SINGLE VOLTAGE EXTERNAL POWER SUPPLY TEST REPORT

Report No.: 160500289SHA-001
Issued: 2016-05-12

Applicant:	GlobTek, Inc.
Applicant Address:	186 Veterans Dr. Northvale, NJ 07647 USA
Manufacturer:	GlobTek (Suzhou) Co., Ltd.
Manufacturer Address:	Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou, JiangSu 215021, China
Product Name:	ITE Power Supply
Model Name:	GT-46240-2424-T3
Model Similarity:	NA
Brand Name:	GlobTek, Inc.

Name plate specifications	Input	Output
Voltage (V)	100-240	24
Current (A)	0.6	1
Power (W)	N/A	24.00
Frequency (Hz)	50-60	DC

Testing Standard:	CSA-C381.1-08 November 2008 with Update No.1 January 2010-Test method for calculating the energy efficiency of single-voltage external ac-dc and ac-ac power supplies
Sample Received:	2016-05-04
Test performed:	2016-05-11
Certification Body:	Intertek Testing Services NA INC. 165 Main Street, Cortland, New York, USA
Testing Location:	Intertek Testing Services Shanghai Limited Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China
Conclusion:	From the results of the testing on the submitted sample(s), we are of the opinion that the submitted sample(s) COMPLY WITH the requirements of Canada's Energy Efficiency Regulations for External Power Supplies.
Note:	1. This report shall not be reproduced, except in full, without written approval of the laboratory. This test results relate only to the items tested. 2. The results contained in the report are for technical evaluation only and are applicable only to the specific test specimen referenced within the report.

Prepared by:

Albert Zhou

Albert Zhou
Engineer

Approved by:

Will Wang
Reviewer

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TECHNICAL INFORMATION

Output cord length and size: 1.83m/ 20AWG

Size of the entire UUT: 80.6mm (L)×50.0mm(W)×31.0mm (H) ±1.0mm

Built-in switch on the UUT: No
Product powered by UUT: General Use

Test Equipment

Equipment Name	Make/Model	Number	Calibration Date	Due Date
Digital Power Meter	WT210	EC 3358	July 1, 2015	June 30, 2016
Digital Power Meter	WT3000	EC 4448	October 24, 2015	October 23, 2016

TEST PROCESS:

The tests are carried out in a room that has an air speed close to test sample of < 0.5m/s, and the ambient temperature is maintained at 23°C±5°C. The input voltage shall be within ± 1 percent of the above specified voltage. The input frequency shall be within ± 1 percent of the specified frequency. The THD of the input voltage shall be ⩽ 2 percent, up to and including the 13th harmonic. The crest factor of the input voltage shall be between 1.34 and 1.49.

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 AC input power does not drift by more than 5% from the maximum value observed, the UUT can be considered stable and then the measurements were recorded at the end of the 5 minutes period. If AC input power is not stable over a 5-minute period, then follow the guidelines established by CAN/CSA-C62301 for measuring average power or accumulated energy over time for both input and output power. Subsequent load conditions were measured under the same 30 minutes stability guidelines.

The unit under test shall be tested at the loading conditions listed below, derated per the proportional allocation method presented in the following section.

Loading Conditions for Unit Under Test:
Loading Condition 1: 100% of Derated Nameplate Output Current ± 2%.
Loading Condition 2: 75% of Derated Nameplate Output Current ± 2%.
Loading Condition 3: 50% of Derated Nameplate Output Current ± 2%.
Loading Condition 4: 25% of Derated Nameplate Output Current ± 2%.
Loading Condition 5: 0%.

Input and output power measurements shall be conducted in sequence from Loading Condition 1 to Loading Condition 4, as indicated above. For Loading Condition 5, the unit under test shall be placed in no-load mode, any additional signal connections to the unit under test shall be disconnected, and input power shall be measured.

