



**亞源科技股份有限公司**  
**ASIAN POWER DEVICES INC.,**

**SPECIFICATION FOR APPROVAL**

Model No.	DB-48A12
Model Name	DB-48A12-AAAB
Customer	Hewlett Packard
Customer P/N	TBD
Input Nameplate Range:	100-240V,50-60Hz
Input Operational Range:	90-264V,47-63Hz
Output :	12V/4A
Rev.	00

CUSTOMER AUTHORIZED SIGNATURE		

Please return to us one copy of "SPECIFICATION FOR APPROVAL" with you approved signature.

Approved By	Safety	EE	ME	Prepared by	Date
丁海平				肖皓妍	

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Made In China



## Change List

Rev.	Date	Changed contents	Why
00	2019-03-22	New	



# The Contents

<b>Item</b>	<b>Document Name</b>	<b>File Name</b>	<b>Sub-Page</b>	<b>Rev.</b>
1.	Electrical Specification	SXXXXX	4-7	00
2.	Mechanical Dimension	MXXXXX	8	00A
3.	LASER	L8030-XXXXX	9	00A



# Electrical Specification

**Model Name : DB-48A12-AAAB**

**Rev. 00**

## 1. SCOPE

This specification describes the physical, functional and electrical characteristics of the 48watts, single output +12V/4A, switching power supply.

## 2. INPUT CHARACTERISTICS

### 2.1. Input Voltage

Nameplate range : 100-240Vac  
Operational range : 90-264Vac

### 2.2. Input Frequency

Nameplate range : 50-60Hz  
Operational range : 47-63Hz

### 2.3. Input current

Input current should be lower than 1.5Arms/1Arms under full-load and 115Vac/230Vac input voltage conditions.

### 2.4. Inrush Current

Inrush current should not interrupt line fuse or cause damage to the power supply at cold start.

### 2.5. Power Consumption

Input power saving should be lower than 0.1Watts under No-load and 115/230Vac input voltage conditions. It would conform to “DoE 2016”

### 2.6. Efficiency

+12V output current 4A/3A/2A/1A respectively at 115Vac & 230Vac input voltage, the average efficiency should be greater than 87.77%, after burning in 0.5 hour at full load. It would conform to “DoE 2016”

## 3. OUTPUT CHARACTERISTICS

### 3.1. Output Characteristics

Output voltage, load current, voltage regulation and output noise of power supply should meet the specifications, which defined on the tables below:

Table 1 Electrical Characteristics overview

Item	Performance	Remarks
Output Voltage	12Vdc	
Output Range	± 5%	
Full Load	4.0A	
Min. Load	0.0A	
Max. Ripple Voltage	200mVp-p	@Ta=25°C (Note 1)
Hold Up Time	10mS Min	Full Load & 115Vac/60Hz Input @Ta=25°C (Note 2)
Turn on Time	5 S Max	Full Load & 115Vac/60Hz Input @Ta=25°C (Note 3)



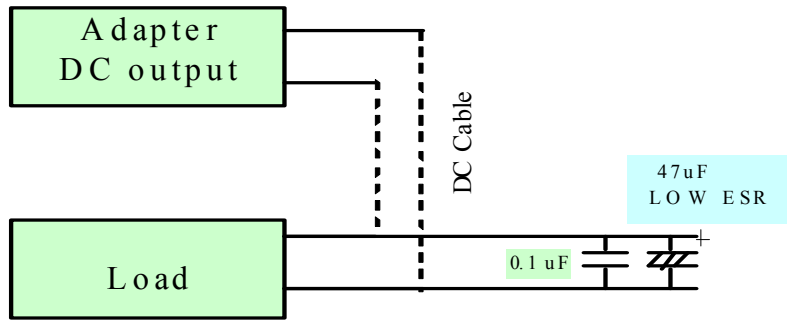
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Output inrush current	>70A duration time < 600uS	100Vac/60Hz ~ 240Vac/50Hz @Ta=25°C
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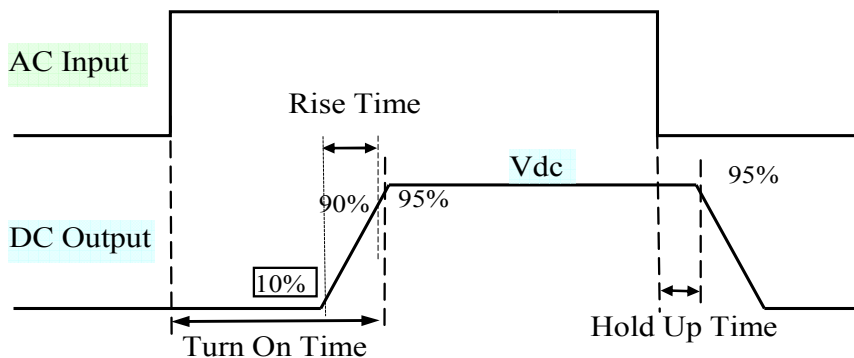
Note 1: Ripple voltage measurement is done with an oscilloscope set at a 20M Hz bandwidth with 0.1uF ceramic capacitor & parallel with 47uF low ESR electrolytic aluminum capacitor at full load.



