 60S
	Safety Standards	ENEC: EN61347-1:2015, EN61347-2-13: 2014/A1: 2017, EN62384 2016/A1: 2009 CE-LVD: EN61347-2-13: 2014/A1: 2017, EN61347-1: 2015, EN62493: 2015 CB: IEC61347-1: 2015, IEC61347-2-3: 2014, IEC 61347-2-13: 2014/AMD1: 2016 SAA: AS 61347.2-13: 2018 RCM: AS 61347.2-13: 2018 UL: UL8750, CSA 250.13
	EMI	CE-EMC/RCM: EN55015, EN61000-3-2, EN61000-3-3 FCC: PART 15B
	EMS	CE-EMC/RCM: EN61000-4-2, 3, 4, 5, 6, 11 Conforms to IEC61000-4-2, 3, 4, 5, 6, 8, 11, 12; IEC61547
	Ringling Wave	4kV
	ESD	Air 8kV, touch 4kV (Class B)
<b>Other Parameters</b>	IP Rating	IP54
	RoHS	RoHS 2.0 (EU) 2015/863
	Warranty	5 yrs (Tc≤80°C)
	MTBF	> 1000Khours@Telcordia SR-332 Issue4
<b>Testing Equipment</b>	Digital power meter: CHROMA66202, oscilloscope: Tektronix DPO3014, DC electronic load: M9712B, LED board, constant temperature and humidity chamber; Everfine EMS61000-5B: Everfine EMS61000-4A, spectroanalyzer: KH3935, withstanding voltage tester: TH9201B, flicker tester (flicker-free coefficient test) 60N-01, etc.	
<b>Testing Remarks</b>	The above parameters are tested at the ambient temperature of 25°C, humidity of 50%, full load and input voltage of 230Vac without any special remarks.	

## → ELECTRICAL CHARACTERISTICS

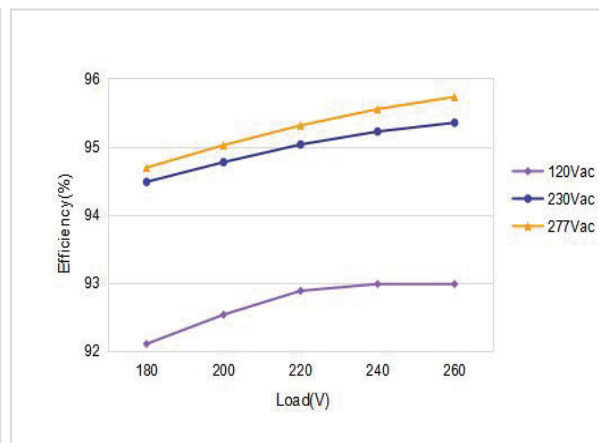
1. It is recommended that our client install over voltage protection, under voltage protection and surge protection devices in the power supply circuits of light fixtures to ensure electricity safety.
2. The PC shade, casing and plug for assembling the LED driver in the light fixture must meet the fire rating of UL94-V0 or above.
3. The LED driver used in combination with the end device is one of the accessories in the whole light fixture, and its EMC is not only susceptible to the driver itself, but to the LED light fixture and the whole light fixture's wiring. Thus, the manufacturer of LED light fixture should re-confirm the EMC performance of LED driver before the whole light fixture is finished.
4. It is suggested that our client use a slotted screwdriver or a Philips to adjust the output current of LED driver, otherwise the potentiometer may be damaged. (The screwdriver should have good insulation at the head, body and handle, and the screwdriver with a 2mm head is recommended as well. What's more, please pay attention that the intensity of torque not exceed 0.5KN.m)
5. When using the LED driver, please pay attention that the total output power not exceed the maximum rated output power, otherwise the warranty service of LED driver would be failed.
6. The withstanding voltage of LED beads and aluminum substrates must  $> 2.5kVac$ .
7. Quantum Power reserves the right to interpret any of the above parameters.

