File E342800
Project 12CA66833

January 31, 2013

REPORT

On

DIRECT PLUG-IN AND CORD CONNECTED CLASS 2 POWER UNITS

Globtek (Hong Kong) Ltd
Kowloon, Hong Kong

DESCRIPTION

PRODUCTS COVERED:

CNL, USL – Class 2 Battery Charger, Model GT-91126-0305-0.8.

GENERAL:

The product covered by this Report is a Class 2 Battery Charger intended for charging 3.7 V Li-ion type battery pack with maximum 2.9 Ah.

The unit consist of a Listed power supply (QQGQ/7), GLOBTEK (HONG KONG) LTD, Model GT-41078-0505-USB with LPS output connected to battery stand through detachable output cord. It provided with removable blade for connection to line voltage.

This unit does not include a grounding connection, and has no user accessible metal parts which are likely to become energized. It is intended for dry location use only.

CNL indicates investigation to Canadian Standard for Power Supplies With Extra-Low-Voltage Class 2 Outputs, CAN/CSA C22.2 No. 223-M91, Second Edition.

USL indicates investigation to the Standard for Class 2 Power Units, UL 1310, Sixth Edition.

ELECTRICAL RATINGS:

	Input		Output	
Part No.	Voltage (Vdc)	Current (mA)	Voltage (Vdc)	Current (mA)
GT-91126-0305-0.8	5	1000	Max 4.2	Max 800

CONSTRUCTION DETAILS:

Section General - The following construction items are described in the Section General.

Instruction Manual	Segregation
C-UL Requirements	Printed Wiring Boards
Abbreviations	Internal Wiring
Blades	Electrical Connections
Spacings	Insulation Tubing/ Sleeving
Markings	Corrosion Protection

Markings – See Sec. Gen. Also the following markings are provided:

* - “Class 2 Battery Charger”
- “Backfeed Protection”, “BFP”, or the equivalent

Cautionary Markings - See Sec. Gen. Also provided with the following markings:

“CAUTION – Risk of Electric Shock” and the following or equivalent, “Dry Location Use Only”.

“CAUTION – Risk of Injury” or “CAUTION – Risk of Fire” and one of the following or the equivalent:

- “Connect only to equipment specified in the instructions” or “For use with GLOBTEK, Model GT-41078-0505-USB adapter only”.
- “Refer to the instruction manual for the size, type, and number of batteries to be charged” or “Charge only the 3.7 Vdc Li-ion battery packs.”

Illustrations - The following illustrations are included in this Report.

ILL.	Description
1	Printed Wiring Board Component and Trace Layouts
2	Mechanical Drawing of Enclosure

General – The general design, shape, and arrangement shall be as illustrated in the following figures, except where variations are specifically described.

CLASS 2 BATTERY CHARGER, MODEL GT-91126-0305-0.8 - FIG. 1

General - Fig. 1 shows the overall view.

1. Power Supply - Listed (QQGQ/7), GLOBTEK (HONG KONG) LTD (E341351), Model GT-41078-0505-USB, rated input 100-240 V ac, 50-60 Hz, 0.2 A, output rated 5 V dc, 1 A, Report Reference No. E341351-A19.

   Alternate - Listed (QQGQ/7), GLOBTEK INC (E170507), Model GT-41078-0505-USB, rated input 100-240 V ac, 50-60 Hz, 0.2 A, output rated 5 V dc, 1 A, Report Reference No. E170507-A30.

2. Battery Stand Enclosure - R/C (QMFZ2), SABIC INNOVATIVE PLASTICS B V (E45329), PC/ABS, Type C2950, all color, rated V-0, 75°C, minimum 2 mm thick. See ILL. 2 for details.

3. LED Lens Covers - Two provided. Polycarbonate. Hot stacking into Enclosure Cover by two posts. See ILL. 2 for details

*4. Interconnecting Cable between Power Supply and Battery Stand – Jacketed multi-conductor cable. Detachable, minimum 24 AWG x 2C for electrical transfer, minimum 28 AWG x 2C for signal transfer. Rated minimum **60°C.** Minimum 1.8 m and maximum 3.05 m external length, with individual conductor insulation plus the thickness of the jacket not less than 0.33 mm thick. Terminates in a data port connector.

CLASS 2 BATTERY CHARGER, MODEL GT-91126-0305-0.8 - FIG. 2.

General – Fig. 2 shows the internal view.

*1 Printed Wiring Board (PWB) – R/C (ZPMV2), rated minimum V-1, minimum 105°C. Overall measures **51.1** by **31.2** mm, 1.6 mm thick. Physically fitted between Enclosure Base and Enclosure Cover.

2. USB Connector (CON1) – Plated copper alloy or stainless steel. Secured on PWB by soldering. Located in secondary circuitry.

3. Output Connector (CON2) – Secured on PWB by soldering. Located in secondary circuitry.

SAMPLES:

Samples of the Class 2 Battery Charger, Model GT-91126-0305-0.8, as indicated below and constructed as described herein, was submitted by the manufacturer for examination and test.

GENERAL:

Test results relate only to the items tested.

The following tests conducted in accordance with UL 1310 were considered representative of the same tests required by Canadian Standard, CAN/CSA C22.2 No. 223:

The following tests were conducted.

Working Voltage Measurements:	24.2
(Electrical Spacings, CSA C22.2 No. 223):	(4.10)
Leakage Current Test:	26(6.5)
Dielectric Voltage Withstand Test After Leakage Current Test:	27
Leakage Current Test After Humidity Exposure:	27
Dielectric Voltage Withstand Test After Humidity Exposure:	27
Maximum Output Voltage Test:	28
(Open-Circuit Secondary Voltage, CSA C22.2 No.223)	(6.2.1)
Normal Input Test:	50.2
(Rated Input, CSA C22.2 No.223)	(6.2.2)
Maximum Input Test:	29
(Rated Input, CSA C22.2 No. 223)	(6.2.2)
Output Current And Power Test (5 S):	30
(Maximum Output Current And Power, CSA C22.2 No.223)	(6.2.4)
Dielectric Voltage Withstand Test After Output Current And Power Test [Not Inherently Limited Units Or CSA C22.2 No. 223 Units]:	34
(Dielectric Strength, CSA C22.2 No. 223)	(6.4)
Full-Load Output Current Test:	32
Normal Temperature Test - General:	33
(Temperature (Normal), CSA C22.2 No. 223)	(6.3)
Normal Temperature Test - Specific Battery:	33
(Temperature (Normal), CSA C22.2 No. 223)	(6.3)
Dielectric Voltage Withstand Test:	34
(Dielectric Strength, CSA C22.2 No.223)	(6.4)

GENERAL: (CONT'D)

