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TEST REPORT
C381.1-17
Test Method for Calculating the Energy Efficiency of Single-Voltage External Ac-Dc and Ac-Ac Power Supplies

Report Reference No.....:	386868/En
Tested by (printed name and signature) .....:	Lisa Lee
Approved by (printed name and signature) .....:	Kenny Ho
Date of issue.....:	2019-11-19
Total number of pages.....	9
Testing Laboratory.....:	Nemko Shanghai Ltd., Shenzhen Branch
Address.....:	Unit C &D, Floor 2 & Floor 10, Financial Base Tower 2, Kefa Road 8#, Hi-Technology Park, Nanshan District, Shenzhen 518057, China
Testing location.....:	As above
Applicant's name.....:	GlobTek, Inc.
Address.....:	186 Veterans Dr. Northvale, NJ 07647 USA
Test specification:	
Standard .....:	International Efficiency Marking Protocal ver.3.0 C381.1-17: Energy performance of external ac-dc and ac-ac power supplies
Test procedure.....:	Appendix Z to Subpart B, Part 430 of Title 10 to the United States Code of Federal Regulations, entitled Uniform Test Method for Measuring the Energy Consumption of External Power Supplies
Test Report Form No.....:	C381.1-17_A
Test Report Form(s) Originator .....:	Nemko Shenzhen
Master TRF.....:	2019-10

This test report is based on the content of the internal test program. The test program considered selected clauses of the a.m. standard(s) and experience gained with product testing. It was prepared by Nemko Shenzhen.

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Test item description .....:	ITE Power Supply
Trademark .....:	GlobTek
Manufacturer .....:	Same as applicant
Factory .....:	See page 3
Model and/or type reference .....:	GT-46600-6012-T3, GT-46600-6012-T3A, GT-46600-6012-T2
Rating(s) (V; Hz) .....:	AC input: 100-240 Vac 50-60 Hz, 1.5A DC output: 12Vdc 5A Cl. I, Cl. II

Copy of marking plate

Summary of testing:

This EUT comply with efficiency requirement of C381.1-17: Energy performance of external ac-dc and ac-ac power supplies.

Possible test case verdicts:

- test case does not apply to the test object ..... : N/A (Not applicant)
- test object does meet the requirement ..... : P (Pass)
- test object does not meet the requirement ..... : F (Fail)

Testing:

Date of receipt of test item ..... : 2019-11-8

Date (s) of performance of tests ..... : 2019-11-18

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(See Annex #)" refers to additional information appended to the report.
Throughout this report a point is used as the decimal separator.
Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods

General product information:

The rated output power (Po) of the EUT=60 W

	Result	**Limit for NrCan directive**
	Vin=115V 60Hz	Mark VI
No load condition power consumption (W)	0.08	0.21
Average active efficiency	89.38%	88%
Supplementary Information: No-Load condition power consumption of ROUND(MAX(UUT1,UUT2,UUT3),2)=0.08		
Supplementary Information: average value efficiency of (Min(89.38%,89.83% , 89.59%))=89.38%		
Remark: International Efficiency Marking Protocal ver.3.0		

Factory Information
1、Name: GlobTek, Inc.
Address: 186 Veterans Dr. Northvale, NJ 07647 USA
2、Name: GlobTek (Suzhou) Co., Ltd
Address: Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou,JiangSu 215021, China

C381.1-17			
Clause	Requirement + Test	Result - Remark	Verdict

Ref. No	Test equipment	Manufacturer	Model	Serial number	Calibration due date
NSZ2018	Digital AC Power Source	All power	APW-150N	888130	06 Jan 2020
NSZ2013	EUP Power Meter	Xitron	2801	28010907016	06 Jan 2020
NSZ2046	DC Electric Load	ARRAY	3711A	A06BH02082	06 Jan 2020
NSZ2050	Thermo-hygrometer	Corintech	EL-WiFi-TH+	4703	12 Mar 2020

	Test conditions		—
	Ambient temperature in °C ..... :	See the test result table.	—
	Information describing the test set-up used at each load condition..... :	Low power measurement circuit.	—

	Test configuration		—
	Nominal test supply voltage (V).....:	115V ac	—
	Nominal total harmonic distortion of supply voltage waveform .....:	<2%	
	Test frequency (Hz) .....:	60Hz	—
	Any notes regarding the operation of the product :	--	—
	Did the EPS have a built-in ON/OFF switch on the input? .....:	No	—
	Was the output voltage selectable?..... :	No	—
	Setting used when performing tests ..... :	Low power measurement circuit.	—
	Output cable length (to the nearest cm) ..... :	120cm±3cm	—

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Clause	Requirement + Test	Result - Remark	Verdict

