

SINGLE VOLTAGE EXTERNAL POWER SUPPLY TEST REPORT

Report No.: 160501829SHA-001
Issued: 2016-05-23

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-46401-4024
Model Similarity: NA

Brand Name: GlobTek, Inc. (with logo)

Table with 3 columns: Name plate specifications, Input, Output. Rows include Voltage (V), Current (A), Power (W), and Frequency (Hz).

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: 2016-05-16

Test performed: 2016-05-23

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 (signature)
Albert Zhou
Engineer

Approved by: Will Wang (signature)
Will Wang
Reviewer



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TECHNICAL INFORMATION

Output cord length and size: 2.438m/ 20AWG

Size of the entire UUT: 90.0mm (L)x38.0mm(W)x59.4mm (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.

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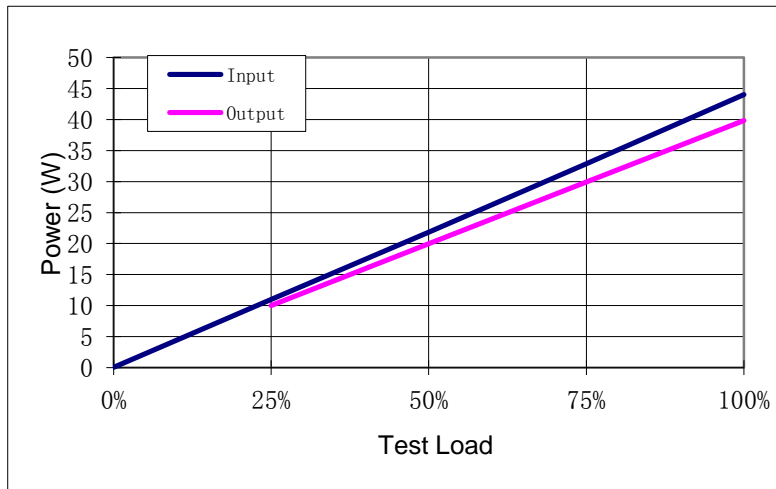
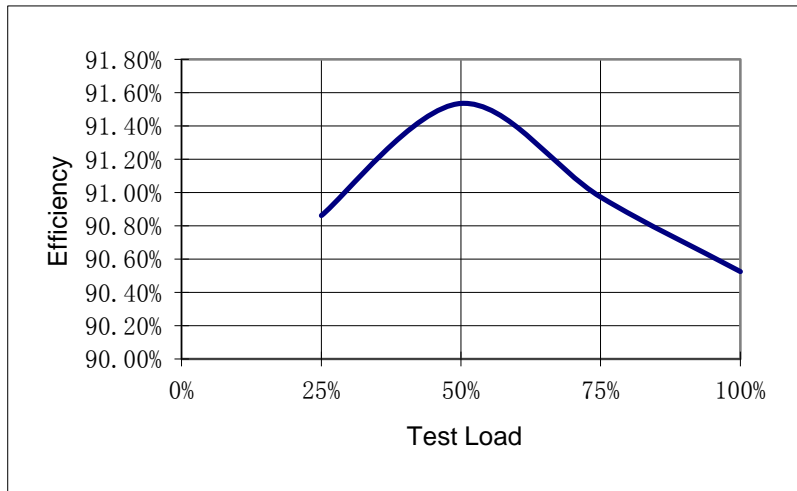
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TEST RESULTS

Sample 1: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		415	830	1245	1660
Rms Output Voltage (V)	24.100	24.077	24.053	24.029	24.008
Active Output Power (W)		9.992	19.964	29.916	39.853
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.035	10.997	21.810	32.885	44.024
Total Harmonic Distortion(THD _V) (%)	0.014	0.114	0.148	0.178	0.204
Total Harmonic Distortion(THD _A) (%)	7.19	236.63	202.38	174.89	157.32
True Power Factor (W/VA)	0.022	0.963	0.953	0.948	0.937
Power Consumed by EUT(W)	0.035	1.005	1.846	2.969	4.171
Efficiency		90.86%	91.54%	90.97%	90.53%
Average Efficiency		90.97%			

Figures:



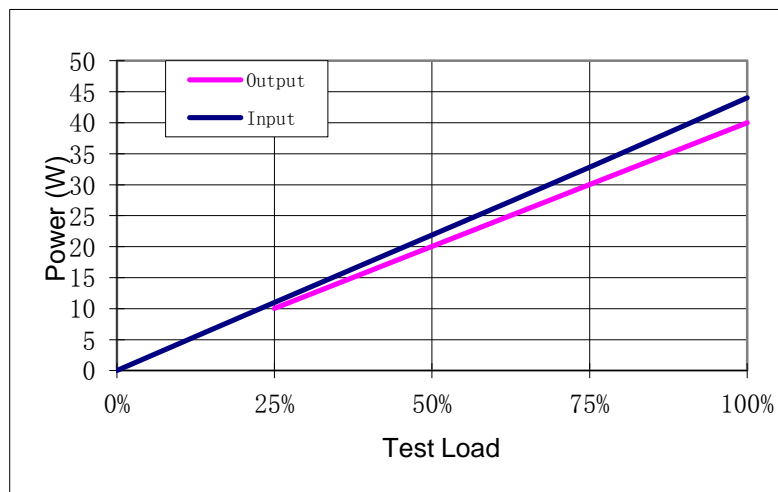
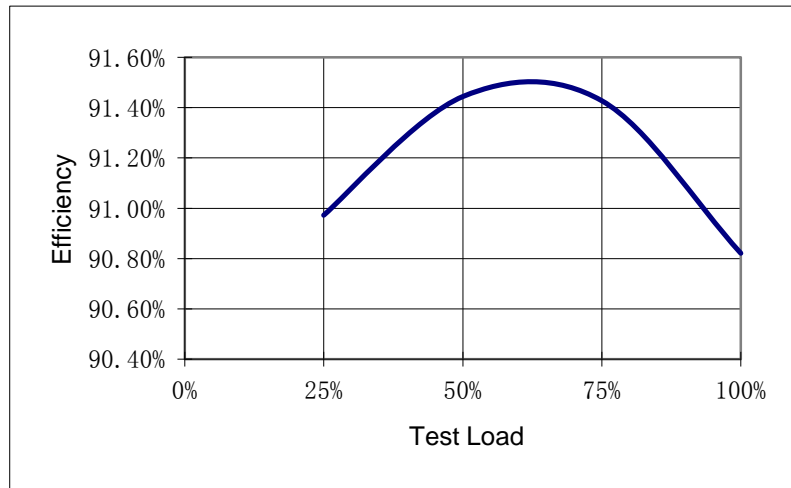
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Sample 2: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		415	830	1245	1660
Rms Output Voltage (V)	24.184	24.161	24.139	24.116	24.098
Active Output Power (W)		10.027	20.035	30.025	40.002
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.041	11.022	21.910	32.840	44.045
Total Harmonic Distortion(THD) V%	0.013	0.121	0.153	0.186	0.213
Total Harmonic Distortion(THD) A%	7.68	240.09	203.49	176.31	158.52
True Power Factor (W/VA)	0.025	0.961	0.956	0.948	0.936
Power Consumed by EUT(W)	0.041	0.995	1.875	2.815	4.043
Efficiency		90.97%	91.44%	91.43%	90.82%
Average Efficiency		91.17%			

Figures:



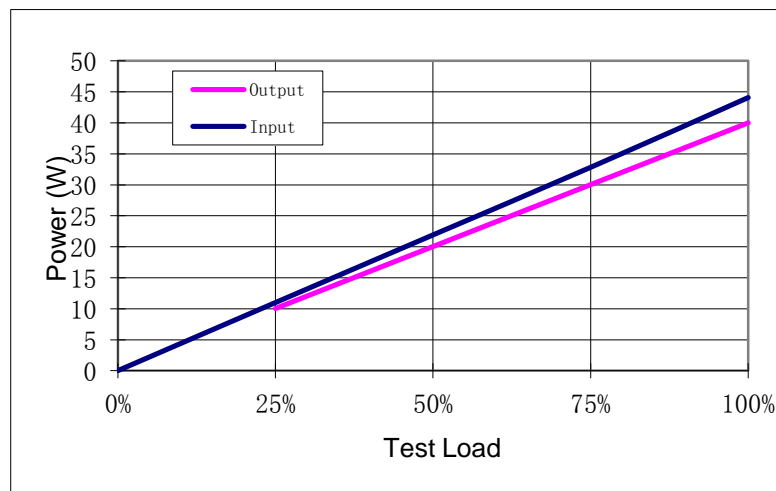
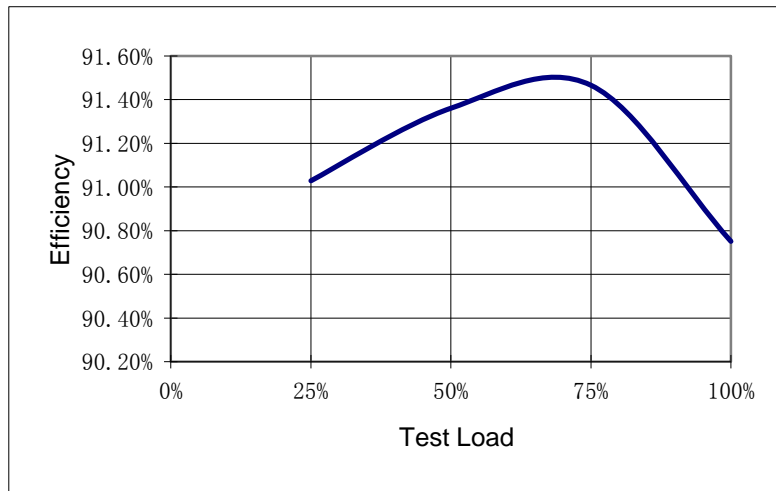
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Sample 3: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		415	830	1245	1660
Rms Output Voltage (V)	24.183	24.163	24.138	24.117	24.098
Active Output Power (W)		10.028	20.034	30.025	40.003
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.037	11.016	21.929	32.827	44.079
Total Harmonic Distortion(THD) V%	0.014	0.120	0.153	0.185	0.213
Total Harmonic Distortion(THD) A%	7.36	240.12	203.39	176.30	158.62
True Power Factor (W/VA)	0.023	0.961	0.956	0.948	0.936
Power Consumed by EUT(W)	0.037	0.988	1.895	2.802	4.076
Efficiency		91.03%	91.36%	91.47%	90.75%
Average Efficiency		91.15%			

Figures:





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Test Result Summary (115V @ 60Hz):

Sample Number	Active Efficiency	No-Load Power
Sample 1	90.97%	0.035
Sample 2	91.17%	0.041
Sample 3	91.15%	0.037
Sampling size	3	3
Mean of sample	91.10%	0.038
Sample standard deviation	0.11%	0.003
UCL/1.05	N/A	0.043
LCL/0.95	95.70%	N/A
Declarable Value	91.10%	0.040
MEPS (level IV)	83.16%	0.50
level V	85.27%	0.30
level VI	87.58%	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.