### ■ Product Characteristic Curves

PF Curve



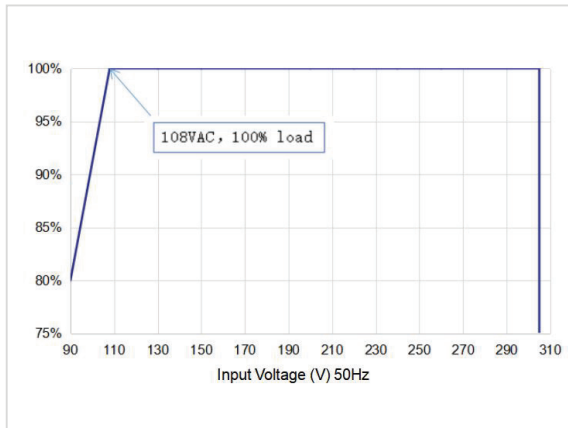
Efficiency Curve



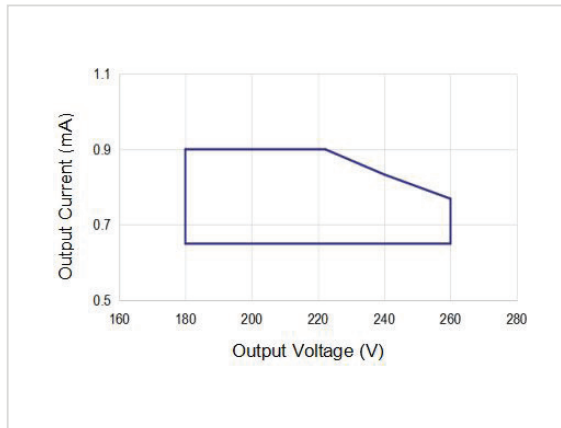
**LED DRIVER OUTDOOR  
CONSTANT CURRENT  
Non-isolated - Linear  
3-in-1 dimming**

**QPLCO-200W-180-260V-ADJ**

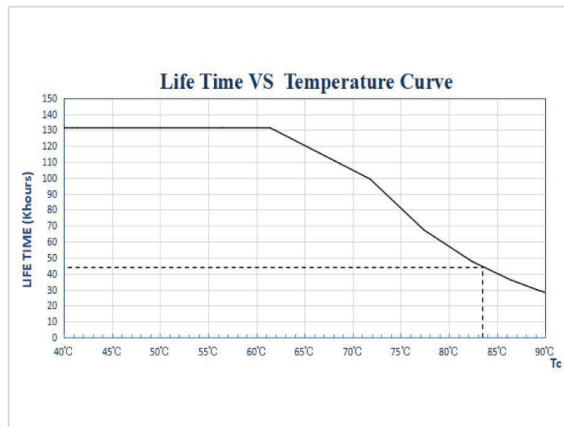
Load Derating Curve



Power Curve



Lifetime Curve



■ **Dimming Operation Instructions**

**Adjustable output current via a built-in potentiometer**

Parameter	Minimum Value	Typical Value	Maximum Value	Note
Output Current	650mA	-	900mA	The total output power should <b>NOT</b> exceed 200W

This current range is only for FAA or FAC series whose initial current is adjustable via the potentiometer, and the current of FAB series is adjustable based on its shifts because the adjustment of current via the DIP switch is susceptible to the one via the potentiometer. Besides, the adjustment of resistor ranges from 110Ω to 10KΩ, thus when our user set the output current of LED driver, its adjustment is supposed to range from 70% to 100% of the maximum one so that the output current can meet certifications' standards.

