Test Report issued under the responsibility of:

TEST REPORT
IEC 61558-2-16

Safety of power transformers, power supplies, reactors and similar products for supply voltages up to 1100 V
Part 2: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units

Report Number..... :	**15TH0324_61558-2-16_0**
Date of issue ..... :	2015-10-14
Total number of pages ..... :	16
Name of Testing Laboratory preparing the Report ..... :	Bureau Veritas Consumer Products Services Germany GmbH Businesspark A96, 86842 Türkheim, GERMANY
Applicant's name ..... :	GlobTek, Inc.
Address ..... :	186 Veterans Drive, Northvale, NJ 07647, USA
Test specification:	
Standard ..... :	EN 61558-2-16:2009 + A1:2013 used in conjunction with EN 61558-1:2005 + A1:2009 (DIN EN 61558-2-16:2014-06)
Test procedure..... :	GS Certification
Non-standard test method..... :	N/A
Test Report Form No. ..... :	IEC61558_2_16C
Test Report Form(s) Originator.... :	VDE Testing and Certification Institute
Master TRF ..... :	Dated 2015-06

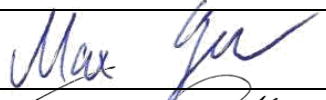
If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description..... :	Power Supply Unit
Trade Mark..... :	GlobTek, Inc.
Manufacturer ..... :	GlobTek, Inc. 186 Veterans Drive, Northvale, NJ 07647, USA
Model/Type reference..... :	GTx91120-wvy-Tb series GTM91128LI1CEL, GTM91128LI2CEL, GTM91128LI3CEL See page 5, “General product information”, for model description.
Ratings..... :	Input: 100 - 240 Vac; 50 - 60 Hz; 1,5 A Output: See general product information.

Testing location/ address ..... :	Bureau Veritas Consumer Products Services Germany GmbHBusinesspark A96, 86842 Türkheim, GERMANY	
Tested by (name, signature)..... :	Max Gebuhr	
Approved by (name, signature)..... :	Thomas Ruffer	

List of Attachments (part of this test report):

- Photos
- List of test equipment
- Uncertainties of measurement

List of Attachments (kept on file at Bureau Veritas, Türkheim):

- SIQ CB test report T211-0359/15 M1, dated 2015-06-24
- SIQ CB certificate SI-4836 M1, dated 2015-06-24
- PAH test report for appliance inlet: report no. SCL01H075084001, dated 2015-09-06, by Centre Testing International Corporation
- PAH test report for enclosure: report no. ECL03H003628001E, dated 2015-07-23, by Centre Testing International Corporation
- RoHS test report for Label: report no. SHAEC1413823304, dated 2014-07-28, by SGS, Shanghai
- RoHS test report for Label glue: report no. SHAEC1413823301, dated 2017-07-28, by SGS, Shanghai
- EMC test report STR10088179E, dated 2010-09-01, SEM.Test Compliance Service Co., Ltd.
- EMC test certificate SEM10082873, dated 2010-10-13, SEM.Test Compliance Service Co., Ltd.

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
The partial testing as described in this test report	Bureau Veritas Consumer Products Services Germany GmbH Businesspark A96, 86842 Türkheim, GERMANY

Summary of compliance with National Differences:

