

■ Description

- √ Wide Input Voltage: 90~305Vac
- √ High Efficiency up to 93.5%
- √ APFC (Active Power Factor Correction): 0.99 Typical
- √ 0-10V/PWM/Resistor/Time 4 in 1 Dimmable
- √ Programmable Output Current with Constant Wattage Design
- √ Lightning Protection 6kV
- √ Waterproof: IP67
- √ 100% Full Load Aging Test for 4 Hours @Ta=45℃
- √ Safety Design Compliant to UL8750/IEC61347
- √ Thermal Optimized Aluminum Case with Potting



■ Application

Outdoor Applications: Street Light and High Bay

■ Model Selection

Model Number	Input Voltage Range	Output Power	Output Voltage Range	Output Current (Io)	Typical Eff.	Certification (ongoing)
PF-P320CC-C140-S-xx	90~ 305 Vac	320 W	137~229Vdc	1400mA	93%	CCC CB ENEC CE RoHS
PF-P320CC-C140-U-xx	90~ 305 Vac	320 W	137~229Vdc	1400mA	93%	UL FCC CE RoHS
PF-P320CC-C280-S-xx	90~ 305 Vac	320 W	69~114Vdc	2800mA	92%	CCC CB ENEC CE RoHS
PF-P320CC-C280-U-xx	90~ 305 Vac	320 W	69~114Vdc	2800mA	92%	UL FCC CE RoHS

Note: xx = ND means non-dimming model; xx = DM means 0-10V dimmable; xx = TS means timer dimming;

■ Specifications

Items		Specifications	
Input	Input Voltage	90~305Vac	
	Input Frequency	47~63Hz	
	Power Factor	>0.99@ 120Vac& Full-Load; >0.95@ 220Vac& Full-Load	
	THD	<20% @70-100%load, refer to THD vs. Load curve.	
	Input Current	3.9Amax@110Vac & Full-Load; 2.5Amax@230Vac & Full-Load	
	Inrush Current	65A peak, 1.2ms duration@230Vac 25°C 70A peak, 1.3ms duration@277Vac 25°C <5.0A ² s@230Vac, 25°C Cold Start	
	Leakage Current	1mAmax @277Vac 60Hz, UL8750 0.75mAmax @240Vac 50Hz, IEC61347-1	
Output	Current Accuracy	±5%Io	
	Ripple Current ^[2]	Ip-p:5%Io	
	Setup Time	1.2s max	
	Output Overshoot	10%Io max & LED Load	
Protection	Output Over Voltage	135%Vomax, The unit will be in burst mode when OVP. It will deliver full function after fault is removed.	
	Input Under Voltage	Shut Down When Vmains≤85±5Vac; Auto Recovery When Vmains≥90±5Vac	
	Over Temperature	Lower the output current when Tc≥ 110±5°C; Auto Recovery When Tc≤ 70±5°C	
	Short Circuit	Auto recovery. The output recovers when short is removed.	
	Over Power	The output power can be limited if the load exceed rated output load.	
Environmental Condition	Operating Temperature	-40°C~+70°C ; 10%RH~100%RH (See Derating Curve for more details) ^[3]	
	Storage Temperature	-40°C~+85°C; 5%RH~100%RH	
Others	MTBF	≥280,000 hours, measured at 230 Vac input, 80% load and 25 °C ambient temperature(MIL-HDBK-217F)	
	Lifetime	≥50,000 hours, measured at 230 Vac input, 80% load and 75 °C Case temperature ^[4]	
	Case Temperature	90°Cmax ^[5]	
	Dimensions	Inch (LxWxH)	9.88X3.54X1.65
		Millimeter (LxWxH)	251 x 90 x 42
	Net Weight	1600g	

Notes:

[1] Unless specified, all the test results are measured in the 25DegC room temperature.

[2] The result differs according to different LED load characteristic.

[3] Please confirm working conditions according to the derating curve of output power vs. input voltage and temperature. Beyond the safety work condition will not be recommended.