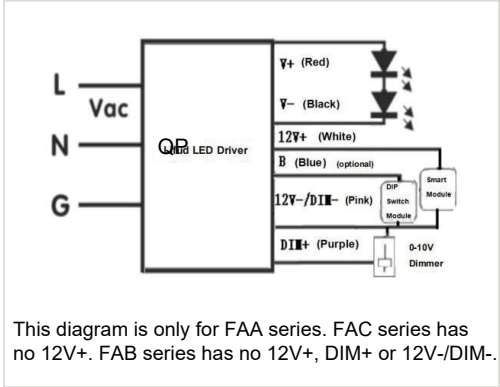
**LED DRIVER OUTDOOR  
CONSTANT CURRENT  
Non-isolated - Linear  
3-in-1 dimming**

**QPLCO-200W-180-260V-ADJ**

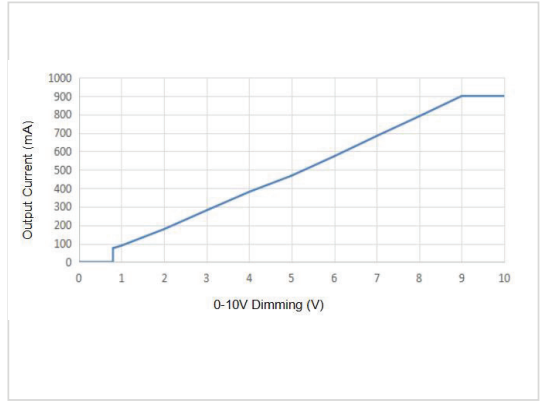
**0-10V Dimming Operation**

- 0-10V signal is connected to DIM terminal.
- In 0-10V dimming mode, when the input voltage is  $0.8V \pm 0.5$ , the light turns off. When it's  $1V \pm 0.5$ , the light turns on.
- Dimming depth: 10%
- DIM+/- (without signal connected): 100% rated current output

**Wiring Diagram of 0-10V Dimming**



**Dimming Curve of FAA and FAC Series**

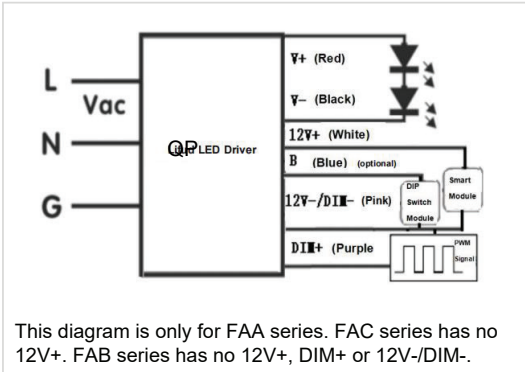


Input: 230Vac, output: 220Vdc/900mA (The data is measured by Quantum Power 0-10V dimmer and the chart is for reference only)

**PWM Dimming Operation**

- PWM signal is connected to DIM terminal.
- Dimming depth: 10%
- Compatible signal: 1000-3000(Hz), amplitude: 9-10(V)
- DIM+/- (without signal connected): 100% rated current output