List of countries addressed

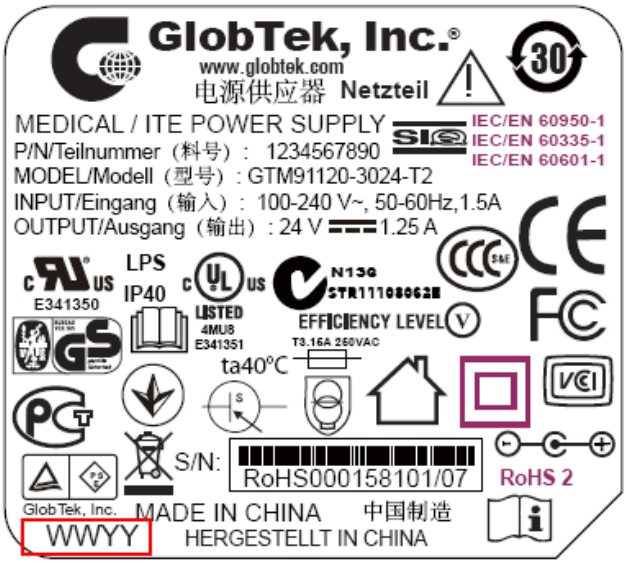
Europe/CENELEC

The product fulfils the requirements of
EN 61558-2-16:2009 + A1:2013 used in conjunction with
EN 61558-1:2005 + A1:2009 (DIN EN 61558-2-16:2014-06)

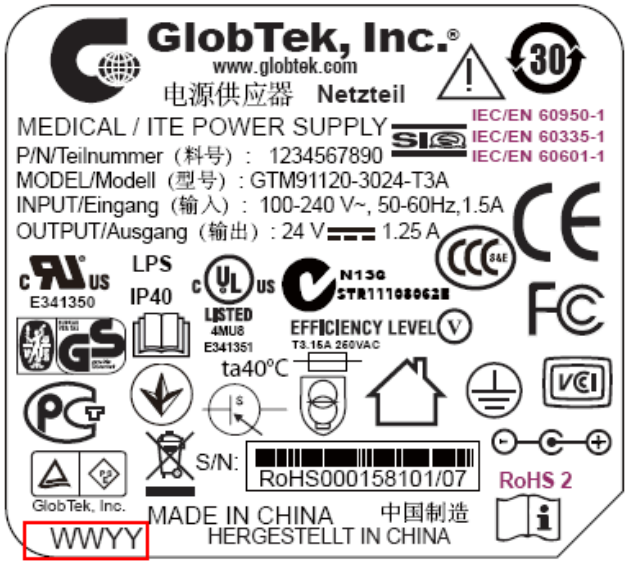
Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Class II products



Class I products



WWYY: week and year of production

Test item particulars..... :	Power Supply Unit
Classification of installation and use..... :	desktop power supply unit Class I or Class II
Supply Connection ..... :	appliance inlet (desktop models)
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2015-09-22
Date (s) of performance of tests .....:	2015-09-25 - 2015-10-12

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Factory ..... :	GlobTek (Suzhou) Co., Ltd Building 4, No. 76, Jinling East Road, Suzhou Industrial Park, Jiangsu CN-215021, CHINA
European Representative ..... :	GlobTek Deutschland GmbH Hafenweg 26a, 48155 Münster, Germany

NOTE
This test report refers to the SIQ CB test report T211-0359/15 M1, dated 2015-06-24.
Only partial retesting has been performed by Bureau Veritas, Türkheim.

General product information:

The products are desktop power supply units.
Open-frame power supply units and power supply units providing open leads are not covered by this test report.

Model variants covered by this report

1. Multi-purpose switch-mode power supply units

Model no.: (according to the SIQ report)	GT	M -	91120-	WW	VV	-X.X	-T	2 3A
Model no.: (according to the German manual)	GT	x	91120-	w	v	y	-T	b

Description of placeholders:

x: market identification
"M": also suitable for medical use, or
"-": for IT equipment or household use

91120: designation of the power supply unit series (fixed value)

w: rated output power in watts
"00" to "30"

v: standard rated output voltage in volts (0,1 volt increments)
"00" to "48", may be followed by "." and one decim

y: optional; voltage to be subtracted from or added to the standard rated output voltage to calculate the effective output voltage; 0,1 volt increments; decimal separator and decimal place may be missing
"-11.9" to "+11.9"