Note2: Turn off at input voltage 90° phase.

Note 3:

Turn On/Rise/Hold Up Time



### 3.2. Output Protection :

**3.2.1. Short Circuit Protection:** No damage to this power supply when output is shorted to GND, Auto-recovery mode.

**3.2.2. Over Current Protection:** Power supply shall shutdown before output current reached 8A Max. @ 90Vac or 264Vac input. Auto-recovery mode.

**3.2.3. Over Voltage Protection:** The power supply shall shut down against over-voltage caused by fault conditions, the output voltage shall not exceed 20Vdc Max. Auto-recovery mode.

**3.2.4. Over Temperature Protection:** The case should be no deformation, no discoloration, no smoke and no fire under abnormal temperature.

## 4. ENVIRONMENT SECTION

**4.1. Operating Temperature :** 0°C to 45°C

**4.2. Operating Humidity :** 10% to 90%RH

**4.3. Storage Temperature :** -20°C to 80°C



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**4.4. Storage Humidity** : 5% to 95%RH

## **5. RELIABILITY**

**5.1. MTBF:** 300K hours minimum @ 25°C, full load & 90Vac/264Vac with SR-332.

### **5.2. Electrolytic Capacitors Lifetime:**

Calculated electrolytic capacitors lifetime should be more than 26280Hours, when tested at 3.5Aoutput; 90V and 264Vac input and 35°C ambient.

### **5.3. Vibration(non-operation)**

Waveform: Sinusoidal/

Acceleration: 2G

Frequency: 10 to 500Hz

Amplitude : 0.15mm

Sweep rate: 1 octave/min

Duration: 30 minutes on each axis X, Y and Z;

### **5.4. Drop:**

The test sample must be dropped from 100cm onto concrete floor for 6 times (1/face)

## **6. EMI STANDARDS :**

### **6.1. Conduction :**

**6.1.1.** It refers to CISPR PUB 22 or FCC part 15 Class B.

### **6.2. Radiation :**

**6.2.1.** It refers to CISPR PUB 22 or FCC part 15 Class B.

### **6.3. Harmonic Current :**

**6.3.1.** It refers to EN 61000-3-2

### **6.4. Flicker Voltage :**

**6.4.1.** It refers to EN 61000-3-3

## **7. EMS Standards :**

### **7.1. Electrostatic Discharge ESD :**

**7.1.1.** It refers to IEC 61000-4-2 criterion A.

**7.1.2.** Air Electrostatic Discharge: ±8KV

**7.1.3.** Contact Electrostatic Discharge: ±4KV

### **7.2. Radiated Immunity RS :**

**7.2.1.** It refers to IEC 61000-4-3

**7.2.2.** Radiated Susceptibility : 3V/m

### **7.3. Transient Burst (EFT) :**

**7.3.1.** It refers to IEC 61000-4-4

**7.3.2.** EFT Test : ±1KV

### **7.4. Surge :**

**7.4.1.** It refers to IEC 61000-4-5 criterion A

**7.4.2.** common mode Surge Immunity: ±4KV

**7.4.3.** differential mode Surge Immunity: ±2KV

### **7.5. Conducted Radio Frequency Disturbances Test CS :**

**7.5.1.** It refers to IEC 61000-4-6

**7.5.2.** Injected Current Susceptibility: 3Vrms

### **7.6. Power Frequency Magnetic Field Test :**

**7.6.1.** It refers to It refers to IEC 61000-4-8

### **7.7. Voltage Dips :**

**7.7.1.** It refers to IEC 61000-4-11



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## 8. SAFETY SECTION

### 8.1. Operating elevation

Power supply should be able to be used at an altitude of 5000 meters.

### 8.2. L.P.S:

Power supply should be conformed to L.P.S.

### 8.3. Leakage Current

Leakage current shall not exceed 100uA at 240 Vac/50Hz input.