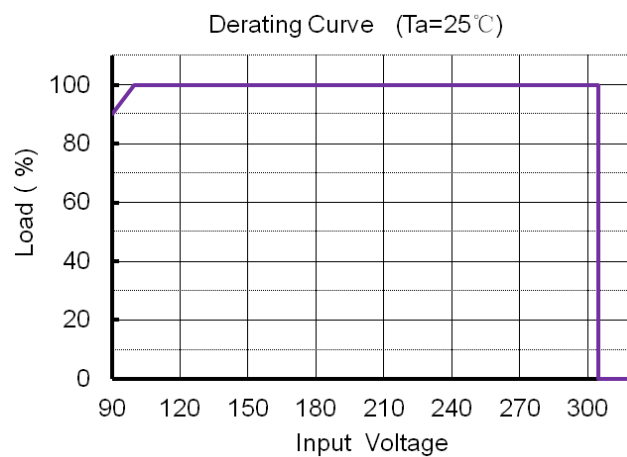
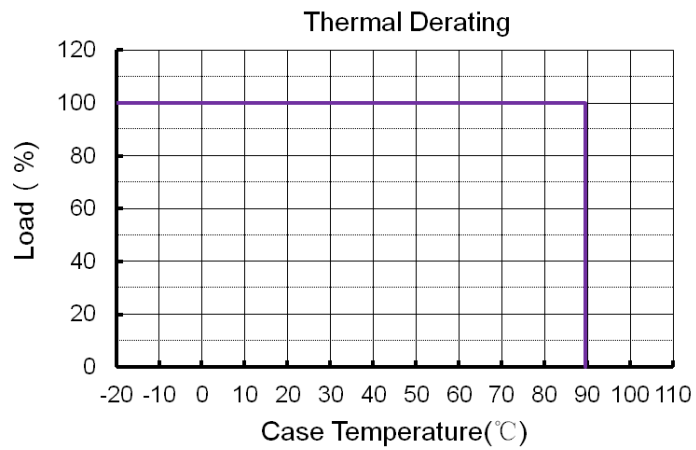
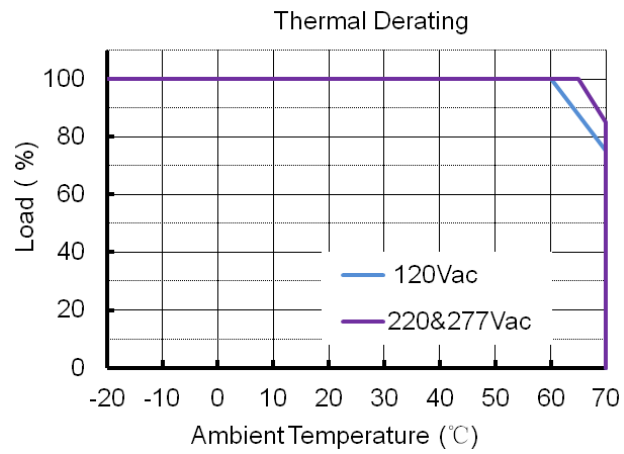
[4] refer to Lifetime vs. Tc curve.

[5] Tc point is marked on the product label. The label is also listed in the specification for approval.