T: kind of construction ("T" is fixed for the products covered by this test report)
"T": external/desktop model

b: safety class
"2" (for class II products), or
"3A" for class I products

2. Lithium-Ion battery chargers for one, two or three cells in series (1CEL, 2CEL, 3CEL)

GTM91128LI1CEL, GTM91128LI2CEL, GTM91128LI3CEL

Examples

Model name	Output voltage [DC]	Output current	Max. output power
GT(M or -)91120-3007.5-2.5-TB	5 V	0-4,0 A	20 W
GT(M or -)91120-3007.5-X.X-TB	5,1-7,5 V	0-4,0 A	22,5 W
GT(M or -)91120-3010.5-X.X-TB	7,6-9 V	0-3,3 A	25 W
GT(M or -)91120-3010.5-X.X-TB	9,1-10,5 V	0-3,3 A	30 W
GT(M or -)91120-3014.5-X.X-TB	10,6-14,5V	0-2,83 A	30 W
GT(M or -)91120-3019.5-X.X-TB	14,6-19,5 V	0-2,0 A	30 W
GT(M or -)91120-3024-X.X-TB	19,6-24 V	0-1,6 A	30 W
GT(M or -)91120-3036-X.X-TB	24,1-36 V	0-1,25 A	30 W
GT(M or -)91120-3048-X.X-TB	36,1-48 V	0-0,83 A	30 W
GTM91128LI1CEL	4,2 V	1,0 A	--
GTM91128LI2CEL	8,4 V	1,0 A	--
GTM91128LI3CEL	12,6 V	1,0 A	--

IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict

NOTE
For the checklist part of the test report refer to the SIQ test report described in the list of attachments.

The following tests, which are part of the SIQ CB test report, have been spot checked by Bureau Veritas, Türkheim.

8.15	**TABLE: Durability of markings**	**P**

marking	Condition of label after the test			Observation
	Still legible	Not easily removable	No curling of edges	
Marking label	P	P	P	white labels with black text
Marking label	P	P	P	black tabels with white text
Serial number label	[1)]	–	–	

Supplementary information:

Test procedure: 15 sec with water and then
15 sec with petroleum spirit (Hexan)

[1)] The serial number label is not relevant, because week and year of manufacturing are part of the marking label.

NOTE
The font size is very small, even though some samples are marked to be medical approved, which requires markings to be readable from a distance of 1 meter.

18.3	**TABLE: Dielectric Strength**	**P**

Test voltage applied between:	**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**
Between parts separated by double or reinforced insulation	4000	No

Supplementary information:
Samples: GTM91120-3014.5-2.5-T3A; GT-91120-3048-T3A

IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict

20	TABLE: Critical components information				P
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
EU mains cord set for class I products (GlobTek part number 23144262M0712(R), Europe)					
cord set	Self-Man Industrial Co., Ltd.	SH-025+SM-112+H05VV-F			see below
mains plug “Schuko”	Self-Man Industrial Co., Ltd.	SH-025	16A, 250V~	DIN VDE 0620-1:2010-02	VDE40008942
cord	I-Sheng Electric Wire & Cable Co. Ltd.	H05VV-F	0.75mm2 *3G	DIN EN 50525-2-11	VDE40015762
appliance connector	Self-Man Industrial Co., Ltd.	SM-112	C5; 2.5A, 250V~	IEC 60320-1	VDE40015743
Alt.-cord set	Self-Man Industrial Co., Ltd.	SH-005+SM-112+H05VV-F			see below
Alt.-mains plug	Self-Man Industrial Co., Ltd.	SH-005	16A, 250V~	DIN VDE 0620-1:2010-02	VDE40008940
Alt.-cord	I-Sheng Electric Wire & Cable Co. Ltd.	H05VV-F	0.75mm2 *3G	DIN EN 50525-2-11	VDE40015762
Alt.-appliance connector	Self-Man Industrial Co., Ltd.	SM-112	2.5A, 250V~	IEC 60320-1	VDE40015743
EU mains cord set for class II products (GlobTek part number 2074112M8703A(R))					
cord set	Self-Man Industrial Co., Ltd.	SH-037+SH-103+H03VVH2-F			see below
mains plug (Euro plug)	Self-Man Industrial Co., Ltd.	SH-037	2.5A, 250V~	DIN VDE 0620 Teil 101:1992-05 EN 50075:1990	VDE101016
cord	I-Sheng Electric Wire & Cable Co. Ltd.	H03VVH2-F	2×0.75mm2	DIN EN 50525-2-11	VDE40015762
appliance connector	Self-Man Industrial Co., Ltd.	SH-103	C7; 2.5A, 250V~	DIN EN 60320-1:2008-05 EN 60320-1:2001+ A1:2007	VDE40014796

