

■ Description

- √ Wide Input Voltage: 176~305Vac
- √ High Efficiency up to 92.0%
- √ APFC (Active Power Factor Correction): 0.99 Typical
- √ All-Around Protection: OCP/OTP/SHORT
- √ Lightning Protection 6kV
- √ Waterproof: IP67
- √ 100% Full Load Aging Test for 4 Hours @Ta=45°C
- √ 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	Max. Output Current	Typical Eff.	Certification (To be done)
PF-F400CV-V024-S-VF	400W	0-16.7 A	24V	93%	VDE	CE/CCC/RoHS
PF-F400CV-V036-S-VF	400W	0-11.1 A	36V	93%	VDE	CE/CCC/RoHS
PF-F400CV-V042-S-VF	400W	0-9.5A	42V	93%	VDE	CE/CCC/RoHS
PF-F400CV-V048-S-VF	400W	0-8.3A	48V	93%	VDE	CE/CCC/RoHS
PF-F400CV-V054-S-VF	400W	0-7.4A	54V	93%	VDE	CE/CCC/RoHS

■ Specifications

Items		Specifications	
Input	Input Voltage	176~305Vac	
	Input Frequency	47~63Hz	
	Power Factor	>0.96@60-100%load, refer to PF vs. Load curve.	
	THD	<15%@80-100%load, refer to THD vs. Load curve.	
	Input Current	2.5Amax@110Vac & Full-Load; 2.5Amax@230Vac & Full-Load	
	Inrush Current	65A peak, 1.2ms duration@220Vac 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	Voltage Accuracy	±5%Vo	
	Setup Time	1.2s max	
	Output Overshoot	5%Vo max	
Protection	Output Over Current	120% Iomax, typ.	
	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.	
Environmental Condition	Operating Temperature	-40°C~+65°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 220 Vac input, 80% load and 25 °C ambient temperature(MIL-HDBK-217F)	
	Lifetime	≥50,000 hours, measured at 220 Vac input, 80% load and 60 °C Case temperature ^[4]	
	Case Temperature	90°C max ^[5]	
	Dimensions	Inch (LxWxH)	9.88X3.54X1.65
		Millimeter (LxWxH)	251X90X42
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.

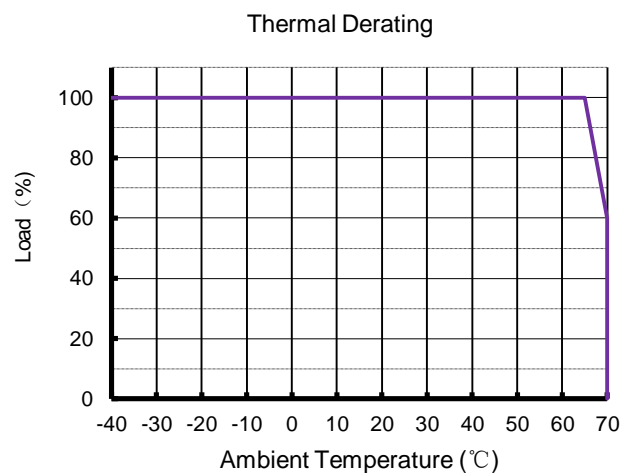
[4] refer to Lifetime vs. Tc curve.

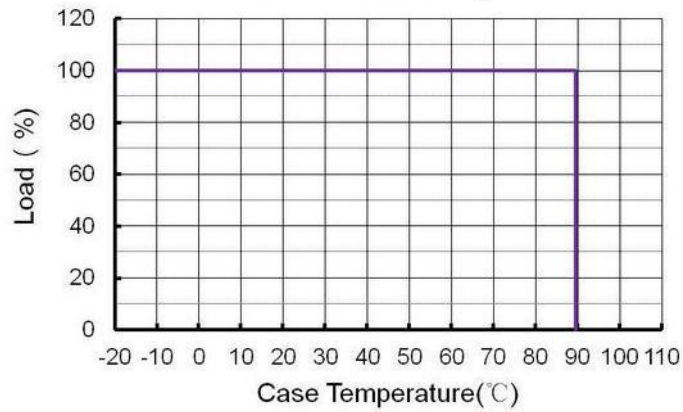
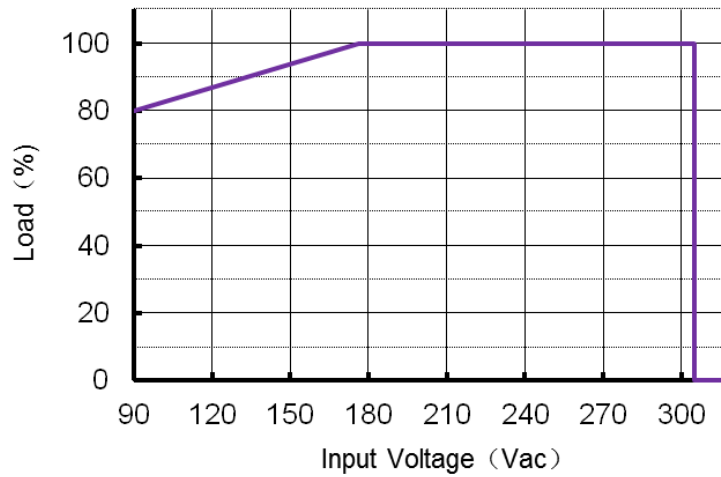
[5] Tc point is marked on the product label. The label is also listed in the specification for approval