Abnormal Tests:	39 (6.7)
Output Loading Test - Abnormal:	39.2, 39.2a
(Secondary Circuit Protection, CSA C22.2 No. 223)	(6.6)
Dielectric Voltage Withstand Test After Output Loading Test:	34
(Dielectric Strength, CSA C22.2 No. 223)	(6.4)
Component Breakdown Test - Abnormal:	39.6
(Abnormal, CSA C22.2 No. 223)	(6.7)
Dielectric Voltage Withstand Test After Component Breakdown Test:	34
(Dielectric Strength, CSA C22.2 No. 223)	(6.4)
Backfeed Protection Test (Component Fault) - Abnormal:	39.8
Impact Test: (Direct Plug-In Unit)	46.2
(Drop And Impact Test, CSA C22.2 No. 223)	(6.9)
Dielectric Voltage Withstand Test After Impact Test:	34
(Dielectric Strength, CSA C22.2 No. 223)	(6.4)
Mold Stress Relief Distortion Test:	Table 25.1

TEST RECORD SUMMARY:

The results of this investigation, including construction review and testing, indicate that the product evaluated comply with the applicable requirements in the Standard for Class 2 Power Units, UL 1310, 6th Edition, dated August 8, 2005, Last Revised date July 25, 2012, and Canadian Standard for Power Supplies with Extra-Low-Voltage Class 2 Outputs, CAN/CSA C22.2 No. 223, 2nd Edition, dated June 1991, Last Revised date September, 2009 and, therefore, such product is judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

CONCLUSION

Samples of the product covered by this Report have been found to comply with the requirements covering the category and the product is found to comply with UL's applicable requirements. The description and test result in this Report are only applicable to the sample(s) investigated by UL and does not signify UL certification or that the product(s) described are covered under UL's Follow-Up Service Program. When covered under UL's Follow-Up Service Program, the manufacturer is authorized to use the UL Listing Mark on such products which comply with UL's Follow-Up Service Procedure and any other applicable requirements of UL LLC. The Listing Mark of UL LLC on the product, or the UL symbol on the product and the Listing Mark on the smallest unit container in which the product is packaged, is the only method to identify products investigated by UL to published requirements and manufactured under UL's Listing and Follow-Up Service.

This Report is intended solely for the use of UL LLC (UL) and the Applicant for establishment of UL certification coverage of the described product(s) under UL's Follow-Up Service. UL retains all rights, title and interest (including exclusive ownership) in this Report and all copyright therein. The Applicant or its designated agent shall not disclose or otherwise distribute this Report or its contents to any third party, except as required for purposes of compliance with laws, regulations, or other existing agreements or schemes in which UL is currently a participant. Any other use of this Report including, without limitation, evaluation or certification by a party other than UL is prohibited and renders the Report null and void. UL shall not incur any obligation or liability for any loss, expense, or punitive damages, arising out of, or in connection with, the use or reliance upon the contents of this Report to anyone other than the Applicant as provided in the agreement between UL and Applicant. Any use or reference to UL's name or certification mark(s) by anyone other than the Applicant in accordance with the agreement is prohibited without the express written approval of UL. Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. UL shall not otherwise be responsible to anyone for the use of or reliance upon the contents of this Report.

Report by:

Tavia Wong
Project Engineer

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Compliance Review Conducted by: Tavia Wong (Printed Name) Tavia Wong (Signature) Date 2012-12-28

When a measurement is needed to determine compliance with a clause the actual measured value must be recorded in the space provided. A simple 'Yes' / 'No' response is not sufficient. (See 'UL Certification Program - Work Instructions for Completion of Construction Review Datasheets (CRD) For C-UL Mark' (00-OP-W0038) for details).

CONSTRUCTION COMPLIANCE REVIEW RECORD
Sample Identification -

Sample Card No.	Date Received	Sample No.	Manufacturer, Product Identification and Ratings
1529363	2012-12-17	S1	GLOBTEK (HONG KONG) LTD Class 2 Battery Charger Model GT-91126-0305-0.8 Input: 5 Vdc, 1000 mA Output: 4.2 Vdc, 800 mA

[ ] Indications of compliance apply to all samples identified with specific indications of compliance included for construction differences of the different samples.

Measurement Instrument Information -

Inst. ID No.	Instrument Type	Function/Range	Last Cal. Date	Next Cal. Date
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

[ ] UL measurement equipment information is recorded on Meter Use in UL's Laboratory Project Management (LPM) database".

The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID No. below corresponds to the Inst. ID No. above.

Inst. ID No.	Make/Model/Serial Number/Asset No.
-	-
-	-
-	-

[x] Measurement instrument information is recorded on UL's Laboratory Project Management (LPM) database. (This statement may be selected only if CRDs are

Comment [GE FG1]: Page: 1
Based on requirement in GLPM, Par. 5.2.7

Comment [GE FG2]: Page: 1
Based on requirement in GLPM, Par. 5.2.5

Comment [GE FG3]: Page: 1
Based on requirement in GLPM, Par. 5.2.6

Comment [GE FG4]: Page: 1
Based on requirement in GLPM, Par. 5.2.1, 5.2.2, 5.2.3

Comment [GE FG8]: Page: 1
Based on requirement in LOM, Par. 6.3 D and CIP Manual

Comment [GE FG9]: Page: 1
Based on requirement in LOM, Par. 6.3 E and CIP Manual

Comment [GE FG5]: Page: 1
Based on requirement in LOM, Par. 6.3 B and CIP Manual

Comment [GE FG6]: Page: 1
Based on requirement in LOM, Par. 6.3 A and CIP Manual

Comment [GE FG7]: Page: 1
Based on requirement in LOM, Par. 6.3 C and CIP Manual

Comment [GE FG10]: Page: 1
Based on requirement in LOM, Par. 6.3 B, CIP Manual

1.2.4.0.3 All instruments used to record test data or environmental conditions shall be recorded and correlation made between the test performed and specific instruments used. Information recorded shall include:
A.Instrument type.
B.Unique identification of instrument (e.g., manufacturer's name, model number, serial number, asset number).
C.Range utilized for multi-range equipment.
D.Last calibration and calibration due date.

2.2.6.0.3 All instruments used to record test data or environmental conditions shall be recorded ar ... [1]

Compliance Review Conducted by: Tavia Wong (Printed Name) Tavia Wong (Signature) Date 2012-12-28

completed at a UL facility)

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CONSTRUCTION COMPLIANCE REVIEW:

The sample was reviewed for compliance with the construction requirements in the following Standard and compliance with applicable construction requirements is noted below.

Standard CAN/CSA-C22.2 No. 223-M91, Power Supplies with Extra-Low-Voltage Class 2 Outputs Edition 2009

Clause/Par. Reference and Construction Requirement	Comply YES	NO	N/A	COMMENTS/MEASUREMENTS	INST. ID NO.
4. Construction					
4.1 General					
4.1.1 Characteristics	X				
4.1.2 Components not intended for power	X				
4.1.3 Component parts	X				
4.1.4 Mass and centre of mass			X		
4.1.5 Determination of moment of force and mass			X		
4.1.6 Capacitor stored energy			X		
4.2 Sources of Fire Hazard	X				
4.3 Enclosures					
4.3.1 Prevention of access	X				
4.3.2 Supplementary decorative enclosures			X		
4.3.3 Enclosure compliance after drop and impact tests	X			Refer to datasheet for details	
4.3.4 Nonmetallic enclosures	X			R/C (QMFZ2), SABIC INNOVATIVE PLASTICS B V (E45329), PC/ABS, Type C2950, rated V-0, 75C, minimum 2.0 mm thick.	MF023
4.3.5 Protection against corrosion of iron and steel parts			X		
4.3.6 Openings in Enclosures					
4.3.6.1 Accessibility of live parts			X	NO OPENING THAT ACCESS TO LIVE PARTS	
4.3.6.2 Compliance with impact test			X		
4.4 Mechanical Assembly			X		