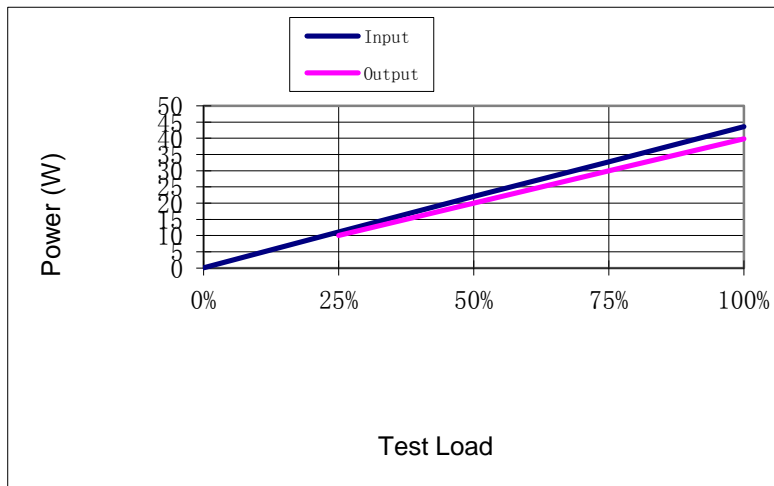
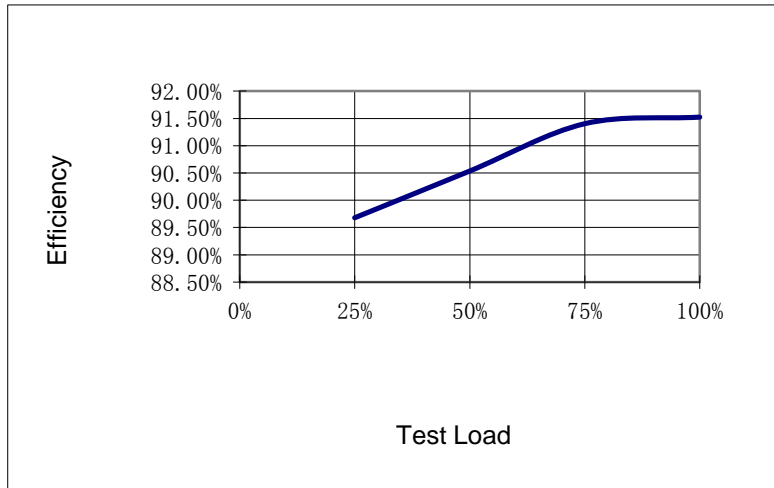
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Sample 1: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		415	830	1245	1660
Rms Output Voltage (V)	24.100	24.075	24.048	24.022	24.007
Active Output Power (W)		9.99	19.96	29.91	39.85
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.042	11.141	22.047	32.721	43.543
Total Harmonic Distortion(THD _V) (%)	0.014	0.043	0.063	0.075	0.084
Total Harmonic Distortion(THD _A) (%)	13.89	265.08	264.67	252.92	235.90
True Power Factor (W/VA)	0.028	0.884	0.946	0.955	0.957
Power Consumed by EUT(W)	0.042	1.150	2.087	2.814	3.692
Efficiency		89.68%	90.53%	91.40%	91.52%
Average Efficiency		90.78%			

Figures:





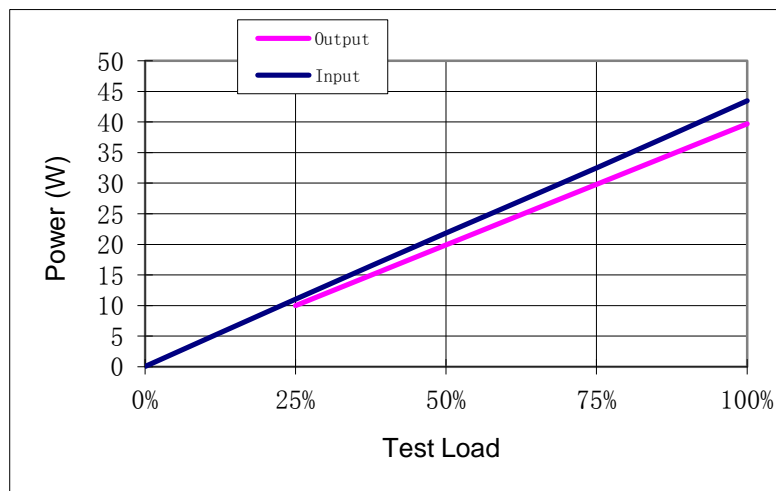
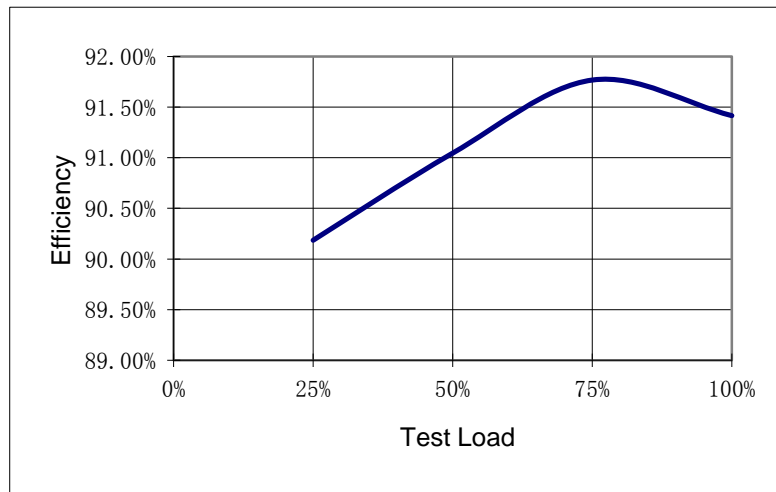
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Sample 2: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		415	830	1245	1660
Rms Output Voltage (V)	24.028	24.007	23.983	23.956	23.933
Active Output Power (W)		9.963	19.906	29.826	39.729
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.060	11.047	21.863	32.501	43.459
Total Harmonic Distortion(THD) V%	0.014	0.042	0.062	0.075	0.084
Total Harmonic Distortion(THD) A%	3.17	266.54	264.08	252.14	235.06
True Power Factor (W/VA)	0.011	0.885	0.946	0.956	0.958
Power Consumed by EUT(W)	0.06	1.08	1.96	2.68	3.73
Efficiency		90.19%	91.05%	91.77%	91.42%
Average Efficiency		91.10%			