■ Safety & EMC Compliance

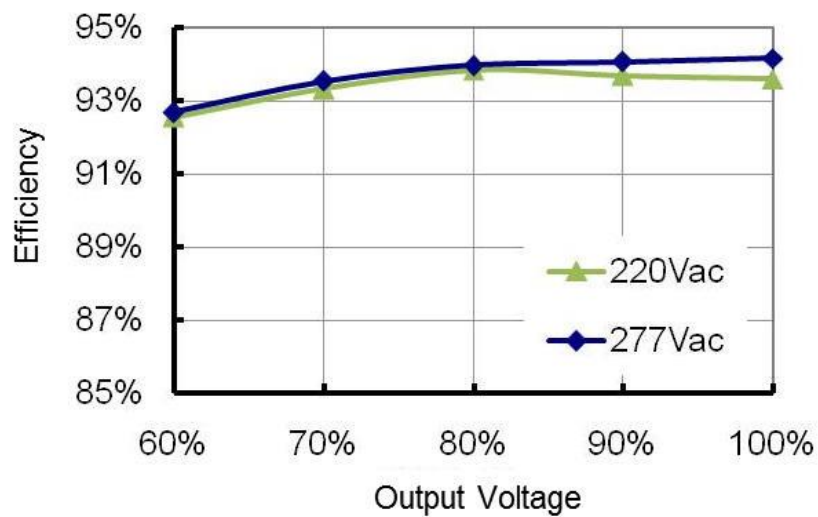
Safety Category	Standard
UL8750	Light Emitting Diode(LED) Equipment for Use in Lighting Products
UL1012	Power Unit Other Than Class 2
IEC 61347-1	Lamp Control Gear Part 1: General and Safety Requirements
IEC 61347-2-13	Lamp Control Gear Part 2-13: Particular Requirement for d.c. or a.c. Supplied Electronic 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)

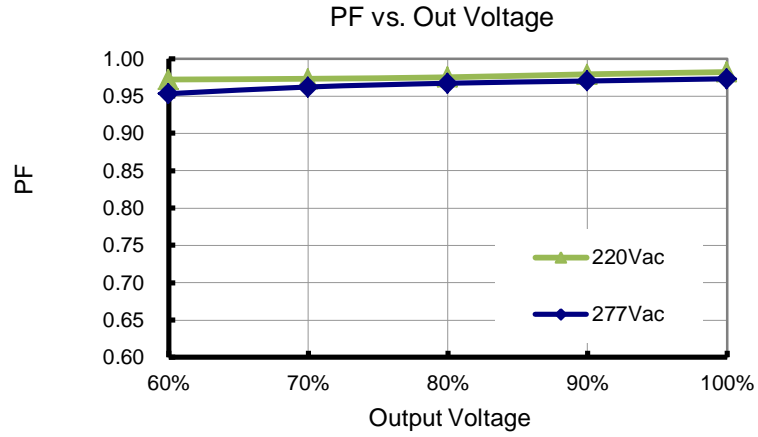


Thermal Derating

Derating Curve (Ta=25°C)


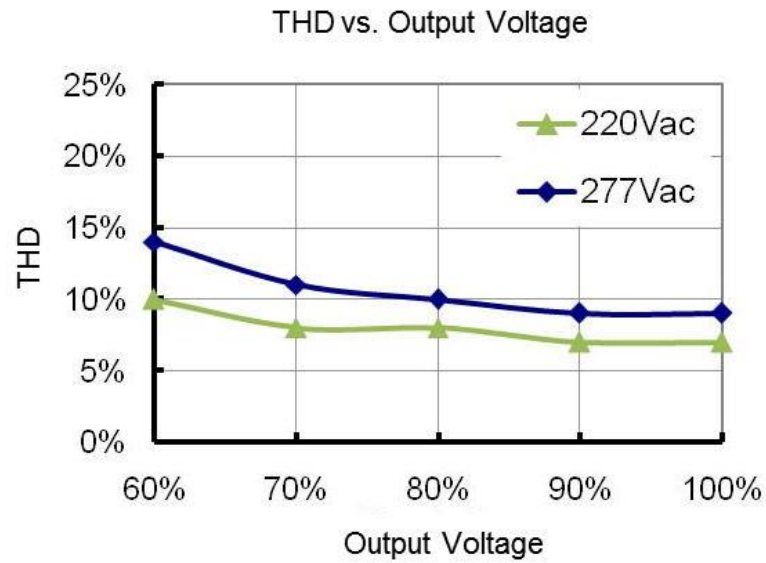
■ Efficiency vs. Load (Typical)