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Clause/Par. Reference and Construction Requirement	Comply YES	NO	N/A	COMMENTS/MEASUREMENTS	INST. ID NO.
4.5 Supply Connections					
4.5.1 Direct Plug-In Power Supplies					
4.5.1.1 Blade assembly			X		
4.5.1.2 No mounting tab			X		
4.5.1.3 Duplex receptacle access			X		
4.5.1.4 Enclosure perimeter			X		
4.5.2 Cord-Connected Power Supplies					
4.5.2.1 Provision of a flexible cord and attachment plug or cord set			X		
4.5.2.2 Supply cord type SPT-2 or equivalent			X		
4.5.2.3 Supply cord type SPT-1 or equal			X		
4.5.2.4	-	-	-	DELETED	
4.5.2.5 A power supply cord shall not pass through the same strain relief as an output cord			X		
4.5.2.6 Enclosed separated conductors			X		
4.6 Internal Wiring					
4.6.1 Use of suitable insulation			X	NO INTERNAL WIRING	
4.6.2 Circuit separation			X		
4.6.3 Securing of solder connections			X		
4.6.4 Internal quick disconnect terminals and connectors of the blade and jaw configuration			X		
4.7 Electrical Insulating Materials					
4.7.1 Materials on which bare live parts are			X	CHARGING STAND WAS SUPPLIED BY A LISTED (QQGQ/7) LPS POWER SUPPLY	
4.7.2 Materials that contact primary circuit bare live parts and exposed metal parts or secondary circuits			X		
4.8 Transformers and Magnetic Components					
4.8.1 Transformers shall comply with the requirements of Clauses 4.8.2 to 4.8.9			X	TRANSFORMER WAS EMPLOYEED IN THE LISTED (QQGQ/7) POWER SUPPLY	

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Clause/Par. Reference and Construction Requirement	Comply YES	NO	N/A	COMMENTS/MEASUREMENTS	INST. ID NO.
4.8.2 Insulation locations			X		
4.8.3 Insulation moisture-absorption resistant			X		
4.8.4 Normal operation above Class 105 limits			X		
4.8.5 Insulation between the primary and secondary windings, between secondary windings, and between the primary winding and the core			X		
4.8.6 0.8 mm bent-up edge			X		
4.8.7 Crossover lead insulation or spacing			X		
4.8.8 Crossover lead insulation options			X		
4.8.9 Class 2 secondary crossover lead exception			X		
4.8.10 Moulded bobbin transformer having a slot for the crossover lead			X		
4.8.11 Insulation between the primary lead connections and the adjacent winding and between secondary lead connections and the primary winding			X		
4.8.12 Protective devices implanted within transformers			X		
4.9 Switches			X		
4.10 Electrical Spacings					
4.10.1 Spacings per Tables 1 and 2			X	NO SWITCH	
4.10.2 Spacings within components			X		
4.10.3 Provision of the minimum required spacings with 1 N force			X		
4.10.4 The spacing at exposed field wiring terminal screws			X		
4.10.5 The spacings for live parts on the load side of overcurrent devices			X		

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Clause/Par. Reference and Construction Requirement	Comply YES	NO	N/A	COMMENTS/MEASUREMENTS	INST. ID NO.
4.10.6 Printed wiring board spacings			X		
4.10.7 Spacings of extra-low-voltage secondary circuits			X		
4.11 Output Connections					
4.11.1 Provision of wire binding screws, terminal studs, jacks, or a permanently attached cord on power supplies Provision of telephone plugs and jacks for use as output connectors on power supplies intended for use with designated end-use equipment	X			BATTERY CONTACT PLATE PROVIDED	
4.11.2 Non-standard receptacles or attachment plugs			X		
4.11.3 Polarity marked or polarized connector	X				
4.11.4 Output connectors mounted on the enclosure			X		
4.11.5 Terminal plate for a wire binding screw or stud			X		
4.11.6 A wire binding screw or terminal shall be not smaller than M3.5 or No. 6			X		
4.11.7 A screw or stud shall be of brass or other nonferrous metal or plated steel			X		
4.11.8 Field wiring terminals prevented from movement			X		
4.12 Strain Relief and Blade Retention					
4.12.1 Provision of strain relief for flexible cords			X		
4.12.2 Specs of the strain relief			X		
4.12.3 A knot in the supply cord			X		
4.12.4 The blades and grounding pin blade retention			X		
4.13 Open-Circuit Secondary Voltage					

Compliance Review Conducted by: Tavia Wong (Printed Name) Tavia Wong (Signature) Date 2012-12-28

Clause/Par. Reference and Construction Requirement	Comply YES	NO	N/A	COMMENTS/MEASUREMENTS	INST. ID NO.
4.13.1 The open-circuit secondary voltage shall not be more than 30 V rms (42.4 V peak or dc)	X				
4.13.2 Interconnection of the output terminals	X				
4.13.3 Interconnection marking			X		
4.14 Provisions for Limiting Output Current					
4.14.1 Limitation of output current	X				
4.14.2 Use of an internal overcurrent device	X				
4.14.3 Acceptability of special-purpose fasteners			X		
4.15 Secondary Circuit Protection	X				
4.16 Grounding and Bonding					
4.16.1 Exposed non-current-carrying metal parts of power supplies shall be grounded in accordance with CSA-C22.2 No. 0.4			X		
4.16.2 Grounding pin for direct plug-in unit			X		
4.16.3 Impedence testing based on primary protector			X		
4.17 Printed Wiring Boards					
4.17.1 Printed-wiring boards used in enclosures that have openings			X		
4.17.2 Printed-wiring boards that contain only components in Class 2 circuits	X			PWB OF CHARGING STAND LOCATED AT CLASS 2 CIRCUIT SEE TEST DATASHEET FOR RESULT	
5. Marking					
5.1 Permanent and visible markings	X				
5.2 Applicable warnings	X				
5.3 Polarity	X				
5.4 Telephone type output connectors for designated use			X		
5.5 Telecommunication applications			X		

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Clause/Par. Reference and Construction Requirement	Comply YES	NO	N/A	COMMENTS/MEASUREMENTS	INST. ID NO.
5.6 Duty cycle			X		

Page: 1
Based on requirement in LOM, Par. 6.3 B, CIP Manual

1.2.4.0.3 All instruments used to record test data or environmental conditions shall be recorded and correlation made between the test performed and specific instruments used. Information recorded shall include:
A.Instrument type.
B.Unique identification of instrument (e.g., manufacturer's name, model number, serial number, asset number).
C.Range utilized for multi-range equipment.
D.Last calibration and calibration due date.

2.2.6.0.3 All instruments used to record test data or environmental conditions shall be recorded and correlation made between the test performed and the specific instruments used. Information recorded shall include:
A.Instrument type.
B.Unique identification of instrument (e.g. manufacturer's name, model number, serial number, asset number).
C.Range utilized for multi-range equipment.
D.Last calibration and calibration due dates.