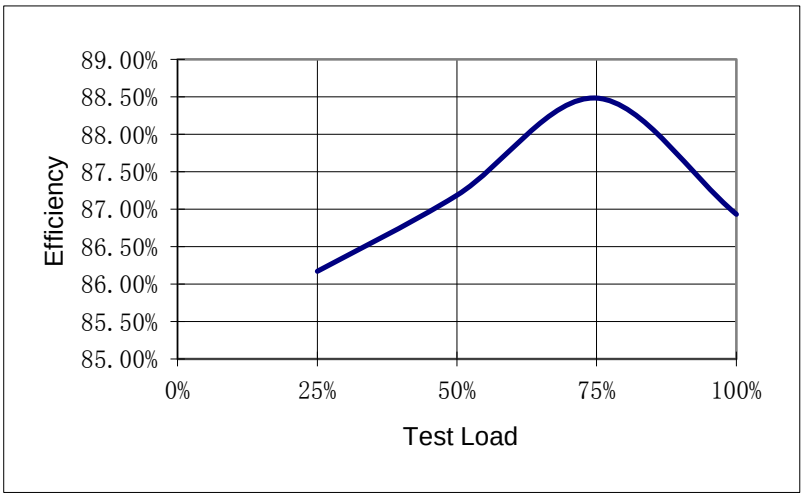
Measurements of power of 0,50 W or greater are made with an uncertainty of less than or equal to 2 % at the 95 % confidence level. Measurements of power of less than 0,50 W are made with an uncertainty of less than or equal to 0,01 W at the 95 % confidence level.

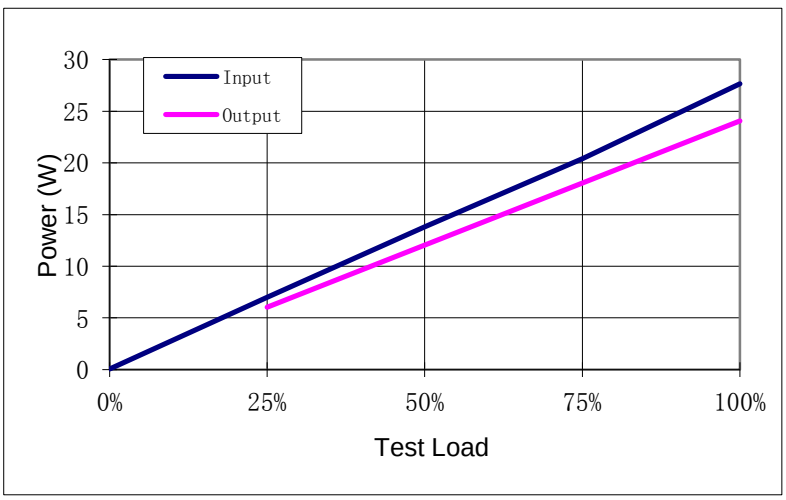
TEST RESULTS

Sample 1: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		250	500	750	1000
Rms Output Voltage (V)	24.150	24.125	24.102	24.078	24.051
Active Output Power (W)		6.031	12.051	18.059	24.051
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.041	6.999	13.822	20.409	27.666
Total Harmonic Distortion(THD_V) (%)	0.015	0.078	0.103	0.121	0.137
Total Harmonic Distortion(THD_A) (%)	15.21	219.60	183.12	162.03	145.78
True Power Factor (W/VA)	0.027	0.953	0.953	0.943	0.931
Power Consumed by EUT(W)	0.041	0.968	1.771	2.351	3.615
Efficiency		86.17%	87.19%	88.48%	86.93%
Average Efficiency		87.19%			

Figures:

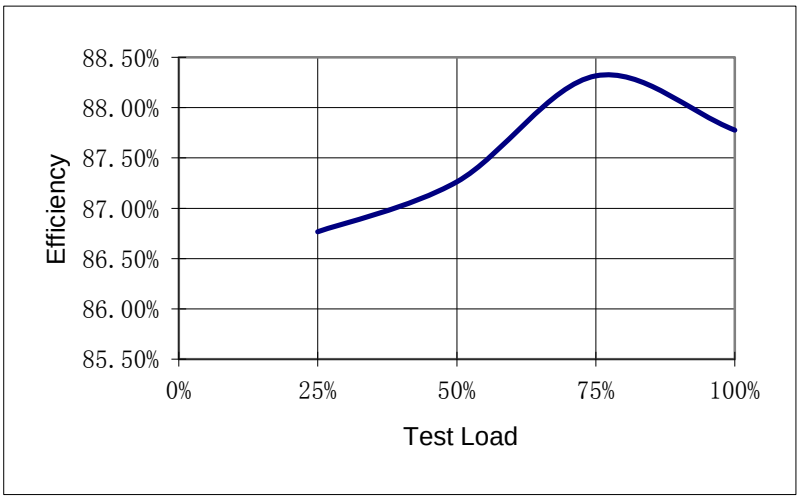


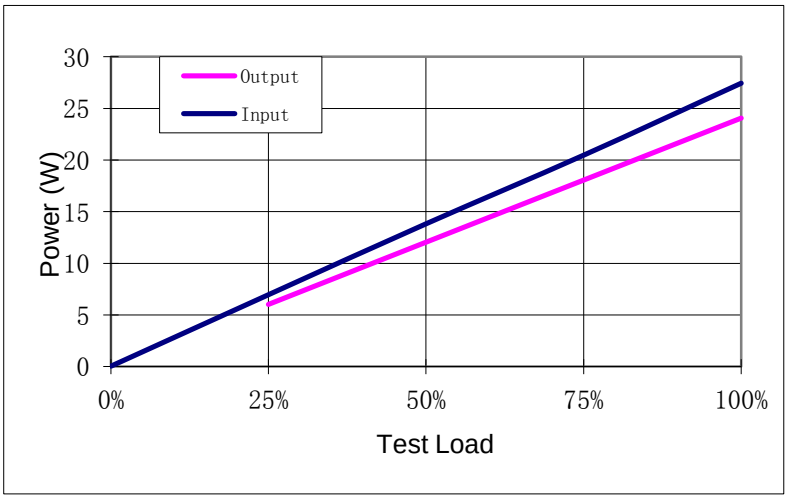


Sample 2: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		250	500	750	1000
Rms Output Voltage (V)	24.161	24.139	24.114	24.090	24.070
Active Output Power (W)		6.035	12.057	18.068	24.070
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.038	6.955	13.817	20.458	27.422
Total Harmonic Distortion(THD) V%	0.017	0.077	0.101	0.120	0.135
Total Harmonic Distortion(THD) A%	14.67	219.16	182.79	161.39	145.87
True Power Factor (W/VA)	0.019	0.953	0.952	0.943	0.931
Power Consumed by EUT(W)	0.038	0.920	1.760	2.391	3.352
Efficiency		86.77%	87.26%	88.32%	87.78%
Average Efficiency		87.53%			

Figures:





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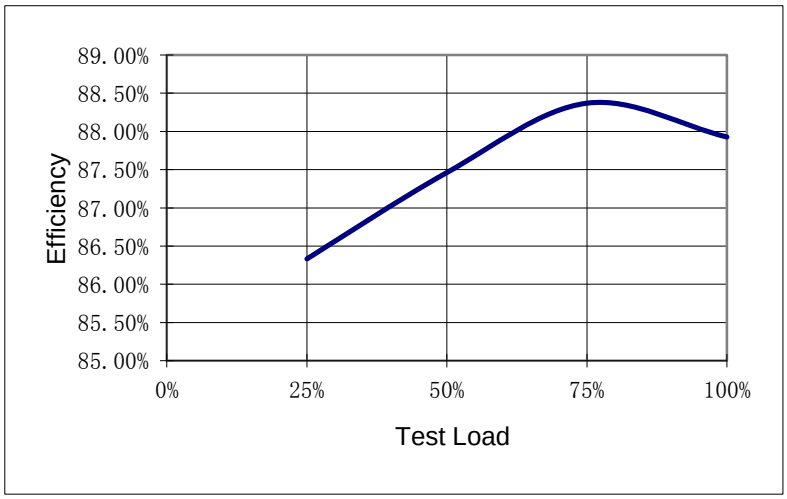
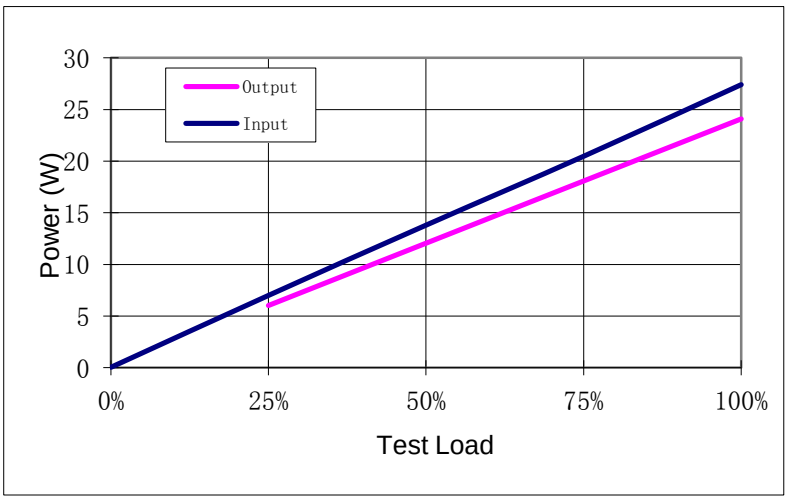
Sample 3: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		250	500	750	1000
Rms Output Voltage (V)	24.179	24.159	24.138	24.117	24.095
Active Output Power (W)		6.040	12.069	18.088	24.095
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.034	6.996	13.799	20.468	27.403
Total Harmonic Distortion(THD) V%	0.016	0.078	0.102	0.121	0.135
Total Harmonic Distortion(THD) A%	14.91	220.52	184.57	163.11	147.50
True Power Factor (W/VA)	0.029	0.955	0.954	0.945	0.933
Power Consumed by EUT(W)	0.034	0.956	1.730	2.380	3.308
Efficiency		86.33%	87.46%	88.37%	87.93%
Average Efficiency		87.52%			

Figures:





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Test Result Summary (115V @ 60Hz):

Sample Number	Active Efficiency	No-Load Power
Sample 1	87.19%	0.041
Sample 2	87.53%	0.038
Sample 3	87.52%	0.034
Sampling size	3	3
Mean of sample	87.42%	0.038
Sample standard deviation	0.19%	0.004
UCL/1.05	N/A	0.044
LCL/0.95	91.68%	N/A
Declarable Value	**87.42%**	**0.040**
MEPS (level IV)	78.60%	0.50
level V	82.09%	0.30
level VI	86.20%	0.10

According to the ENERGY STAR® protocol:

The samples tested comply with level: VI

Note: This product is not a replacement EPS or a security EPS.

