SINGLE VOLTAGE EXTERNAL POWER SUPPLY TEST REPORT

Report No.: 160500287SHA-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-46600-6012-T3

Model Similarity: NA

Brand Name: GlobTek, Inc.

Name plate specifications	Input	Output
Voltage (V)	100-240	12
Current (A)	1.5	5
Power (W)	N/A	60.00
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
Will Wang
Reviewer

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TECHNICAL INFORMATION

Output cord length and size: 1.2m / 16AWG

Size of the entire UUT: 121.0mm (L)×52.0mm(W)×33.0mm (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.

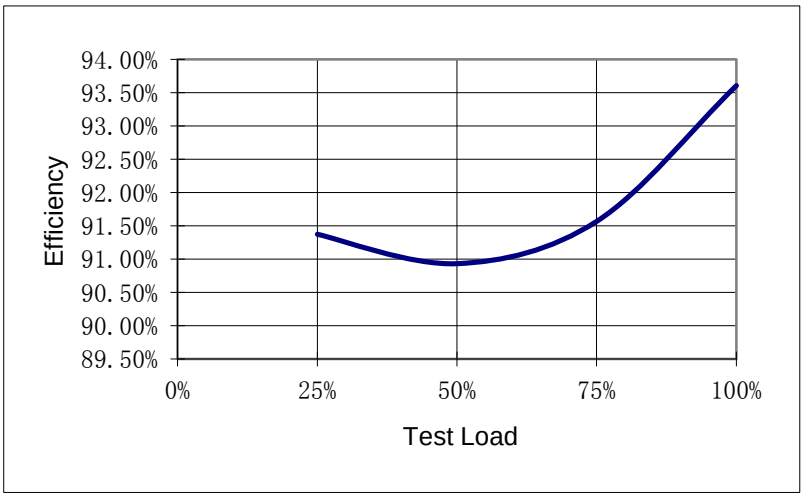
Measurements of power of 0,50 W or greater are made with an uncertainty of less than or equal to 2 % at the 95 % confidence level. Measurements of power of less than 0,50 W are made with an uncertainty of less than or equal to 0,01 W at the 95 % confidence level.

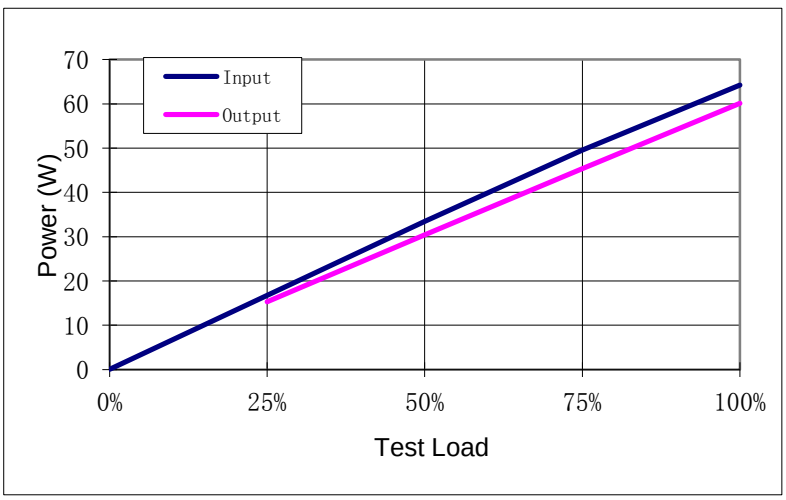
TEST RESULTS

Sample 1: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		1250	2500	3750	5000
Rms Output Voltage (V)	12.311	12.243	12.178	12.106	12.030
Active Output Power (W)		15.304	30.445	45.399	60.152
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.043	16.749	33.481	49.579	64.261
Total Harmonic Distortion(THD_V) (%)	0.018	0.153	0.207	0.256	0.299
Total Harmonic Distortion(THD_A) (%)	1.58	235.70	202.72	172.63	147.13
True Power Factor (W/VA)	0.044	0.944	0.964	0.952	0.940
Power Consumed by EUT(W)	0.043	1.445	3.036	4.180	4.110
Efficiency		91.37%	90.93%	91.57%	93.60%
Average Efficiency		91.87%			