### 8.4. Hi-Pot Test

**8.4.1. Primary to Secondary:** 10mA Max. @4242Vdc/3 Sec for in-process; 60 Sec for FQC (Final check).

### 8.5. Insulation

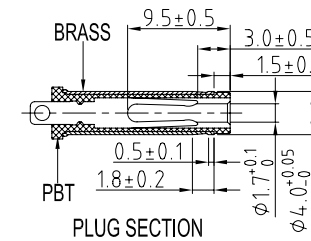
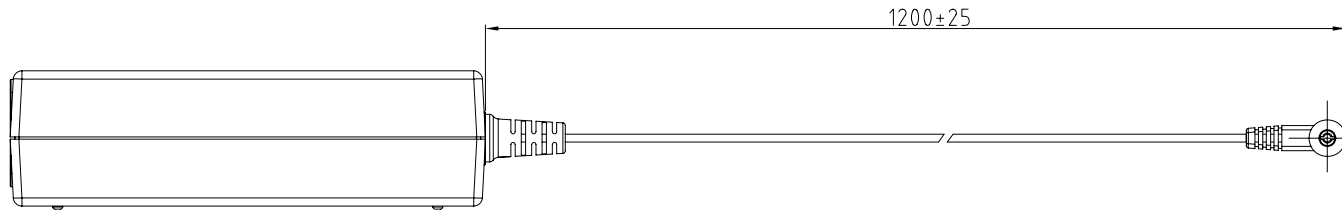
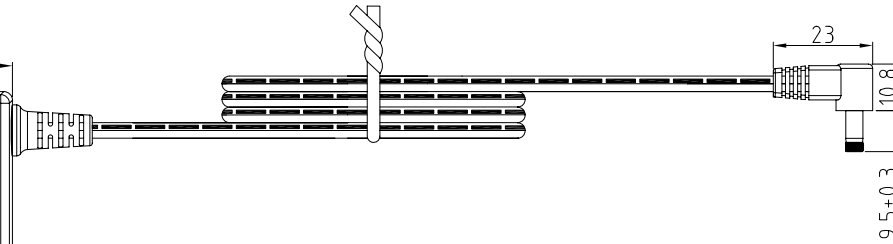
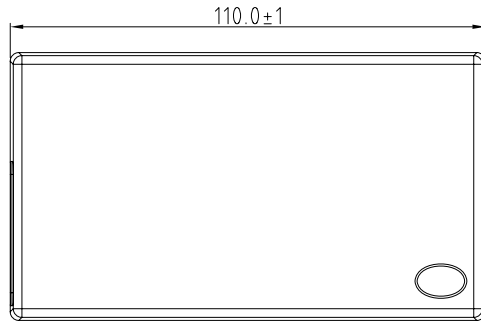
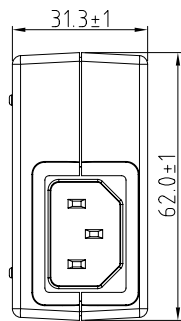
**8.5.1. Primary to Secondary** : 100M ohm Min. @500Vdc.