LABORATORY DATA PACKAGE

Number of pages in this package __78__ **[** including additional pages _-___ **]**
(Fill in when using printed copy as record)

TEST LOCATION:					
[x]UL or Affiliate	**[**WTDP	**[]**CTDP	**[]**TPTDP	**[]**TCP	**[]**PPP
	[]WMT	**[]**TMP	**[]**SMT		
Company Name	UL International Limited				
Address	Hong Kong				

CLIENT INFORMATION	
Company Name	GLOBTEK (HONG KONG) LTD
Address	Unit 1402, Benson Tower 74 Hung To Rd Kwun Tong Kowloon, Hong Kong

AUDIT INFORMATION:				
[x] Description of Tests	Per Standard No.	**[x]** UL 1310	Edition/ Revision Date	Sixth / 2012-07-25
		[x] CSA C22.2 No. 223		Second /September 2009
		[ ] TIL No. I-42		First /2006-09-15

[X] Tests Conducted by +	Wayne Chow	Wayne Chow
	Printed Name	Signature
[] UL Staff conducting or witnessing testing (WTDP, TMP, WMT only) **[]** UL Staff supervising UL Staff in training **[]**Authorized Signatory (CTDP, TPTDP, TCP, PPP, SMT)	Printed Name	Signature, and include date for CTDP, TPTDP, TCP, PPP, WMT, TMP, SMT
Reviewed and accepted by qualified Project Handler	Tavia Wong	Tavia Wong
	Printed Name	Signature

TESTS TO BE CONDUCTED:

Test No.	Done +++	Test Name	**[X]** Comments/Parameters **[]**Tests Conducted by ++
1.	X	WORKING VOLTAGE MEASUREMENTS:	Pass
2.	X	LEAKAGE CURRENT TEST:	Pass

TESTS TO BE CONDUCTED:			
Test No.	Done +++	Test Name	**[X]** Comments/Parameters **[]**Tests Conducted by ++
3.	X	DIELECTRIC VOLTAGE WITHSTAND TEST AFTER LEAKAGE CURRENT TEST:	Pass
4.	X	LEAKAGE CURRENT TEST AFTER HUMIDITY EXPOSURE:	Pass
5.	X	DIELECTRIC VOLTAGE WITHSTAND TEST AFTER HUMIDITY EXPOSURE:	Pass
6.	X	MAXIMUM OUTPUT VOLTAGE TEST:	Pass
7.	X	NORMAL INPUT TEST:	Pass
8.	X	MAXIMUM INPUT TEST:	Pass
9.	X	OUTPUT CURRENT AND POWER TEST (5 s):	Pass
10	X	DIELECTRIC VOLTAGE WITHSTAND TEST AFTER OUTPUT CURRENT AND POWER TEST [NOT INHERENTLY LIMITED UNITS OR CSA C22.2 NO. 223 UNITS]:	Pass
11	X	FULL-LOAD OUTPUT CURRENT TEST:	Pass
12	X	NORMAL TEMPERATURE TEST - GENERAL:	Pass
13	X	NORMAL TEMPERATURE TEST - SPECIFIC BATTERY:	Pass
14	X	DIELECTRIC VOLTAGE WITHSTAND TEST:	Pass
		ABNORMAL TESTS:	
15	X	OUTPUT LOADING TEST - ABNORMAL:	Pass
16	X	DIELECTRIC VOLTAGE WITHSTAND TEST AFTER OUTPUT LOADING TEST:	Pass
17	X	COMPONENT BREAKDOWN TEST - ABNORMAL:	Pass
18	X	DIELECTRIC VOLTAGE WITHSTAND TEST AFTER COMPONENT BREAKDOWN TEST:	Pass
19	X	BACKFEED PROTECTION TEST (COMPONENT FAULT) - ABNORMAL:	Pass
20	X	IMPACT TEST: (DIRECT PLUG-IN UNIT)	Pass
21	X	DIELECTRIC VOLTAGE WITHSTAND TEST AFTER IMPACT TEST:	Pass
22	X	MOLD STRESS RELIEF DISTORTION TEST:	Pass

Instructions -

+ - When all tests are conducted by one person, printed name and signature can be inserted here instead of including printed name and signature on each page containing data. Must indicate number of pages in the data package.
++ - When test conducted by more than one person, printed name and signature of person conducting the test can be inserted next to the test name instead of including printed name and signature on each page containing data. Must indicate number of pages in the data package.
+++ - Use of this field is optional and may be employed differently.

Special Instructions –

[x] Unless otherwise specified in the individual test Methods and Results, the units were operated as follows:

[x] Direct Plug-In Units - For all tests in which the units were energized from a source of supply the units were operated from a 15 A duplex receptacle with a nonmetallic faceplate. The receptacle was mounted on a nonmetallic outlet box having a volume of not more than 12 in.^{3}. The outlet box was mounted in a 3-1/2 in. thick wall section with gypsum wallboard surfaces and loosely filled with fiberglass insulation.

[ ] Supply Circuit - The units were connected to a 15 A branch circuit supply adjusted to provide
[ ] 120 V, 60 Hz
[ ] _____

[x] Supply Circuit - The following tabulates the 15 A branch circuit supply used in each test.

Test	Supply Circuit, Volts/Hz
Working Voltage Measurement	240 V/60 Hz
Leakage Current	240 V/60 Hz
Maximum Output Voltage	100 V/60 Hz, 240 V/60 Hz
Normal Input (*)	100 V/50 Hz, 240 V/50 Hz 100 V/60 Hz, 240 V/60 Hz
Maximum Input (*)(#)	100 V/50 Hz, 240 V/50 Hz
Output Current and Power (#)	100 V/60 Hz, 240 V/60 Hz
Calibration of Overcurrent Protection Devices (#)	-
Full-Load Output Current (*)(#)	100 V/50 Hz, 240 V/50 Hz
Normal Temperature (*)(#)	100 V/50 Hz, 240 V/50 Hz
Overload and Endurance (*)(#)	-
Overload on Primary Switches (#)	-
Overload on Secondary Switches (#)	-
Operation (#)	-
Output Loading (#)	_240__ V/60 Hz
Transformer Burnout (#)	_240__ V/60 Hz
Backfeed Protection (#)	_240__ V/60 Hz
Reverse Polarity (#)	-
Switch Position (#)	-
Component Malfunction or Breakdown (#)	-
Printed Wiring Board Abnormal Operation (#)	_240__ V/60 Hz
Backfeed Protection (#)	-
Rod Pressure	-
Input Blade Endurance (*)(#)	-

Remark: Test voltage confirmed by engineer, Wayne Chow, 2013-01-29

(*) - Note to Engineer: These tests are to be conducted at lowest rated frequency. All other tests are to be conducted at highest rated frequency.
(#) – Note to Engineer: These tests together with the Test on Insulating Materials are to be conducted in an ambient air temperature range of 21-30°C, except for the Normal Temperature Test which may be conducted in an ambient air temperature range of 10-40°C when no overtemperature protectors are provided.

[x] Normal Load -

[ ] Each AC output was resistively loaded to its rated output current (+).