Figures:



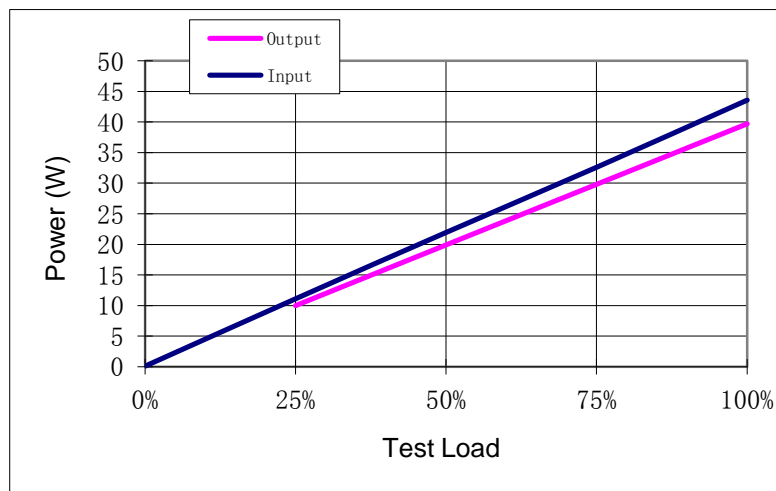
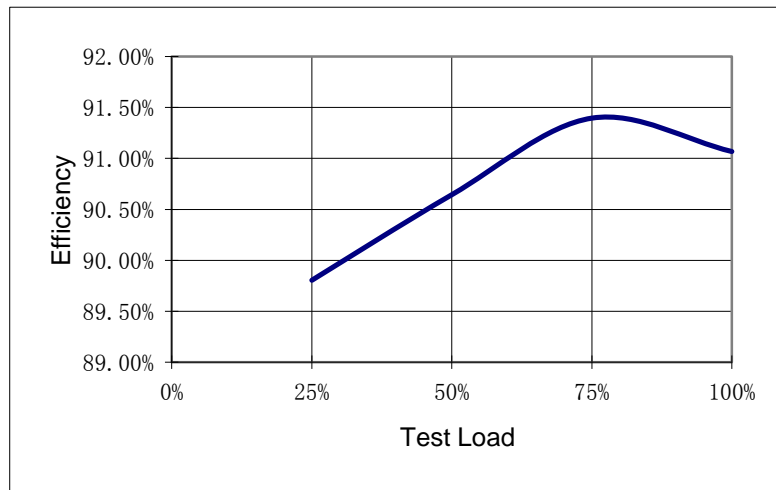
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Sample 3: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		415	830	1245	1660
Rms Output Voltage (V)	24.024	23.998	23.970	23.943	23.920
Active Output Power (W)		9.959	19.895	29.809	39.706
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.066	11.090	21.949	32.615	43.601
Total Harmonic Distortion(THD) V%	0.017	0.046	0.071	0.088	0.101
Total Harmonic Distortion(THD) A%	2.47	251.31	255.17	248.86	239.94
True Power Factor (W/VA)	0.014	0.856	0.941	0.957	0.961
Power Consumed by EUT(W)	0.066	1.131	2.054	2.806	3.895
Efficiency		89.80%	90.64%	91.40%	91.07%
Average Efficiency		90.73%			

Figures:





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Test Result Summary (230V @ 50Hz):