Figures:

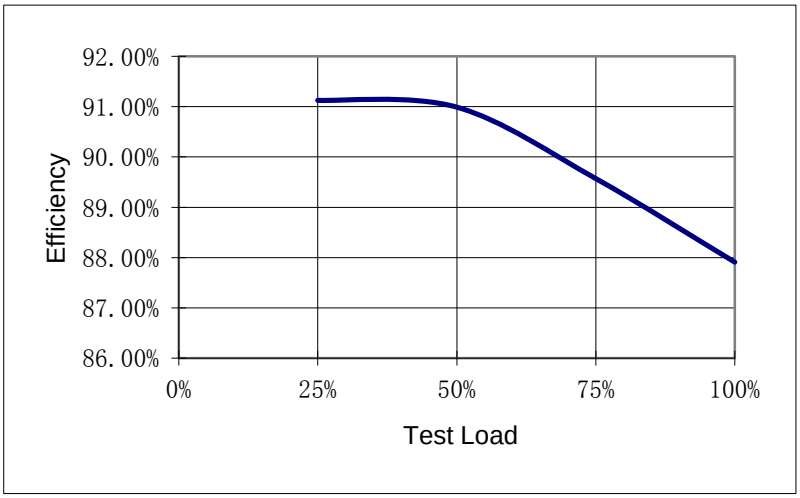


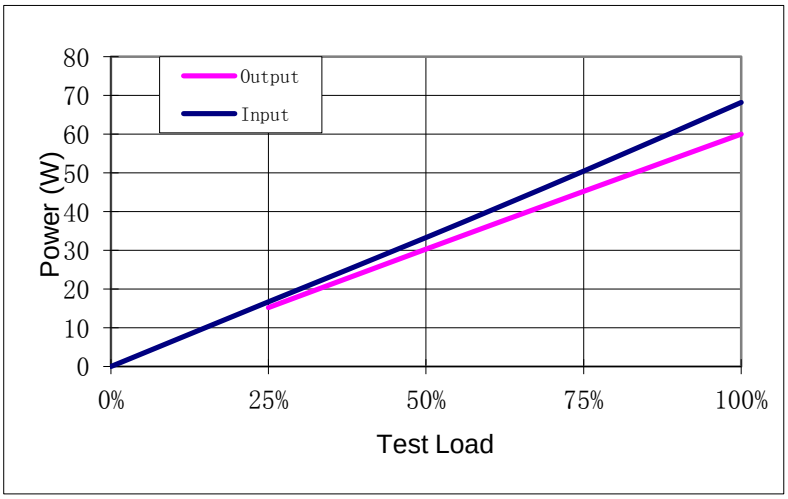


Sample 2: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		1250	2500	3750	5000
Rms Output Voltage (V)	12.266	12.195	12.131	12.061	11.998
Active Output Power (W)		15.244	30.328	45.227	59.988
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.006	16.728	33.330	50.493	68.241
Total Harmonic Distortion(THD) V%	0.014	0.152	0.209	0.254	0.535
Total Harmonic Distortion(THD) A%	14.90	237.24	204.20	175.74	162.88
True Power Factor (W/VA)	0.043	0.976	0.963	0.952	0.940
Power Consumed by EUT(W)	0.006	1.484	3.002	5.266	8.253
Efficiency		91.13%	90.99%	89.57%	87.91%
Average Efficiency		89.90%			

Figures:

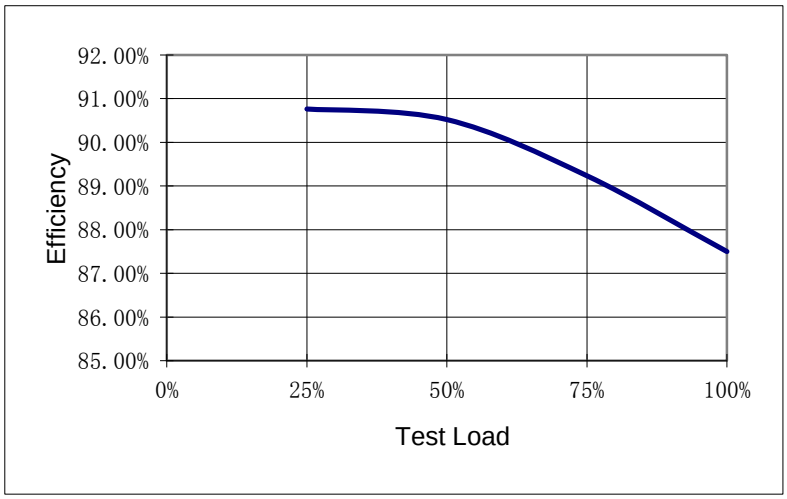


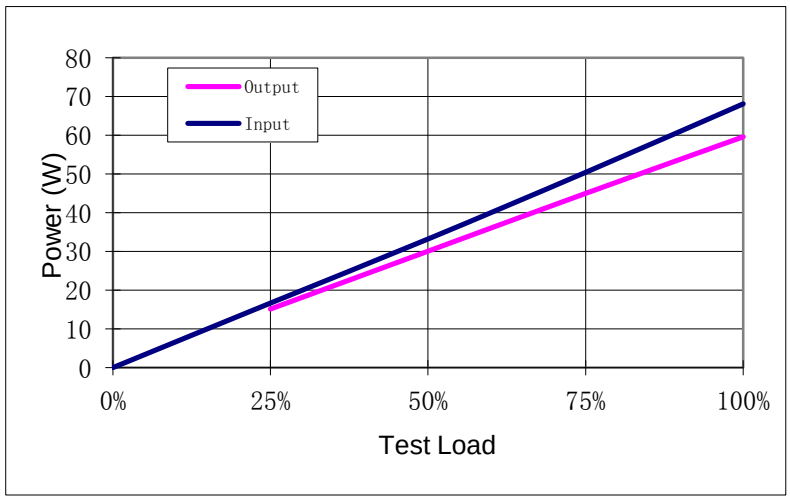


Sample 3: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		1250	2500	3750	5000
Rms Output Voltage (V)	12.274	12.145	12.040	12.002	11.920
Active Output Power (W)		15.181	30.099	45.008	59.598
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.072	16.726	33.251	50.437	68.110
Total Harmonic Distortion(THD) V%	0.304	0.322	0.320	0.414	0.534
Total Harmonic Distortion(THD) A%	17.86	215.97	193.96	186.61	160.44
True Power Factor (W/VA)	0.048	0.977	0.965	0.951	0.939
Power Consumed by EUT(W)	0.072	1.545	3.152	5.430	8.513
Efficiency		90.76%	90.52%	89.24%	87.50%
Average Efficiency		89.50%			

Figures:





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Test Result Summary (115V @ 60Hz):

Sample Number	Active Efficiency	No-Load Power
Sample 1	91.87%	0.043
Sample 2	89.90%	0.006
Sample 3	89.50%	0.072
Sampling size	3	3
Mean of sample	90.42%	0.040
Sample standard deviation	1.27%	0.033
UCL/1.05	N/A	0.117
LCL/0.95	92.94%	N/A
Declarable Value	**90.42%**	**0.120**
MEPS (level IV)	85.00%	0.50
level V	87.00%	0.50
level VI	88.00%	0.21

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.