V Output	Output Current	
	[ ] A **[ ]** mA	For Model
	[ ] A **[ ]** mA	For Model
	[ ] A **[ ]** mA	For Model

[x] Each DC output was loaded with a ~~**[**10,000 µF**]**~~ **[**22,000 µF**]** capacitor in parallel with a variable resistor adjusted to result in the rated output current (+).

V Output	Output Current		
4.2	800	**[ ]** A **[x]** mA	For Model GT-91126-0305-0.8
		[ ] A **[ ]** mA	For Model
		[ ] A **[ ]** mA	For Model

[ ] (+) - For outputs rated in W or VA, the rated output current was determined by the quotient of the rated W or VA and rated V.

[x] For tests which reference exposed conductive surfaces or accessible dead metal, the conductive surfaces consisted of

[x] metal foil with an area of 10 by 20 cm (3.94 by 7.8 in.), or the same size of the surface if the surface was less than 10 by 20 cm, wrapped around the enclosure.

[ ] the grounding pin, since all exposed surfaces were electrically bonded together.

[ ] During all tests except for the Normal Temperature and Full Load Output Current Tests user replaceable fuses were replaced by the largest current rated fuse which the fuseholders would accept.

Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient
Temperature, °C 21-30

Tested by: _____ Date _____

Printed Name Signature

TEST EQUIPMENT INFORMATION

Inst. ID No.	Instrument Type	Test Number +, Test Title or Conditioning	Function /Range	Last Cal. Date	Next Cal. Date

+ - If Test Number is used, the Test Number must be identified on the data sheet pages or on the Data Sheet Package cover page.

The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID No. below corresponds to the Inst. ID No. above.

Inst. ID No.	Make/Model/Serial Number/Asset No.

[X]UL test equipment information is recorded on Meter Use in UL's Laboratory Project Management (LPM) database.

Tested by: _____ Date _____
Printed Name Signature

TEST SAMPLE IDENTIFICATION:

The table below is provided to provide correlation of sample numbers to specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received	[] Test No.+	Sample No.	Manufacturer, Product Identification and Ratings
1529363 1529364 1529366	2012-12-17	See individual page	S1 S1 S1-S6	GLOBTEK (HONG KONG) LTD Class 2 Battery Charger Model GT-91126-0305-0.8 Input: 5 Vdc, 1000 mA Output: 4.2 Vdc, 800 mA
1529367 1529368 1529369	2012-12-17	See individual page	S1 S1 S1-S3	Listed Switching Power Adapter, GLOBTEK (HONG KONG) LTD Model GT-41078-0505-USB Input: 100-240 V ac, 50-60 Hz, 0.2 A Output: 5 V dc, 1 A
1539044	2013-01-07		S1	
1533569 1533570 1533571	2012-12-21	See individual page	S1 S1 S1-S2	Lithium-ion Battery Model SB-202D, 2900 mAh
1539045 1539046 1539047	2012-01-07	See individual page	S1	GLOBTEK (HONG KONG) LTD Interconnecting cable

+ - If Test Number is used, the Test Number or Numbers the sample was used in must be identified on the data sheet pages or on the Data Sheet Package cover page.

[] Sampling Procedure -

Tested by: _____ Date _____
Printed Name Signature

WORKING VOLTAGE MEASUREMENTS: 24.2
(ELECTRICAL SPACINGS, CSA C22.2 No. 223): (4.10)

METHOD

The unit was connected to the supply circuit and loaded to result in the maximum working voltage measurement. The working voltage present between the locations indicated below were measured.

RESULTS

Location	V peak	V rms
T1 Pin 1-P+	366	186
T1 Pin 2-P+	406	223
T1 Pin 4-P+	354	191
T1 Pin 5-P+	380	192
T1 Pin 1-P-	340	186
T1 Pin 2-P-	410	232
T1 Pin 4-P-	346	190
T1 Pin 5-P-	420	195
Between CY1 pins	342	186
PC1 Pin 1-3	346	189
PC1 Pin 2-3	344	189
PC1 Pin 1-4	344	189
PC1 Pin 2-4	342	188

Ambient Temperature, ˚C	25.9

Test date: 2013-01-18, Sample no.: 1529368S1, 1529366S4

Tested by: _____ Date _____
Printed Name Signature

LEAKAGE CURRENT TEST: 26(6.5)

METHOD

An as received sample was connected in accordance with the Leakage-current measurement circuit specified in UL 1310. Under normal load conditions the leakage current was measured:

(a) between exposed conductive surfaces and the grounded pole of the supply circuit.

(b) between output circuits and the grounded pole of the supply circuit.

(c) between output circuits and exposed conductive surfaces.

(d) with output circuits conductively connected to exposed conductive surfaces, between output circuits/exposed conductive surfaces and the grounded pole of the supply circuit.

RESULTS

Model	GT-91126-0305-0.8	Measured Leakage Current, mA							
		Switch 2 Position 1				Switch 2 Position 2			
Condition	Switch S1	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)
As Received	Open	+	0.055	+	0.055	+	0.055	+	0.055
	Closed								
	0-5 s	+	0.03	+	0.03	+	0.03	+	0.03
	5 s - 10 min	+	0.03	+	0.03	+	0.03	+	0.03
	10 min - thermal stability	+	0.03	+	0.03	+	0.03	+	0.03

Sample no.: 1529367S1, 1529366S3, Test date: 2013-01-24

Ambient Temperature, ˚C	24.9

Key "+" when less than 0.005 mA.

[X] The maximum measured leakage current did not exceed the allowable 0.5 mA rms for a portable unit.

~~**[ ]** The maximum measured leakage current did not exceed the allowable 0.75 mA rms for a stationary unit.~~

[ ] The maximum measured leakage current exceeded the allowable 0.5 ma rms for a portable unit.

~~**[ ]** The maximum measured leakage current exceeded the allowable 0.75 ma rms for a stationary unit.~~

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST AFTER LEAKAGE CURRENT TEST: 27

METHOD

One min following the preceding Leakage Current Test, the following potentials were gradually applied and maintained for one min.

$[x] __1594___ V ac between primary circuits and exposed conductive surfaces ~~(+)~~.

$[x] 1594_____ V ac between primary and secondary circuits ~~(+)~~.

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[x] 500 V ac between secondary circuits and exposed conductive parts ~~**[**with common connections disconnected**]** (+)~~.

[ ] _____ V dc between the leads of across-the-line capacitors.

[ ] _____ V ac between different windings of inductors located in primary circuits.

~~(+) - The AC potential resulted in excessive leakage through capacitors. Therefore, the capacitors were removed from the circuit for the AC potential. With the capacitors connected in the circuit, the unit was subjected to potential of 1.414 times the AC rms potential.~~

$ - The test voltage was determined from the formula: 1000 + 2 x (Max. V peak value obtained in WORKING VOLTAGE MEASUREMENTS x 0.707) or 1480Vac, whichever higher.

RESULTS

[X] The spacings and insulation withstood the application of the specified potentials for one min without indication of breakdown.

[ ] An indication of dielectric breakdown occurred during testing between

Remark: Test voltage=1000Vac+420Vac*2*0.707= 1594Vac, Wayne Chow, 2013-01-18
This does not comply with UL 1310.