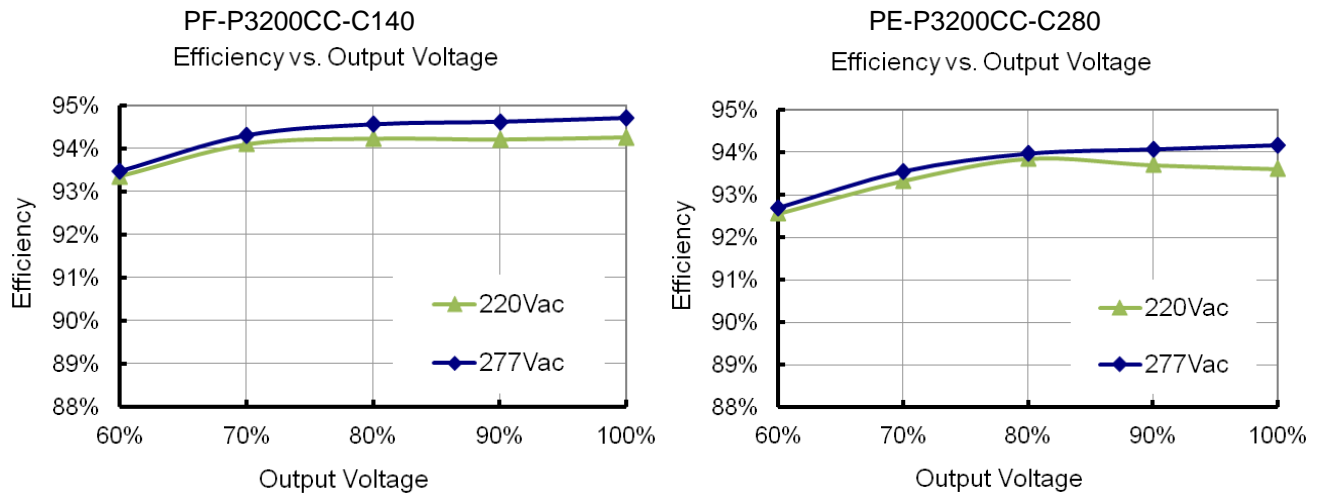
■ Safety & EMC Compliance

Safety Category	Standard
UL8750	Light Emitting Diode(LED) Equipment for Use in Lighting Products
UL1012	Power Unit Other Than Class 2
IEC 61347-1	Lamp Control Gear Part 1: General and Safety Requirements
IEC 61347-2-13	Lamp Control Gear Part 2-13: Particular Requirement for d.c. or a.c. Supplied Electronic Control Gear for LED Modules
EMI Standards	Notes
IEC 55015	Conducted emission test & Radiated emission test
IEC 61000-3-2	Harmonic current emissions; Class C ($\geq 75\%$ load)
IEC 61000-3-3	Voltage fluctuations & flicker
FCC Part 15	Class B
EMS Standards	Notes
IEC 61000-4-2	Electrostatic discharge (ESD)
IEC 61000-4-3	Radio frequency electromagnetic field susceptibility test (RS)
IEC 61000-4-4	Electrical fast transient (EFT)
IEC 61000-4-5	Surge immunity test L-N:4kV; LN-PE:6kV
IEC 61000-4-6	Conducted radio frequency disturbances test (CS)
IEC 61000-4-8	Power frequency magnetic field test
IEC 61000-4-11	Voltage dips
IEC 61547	Electromagnetic immunity requirements applies to lighting equipment

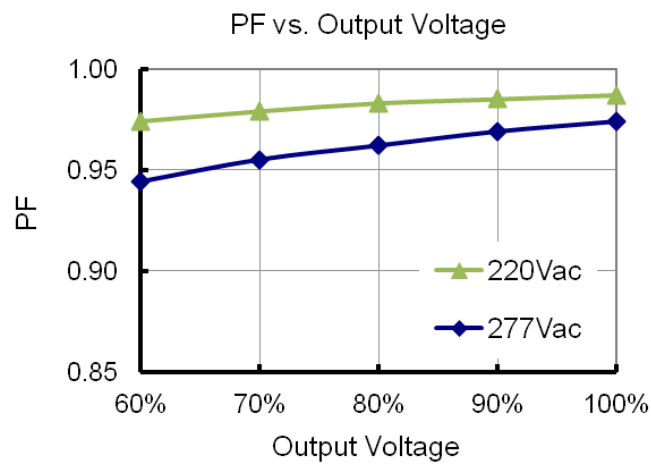
■ Derating Curve (Typical)



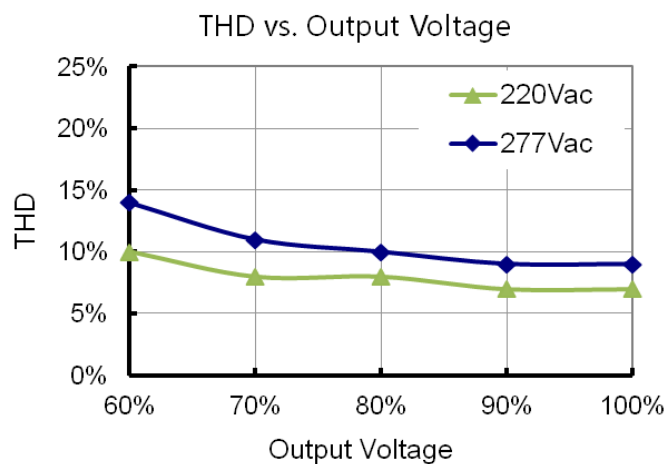
■ Efficiency vs. Load (Typical)