SINGLE VOLTAGE EXTERNAL POWER SUPPLY TEST REPORT

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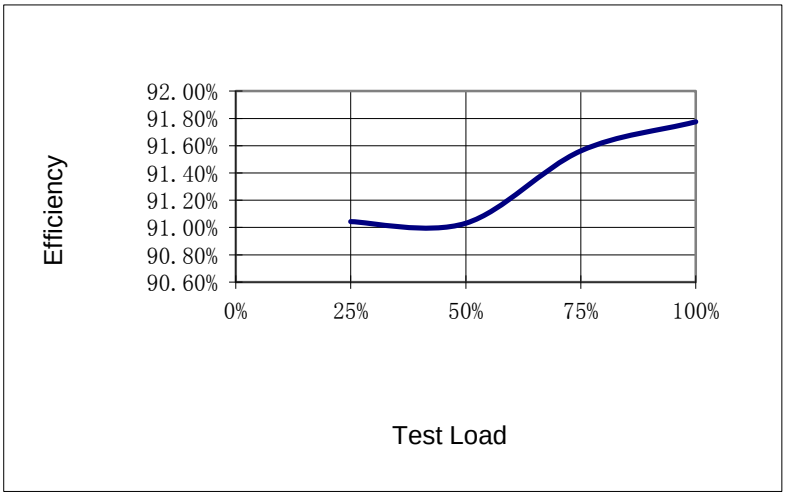
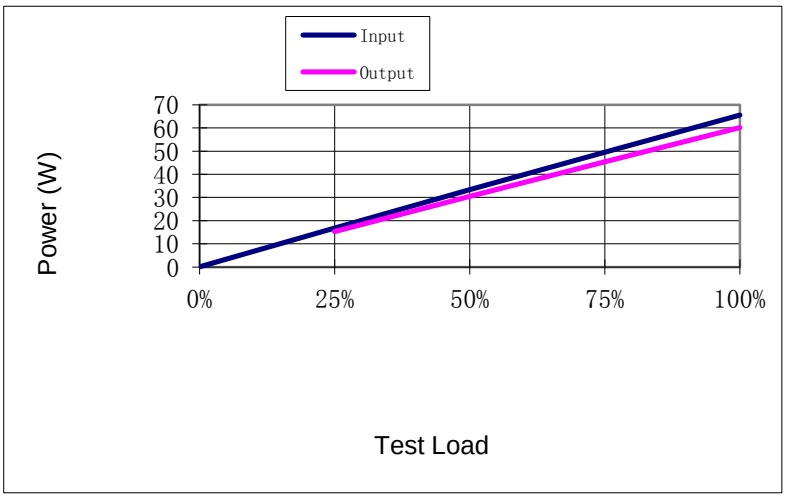
Sample 1: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		1250	2500	3750	5000
Rms Output Voltage (V)	12.312	12.240	12.170	12.106	12.031
Active Output Power (W)		15.30	30.42	45.40	60.15
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.118	16.805	33.422	49.582	65.544
Total Harmonic Distortion(THD_V) (%)	0.013	0.058	0.082	0.101	0.117
Total Harmonic Distortion(THD_A) (%)	5.75	275.31	265.40	251.69	234.90
True Power Factor (W/VA)	0.047	0.943	0.972	0.980	0.975
Power Consumed by EUT(W)	0.118	1.505	2.998	4.184	5.391
Efficiency		91.04%	91.03%	91.56%	91.77%
Average Efficiency		91.35%			

Figures:

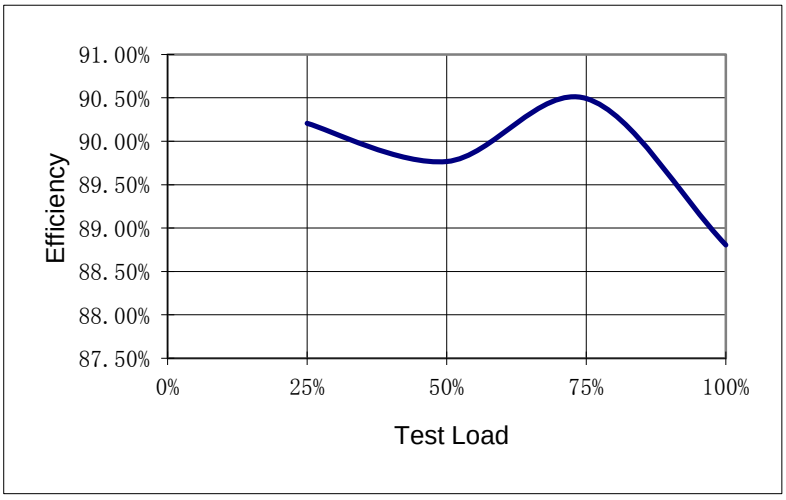


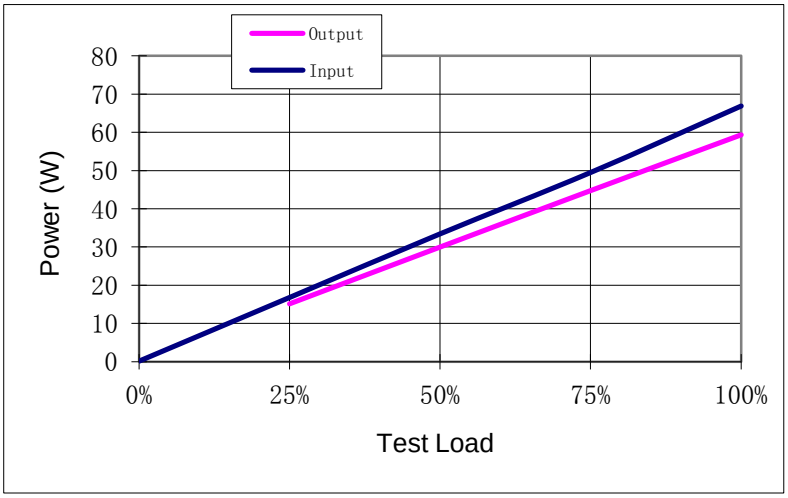


Sample 2: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		1250	2500	3750	5000
Rms Output Voltage (V)	12.274	12.114	12.000	11.939	11.873
Active Output Power (W)		15.142	29.999	44.770	59.363
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.137	16.786	33.419	49.473	66.847
Total Harmonic Distortion(THD) V%	0.119	0.115	0.135	0.176	0.207
Total Harmonic Distortion(THD) A%	19.15	301.77	287.14	262.53	231.10
True Power Factor (W/VA)	0.052	0.942	0.971	0.975	0.974
Power Consumed by EUT(W)	0.14	1.64	3.42	4.70	7.48
Efficiency		90.21%	89.77%	90.49%	88.80%
Average Efficiency		89.82%			

Figures:

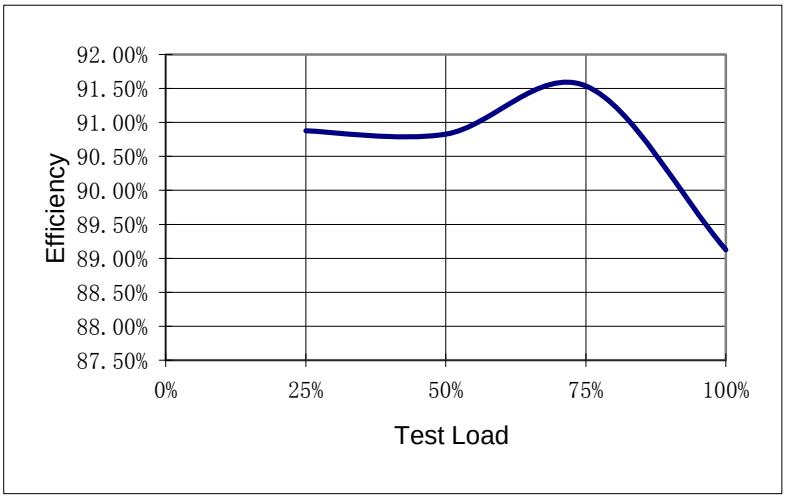


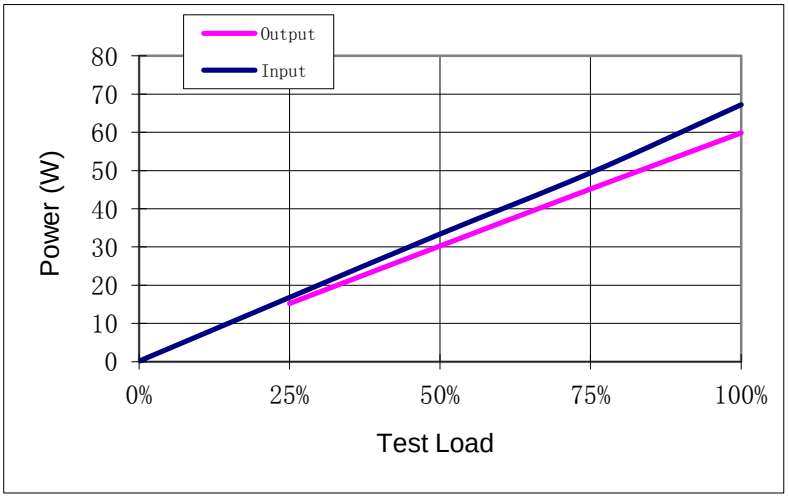


Sample 3: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		1250	2500	3750	5000
Rms Output Voltage (V)	12.266	12.194	12.123	12.058	11.977
Active Output Power (W)		15.242	30.307	45.217	59.883
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.099	16.772	33.367	49.398	67.188
Total Harmonic Distortion(THD) V%	0.103	0.058	0.082	0.103	0.207
Total Harmonic Distortion(THD) A%	5.20	274.95	266.54	253.56	235.96
True Power Factor (W/VA)	0.019	0.944	0.971	0.972	0.974
Power Consumed by EUT(W)	0.099	1.530	3.061	4.181	7.306
Efficiency		90.88%	90.83%	91.54%	89.13%
Average Efficiency		90.59%			

Figures:





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Test Result Summary (230V @ 50Hz):

Sample Number	Active Efficiency	No-Load Power
Sample 1	91.35%	0.118
Sample 2	89.82%	0.137
Sample 3	90.59%	0.099
Sampling size	3	3
Mean of sample	90.59%	0.118
Sample standard deviation	0.77%	0.019
UCL/1.05	N/A	0.143
LCL/0.95	93.99%	N/A
Declarable Value	**90.59%**	**0.14**
MEPS (level IV)	85.00%	0.50
level V	87.00%	0.50
level VI	88.00%	0.21

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):

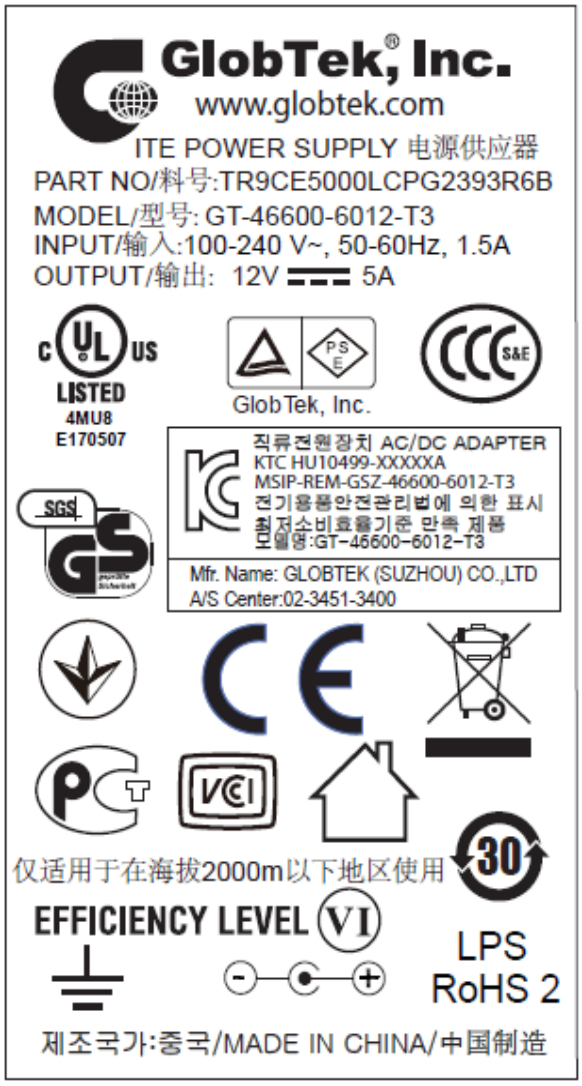
GlobTek, Inc.
www.globtek.com
ITE POWER SUPPLY 电源供应器
PART NO/料号:TR9CE5000LCPG2393R6B
MODEL/型号: GT-46600-6012-T3
INPUT/输入:100-240 V~, 50-60Hz, 1.5A
OUTPUT/输出: 12V 5A
c UL us
LISTED
4MU8
E170507
GlobTek, Inc.
직류전원장치 AC/DC ADAPTER
KTC HU10499-XXXXXA
MSIP-REM-GSZ-46600-6012-T3
전기용품안전관리법에 의한 표시
최저소비효율기준 만족 제품
모델명:GT-46600-6012-T3
Mfr. Name: GLOBTEK (SUZHOU) CO.,LTD
A/S Center:02-3451-3400
仅适用于在海拔2000m以下地区使用
EFFICIENCY LEVEL VI
LPS
RoHS 2
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