Sample Number	Active Efficiency	No-Load Power
Sample 1	90.78%	0.042
Sample 2	91.10%	0.060
Sample 3	90.73%	0.066
Sampling size	3	3
Mean of sample	90.87%	0.056
Sample standard deviation	0.20%	0.012
UCL/1.05	N/A	0.073
LCL/0.95	95.29%	N/A
Declarable Value	90.87%	0.07
MEPS (level IV)	83.16%	0.50
level V	85.27%	0.30
level VI	87.58%	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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Label(s):

GlobTek[®], Inc.
 www.globtek.com
 ITE POWER SUPPLY(电源供应器)
 P/N (料号): WR9QI1660NAG2476R6W
 MODEL (型号): GT-46401-4024
 INPUT (输入): 100-240V~, 50-60 Hz, 1.0A
 OUTPUT(输出): 24V \equiv 1.66A

KC 직류전원장치 AC/DC ADAPTER
 KTC HU10499-XXXXXA
 MSIP-REM-GSZ-46401-4024
 전기용품안전관리법에 의한 표시
 최저소비효율기준 만족 제품
 모델명:GT-46401-4024
 Mfr. Name: GLOBTEK (SUZHOU) CO.,LTD
 A/S Center:02-3451-3400

UL US LISTED
 4MU8
 E170507

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CE **VCCI** **PS E**

GlobTek, Inc.
EFFICIENCY LEVEL VI RoHS 2
 仅适用于在海拔2000m以下地区使用 IP40
 WWYY LPS
 제조국가:중국/MADE IN CHINA/中国制造

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Photo 1 - External view

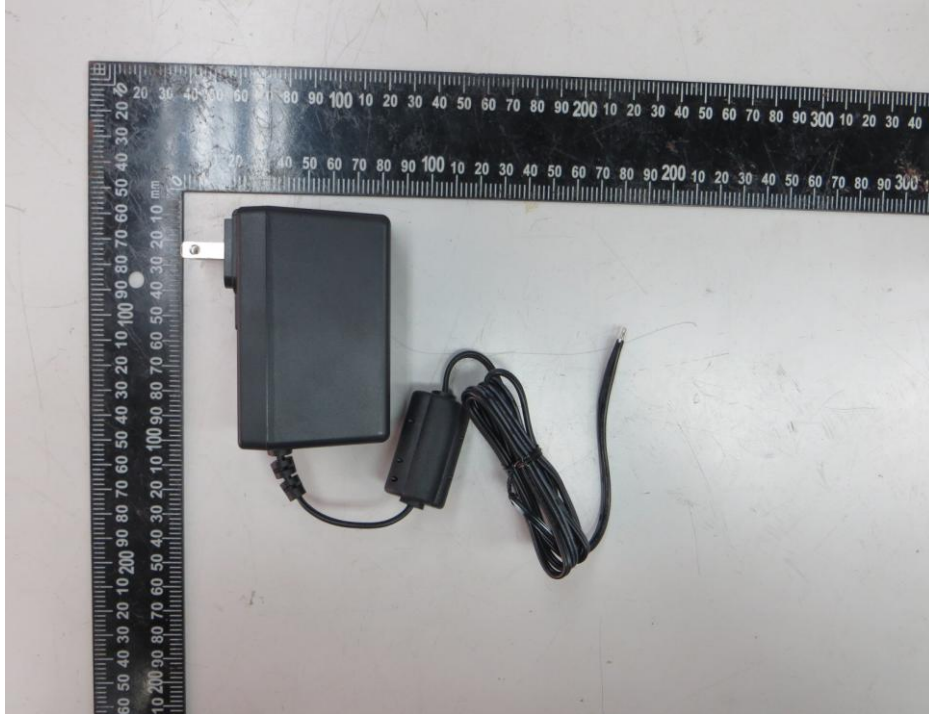
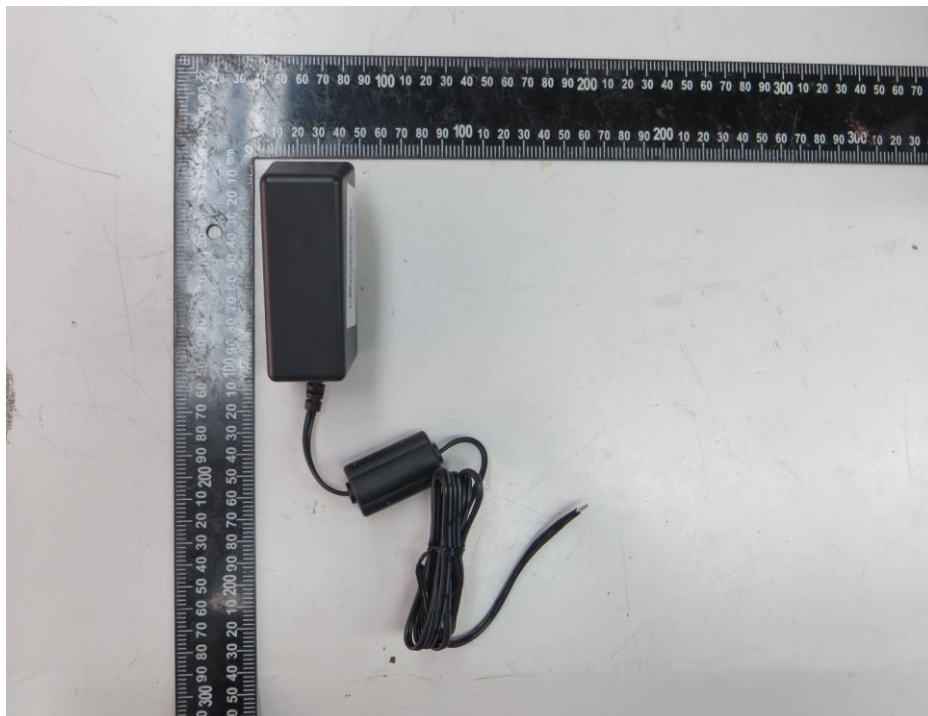