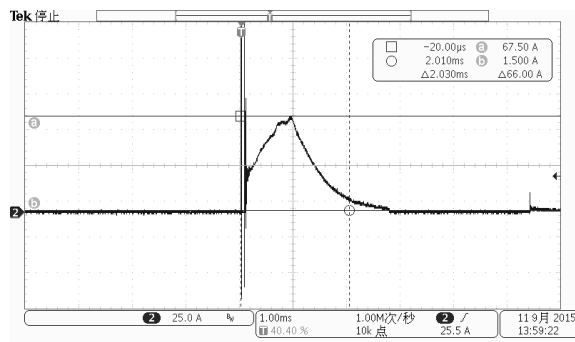
■ Power Factor Characteristics (Typical)



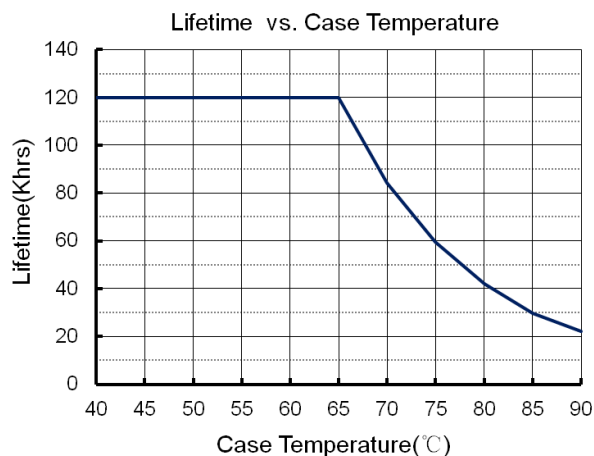
■ THD vs. Load (Typical)



■ Inrush Current Waveform (Typical)



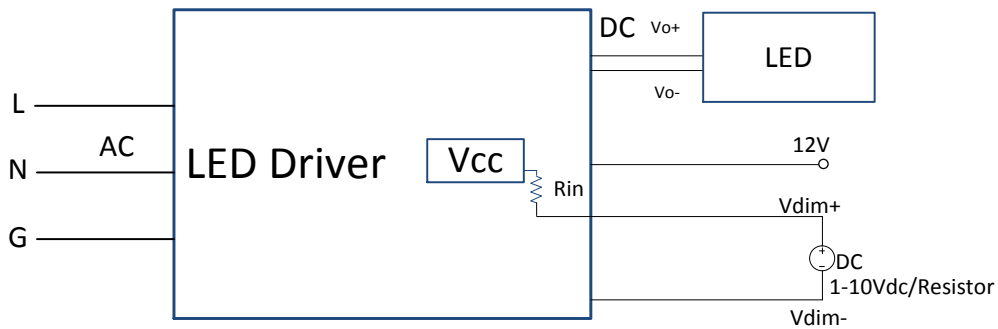
■ Lifetime vs. Case Temperature



■ Dimming Section

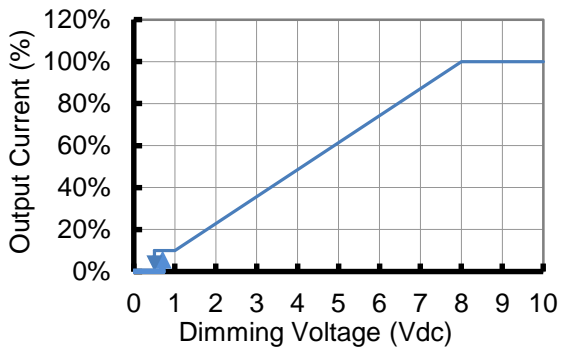
Parameter	Min.	Typ.	Max.
Vcc Output Voltage	-	12 V	-
12V Auxiliary Output Source Current		200 mA	300mA
Rin	-	100 kOhm	-
Absolute maximum voltage range on the 0~10V input pin	-20 V	-	20 V
Dimming range	10%	-	100%
Dim off threshold		0.5V	
Dim off hysteresis		0.3V	
0-10V Dimming Range	10% (Vdim=1V)	-	100% (Vdim=8~10V)
PWM Dimming Range	10% (Duty=10%)	-	100% (Duty=80-100%)
PWM High	3V	-	10V
PWM Low	0V	-	0.6V
PWM Frequency	300Hz	-	2kHz
External PWM Controller Current Sinking Capability	300uA	-	-

