

TEST REPORT

Applicant's name : Changzhou Baojin Electrical Equipment CO.,LTD

Address : Heshu, Lijia Town, Wujin District, Changzhou Jiangsu 213165
P.R.CHINA

Product Name : Power Supply

Model(s) : JXA-12V800-IP44

Testing Laboratory : Shenzhen DACE Testing Technology Co., Ltd.
102, Building H1, & 1/F., Building H, Hongfa Science & Technology
Address : Park, Tangtou Community, Shiyan, Bao'an District, Shenzhen,
Guangdong, China

Test Date : Jul. 25, 2024 - Jul. 26, 2024

Date of Report : Jul. 27, 2024

Report No. : DACE240725004RL001

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Revision History Of Report

Version	Description	REPORT No.	Modified information
A0	Original	DACE240725004RL001	None

Energy Efficiency Test Report of External Power Supplies for CEC

Test Report Number..... : DACE240725004RL001

Tested by
(printed name and signature)..... : Alicia

Approved by
(printed name and signature)..... : Calvin Chen



Date of issue..... : Jul. 27, 2024

Testing laboratory..... : Shenzhen DACE Testing Technology Co., Ltd.

Address..... : 102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park,
Tangtou Community, Shiyan, Bao'an District, Shenzhen, Guangdong, China

Applicant..... : Changzhou Baojin Electrical Equipment CO.,LTD

Address..... : Heshu, Lijia Town, Wujin District, Changzhou Jiangsu 213165 P.R.CHINA

Manufacturer..... : Changzhou Baojin Electrical Equipment CO.,LTD

Address..... : Heshu, Lijia Town, Wujin District, Changzhou Jiangsu 213165 P.R.CHINA

Standards..... : 2014 Appliance Efficiency Regulations, CEC-400-2014-009-CMF

Energy performance mark..... : VI

Test item description..... : Power Supply

Trade Mark..... : 常荔

Model(s)..... : JXA-12V800-IP44

Ratings..... : Input: 120V~ 60Hz 0.28A
Output: 12.0Vac 0.8A

Input Cord Length (cm)..... : N/A

Output Cord Length (cm)..... : 25cm

Samples Received Date..... : Jul. 25, 2024

Tested Date..... : Jul. 25, 2024 - Jul. 26, 2024

Ambient temp. (°C)..... : 23.3°C

Test Room Air Speed..... : < 0.5m/s

Copy of marking plate:

WARNING: Risk Of Electric Shock. Install only to a covered class A GFCI receptacle that has an enclosure that is weather proof with the attachment plug cap inserted or removed. This power unit is intended to be correctly orientated in a vertical or floor mount position.

MODEL NO : JXA-12V800-IP44
 INPUT : 120V ac 60Hz 0.28A
 OUTPUT : 12V ac 0.8A

 **LISTED** E474768 Class 2 Transformer Date: 2324
 US-CLASS 2 NOT WET, CLASS 3 WET
 CUL-CLASS 2 NOT WET, CLASS 1 WET

CHANG ZHOU BAOJIN ELECTRICAL Co., Ltd
 MADE IN CHINA

AC-AC ADAPTOR
 MODEL NO: JXA-12V800-IP20
 INPUT : 120VAC 60HZ 0.28A
 OUTPUT: 12VAC 0.80A

 **LISTED** E474768 37NG
 US-CLASS 2 NOT WET CLASS 3 WET
 CUL-CLASS 2 NOT WET CLASS 1 WET

DATE:2324
 MADE IN CHINA

TEST CONDITION AND PROGRAM:

1. MEASURING EQUIPMENT:

Measurements of active power of 0.5W or greater shall be made with an uncertainty of $\leq 2\%$. Measurements of active power of less than 0.5W shall be made with an uncertainty of $< 0.01W$. The power measurement instrument shall have a resolution of 0.01W or better for active power. Measurements of voltage and current shall be made with an uncertainty of $< 2\%$.

2. TEST ROOM:

The tests shall be carried out in a room that has an air speed close to the EUT of < 0.5 m/s. The ambient temperature shall be maintained at $23^{\circ}C \pm 5^{\circ}C$ throughout the test.

3. TEST VOLTAGE:

The Total Harmonic Distortion (THD) of input voltage source shall not exceed 2%. Where the Equipment Under Test (EUT) nameplate input voltage is 115V or the nameplate input voltage range includes 115V, the test voltage shall be 115V at 60Hz. Where the EUT nameplate input voltage is 230V or the nameplate input voltage range includes 230V, the test voltage shall be 230V at 50Hz. Where the EUT nameplate input voltage or input voltage range includes both 115V and 230V, the EUT shall be tested at both 115V at 60Hz and 230V at 50Hz.