TABLE: Test results						P
Vin=115V 60Hz UUT 1						
	No load	Power Modes				
Percent of nameplate current	0%	25%	50%	75%	100%	Average
DC output current (A r.m.s)	0	1.25	2.5	3.75	5	
DC output voltage (V r.m.s)	12.25	12.19	12.13	12.06	11.99	
DC output power (W r.m.s)	0.00	15.24	30.33	45.23	59.95	
Maximum AC input voltage (V r.m.s)	115.03	115.04	115.1	115.02	115.06	
Minimum AC input voltage (V r.m.s)	114.98	114.98	115.04	114.96	115	
Maximum ambient temperature (°C)	24.15	24.08	24.08	24.08	24.08	
Minimum ambient temperature (°C)	24.15	24.08	24.08	24.09	24.08	
AC input power (W)	0.08	16.84	33.44	51.05	68.32	
Current total harmonic distortion (THD)(%)	16.44	162.66	147.81	138.53	132.47	
True power factor	0.05	0.51	0.55	0.57	0.58	
Crest Factor	1.417	1.413	1.425	1.438	1.45	
Power consumed (W)	0.08	1.60	3.11	5.83	8.37	
Active mode efficiency		90.48%	90.68%	88.59%	87.75%	
Average efficiency of active modes						89.38%
Calculated measurement uncertainty	0.0001	0.0518	0.0094	0.0147	0.0213	
Uncertainty requirement	0.0200	0.9834	0.1750	0.0230	0.3646	
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

TABLE: Test results						P
Vin=115V 60Hz UUT 2						
	No load	Power Modes				
Percent of nameplate current	0%	25%	50%	75%	100%	Average
DC output current (A r.m.s)	0	1.25	2.5	3.75	5	
DC output voltage (V r.m.s)	12.22	12.15	12.09	12.02	11.95	
DC output power (W r.m.s)	0.00	15.19	30.23	45.08	59.75	
Maximum AC input voltage (V r.m.s)	115.09	115.05	114.98	115.06	115.02	
Minimum AC input voltage (V r.m.s)	115.04	114.99	114.92	115.01	114.96	
Maximum ambient temperature (°C)	24.07	24.07	24.07	24.07	24.07	
Minimum ambient temperature (°C)	24.07	24.07	24.07	24.07	24.07	
AC input power (W)	0.07	16.69	33.26	50.52	67.72	
Current total harmonic distortion (THD)(%)	16.12	164.30	149.7	140.62	134.01	
True power factor	0.05	0.51	0.54	0.56	0.58	
Crest Factor	1.417	1.415	1.428	1.441	1.453	
Power consumed (W)	0.07	1.50	3.04	5.45	7.97	
Active mode efficiency		91.00%	90.87%	89.22%	88.23%	
Average efficiency of active modes						89.83%
Calculated measurement uncertainty	0.0001	0.0518	0.0094	0.0147	0.0213	
Uncertainty requirement	0.0200	0.9834	0.1750	0.0230	0.3646	
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

TABLE: Test results						P
Vin=115V 60Hz UUT 3						
	No load	Power Modes				
Percent of nameplate current	0%	25%	50%	75%	100%	Average
DC output current (A r.m.s)	0	1.25	2.5	3.75	5	
DC output voltage (V r.m.s)	12.24	12.17	12.1	12.04	11.97	
DC output power (W r.m.s)	0.00	15.21	30.25	45.15	59.85	
Maximum AC input voltage (V r.m.s)	115.05	114.97	114.92	114.86	114.81	
Minimum AC input voltage (V r.m.s)	115	114.91	114.86	114.8	114.73	
Maximum ambient temperature (°C)	24.07	24.07	24.07	24.07	24.07	
Minimum ambient temperature (°C)	24.07	24.07	24.07	24.07	24.07	
AC input power (W)	0.07	16.76	33.29	50.78	68.15	
Current total harmonic distortion (THD)(%)	15.15	163.19	148.69	139.08	131.54	
True power factor	0.04	0.51	0.55	0.57	0.58	
Crest Factor	1.417	1.415	1.428	1.44	1.451	
Power consumed (W)	0.07	1.55	3.04	5.63	8.30	
Active mode efficiency		90.77%	90.87%	88.91%	87.82%	
Average efficiency of active modes						89.59%
Calculated measurement uncertainty	0.0001	0.0518	0.0094	0.0147	0.0213	
Uncertainty requirement	0.0200	0.9834	0.1750	0.0230	0.3646	
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

	Conclusion		—
	No-Load condition power consumption (W).....:	0.08	—
	No-Load limit applied (W) .....:	0.21	—
	Regulatory conference .....:	No load power consumption of C381.1-17	—
	No-Load verdict (PASS/FAIL) .....:	PASS	—
	Calculated average efficiency of active modes (%):	89.38	—
	Average efficiency of active modes limit applied (%) ..... :	88	—
	Regulatory reference..... :	No load power consumption of C381.1-17	—
	Average efficiency of active modes verdict (PASS/FAIL) ..... :	PASS	—

Annex 1 - Photo