Diagram

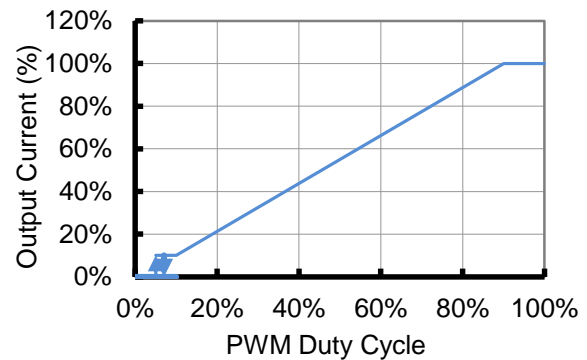


Dimming Curve

Output Current vs. Dimming Voltage

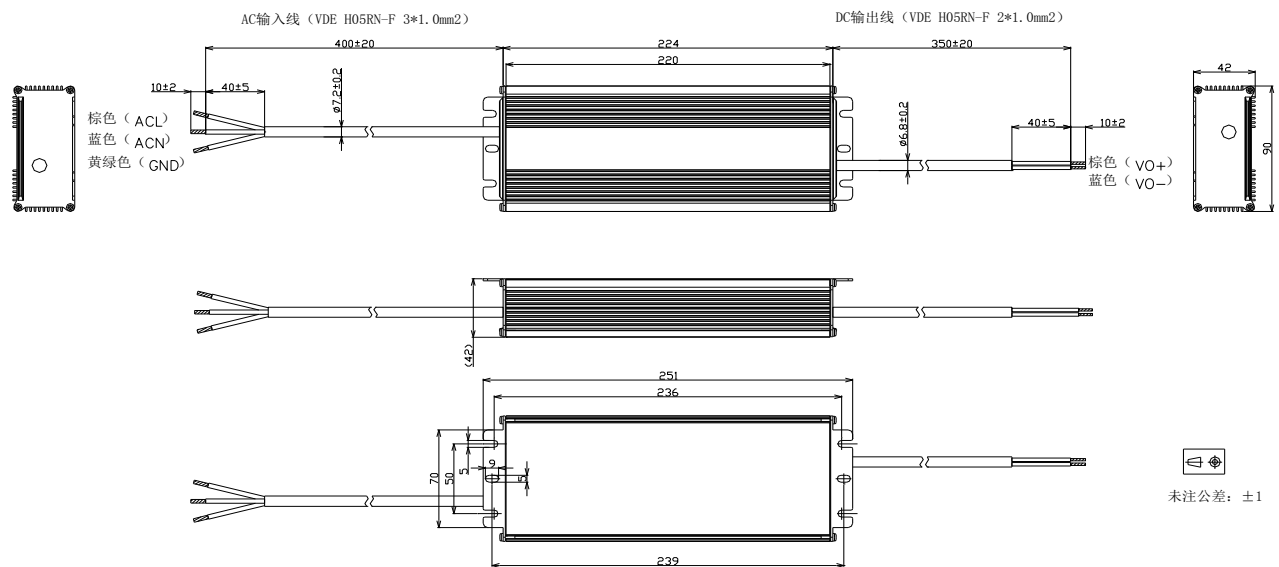


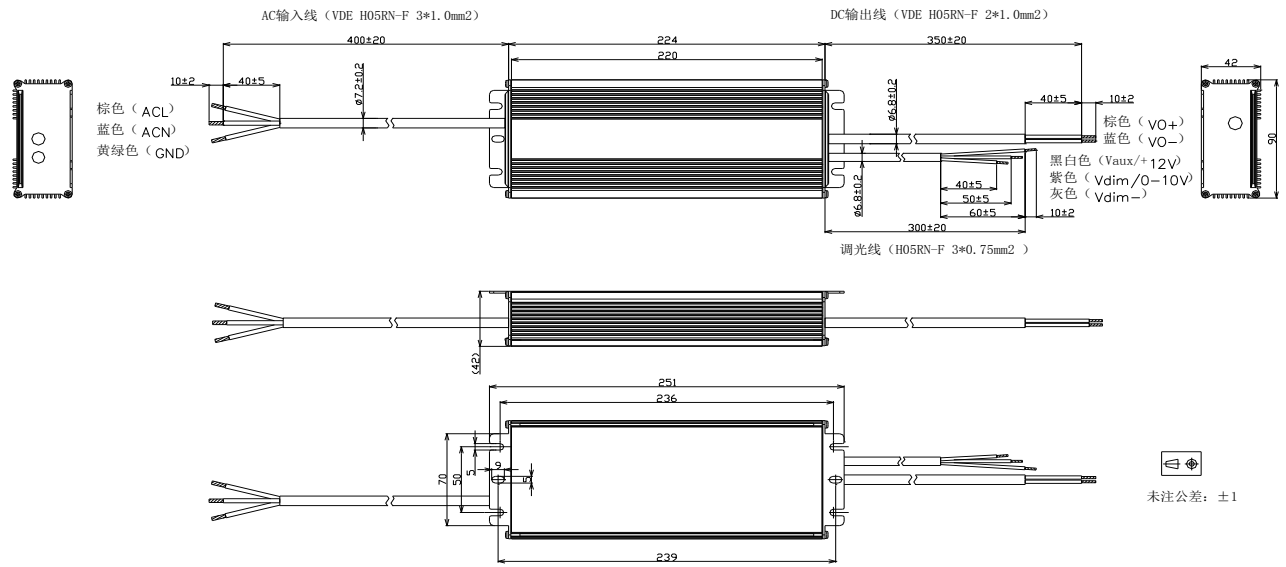
Output Current vs. PWM Duty Cycle

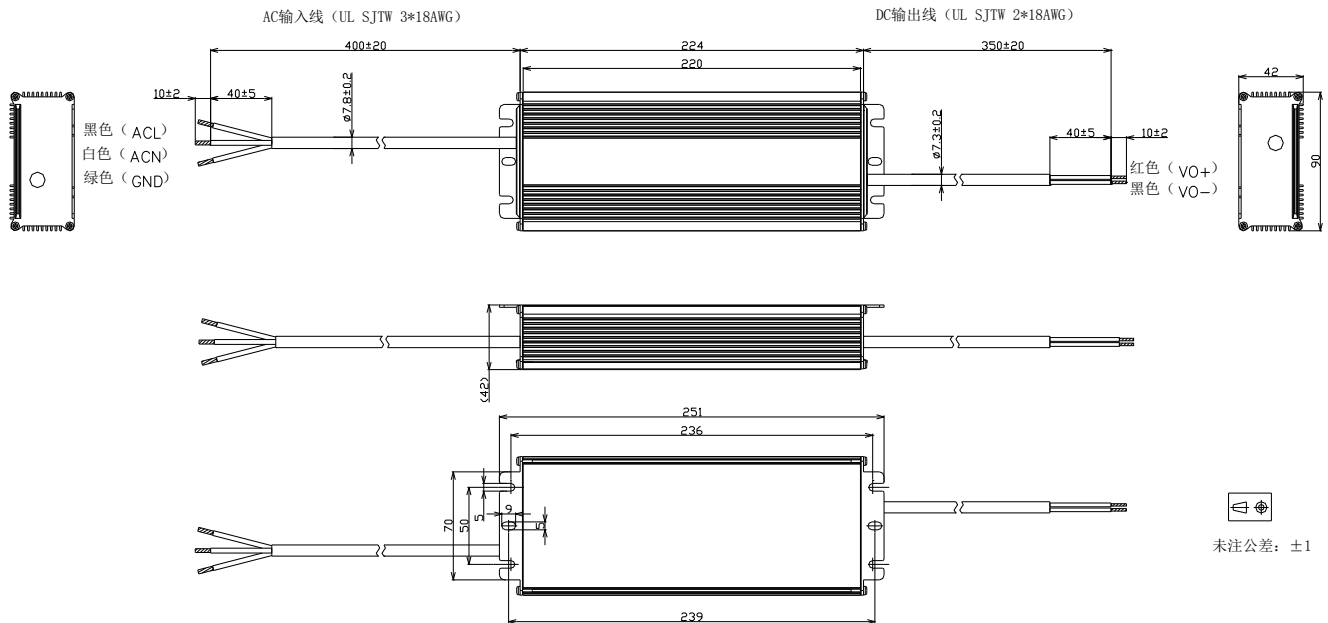