Dielectric Test Observations:

Tested by: _____ Date _____

Printed Name Signature

Ambient Temperature, ˚C	22.6

Sample no. and test date: See page 10, Wayne Chow, 2013-01-24

Tested by: _____ Date _____
Printed Name Signature

LEAKAGE CURRENT TEST AFTER HUMIDITY EXPOSURE: 27

METHOD

A test sample was placed in a humidity chamber having a relative humidity of 88 ± 2% at a temperature of 32 ± 2°C (89.6 ± 3.6°F). At the end of 48 hours, the test sample was removed and placed on an insulated surface, and the Leakage Current Test was repeated.

RESULTS

Model	GT-91126-0305-0.8	Measured Leakage Current, mA							
		Switch 2 Position 1				Switch 2 Position 2			
Condition	Switch S1	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)
Humidity Conditioned	Open	+	0.055	+	0.055	+	0.055	+	0.055
	Closed								
	0-5 s	+	0.03	+	0.03	+	0.03	+	0.03
	5 s - 10 min	+	0.03	+	0.03	+	0.03	+	0.03
	10 min - thermal stability	+	0.03	+	0.03	+	0.03	+	0.03

Start		Stop	
Date	Time	Date	Time
2013-01-22	09:30	2013-01-24	09:30

Conditioning Temperature, °C	32
Conditioning humidity, %	88

Ambient Temperature, °C	24.9

Key "+" when less than 0.005 mA.

[X] The maximum measured leakage current did not exceed the allowable 0.5 mA rms for a portable unit.

~~**[ ]** The maximum measured leakage current did not exceed the allowable 0.75 mA rms for a stationary unit.~~

[ ] The maximum measured leakage current exceeded the allowable 0.5 ma rms for a portable unit.

~~**[ ]** The maximum measured leakage current exceeded the allowable 0.75 ma rms for a stationary unit.~~

Sample no.: 1529369S3, 1529366S5, Test date: 2013-01-24

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST AFTER HUMIDITY EXPOSURE: 27

METHOD

One min following the preceding Leakage Current Test after Humidity Exposure, the following potentials were gradually applied and maintained for one min.

$[x] __1594___ V ac between primary circuits and exposed conductive surfaces ~~(+)~~.
$[x] __1594___ V ac between primary and secondary circuits ~~(+)~~.

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[x] 500 V ac between secondary circuits and exposed conductive parts ~~**[**with common connections disconnected**]** (+)~~.

[ ] _____ V dc between the leads of across-the-line capacitors.

[ ] _____ V ac between different windings of inductors located in primary circuits.

~~(+) - The AC potential resulted in excessive leakage through capacitors. Therefore, the capacitors were removed from the circuit for the AC potential. With the capacitors connected in the circuit, the unit was subjected to potential of 1.414 times the AC rms potential.~~

$ - The test voltage was determined from the formula: 1000 + 2 x (Max. V peak value obtained in WORKING VOLTAGE MEASUREMENTS x 0.707) or 1480Vac, whichever higher.

RESULTS

[X] The spacings and insulation withstood the application of the specified potentials for one min without indication of breakdown.

[ ] An indication of dielectric breakdown occurred during testing between

---

Remark: Test voltage=1000Vac+420Vac*2*0.707= 1594Vac, Wayne Chow, 2013-01-18
This does not comply with UL 1310.

Dielectric Test Observations:

Tested by: _____ Date _____
Printed Name Signature

Ambient Temperature, ˚C	22.6

Sample no.: 1529369S3, 1529366S5
Test date: 2013-01-24

Tested by: _____ Date _____
Printed Name Signature

MAXIMUM OUTPUT VOLTAGE TEST: 28

(OPEN-CIRCUIT SECONDARY VOLTAGE, CSA C22.2 No.223) (6.2.1)

METHOD A

The maximum output voltage under any load condition, including open-circuit, between any two output terminations were measured and recorded below.

~~METHOD B~~

~~Method A was repeated except the outputs were interconnected to result in the maximum peak output voltage.~~

RESULTS A ~~and B~~

Model	Supply condition	Output Terminations Measured	Loading Condition	Maximum Voltage Measured, V		
				[X]Peak	**[ ]**rms	**[X]**dc
GT-91126-0305-0.8	100V/60Hz	B+ to B-	O/C	4.44		2.63
	240V/60Hz	B+ to B-	O/C	4.44		1.66
	100V/60Hz	B+ to S/C (B- and NTC)	Resistive load	4.32		4.06
	240V/60Hz	B+ to S/C (B- and NTC)	Resistive load	4.32		4.02

Ambient Temperature, °C	25.8

Remark: (B+ to B-) cannot trigger the sample to operate, so that no pure DC voltage measured, cause only irregular (not consecutive) DC voltage provided, Wayne Chow, 2013-01-18

~~**[ ]** The output voltage did not exceed 42.4 V peak for sinusoidal or non-sinusoidal ac.~~

~~**[ ]** The output voltage exceeded the allowable 42.4 V peak for sinusoidal or non-sinusoidal AC. This does not comply with UL 1310.~~

Test date: 2013-01-18, sample no.: 1529368S1, 1529366S4

Tested by: _____ Date _____
Printed Name Signature

MAXIMUM OUTPUT VOLTAGE TEST: (CONT'D)

[X] The output voltage did not exceed ~~**[60 V]**~~ **[**42.4 V**]** for continuous dc.

[ ] The output voltage exceeded 60 V for continuous dc. This does not comply with UL 1310.

[ ] The output voltage exceeded 42.4 V for continuous dc. This does not comply with CSA C22.2 No. 223.

~~**[ ]** The output voltage did not exceed the values specified in UL 1310 for composite AC and DC voltages.~~

~~**[ ]** The output voltage exceeded the values specified in UL 1310 for composite AC and DC voltages. This does not comply with UL 1310.~~

~~**[ ]** The output voltage did not exceed 24.8 V for dc interrupted at a rate of 200 Hz or less with approximately 50% duty cycle.~~

~~**[ ]** The output voltage exceeded 24.8 V for dc interrupted at a rate of 200 Hz or less with approximately 50% duty cycle. This does not comply with UL 1310.~~

Maximum Output Voltage Test Observations:

LAB - Under the "Output Terminations Measured" column record specific details. For Method B (applicable to multi-output units) draw a sketch below illustrating the interconnection resulting in maximum voltage.

Tested by: _____ Date _____
Printed Name Signature

NORMAL INPUT TEST: 50.2
(RATED INPUT, CSA C22.2 No.223) (6.2.2)

METHOD

Each load was adjusted to result in normal load conditions. Without further adjustment of the load, the supply circuit was de-energized and the sample was allowed to cool to room temperature. The supply circuit was then re-energized and the primary input current **[**and power**]** to the sample was measured when temperatures on components stabilized (while delivering full load) after application of voltage to the primary.