4. LOAD CONDITIONS:

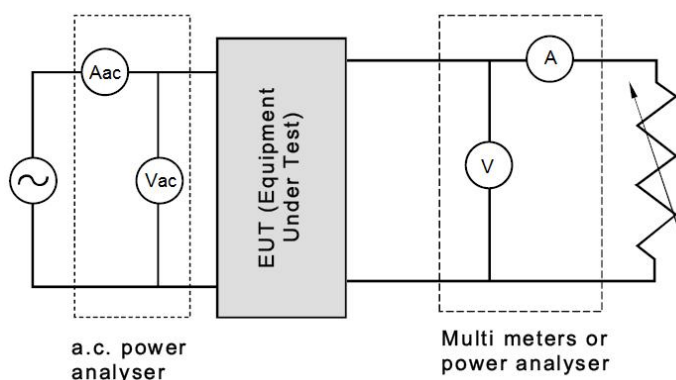
External power supplies with a switchable output are normally tested twice; once with the output voltage set to the lowest voltage value and then again with the output voltage set to the highest voltage value.

The EUT shall be tested at the below load conditions:

Percentage of nameplate output current	
Load condition	Percentage
1	100 $\pm$ 2
2	75 $\pm$ 2
3	50 $\pm$ 2
4	25 $\pm$ 2
5	0

5. TEST LOAD:

In order to load the power supply to produce all four active mode load conditions (1 to 4 as defined in above), a set of variable resistive or electronic test loads shall be used. The test loads shall have a power factor of 0.95 to 1.



6. TESTING SEQUENCE:

The test sample was operated at 100% of nameplate current output for at least 30 minutes immediately prior to conducting efficiency measurements. After this warm-up period, if the power level does not drift by more than 5% from the maximum value observed, of the 5 minutes period. Subsequent load conditions can then be measured under the same 5 minute stability guidelines.

TEST RESULT AND VERDICT:

Table U-1
Standards for Class A External Power Supplies
That are Federally Regulated

Nameplate Output	Minimum Efficiency in Active Mode (Decimal equivalent of a Percentage)
< 1 watt	0.5 * Nameplate Output
≥ 1 and ≤ 51 watts	0.09*Ln(Nameplate Output) + 0.5
> 51 watts	0.85
	<i>Maximum Energy Consumption in No-Load Mode</i>
≤ 250 watts	0.5 watts
Where Ln (Nameplate Output) = Natural Logarithm of the nameplate output expressed in watts.	

Table U-3
Standards for State-Regulated External Power Supplies
Effective July 1, 2008

Nameplate Output	Minimum Efficiency in Active Mode
< 1 watt	0.5 * Nameplate Output
≥ 1 and ≤ 51 watts	0.09*Ln(Nameplate Output) + 0.5
> 51 watts	0.85
	<i>Maximum Energy Consumption in No-Load Mode</i>
Any output	0.5 watts
Where Ln (Nameplate Output) = Natural Logarithm of the nameplate output expressed in watts.	

Table I-1. Energy Conservation Standards for Direct Operation EPSs (Compliance Starting February 10, 2016) (Level VI)

Single-Voltage External AC-DC Power Supply, Basic-Voltage		
Nameplate Output Power (P_{out})	Minimum Average Efficiency in Active Mode (expressed as a decimal)	Maximum Power in No-Load Mode [W]
$P_{out} \leq 1 \text{ W}$	$\geq 0.5 \times P_{out} + 0.16$	≤ 0.100
$1 \text{ W} < P_{out} \leq 49 \text{ W}$	$\geq 0.071 \times \ln(P_{out}) - 0.0014 \times P_{out} + 0.67$	≤ 0.100
$49 \text{ W} < P_{out} \leq 250 \text{ W}$	≥ 0.880	≤ 0.210
$P_{out} > 250 \text{ W}$	≥ 0.875	≤ 0.500