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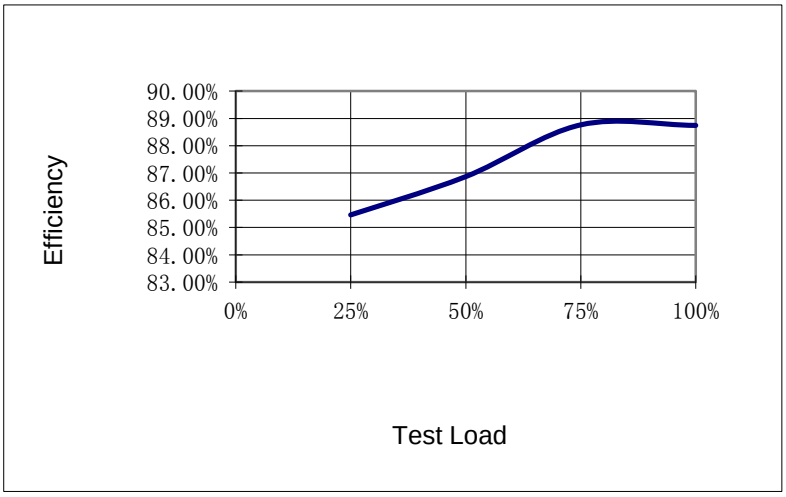
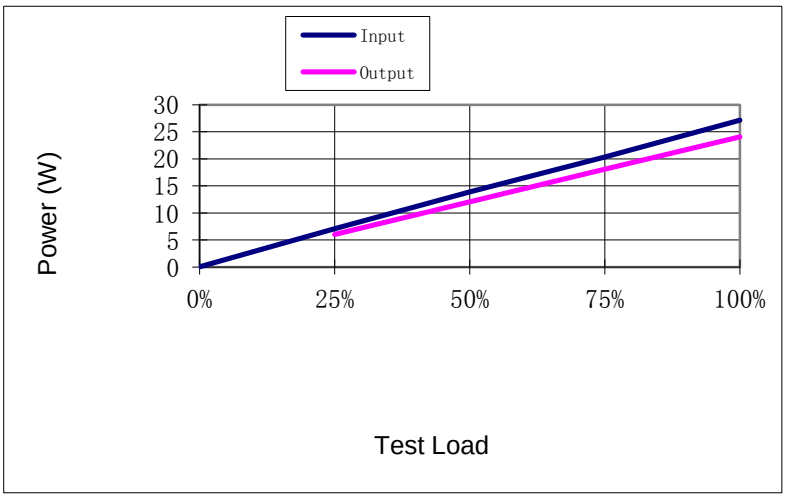
Sample 1: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		250	500	750	1000
Rms Output Voltage (V)	24.176	24.153	24.130	24.107	24.088
Active Output Power (W)		6.04	12.07	18.08	24.09
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.035	7.065	13.889	20.369	27.143
Total Harmonic Distortion(THD_V) (%)	0.013	0.026	0.038	0.048	0.052
Total Harmonic Distortion(THD_A) (%)	6.34	261.42	249.07	231.10	214.74
True Power Factor (W/VA)	0.034	0.866	0.935	0.949	0.954
Power Consumed by EUT(W)	0.035	1.027	1.824	2.289	3.055
Efficiency		85.47%	86.87%	88.76%	88.74%
Average Efficiency		87.46%			

Figures:

