# 250W ITE Power Supplies
# Open Frame Series
## Single Output 250W PFC Data Sheet

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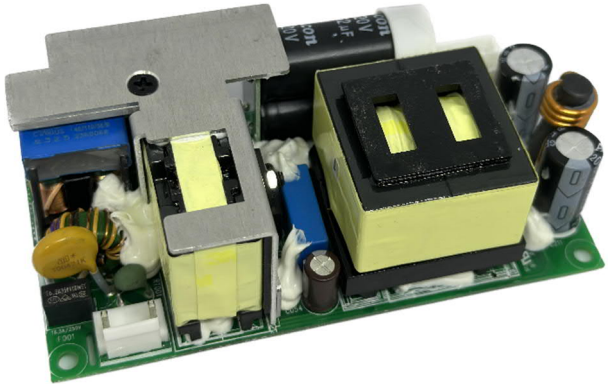
## Description

This is an AC to DC switching power supply in a package of 2 x 4 inches is a class-I PSU. This PSU capable of delivering 250 watts continuous power with 14CFM forced air cooling at 50℃ operation temperature. It complies with worldwide safety and EMC regulations (refer to details below). This PSU is suitable for information & networking applications.

## Features

* Full AC input voltage design.
* Full Protections: Short-circuit/ Over-voltage/ Over-current/ Over temperature
* IEC/EN 62368-1 design compliance
* Up to 5000 meters operating altitude (note #4)
* High efficiency and high reliability



## Electrical Specification

| Model Name | PA-1251-12F1 |
|---|---|
| **Output** | |
| Rated power | 250W |
| Rated voltage | 12V |
| Rated current | 20.83A |
| Ripple & Noise(max.) (note #2) | 120mV |
| Line & load regulation | ±5% |
| Hold-up time (min.) | 10ms at 250W output and 115Vac/60Hz |
| Timing: AC ON delay / rising (max.) | 3 sec |
| **Input** | |
| Rated voltage range | 100~240Vac |
| Operated voltage range (note #5) | 90~264Vac |
| Current range (max.) | 2.7A/115Vac; 1.5A/230Vac |
| Inrush current (typ.) | 130A/230Vac (cold start) |
| Frequency range | 47-63Hz |
| Leakage current (max.) | 0.25mA at 264Vac/50Hz |
| Average Efficiency (min.) | >89% at 115Vac/60Hz |

| | |
|---|---|
| | >90% at 230Vac/50Hz |
| No Load Power Consumption (max.) | <0.21W at 115Vac/60Hz and 230Vac/50Hz input voltage |
| **Protection Function** | |
| Over voltage (max.) | < 16V, latch-off protection |
| Over current (max.) | < 31.245A, hiccup mode protection until fault is removed |
| Short circuit at O/P | No damage, hiccup mode protection until fault is removed |
| Over temperature | No damage, auto recovery until temperature is back to normal |
| **Others** | |
| MTBF (min.) (note#3) | 300K hours @ rated load with 14CFM forced air cooling |
| **Environment** | |
| Temperature (note#6) | (operating) -20~50℃ / (storage) -40~85℃ |
| Humidity | (operating) 20~80% RH non-condensing / (storage) 10~90% RH |
| Altitude (max.) | 5000 meters |
| **Mechanical** | |
| Dimension | 101.6mm(L)* 50.8mm(W)*36.0mm(H) |
| Vibration | 5~200 Hz, 0.5G 90min./1cycle per axis for all axes (X, Y, Z) |
| Weight (typ.) | 225 grams (0.496 lbs.) approx |
| **Safety** | |
| Standard | IEC62368-1, IEC60950 |
| Withstand voltage | Input-Output: 3000VAC / Input-FG: 1500VAC |
| Isolation resistance(min.) | Input-Output: ≥20Mohm @ 500VDC, 2sec |
| **EMC** | |
| EN55032 (CISPR32) | Conducted EMI: Class B / Radiated EMI: Class B |
| FCC | Conducted EMI: class B / Radiated EMI: class B |
| EN61000-3-2 | Harmonic distortion: Class D |
| EN61000-4-2 Level 4 (note #5) | Criteria A, ESD: ±4KV contact discharge / ±8KV air discharge |
| EN61000-4-3 | Criteria A, Radiated RF immunity: 10V/m rms 80% AM with 1KHZ modulation |
| EN61000-4-4 Level 3 | Criteria A, EFT: ±2KV |
| EN61000-4-5 Level 3 | Criteria A, Surge: ±2KV DM / ±4KV CM |
| EN61000-4-6 Level 2 | Criteria A Conducted RF immunity: 10V/m rms 80% AM with 1KHZ modulation |
| EN61000-4-11 | Voltage dip immunity<br>>95% dip, 0.5 cycle (10ms), Criteria A<br>>95% dip, 1 cycle (20ms), Criteria B<br>>30% dip, 25 cycle (500ms), Criteria A<br>>95% dip, 250 cycle (5000ms), Criteria B |

## Notes

#1: All specification defined at 230Vac/50Hz, rated power and 25℃ ambient temperature if not mentioned specifically.

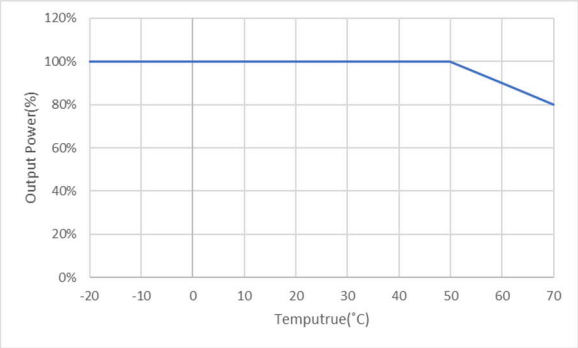
#2: Ripple noise is measured by a 30cm length, twisted wires with 0.1uF MLCC & 47uF low ESR capacitor.

