

## KEY FEATURES

- Open Frame LED Power Supply
- With Constant Current & Constant Voltage (C.C+C.V mode)
- With P.F.C. Function, PF>0.9
- High Efficiency up to 89%
- Free Air Convection
- Protections: Over Load / Over Voltage / Short Circuit
- High Reliability & Double Layered PCB
- Ultra Compact Size: 4.12 x 2.07 x 1.06 Inches
- 3-Years Product Warranty



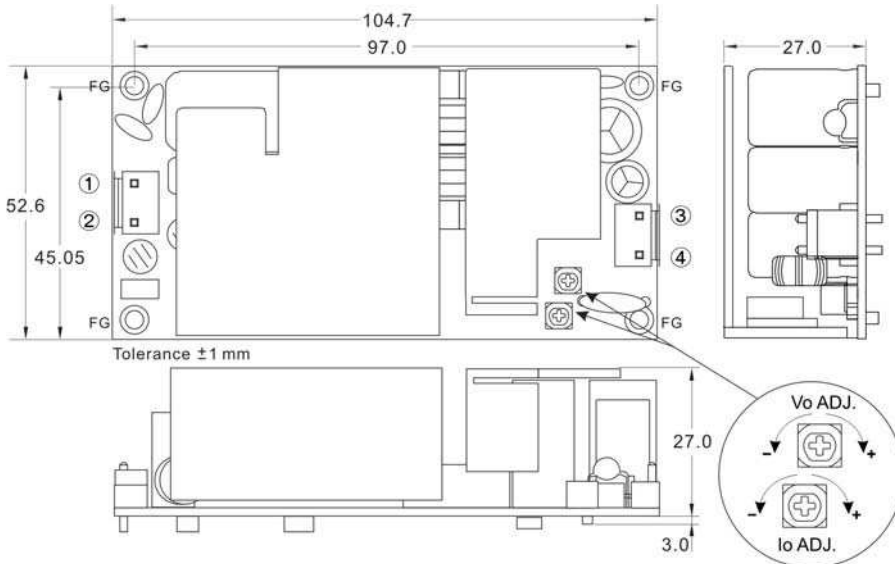
## ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

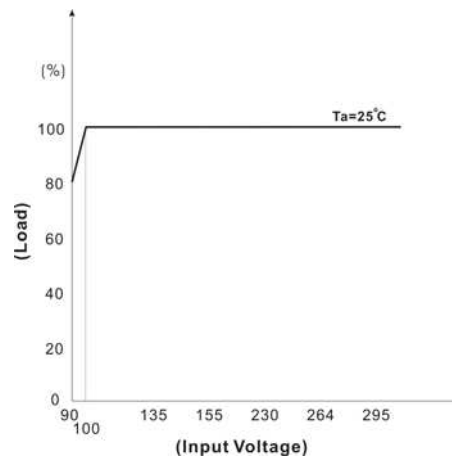
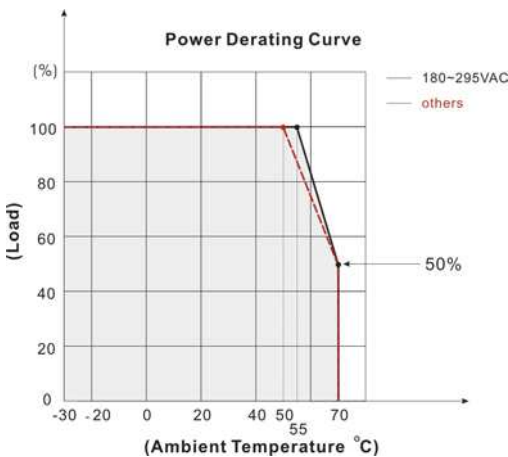
Model No.	ZLF60-24S	ZLF60-36S	ZLF60-48S	ZLF60-54S	
Max output wattage ( W )	60W				
Input	Voltage (Note2)	90-295 VAC			
	Frequency (Hz)	50 / 60 Hz			
	Power factor	PF>0.9 at Full load (115 VAC / 230 VAC)			
	Current (Full load)	0.8A (115 VAC) / 0.4A (230 VAC)			
	Inrush current (at 230 VAC)	45 A max.			
	Leakage Current	< 0.7 mA max at 240 VAC			
Output	Voltage (V.DC.)	24V	36V	48V	54V
	Voltage ADJ Range Setup (CV Mode)	22 ~ 26.5V	33 ~ 39.5V	44 ~ 51.5V	49 ~ 55V
	Constant Current Operation Voltage (max) (CC Mode) (Note3)	15.6~ 24 VDC	23.4~36 VDC	36~48 VDC	35.1~54 VDC
	Voltage Tolerance	±10%			
	Preset Current (mA) (CC Mode) (at 230 VAC)	2450	1750	1250	1050
	Current Adjustment Range (mA) (CC Mode)	2000~2500	1350~1750	1000~1300	900~1150
	Minimum Load (mA)	2000	1350	1000	900
	Line Regulation (typ.) (110-240 VAC)	±4%			
	Load Regulation (Min-Max) (typ.)	±5%			
	Ripple & Noise (typ.) (Note1)	2.7Vp-p	5Vp-p		
	Efficiency (at 230VAC / Full Load)(typ)	89%			
Protection	Over current protection	Auto recovery			
	Over voltage protection	Zener diode clamp			
	Short circuit protection	Auto recovery			
Isolation	Input-Output (V.AC)	3750V			
	Input-FG (V.AC)	1880V			
	Output-FG (V.AC)	500V			
Environment	Operating temperature	-30°C...+70°C (with derating)			
	Storage temperature	-40°C...+85°C			
	Temperature coefficient	0.02%/°C			
	Humidity	95% RH			
	MTBF	>450,000 h @ 25°C (MIL-HDBK-217F)			
Physical	Dimension (L x W x H)	4.12 x 2.07 x 1.2 Inches ( 104.7 x 52.6 x 27.0 mm ) Tolerance ±1mm			
	Weight	195 g			
	Cooling method	Free air convection			
Safety	Agency Approvals	UL8750 · IEC / EN 61347-2-13 · IEC / EN 61347-1			
EMC	EMI (Conducted & Radiated Emission)	EN 55015			
	EMS (Noise Immunity)	EN 61547			
	Harmonic Current	EN 61000-3-2(at Full Load) · EN 61000-3-3			
	Surge	2KV L-N, 4KV L N-FG			

**Note:**

1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. Please check the derating curve for more details.
3. Input Voltage=115 or 230 VAC. This is the suitable operation region for LED related application.but please reconfirm special electrical requirements for some specific system design.

**MECHANICAL DIMENSION ( Top View )**


PIN#	SINGLE
1	AC IN (N)
2	AC IN (L)
3	+DC OUT
4	-DC OUT

**DERATING**


If the output is not connected LEDs, the input voltage must be greater than 180VAC.

**BLOCK DIAGRAM**