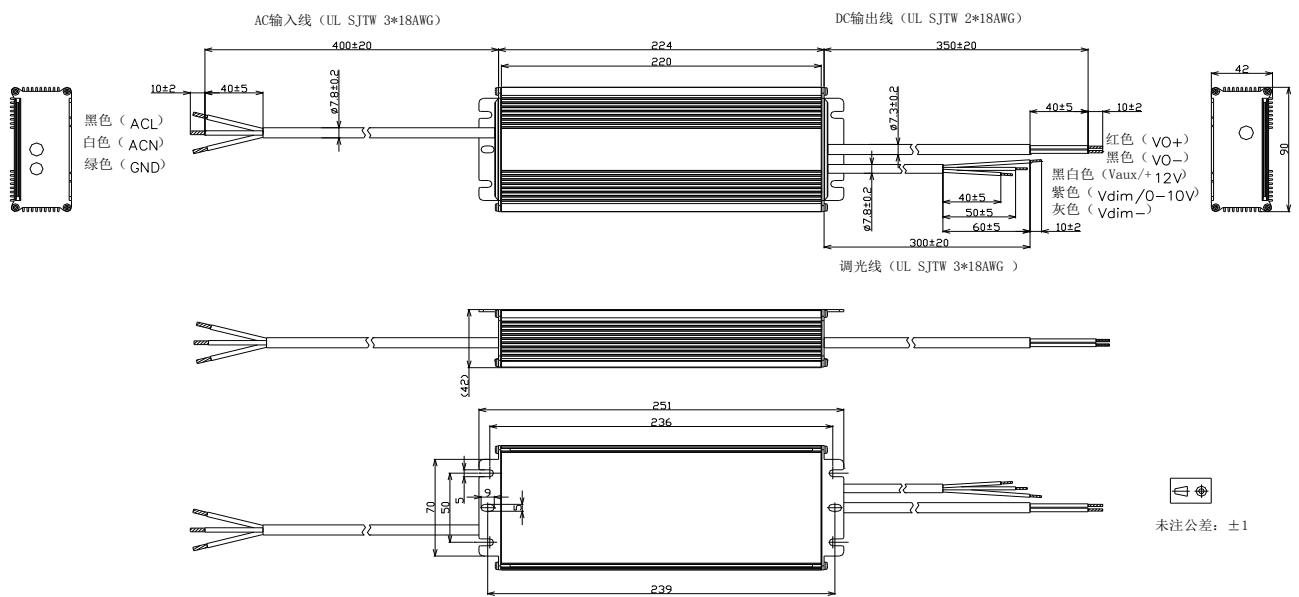


■ Mechanical Outline (Unit: mm)

PF-P320CC-Cxxx-S-ND /TS



PF-P320CC-Cxxx-S-DM


PF-P320CC-Cxxx-U-ND /TS

PF-P320CC-Cxxx-U-DM


Note: Please make sure the output cable does not connect to dimming cable or the cables of other drivers until 20 seconds after being tested because of the remained voltage in the output capacitor.

■ Revision History

Date	Rev.	Description of Change		
		Item	From	To
2015-02-04	A	Release	/	/
2016-2-11	B	Update Performance Curve		