

# SINGLE VOLTAGE EXTERNAL POWER SUPPLY TEST REPORT

Report No.: 160302656SHA-001

Issued: 2016-04-12

Applicant: GlobTek, Inc.

Applicant Address: 186 Veterans Dr. Northvale, NJ 07647 USA

Manufacturer: GlobTek ( Suzhou) Co., Ltd

Manufacturer Address: Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou, JiangSu, 215021, China

Product Name: Power Supply

Model Name: GT-46180-1812

Model Similarity: NA

Brand Name: NA

Name plate specifications	Input	Output
Voltage (V)	100-240	12
Current (A)	0.6	1.5
Power (W)	N/A	18.00
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: 2016-03-24

Test performed: 2016-03-25

Certification Body: Intertek Testing Services NA INC.  
165 Main Street, Cortland, New York, USA

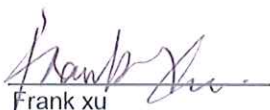
Testing Location: Intertek Testing Services Shanghai Limited  
Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China

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.

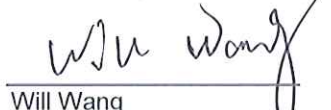
Note:

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:

  
Frank xu  
Engineer

Approved by:

  
Will Wang  
Reviewer

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### TECHNICAL INFORMATION

Output cord length and size: 1.80m/ 20AWG

Size of the entire UUT: 73.43mm (L)×43.66mm(W)×38.34mm (H)

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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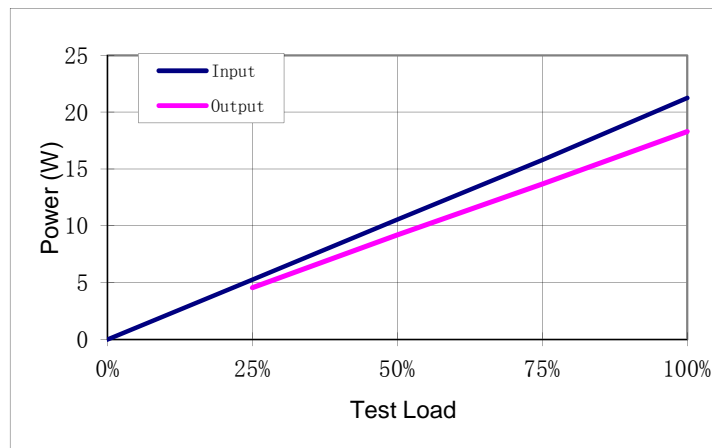
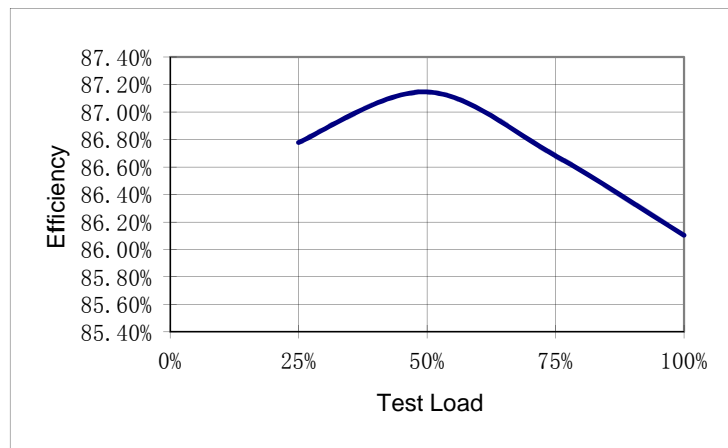
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### TEST RESULTS