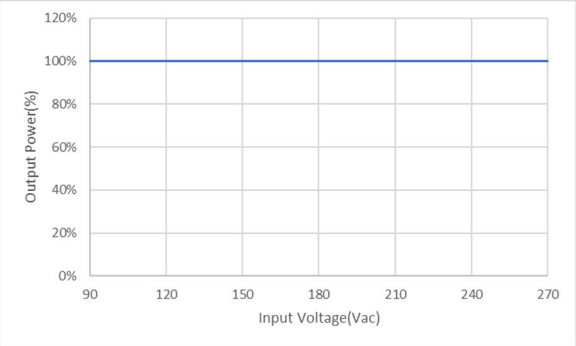
#3: Calculated by Telcordia SR332 at 50℃ operation temperature with 14CFM forced air cooling.

#4: When operating altitude is higher than 2000m, the environment temperature derating factor is 0.36℃/100m.

#5: ESD was tested with system enclosure.

#6: De-rating curve of AC input voltage and ambient temperature:



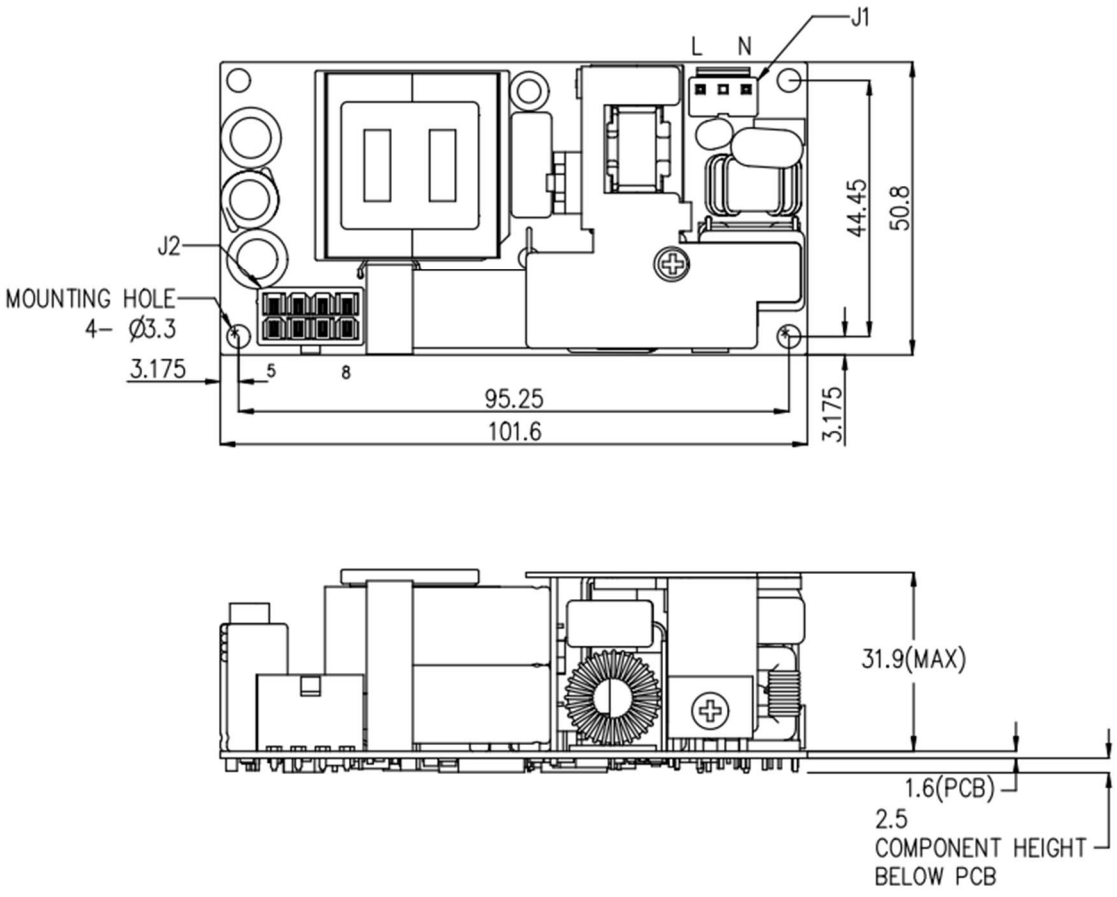



## Mechanical Specification

Dimension:

4.0 inch (L) X 2.0 inch (W) X 1.4 inch (H)

101.6 mm (L) X 50.8 mm (W) X 36.0 mm (H)




NOTES:

1.Dimension(LxWxH): 101.6*50.8*36.0 mm
2.CN1: CVILUX CI5203P1VP2 OR EQU;
CN2: CVILUX CP–01308130–NH OR EQU.
3.螺絲孔位公差與其它尺寸公差±0.1 mm.
4.To ensure compliance with level B emmision, connect the two "*" marks mounting holes with metallic standoff to chassis.
5.Dimension unit: mm

Pin assignment of J2:

| Pin No. | Function |
|---|---|
| 1,2,5,6 | +Vout |
| 3,4,7,8 | –Vout |

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