Photo 2 - External view



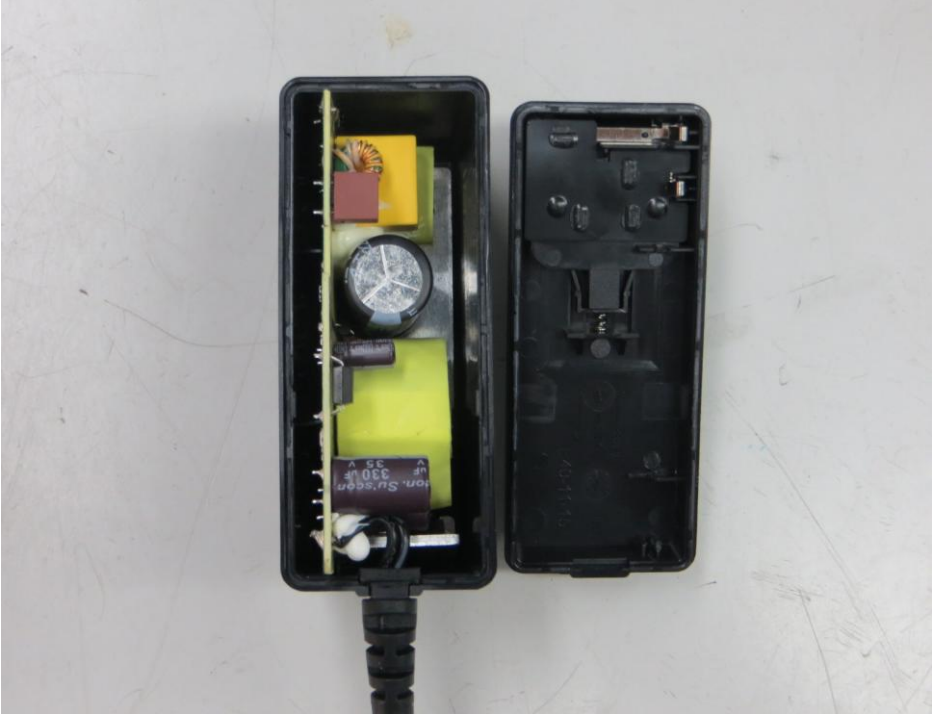
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Photo 3 - External view



Photo 4 - Internal view



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Photo 5 - Internal view



Photo 6 - Internal view