Sample 1: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		371	753	1125	1509
Rms Output Voltage (V)	12.304	12.259	12.207	12.158	12.168
Active Output Power (W)		4.551	9.195	13.685	18.290
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.049	5.244	10.551	15.787	21.242
Total Harmonic Distortion(THD <sub>V</sub> ) (%)	0.015	0.046	0.066	0.079	0.090
Total Harmonic Distortion(THD <sub>A</sub> ) (%)	26.06	208.05	173.06	152.69	137.89
True Power Factor (W/VA)	0.071	0.971	0.964	0.952	0.939
Power Consumed by EUT(W)	0.049	0.693	1.356	2.103	2.952
Efficiency		86.78%	87.15%	86.68%	86.10%
Average Efficiency		86.68%			

Figures:



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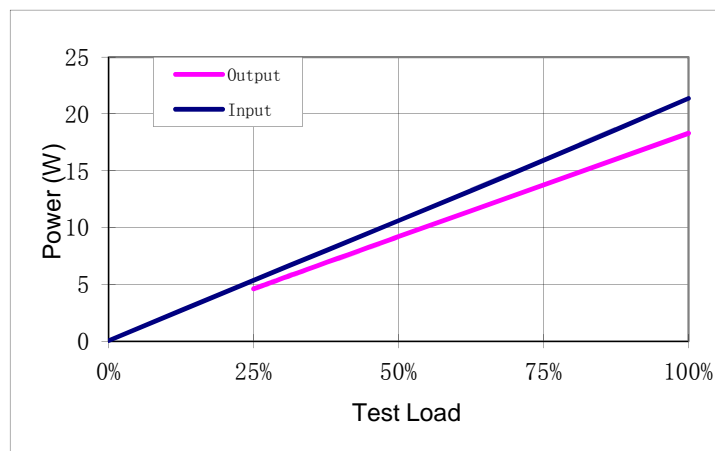
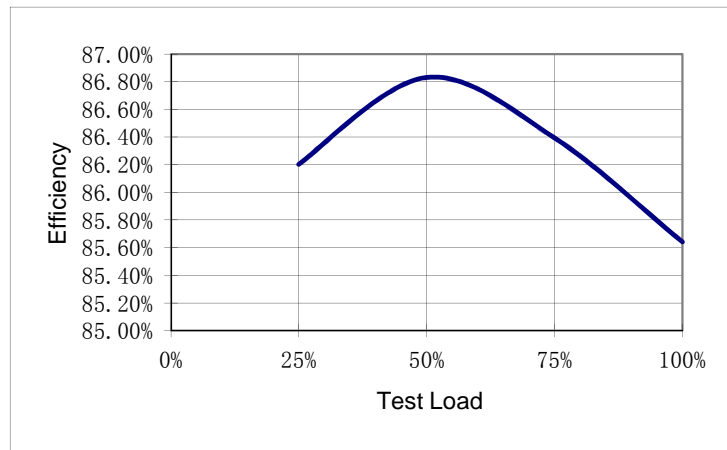
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Sample 2: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		375	750	1125	1505
Rms Output Voltage (V)	12.359	12.304	12.256	12.203	12.149
Active Output Power (W)		4.611	9.200	13.734	18.282
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.038	5.349	10.595	15.897	21.347
Total Harmonic Distortion(THD) V%	0.014	0.046	0.066	0.079	0.091
Total Harmonic Distortion(THD) A%	26.15	203.89	171.84	151.47	137.14
True Power Factor (W/VA)	0.084	0.974	0.965	0.953	0.939
Power Consumed by EUT(W)	0.038	0.738	1.395	2.163	3.065
Efficiency		86.20%	86.83%	86.39%	85.64%
Average Efficiency		86.27%			

Figures:



## SINGLE VOLTAGE EXTERNAL POWER SUPPLY TEST REPORT

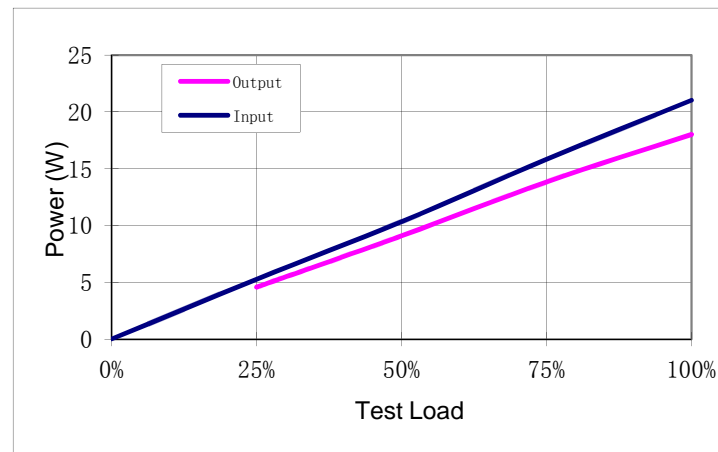
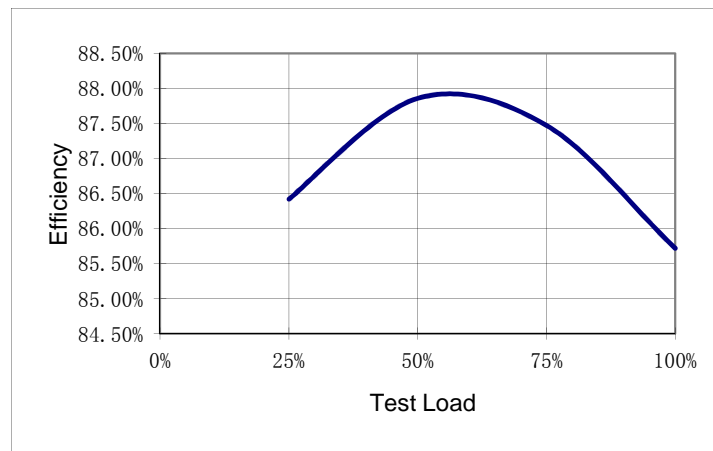
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Sample 3: Test voltage is 115V @ 60Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		375	750	1125	1502
Rms Output Voltage (V)	12.125	12.170	12.113	12.028	11.994
Active Output Power (W)		4.569	9.086	13.843	18.020
Rms Input Voltage (V)	115	115	115	115	115
Active Input Power (W)	0.035	5.287	10.342	15.825	21.022
Total Harmonic Distortion(THD) V%	0.015	0.047	0.068	0.086	0.091
Total Harmonic Distortion(THD) A%	25.13	207.59	173.81	147.38	138.20
True Power Factor (W/VA)	0.072	0.972	0.964	0.947	0.938
Power Consumed by EUT(W)	0.035	0.718	1.256	1.983	3.002
Efficiency		86.42%	87.86%	87.47%	85.72%
Average Efficiency		86.87%			

Figures:



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### Test Result Summary (115V @ 60Hz):