Supplementary information:
[1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.

NOTE
For other parts refer to the table in the SIQ test report.

IEC 61558-2-16			
Clause	Requirement + Test	Result - Remark	Verdict

26	TABLE: Clearance And Creepage Distance Measurements					P
clearance cl and creepage distance dcr at/of:	**Up (V)**	**U r.m.s. (V)**	**Required cl (mm)**	**cl (mm)**	**required dcr (mm)**	**dcr (mm)**
line to neutral before fuse	340	240	2,4	4,6	2,5	4,6
primary to (functional) earth	340	240	2,4	6,1	2,5	6,1
primary to secondary on T1	526	278	5,2	>8,4	5,6	>8,4
primary to secondary on PCB	526	278	5,2	8,0	5,6	11,2
primary to secondary at optocoupler U2	400	255	4,8	7,7	5,1	7,7
primary to outer enclosure	526	278	5,2	8,2	5,6	>8,4
Supplementary information: Samples: GTM91120-3014.5-2.5-T3A; GT-91120-3048-T3A The values measured by SIQ have been verified.						

26	TABLE: Distance Through Insulation Measurements			P
Distance through insulation di at/of:	**U r.m.s. (V)**	**Test voltage (V)**	**Required di (mm)**	**di (mm)**
Enclosure	278	4000 Vac	0,46	1,5
primary to secondary (thin sheet)	278	2000 Vac	– [1)]	0,11
Supplementary information: Samples: GTM91120-3014.5-2.5-T3A; GT-91120-3048-T3A [1)] Required basic insulation between primary wire (enameled Cu wire) and secondary wire (TIW).				

Attachment: List of test equipment

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Equipment No.	Last Calibration date	Calibration due date
all	ambient		449	2015-07	2016-07
8.15	marking durability	Hexan	746	–	2018-04
18.3	dielectric strength	dielectric strength tester	730	2015-03	2016-03
26	distance	caliper	728	2015-05	2016-05

Attachment: Uncertainties of measurement

Type of measurement		Uncertainty of measurement (k=2)
Input power measurement	I<16A	±1,10%
	I<32A	±0,56%
	I>32A	±0,54%
Input current measurement	I<10A	±1,66%
	I<16A	±1,31%
	I<32A	±0,56%
	I>32A	±0,54%
Voltage measurement	by oscilloscope	±5,51%
	by meter	±1,87%
Resistance measurement		±1,70%
Touch/Leakage current measurement	15Hz≤f≤10kHz	±2,33%
	10kHz<f≤1Mhz, DC	±5,78%
Temperature measurement (by thermocouple)		±1,96°C
Time measurement	by oscilloscope (t<40s)	±0,23%
	by clock (t<100min)	±0,43%
Resistance of earthing measurement		±6,98mΩ
Insulation resistance test		±1,03%
Dielectric strength test		±2,90%
Force measurements		±3,13%
Mass measurements		±3,13%
Mechanical energy, Impact hammer test 0,50J		±0,04J
Linear dimension		±0,04mm
Torque		±0,22Nm
Angle		±0,9°
Humidity		±6,16%
Air pressure		±1,00%