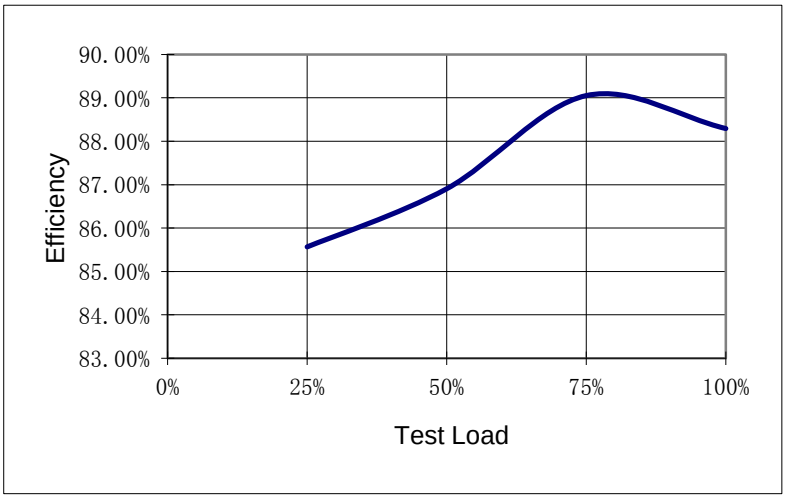


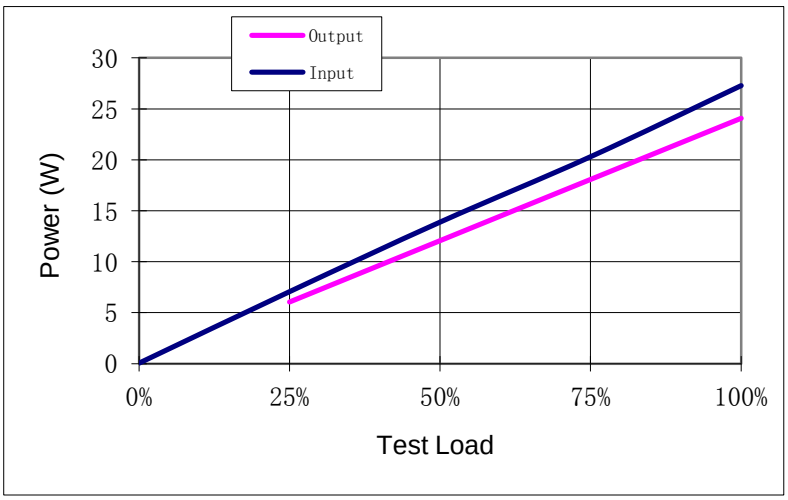


Sample 2: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		250	500	750	1000
Rms Output Voltage (V)	24.169	24.150	24.130	24.108	24.085
Active Output Power (W)		6.037	12.065	18.081	24.085
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.037	7.056	13.883	20.303	27.278
Total Harmonic Distortion(THD) V%	0.014	0.025	0.037	0.047	0.052
Total Harmonic Distortion(THD) A%	5.05	260.14	247.71	229.67	212.93
True Power Factor (W/VA)	0.032	0.862	0.933	0.948	0.953
Power Consumed by EUT(W)	0.04	1.02	1.82	2.22	3.19
Efficiency		85.56%	86.90%	89.05%	88.29%
Average Efficiency		87.45%			

Figures:

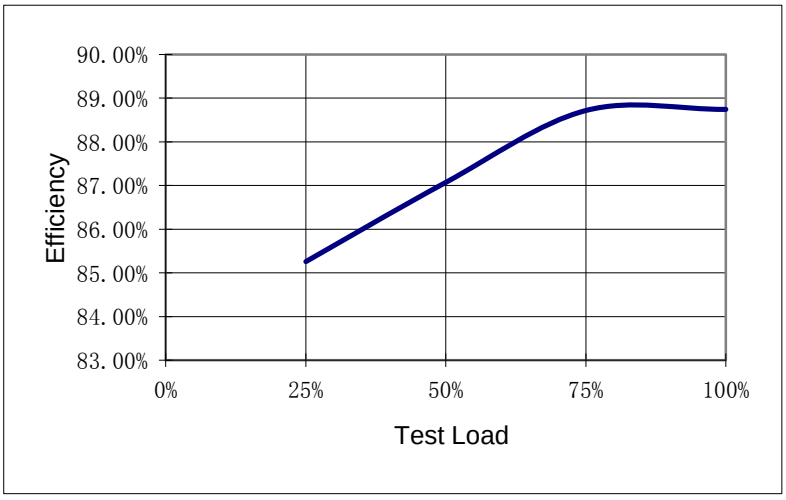


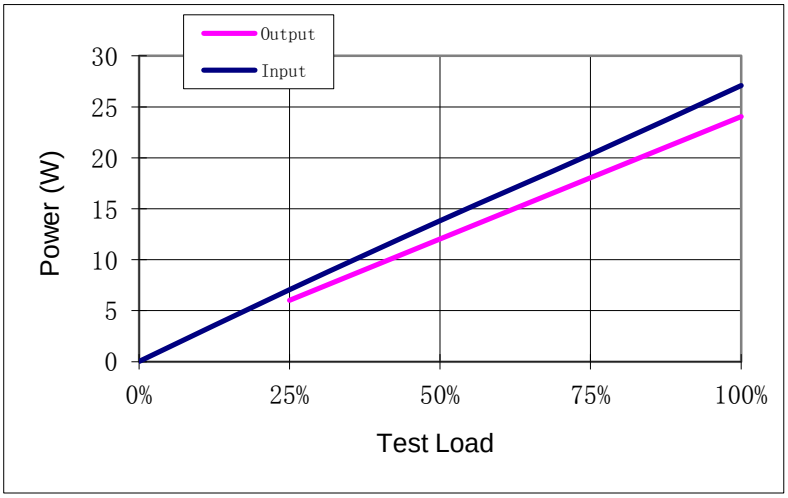


Sample 3: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		250	500	750	1000
Rms Output Voltage (V)	24.146	24.118	24.091	24.065	24.040
Active Output Power (W)		6.030	12.046	18.049	24.040
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.031	7.072	13.834	20.344	27.089
Total Harmonic Distortion(THD) V%	0.014	0.025	0.037	0.047	0.053
Total Harmonic Distortion(THD) A%	6.53	260.53	247.87	229.22	212.95
True Power Factor (W/VA)	0.030	0.864	0.933	0.948	0.953
Power Consumed by EUT(W)	0.031	1.042	1.788	2.295	3.049
Efficiency		85.26%	87.07%	88.72%	88.74%
Average Efficiency		87.45%			

Figures:





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Test Result Summary (230V @ 50Hz):

Sample Number	Active Efficiency	No-Load Power
Sample 1	87.46%	0.035
Sample 2	87.45%	0.037
Sample 3	87.45%	0.031
Sampling size	3	3
Mean of sample	87.45%	0.034
Sample standard deviation	0.01%	0.003
UCL/1.05	N/A	0.038
LCL/0.95	92.05%	N/A
Declarable Value	**87.45%**	**0.04**
MEPS (level IV)	78.60%	0.50
level V	82.09%	0.30
level VI	86.20%	0.10

According to the ENERGY STAR® protocol:
The samples tested comply with level: VI

Note: This product is not a replacement EPS or a security EPS.

Label(s):


GlobTek, Inc.
www.globtek.com
ITE POWER SUPPLY 电源供应器
P/N(料号)：TR9CI1000A00G1637R6B
MODEL(型号)：GT-46240-2424-T3
INPUT(输入)：100-240V~,50-60Hz,0.6A
OUTPUT(输出)：24V ⎓ 1.0A
직류전원장치 AC/DC ADAPTER
KTC HU10499-XXXXXA
MSIP-REM-GSZ-46240-2424-T3
전기용품안전관리법에 의한 표시
최저소비효율기준 만족 제품
모델명:GT-46240-2424-T3
Mfr. Name: GLOBTEK (SUZHOU) CO.,LTD
A/S Center:02-3451-3400
PS E
30
GlobTek, Inc.
EFFICIENCY LEVEL VI
RoHS 2 LPS
IP40 WWYY
제조국가:중국/MADE IN CHINA/中国制造