Sample Number	Active Efficiency	No-Load Power
Sample 1	86.68%	0.049
Sample 2	86.27%	0.038
Sample 3	86.87%	0.035
Sampling size	3	2
Mean of sample	86.60%	0.037
Sample standard deviation	0.31%	0.002
UCL/1.05	N/A	0.053
LCL/0.95	90.62%	N/A
<b>Declarable Value</b>	<b>86.60%</b>	<b>0.050</b>
MEPS (level IV)	76.01%	0.50
level V	80.29%	0.30
level VI	85.00%	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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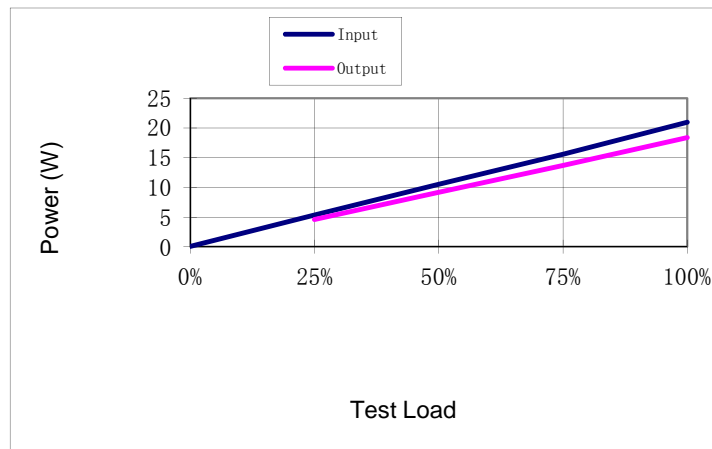
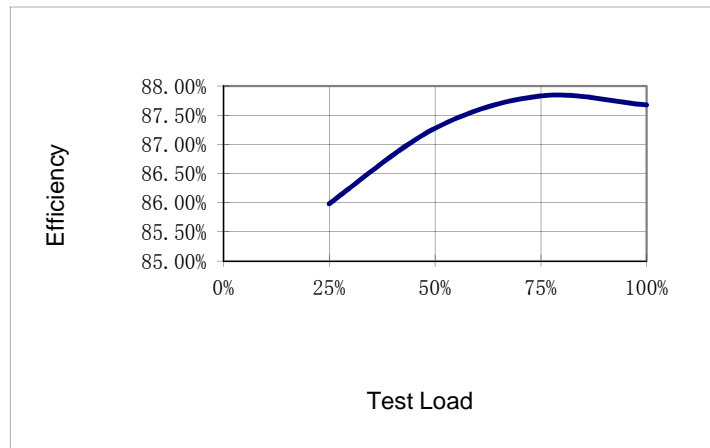
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Sample 1: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		375	751	1125	1517
Rms Output Voltage (V)	12.298	12.248	12.210	12.163	12.100
Active Output Power (W)		4.60	9.17	13.69	18.36
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.071	5.350	10.506	15.591	20.939
Total Harmonic Distortion(THD <sub>V</sub> ) (%)	0.014	0.019	0.023	0.030	0.036
Total Harmonic Distortion(THD <sub>A</sub> ) (%)	14.70	263.24	239.37	219.38	203.43
True Power Factor (W/VA)	0.043	0.934	0.941	0.968	0.968
Power Consumed by EUT(W)	0.071	0.750	1.337	1.898	2.581
Efficiency		85.98%	87.27%	87.83%	87.67%
Average Efficiency		87.19%			

Figures:



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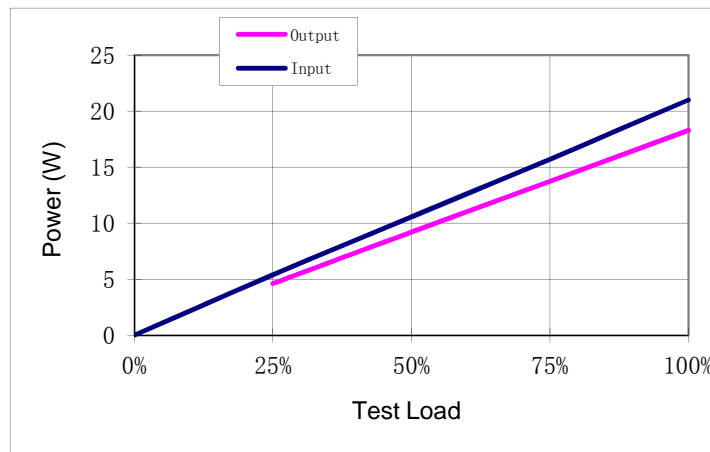
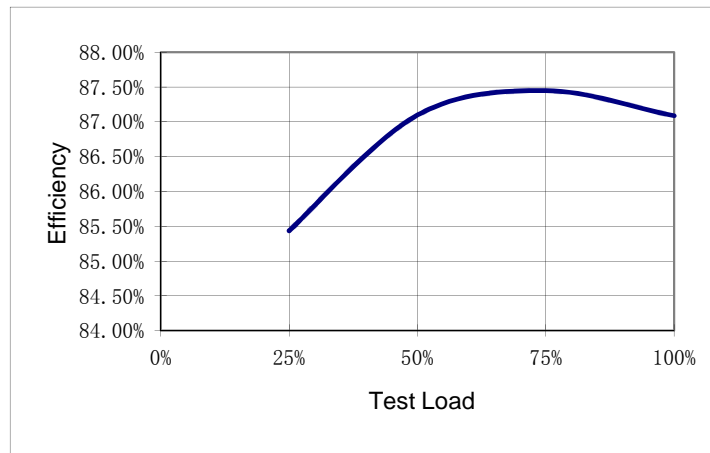
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Sample 2: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		375	751	1125	1507
Rms Output Voltage (V)	12.356	12.303	12.261	12.216	21.136
Active Output Power (W)		4.617	9.213	13.745	18.289
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.020	5.404	10.578	15.718	21.001
Total Harmonic Distortion(THD) V%	0.013	0.019	0.022	0.018	0.034
Total Harmonic Distortion(THD) A%	48.47	264.51	234.84	216.56	201.69
True Power Factor (W/VA)	0.13066	0.94193	0.96774	0.97065	0.96966
Power Consumed by EUT(W)	0.02	0.79	1.36	1.97	2.71
Efficiency		85.43%	87.10%	87.45%	87.09%
Average Efficiency		86.77%			

Figures:





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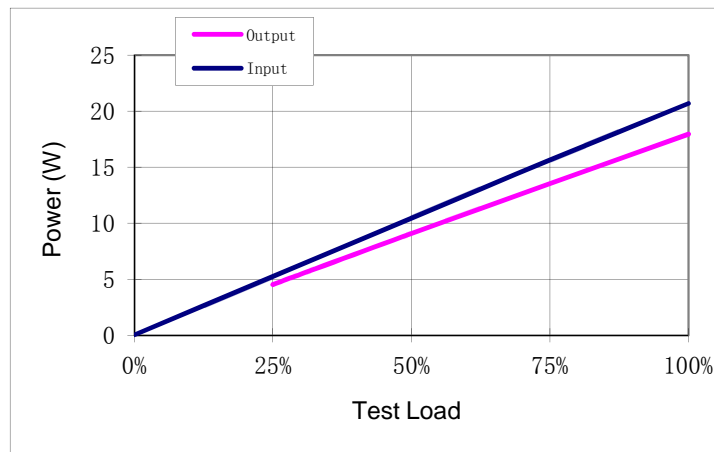
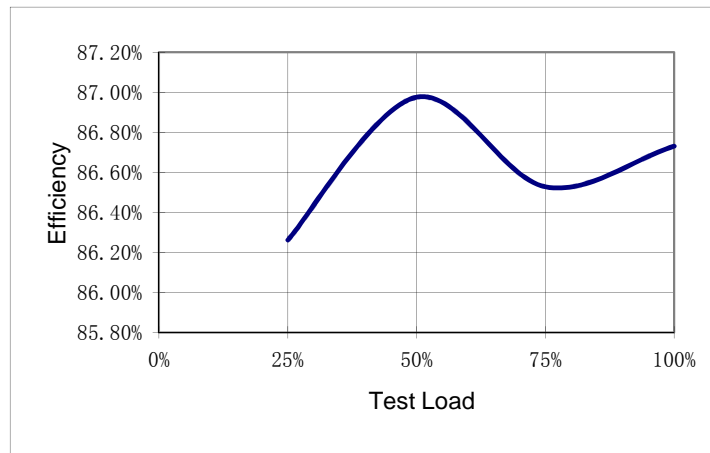
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Sample 3: Test voltage is 230V @ 50Hz