RESULTS

Model	Supply Condition	Load	Measured Input V	Measured Input mA	Measured Input W	Marked Rated Input [mA]~~[W]~~[~~VA~~]
GT-91126-0305-0.8	100 V/50 Hz	Battery	100.0	90.92	4.465	200
		Resistive	100.0	98.25	5.104	200
	100 V/60 Hz	Battery	100.0	82.49	4.497	200
		Resistive	100.0	92.20	5.111	200
	240 V/50 Hz	Battery	240.0	43.342	4.360	200
		Resistive	240.0	45.275	4.628	200
	240 V/60 Hz	Battery	240.0	39.120	4.604	200
		Resistive	240.0	41.862	5.155	200

Ambient Temperature, ˚C	25.9

Model	Supply Condition	Load	Measured Input V	Measured Input mA	Measured Input W	Marked Rated Input [mA]~~[W]~~[~~VA~~]
GT-91126-0305-0.8	100 V/50 Hz	Battery	4.837	0.7174	3.482	1000
		Resistive	4.840	0.7961	3.850	1000
	100 V/60 Hz	Battery	4.815	0.7188	3.501	1000
		Resistive	4.843	0.8022	3.885	1000
	240 V/50 Hz	Battery	4.834	0.7251	3.505	1000
		Resistive	4.810	0.8022	3.859	1000
	240 V/60 Hz	Battery	4.842	0.7249	3.510	1000
		Resistive	4.810	0.8035	3.865	1000

Remark: the input measurement from Battery charger stand, Wayne Chow, 2013-01-29
Test date: 2013-01-18, sample no.: 1529368S1, 1529366S4, 1533571S1

[X] The marked rated input **[**current**]** ~~**[**power**]** **[**VA**]**~~ is at least 90% of the measured input.

[ ] The marked rated input **[**current**]** ~~**[**power**]** **[**VA**]**~~ is less than 90% of the measured input. This does not comply with UL 1310.

Tested by: _____ Date _____
Printed Name Signature

MAXIMUM INPUT TEST: 29
(RATED INPUT, CSA C22.2 No. 223) (6.2.2)

METHOD

Each load was adjusted, including short circuit, to result in maximum primary input current to the sample. Without further load adjustment, the supply circuit was de-energized and the sample was allowed to cool to room temperature. The supply circuit was then re-energized and the primary input current to the sample was measured 15 s after application of voltage to the primary.

RESULTS

Model	Supply Condition	Output Loading Condition	Measured Input		
			V	mA	W
GT-91126-0305-0.8	100 V/50 Hz	B+ to B-,#	-	-	-
		B+ to S/C (B- and NTC)	100.0	103.74	5.271
	240 V/50 Hz	B+ to B-,#	-	-	-
		B+ to S/C (B- and NTC)	240.0	45.514	4.676

Remark: #: Since condition (B+ to B-) cannot trigger the changer to operate, so that no measurement can be obtained, Wayne Chow, 2013-01-18

Ambient Temperature, ˚C	25.9

Sample no.: 1529368S1, 1529366S4, Test date: 2013-01-18

[X] The maximum input power did not exceed 660 watts.

[ ] The maximum input power exceeded 660 watts. This does not comply with UL 1310.

Note to Engineer -This requirement is for direct plug-in and cord-connected products.

Tested by: _____ Date _____
Printed Name Signature

OUTPUT CURRENT AND POWER TEST (5 S): 30

(MAXIMUM OUTPUT CURRENT AND POWER, CSA C22.2 No.223) (6.2.4)

METHODS A and B

[ ] During these tests each direct plug-in unit was draped with a double layer of cheesecloth and the **[**thermal protector**] [**fuse**]** was shorted.

[x] During these tests each unit was placed on a tissue covered soft wood surface and draped with a double layer of cheesecloth. The ~~**[**thermal protector**]~~ **[**fuse**]** was shorted.

[ ] The remaining outputs were **[**open circuited**] [**resistively loaded to result in minimum load**]**. The test was repeated for each output.

[ ] The remaining sections of a tapped winding were **[**open circuited**] [**resistively loaded to result in minimum load**]**. The test was repeated for each section of a tapped winding.

[ ] If the results indicated that the output under test met not inherently limited Class 2 specifications, the unit was subjected to the following Dielectric Voltage Withstand Test.

[x] For evaluation to CSA C22.2 No. 223, a Class A GFCI was connected in the test circuit. The output was connected to ground. The unit was subjected to the following Dielectric Voltage Withstand Test.

METHOD A

The output under test was resistively loaded, including short circuit, to result in maximum output current. Without further adjustment of the load, the supply circuit was de-energized and the sample was allowed to cool to room temperature. The supply circuit was then re-energized and the output current was measured 5 s after application of voltage to the primary. The current at 5 s was recorded.

METHOD B

The output under test was resistively loaded to result in maximum output power as determined by a watt meter. Without further adjustment of the load, the supply circuit was de-energized and the sample was allowed to cool to room temperature. The supply circuit was then re-energized and the output power was measured 5 s after application of voltage to the primary. The power at 5 s was recorded.

NOTE TO ENGINEER - This test is intended for a linear type unit which (a) employs an energy limiting impedance, such as a resistor or PTC device, (b) may employ a fuse or thermal protector, and (c) does employ additional electronic limiting components or circuits.

Tested by: _____ Date _____
Printed Name Signature

OUTPUT CURRENT AND POWER TEST (5 s): (CONT'D)

RESULTS A and B

			Maximum Output	
Model	Supply Condition	Output Measured	Current, **[**A**]** ~~[mA]~~	Power, W
GT-91126-0305-0.8	100 V/60 Hz	B+ to B-,#	-	-
		B+ to S/C (B- and NTC)	0.8080	3.311
	240 V/60 Hz	B+ to B-,#	-	-
		B+ to S/C (B- and NTC)	0.8085	3.322
GT-41078-0505-USB	100 V/60 Hz	Adaptor output	1.5850	7.767
	240 V/60 Hz	Adaptor output	1.5600	7.741

Remark: Since condition (B+ to B-) cannot trigger the changer to operate, so that no measurement can be obtained, Wayne Chow, 2013-01-18

Ambient Temperature, ˚C	25.9

Sample no.: 1529368S1, 1529366S4, Test date: 2013-01-18

[X] For inherently limited outputs:

~~**[ ]** The maximum output current and power did not exceed 8 A and 100 W, respectively, for AC outputs.~~

[X] The maximum output current and power did not exceed 8 A and 100 W, respectively, for DC outputs with a maximum voltage of 30 V.

[ ] The maximum output current and power did not exceed 150/Vmax A and 100 W, respectively, for DC outputs with a maximum voltage over 30 V.

~~**[ ]** The maximum output current exceeded the allowable 8 A for AC outputs. This does not comply with UL 1310.~~

[ ] The maximum output current exceeded the allowable 8 A for DC outputs with a maximum voltage of 30 V. This does not comply with UL 1310.

[ ] The maximum output current exceeded the allowable 150/Vmax A for DC outputs with a maximum voltage over 30 V. This does not comply with UL 1310.

[ ] The maximum output power exceeded the allowable 100 W. This does not comply with UL 1310.

Tested by: _____ Date _____
Printed Name Signature

OUTPUT CURRENT AND POWER TEST (5 s): (CONT'D)

[X] For inherently limited outputs evaluated to CSA C22.2 No. 223:

[X] The Class A GFCI did not open.

[ ] The Class A GFCI open. This does not comply with CSA C22.2 No. 223.