Single-Voltage External AC-DC Power Supply, Low-Voltage		
Nameplate Output Power (P_{out})	Minimum Average Efficiency in Active Mode (expressed as a decimal)	Maximum Power in No-Load Mode [W]
$P_{out} \leq 1 \text{ W}$	$\geq 0.517 \times P_{out} + 0.087$	≤ 0.100
$1 \text{ W} < P_{out} \leq 49 \text{ W}$	$\geq 0.0834 \times \ln(P_{out}) - 0.0014 \times P_{out} + 0.609$	≤ 0.100
$49 \text{ W} < P_{out} \leq 250 \text{ W}$	≥ 0.870	≤ 0.210
$P_{out} > 250 \text{ W}$	≥ 0.875	≤ 0.500
Single-Voltage External AC-AC Power Supply, Basic-Voltage		
Nameplate Output Power (P_{out})	Minimum Average Efficiency in Active Mode (expressed as a decimal)	Maximum Power in No-Load Mode [W]
$P_{out} \leq 1 \text{ W}$	$\geq 0.5 \times P_{out} + 0.16$	≤ 0.210
$1 \text{ W} < P_{out} \leq 49 \text{ W}$	$\geq 0.071 \times \ln(P_{out}) - 0.0014 \times P_{out} + 0.67$	≤ 0.210
$49 \text{ W} < P_{out} \leq 250 \text{ W}$	≥ 0.880	≤ 0.210
$P_{out} > 250 \text{ W}$	≥ 0.875	≤ 0.500
Single-Voltage External AC-AC Power Supply, Low-Voltage		
Nameplate Output Power (P_{out})	Minimum Average Efficiency in Active Mode (expressed as a decimal)	Maximum Power in No-Load Mode [W]
$P_{out} \leq 1 \text{ W}$	$\geq 0.517 \times P_{out} + 0.087$	≤ 0.210
$1 \text{ W} < P_{out} \leq 49 \text{ W}$	$\geq 0.0834 \times \ln(P_{out}) - 0.0014 \times P_{out} + 0.609$	≤ 0.210
$49 \text{ W} < P_{out} \leq 250 \text{ W}$	≥ 0.870	≤ 0.210
$P_{out} > 250 \text{ W}$	≥ 0.875	≤ 0.500
Multiple-Voltage External Power Supply		
Nameplate Output Power (P_{out})	Minimum Average Efficiency in Active Mode (expressed as a decimal)	Maximum Power in No-Load Mode [W]
$P_{out} \leq 1 \text{ W}$	$\geq 0.497 \times P_{out} + 0.067$	≤ 0.300
$1 \text{ W} < P_{out} \leq 49 \text{ W}$	$\geq 0.075 \times \ln(P_{out}) + 0.561$	≤ 0.300
$P_{out} > 49 \text{ W}$	≥ 0.860	≤ 0.300

Note:

Single-voltage external AC-DC power supply means an external power supply that is designed to convert line voltage AC into lower-voltage DC output and is able to convert to only one DC output voltage at a time.

Single-voltage external AC-AC power supply means an external power supply that is designed to convert line voltage AC into lower-voltage AC output and is able to convert to only one AC output voltage at a time.

Multiple-voltage external power supply means an external power supply that is designed to convert line voltage AC input into more than one simultaneous lower-voltage output.

Low-voltage external power supply means an external power supply with a nameplate output voltage less than 6 volts and nameplate output current greater than or equal to 550 milliamps. Basic-voltage external power supply means an external power supply that is not a low-voltage power supply.

Sample 1		
Test item	Test at 115V, 60Hz	Efficiency requirements
No load power (W)	0.06	≤ 0.210
Average efficiency (%)	82.74	≥ 81.72
Complies with performance mark	VI	

Sample 2		
Test item	Test at 115V, 60Hz	Efficiency requirements
No load power (W)	0.06	≤ 0.210
Average efficiency (%)	82.85	≥ 81.72
Complies with performance mark	VI	

Test Data:

Sample 1	
Test Model	JXA-12V800-IP44
Test Results	Pass
Test Voltage	115V, 60Hz

Measured and Calculated Data						
	No load	Active Power Values				Average
Percent of nameplate current	0%	25%	50%	75%	100%	--
Output Current (mA)	--	200	400	600	800	
Output Voltage (V)		12.00	11.90	11.80	11.66	
Output Power (W)		2.40	4.76	7.08	9.33	
AC Input Voltage (V)	115	115	115	115	115	--
AC Input Current (mA)	4.5	25.1	51.2	76.8	102.2	
AC Input Power (W)	0.19	2.87	5.76	8.59	11.34	
Total Harmonic Distortion (THD)	0.66	0.68	0.73	0.89	0.96	
True Power Factor (W/VA)	0.37	0.99	0.98	0.97	0.96	
AC Input Frequency (Hz)	60	60	60	60	60	
Power Consumed by UUT (W)	0.19	0.47	1.00	1.51	2.01	--
Efficiency (%)	--	83.62	82.64	82.42	82.26	82.74
Supplementary information:						
Level VI limit:						
Average active mode efficiency limit $\geq 0.071 \cdot \ln(P_{out}) - 0.0014 \cdot P_{out} + 0.67 = 81.72\%$						
The no-load condition consumption shall not exceed 0.210W						