Percent of nameplate current	0%	25%	50%	75%	100%
Rms Output Current (mA)		375	750	1125	1502
Rms Output Voltage (V)	12.234	12.170	12.117	11.993	11.943
Active Output Power (W)		4.544	9.095	13.536	17.948
Rms Input Voltage (V)	230.2	230.2	230.2	230.2	230.2
Active Input Power (W)	0.046	5.268	10.457	15.643	20.694
Total Harmonic Distortion(THD) V%	0.014	0.019	0.023	0.033	0.034
Total Harmonic Distortion(THD) A%	10.82	261.86	237.21	207.63	202.78
True Power Factor (W/VA)	0.028	0.936	0.966	0.969	0.969
Power Consumed by EUT(W)	0.046	0.724	1.362	2.108	2.746
Efficiency		86.26%	86.98%	86.53%	86.73%
Average Efficiency		86.62%			

Figures:



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### Test Result Summary (230V @ 50Hz):

Sample Number	Active Efficiency	No-Load Power
Sample 1	87.19%	0.071
Sample 2	86.77%	0.020
Sample 3	86.62%	0.046
Sampling size	3	3
Mean of sample	86.86%	0.046
Sample standard deviation	0.29%	0.025
UCL/1.05	N/A	0.084
LCL/0.95	90.91%	N/A
<b>Declarable Value</b>	<b>86.86%</b>	<b>0.08</b>
MEPS (level IV)	76.01%	0.50
level V	80.29%	0.30
level VI	85.00%	0.10

According to the ENERGY STAR® protocol:

The samples tested comply with level: VI

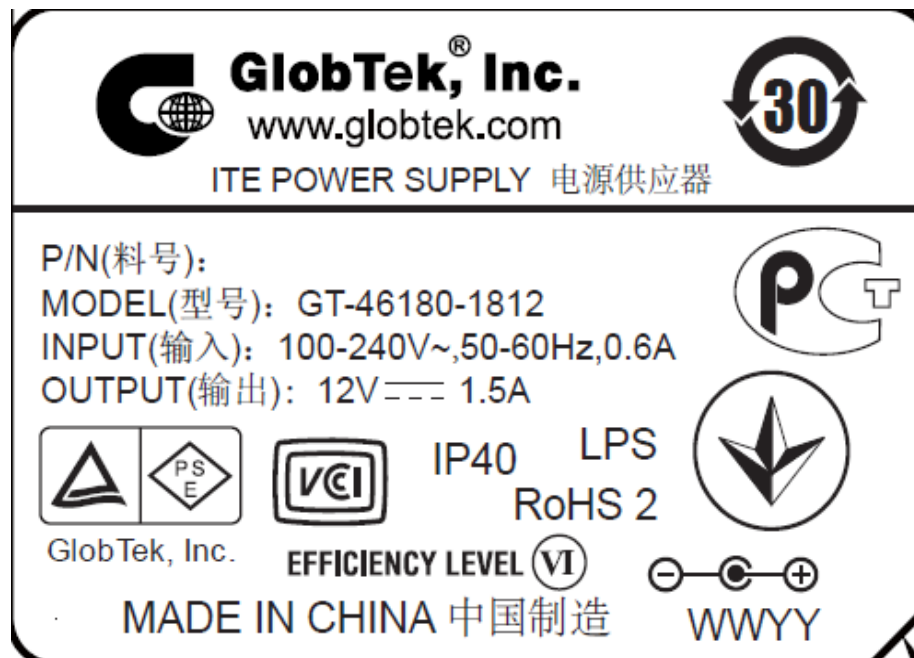
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Label(s):



**SINGLE VOLTAGE EXTERNAL POWER SUPPLY TEST REPORT**

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**Photo 1 - External view**



**Photo 2 - External view**



## **SINGLE VOLTAGE EXTERNAL POWER SUPPLY TEST REPORT**

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**Photo 3 - Internal view**

**Photo 4 - Internal view**