Efficiency vs. Output Voltage


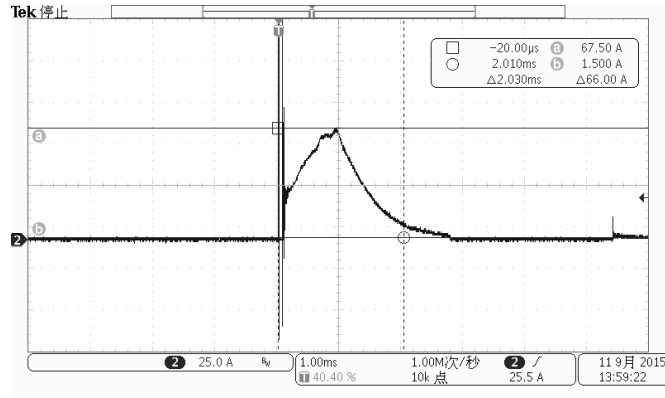
■ Power Factor Characteristics (Typical)



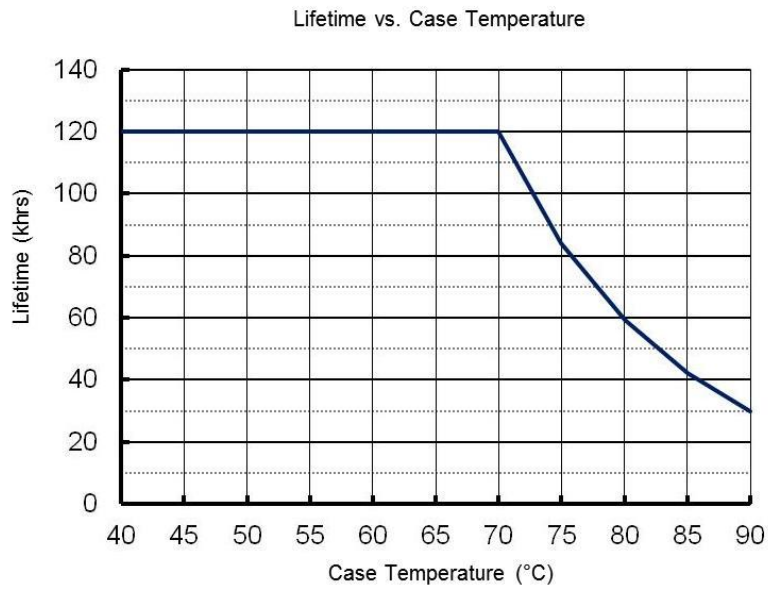
■ THD vs. Load (Typical)



■ **Inrush Current Waveform (Typical)**

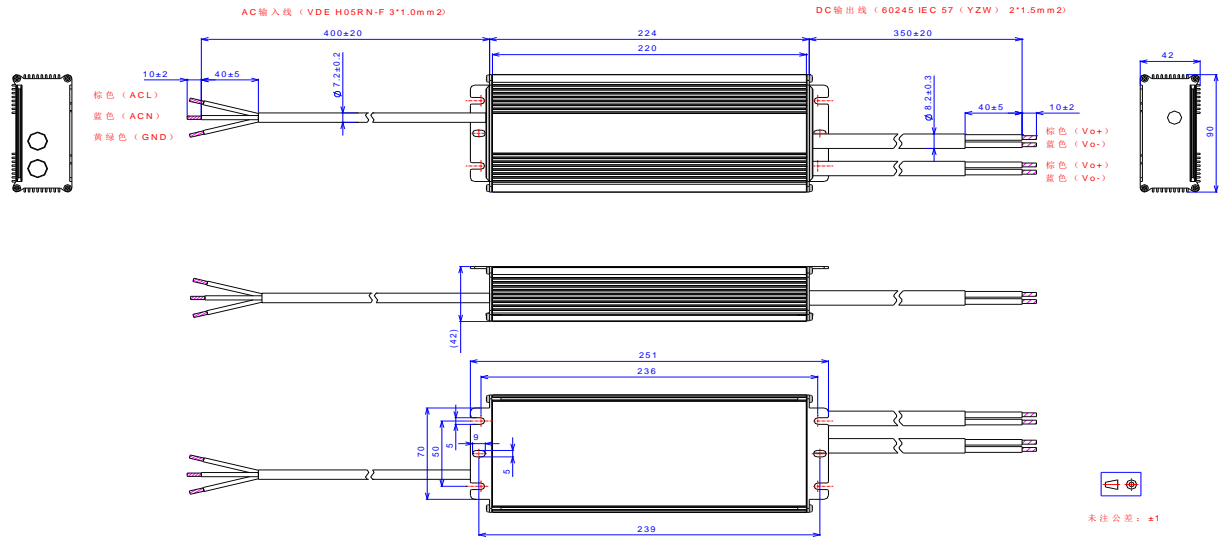


■ **Lifetime vs. Case Temperature**



■ Mechanical Outline (Unit: mm)

PF-F400CV-V024-S-VF PF-F400CV-V036-S-VF



■ Revision History

Date	Rev.	Description of Change		
		Item	From	To
2016.01.06	A	First Released	/	/
2017.07.26	B	Newly increased 36V、42V、48V、54V		
2018.12.19	C	Update Performance Curve		