Photo 1 - External view

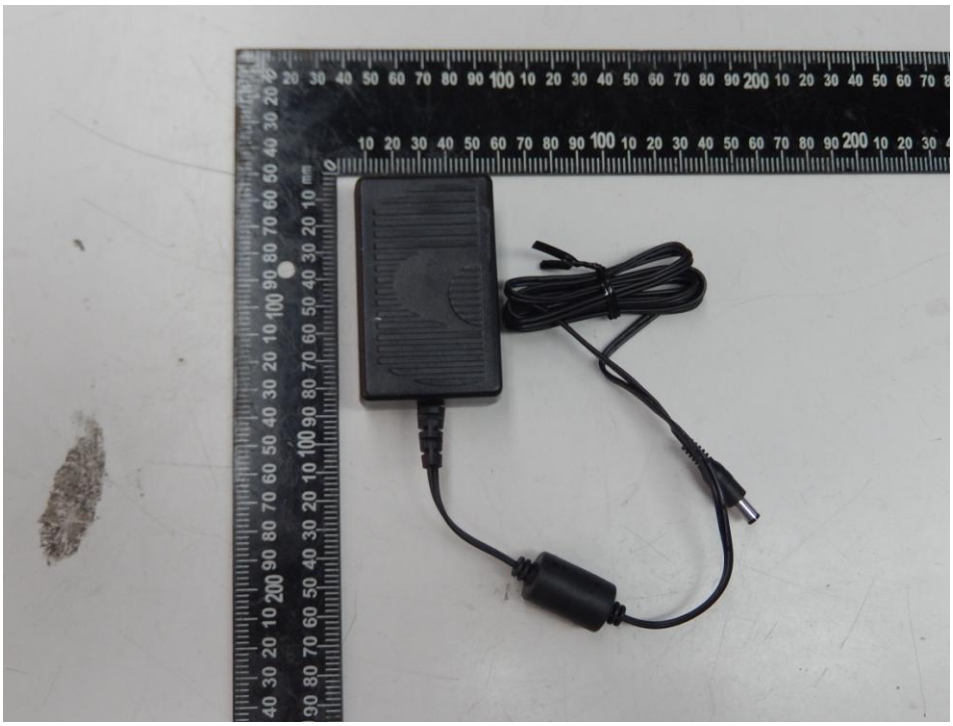

Photo 2 - External view

Photo 3 - Internal view

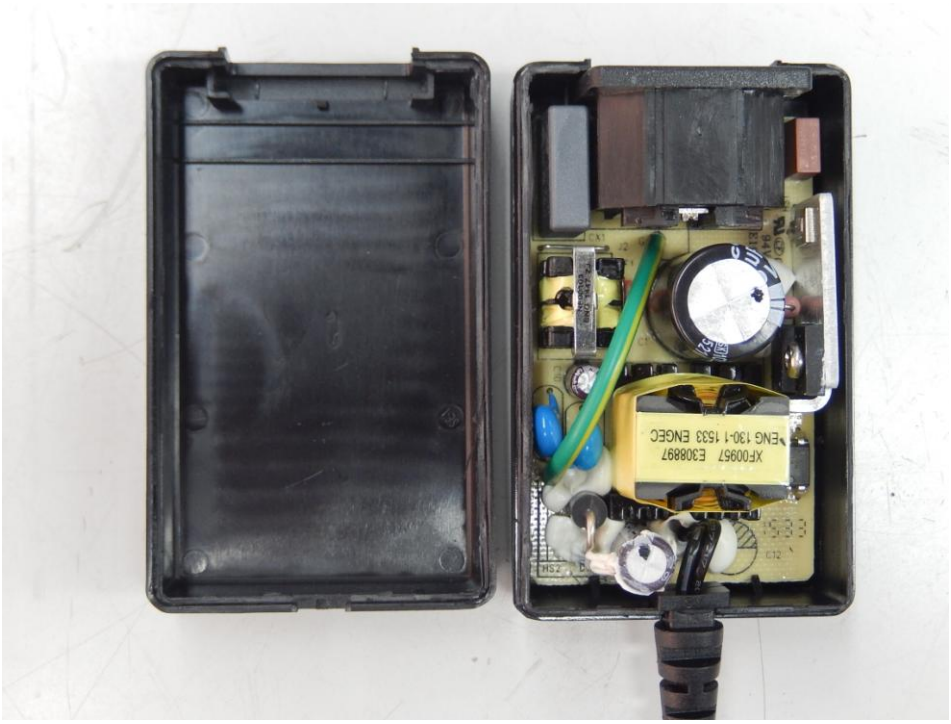

Photo 4 - Internal view