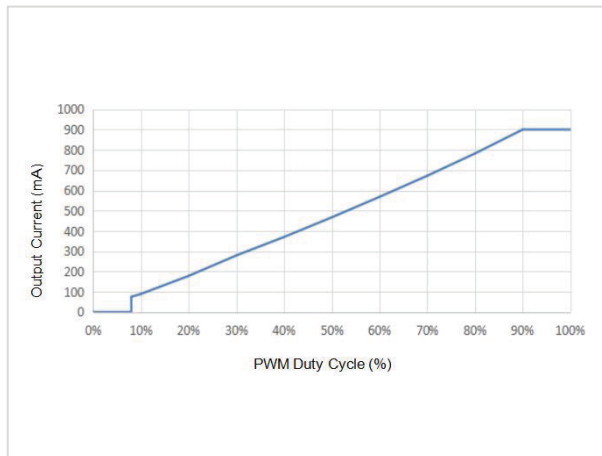
**Wiring Diagram of PWM Dimming**



**LED DRIVER OUTDOOR  
CONSTANT CURRENT  
Non-isolated - Linear  
3-in-1 dimming**

**QPLCO-200W-180-260V-ADJ**

Dimming Curve of FAA and FAC Series

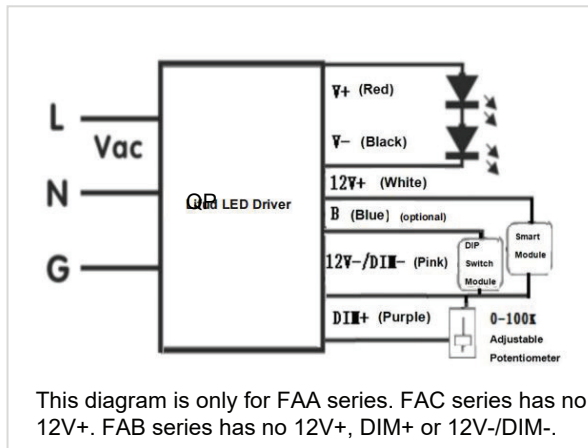


Input: 230Vac, output: 220Vdc/900mA (The data is measured by Quantum Power PWM signal generator and the chart is for reference only)

Rx Dimming Operation

- Rx signal is connected to DIM terminal.
- Range: 0-100KΩ
- DIM+/- (without signal connected): 100% rated current output

Wiring Diagram of Rx Dimming



This diagram is only for FAA series. FAC series has no 12V+. FAB series has no 12V+, DIM+ or 12V-/DIM-.

**LED DRIVER OUTDOOR  
CONSTANT CURRENT  
Non-isolated - Linear  
3-in-1 dimming**

■ **Structure & Dimensions (unit: mm; tolerance: ± 2mm)**

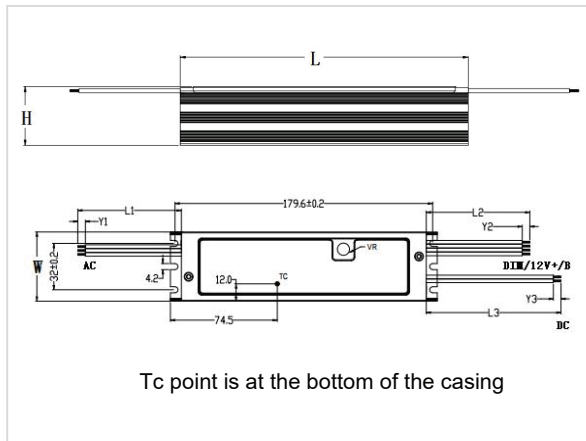
**QPLCO-200W-180-260V-ADJ**

Wire Specifications

	Input Wire	Output Wire	Dimming Wire & AUX Power Supply Wire
	PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$	PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$	PVC Electronic Wire UL1015 22AWG $\Phi 2.3 \pm 0.5$
	PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$	PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$	/
	PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$	PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$	PVC Electronic Wire UL1015 22AWG $\Phi 2.3 \pm 0.5$
Color	AC-L Black; AC-N White; PG Green	LED+ Red; LED- Black	DIM+ Purple; DIM- Pink; 12V+ White; B Blue (optional)
Length	250± 20mm (L1)	300± 20mm (L3)	220± 20mm (L2)
Tinning	10± 1.5mm (Y1)	10± 1.5mm (Y3)	10± 1.5mm (Y2)