Sample 2	
Test Model	JXA-12V800-IP44
Test Results	Pass
Test Voltage	115V, 60Hz

Measured and Calculated Data						
	No load	Active Power Values				Average
Percent of nameplate current	0%	25%	50%	75%	100%	--
Output Current (mA)	--	200	400	600	800	
Output Voltage (V)		12.01	11.89	11.82	11.68	
Output Power (W)		2.40	4.76	7.09	9.34	
AC Input Voltage (V)	115	115	115	115	115	--
AC Input Current (mA)	4.7	25.3	51.8	78.3	103.5	
AC Input Power (W)	0.19	2.86	5.77	8.58	11.35	
Total Harmonic Distortion (THD)	0.67	0.69	0.79	0.91	0.99	
True Power Factor (W/VA)	0.35	0.98	0.97	0.95	0.95	
AC Input Frequency (Hz)	60	60	60	60	60	
Power Consumed by UUT (W)	0.19	0.46	1.01	1.49	2.01	--
Efficiency (%)	--	83.99	82.43	82.66	82.33	82.85
Supplementary information:						
Level VI limit:						
Average active mode efficiency limit $\geq 0.071 \cdot \ln(P_{out}) - 0.0014 \cdot P_{out} + 0.67 = 81.72\%$						
The no-load condition consumption shall not exceed 0.210W						

Appendix: Test equipment list

Equipment	Manufacturer	Type	Series No	Cal.	Due.
Digital power meter	EVERFINE	PF310A	DZ-SY-220	2024-04-15	2025-04-14
DC electronic load	Adex	IT8511+	DZ-SY-015	2024-04-15	2025-04-14
Variable frequency power supply	Shenzhen hengxinlong TechnologyCo., Ltd	HXL-3130	DZ-SY-004	2024-04-15	2025-04-14
Tape measure	Hengda	16ft	DZ-SY-055	2024-04-15	2025-04-14
Hygrothermograph	/	JR900	DZ-SY-192	2024-04-17	2025-04-16

PHOTO OF SAMPLE

Photo 1



Photo 2

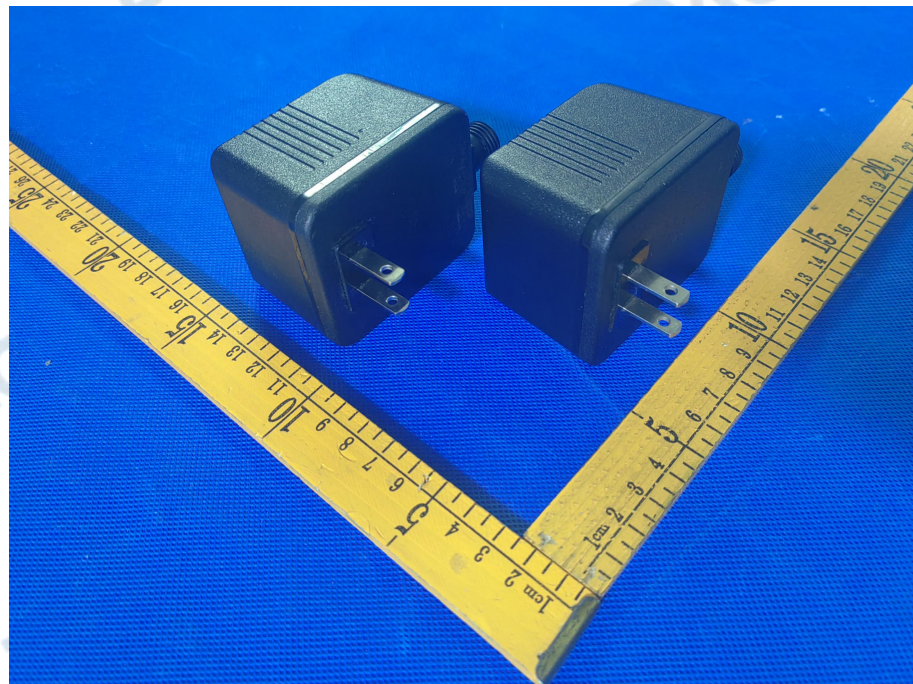


Photo 3



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