**8.6. Safety standards:** Meet IEC 60950-1 and IEC 62368-1.

## 9. MECHANICAL SECTION

**9.1. Dimension:** Refer to mechanical drawing for the details.

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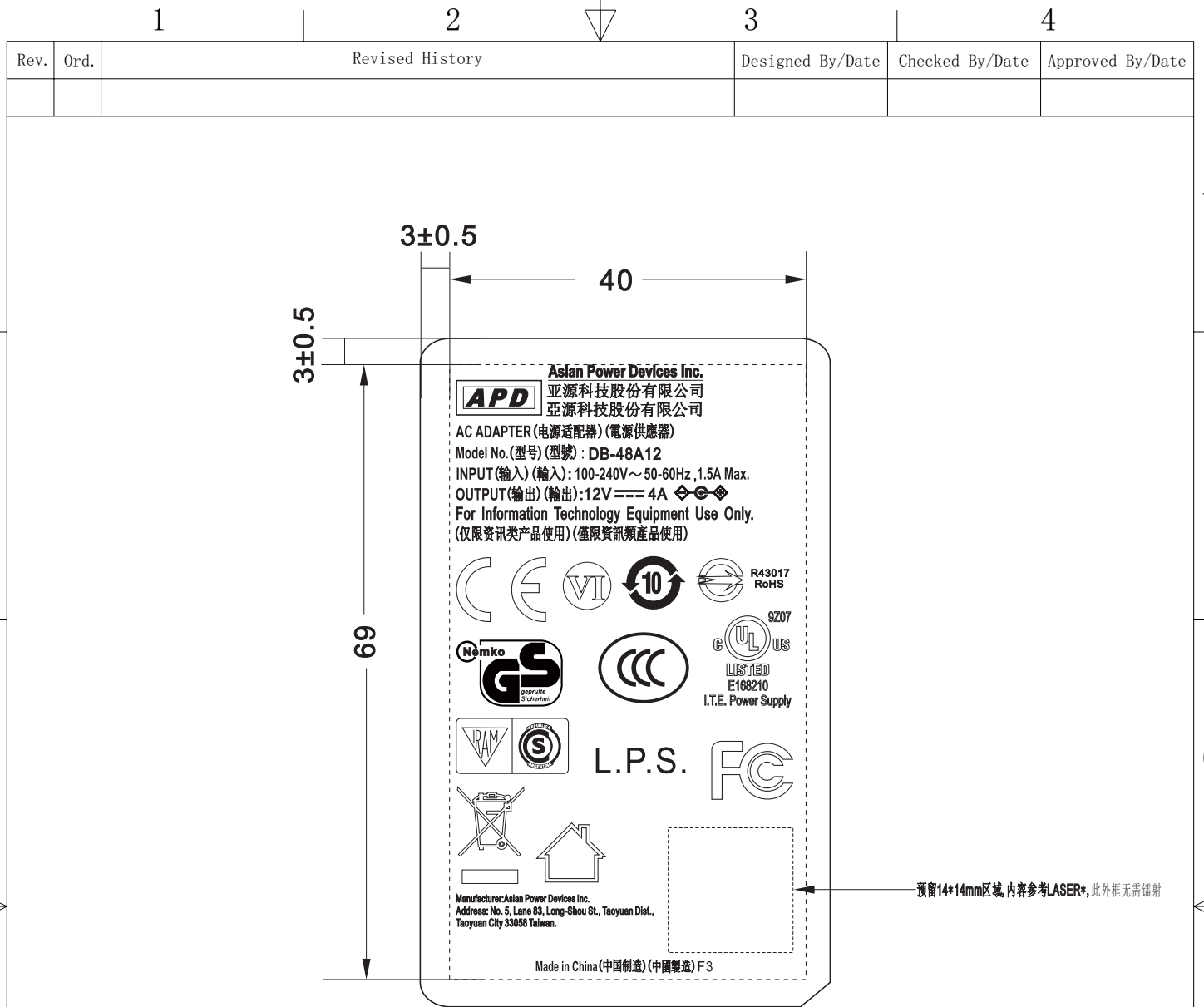
GENERAL NOTES	
1. COLOR	BLACK
2. AC RECEPTACLES	IEC-320+C14, 15A/250Vac
3. DC POWER CORD	UL 2468 #20AWG*2
4. DC POWER PLUG	φ4.0*φ1.7*L 9.5mm TUNING FORK TYPE (INNER 3 mm)
5. CABLE TIE	CABLE TIE (WITH-STEEL)
6. TOTAL WHEIGHT	ABOUT 210 g

		Approved By	王伟	Date	2019-01-15
		Checked By	赵操	Date	2019-01-15
		Designed By	傅光晨	Date	2019-01-15
Dimensions		Description: DB-48A12-AAAG MECHANICAL DRAWING			
Tolerances unless otherwise mentioned		Document No.		Rev.	Ord.
Size		M8030-XXXXX		00	A
Third Angle Projection		Sheet 1 of 1			

Rev.	Ord.	Revised History	Designed By/Date	Checked By/Date	Approved By/Date

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**Notes:**

- 虚线框仅示意LASER参考位置, 无需LASER.  
The referenced dotted box needn't to LASER.
- 虚线框内内容目视无明显倾斜.  
The contents of the dotted box are not visually skewed.
- 镭射内容需清晰可见.  
LASER contents must be clear.

预留14\*14mm区域, 内容参考LASER\*, 此外框无需镭射



Approved By	王伟	Date	2019-01-15
Checked By	张园	Date	2019-01-15
Designed By	傅光晨	Date	2019-01-15

Dimensions								0<X≤6	6<X≤30	30<X≤80	80<X≤180	180<X≤320	320<X≤600	>600	Description: <b>LASER</b>			
Tolerances unless otherwise mentioned	A	±0.05	±0.1	±0.15	±0.2	±0.25	±0.35	±0.5	Part No. _____ Type No. _____ Rev. _____ Sup No. _____ L8030-XXXXX 00 / A									
	V	±0.1	±0.15	±0.2	±0.25	±0.4	±0.5	±0.65										
	C	±0.2	±0.3	±0.4	±0.6	±0.8	±1	±2										
	D	±0.5	±1	±1.5	±2.2	±3.5	±5	±6.5										
Holes: ±0.1								Angles: ±0.5°										
Size	A4	Unit	mm	Scale	Free	Third Angle Projection				Sheet 1 Of 1								

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