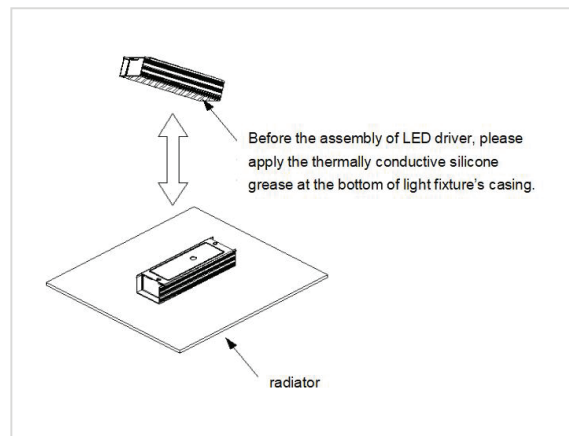
Casing Dimensions

Description	Symbol	Unit (mm)
Length	L	186
Width	W	48
Height	H	34



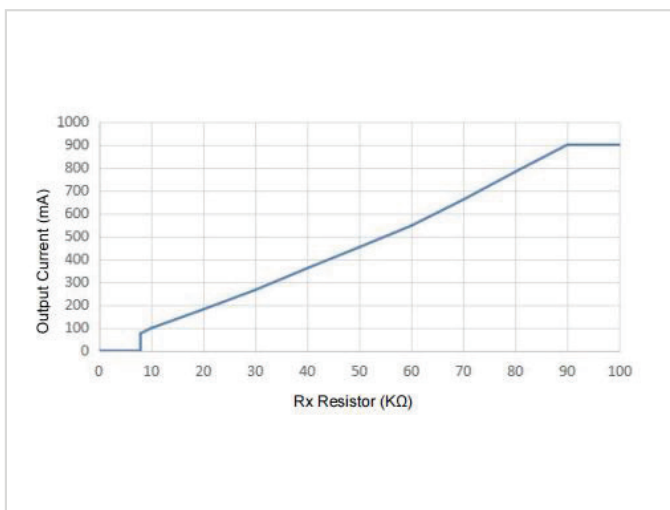
■ **Heat Dissipation Instruction**

It is recommended that the thermally conductive silicone grease be applied among the light fixture's casing, radiator and LED driver. Moreover, the TC temperature shall not exceed +90°C.





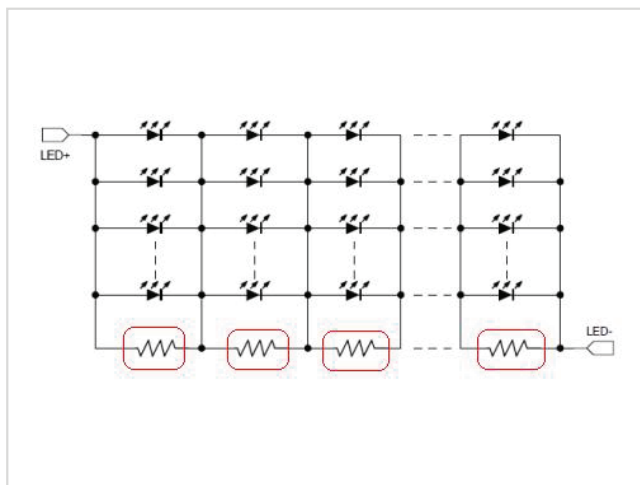
Dimming Curve of FAA and FAC Series



Input: 230Vac, output: 220Vdc/900mA (The data is measured by LEV1TON dimmer and the chart is for reference only)

Dimming-to-Off Operation

When the dimming signal is 0V, the LED driver has no output, but there exists junction capacitance between the aluminum substrate's copper foil and the grounding wire, which will make the LED bead glow slightly. Thus, it is necessary to attach a 3-5KΩ resistor (resistor size: 1206) to LED beads in series connection, and the connection method is as shown in the right figure.



## ■ Packaging Specifications

Model	QPLCO-200W-180-260V-ADJ
Carton Size	420× 305× 225mm (L× W× H)
Quantity	7 pcs/layer; 3 layers/ctn; 21 pcs/ctn
Weight	0.480± 0.1 kg/pc; 11.5± 2.1 kg/ctn

## ■ Transportation and Storage

### 1. Transportation

- Suitable transportation means: vehicles, boats and aeroplanes.
- In transit, it is necessary to prepare awnings for rain or sun protection. Moreover, please keep civilized loading and unloading to prevent the vibration or impact of LED driver as much as possible.

### 2. Storage

- The storage of LED driver shall conform to the standard of Class I environment. When using LED drivers which have been stored for more than 6 months, please re-test them firstly. Do not use them unless they are tested to be qualified.

## Cautions

- Please use Quantum Power LED driver according to its parameters in the specification, otherwise the LED driver may malfunction.
- Using any incompatible light fixtures or those that have not been certified may cause fire, explosion or other risks.
- Man-made damage is beyond the scope of Quantum Power warranty service.