[x] The branch circuit did not open.

[ ] The branch circuit opened. This does not comply with CSA C22.2 No. 223.

[X] There was no resultant openings in the overall enclosure that would expose live or current-carrying parts as determined by the requirements of CSA C22.2 No. 223.

[ ] There was resultant opening in the overall enclosure that would expose live or current-carrying parts as determined by the requirements of CSA C22.2 No. 223. This does not comply with CSA C22.2 No. 223.

[ ] For not inherently limited outputs:

[ ] The maximum output current and power did not exceed 1000/Vmax A and 350 W, respectively, for outputs with a maximum voltage of 15 V.

Tested by: _____ Date _____
Printed Name Signature

OUTPUT CURRENT AND POWER TEST (5 s): (CONT'D)

[ ] The maximum secondary current and power did not exceed $1000/V_{max}$ A and 250 W, respectively, for outputs with a maximum voltage over 15 V but not more than 20 V.

[ ] The maximum output current and power did not exceed 1000/Vmax A and 250 W, respectively, for outputs with a maximum voltage over 20 V.

[ ] The maximum output current exceeded 1000/Vmax. This does not comply with UL 1310.

[ ] The maximum output power exceeded 350 W for outputs with a maximum voltage of 15 V. This does not comply with UL 1310.

[ ] The maximum output power exceeded 250 W for outputs with a maximum voltage over 20 V. This does not comply with UL 1310.

[X] There was no charring, glowing, or flaming of the cheesecloth.

[ ] There was **[**charring**] [**glowing**] [**flaming**]** of the cheesecloth. This does not comply with UL 1310.

[ ] For not inherently limited outputs evaluated to CSA C22.2 No. 223:

[ ] The Class A GFCI did not open.

[ ] The Class A GFCI opened. This does not comply with CSA C22.2 No. 223.

[ ] The branch circuit did not open.

[ ] The branch circuit opened. This does not comply with CSA C22.2 No. 223.

[ ] There was no resultant openings in the overall enclosure that would expose live or current-carrying parts as determined by the requirements of CSA C22.2 No. 223.

[ ] There was resultant opening in the overall enclosure that would expose live or current-carrying parts as determined by the requirements of CSA C22.2 No. 223. This does not comply with CSA C22.2 No. 223.

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST AFTER OUTPUT CURRENT AND POWER TEST [NOT INHERENTLY LIMITED UNITS OR CSA C22.2 NO. 223 UNITS]: 34

(DIELECTRIC STRENGTH, CSA C22.2 No. 223) (6.4)

METHOD

One min following the preceding Output Current and Power Test, the following potentials were gradually applied and maintained for one min.

$[x] _1594____ V ac between primary circuits and exposed conductive surfaces (+).

$[x] _1594____ V ac between primary and secondary circuits ~~(+)~~.

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[x] 500 V ac between secondary circuits and exposed conductive parts ~~**[**with common connections disconnected**]** (+)~~.

[ ] _____ V dc between the leads of across-the-line capacitors.

[ ] _____ V ac between different windings of inductors located in primary circuits.

~~(+) - The ac potential resulted in excessive leakage through capacitors. Therefore, the capacitors were removed from the circuit for the AC potential. With the capacitors connected in the circuit, the unit was subjected to a DC potential of 1.414 times the AC rms potential.~~

[x] For evaluation to CSA C22.2 No. 223, after the samples had cooled to room temperature, the following 60 Hz potentials were applied for 1 min.

[ ] _____ V ac between primary current carrying parts and core. (Core treat as live)

$[x] _1594_____ V ac between secondary current carrying parts and core.

$ - The test voltage was determined from the formula: 1000 + 2 x (Max. V peak value obtained in WORKING VOLTAGE MEASUREMENTS x 0.707) or 1480Vac, whichever higher.

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST AFTER OUTPUT CURRENT AND POWER TEST (NOT INHERENTLY LIMITED UNITS OR CSA C22.2 NO. 223 UNITS): (CONT'D)

RESULTS

[X] The spacings and insulation withstood the application of the specified potentials for one min without indication of breakdown.

[ ] An indication of dielectric breakdown occurred during testing between

_____

_____

This does not comply with UL 1310.

[ ] An indication of dielectric breakdown occurred during testing between

_____

_____

This does not comply with CSA C22.2 No. 223.

Dielectric Test Observations:

Ambient Temperature, ˚C	22.8

Sample no.: 1529368S1, 1529366S4, Test date: 2013-01-18
Remark: Test voltage=1000Vac+420Vac*2*0.707= 1594Vac, Wayne Chow, 2013-01-18

Tested by: _____ Date _____
Printed Name Signature

FULL-LOAD OUTPUT CURRENT TEST: 32

METHOD

Each output was loaded to result in normal load. At 15 min of operation each load was readjusted, if necessary, to result in normal load. Without further load adjustment the test was continued for one hr. At one hr the output load was measured.

RESULTS

Model	Supply Condition	Output Current Rating, **[**mA**]** ~~**[**A**]**~~	Output Current Rating at 1 hr, ~~**[**mA**]**~~ **[**A**]**
GT-91126-0305-0.8	100 V/50 Hz	800	0.7959
	240 V/50 Hz	800	0.7959

Ambient Temperature, ˚C	25.9

[X] The output current at one hr was at least 90% of the rated value.

[ ] The output current at one hr was less than 90% of the rated value. This does not comply with UL 1310.

[X] The ~~**[**overtemperature**]**~~ **[**overcurrent**]** protection device did not operate.

[ ] The ~~**[**overtemperature**]**~~ **[**overcurrent**]** protection device operated. This does not comply with UL 1310.

Sample no.: 1529366S4, 1529368S1
Test date: 2013-01-22

Tested by: _____ Date _____
Printed Name Signature

NORMAL TEMPERATURE TEST - GENERAL: 33

(TEMPERATURE (NORMAL), CSA C22.2 No. 223) (6.3)

METHOD

[ ] Each direct plug-in unit was tested in both the horizontal and vertical positions.

[x] Each unit was tested in the indicated positions.

[x] Each output was connected to the normal load. At 15 min of operation each load was readjusted to result in normal load. Without further load adjustment each unit was operated until temperatures stabilized. Temperatures were measured by means of thermocouples secured by solder, tape, or waterglass.

NOTE TO ENGINEER - This test is to be used for units with no specific end use, and for battery chargers intended to charge "off the shelf" standard batteries.

Tested by: _____ Date _____

Printed Name Signature

NORMAL TEMPERATURE TEST - GENERAL: (CONT'D) 33

RESULTS

Model GT-91126-0305-0.8

#	Location of Thermocouples	Maximum Temperature °C, Mounting Position: 100 V, 50 Hz Charging stand Horizontal -	100 V, 50 Hz Charging stand Horizontal Room Ambient	240 V, 50 Hz Charging stand Horizontal -	240 V, 50 Hz Charging stand Horizontal Room Ambient	Limit, °C
		-	Room Ambient	-	Room Ambient	21-30
1	Adaptor Enclosure outside, front, above T1	-	38.33	-	40.10	75
2	Enclosure outside, rear, near C2	-	34.44	-	34.75	75
3	Enclosure outside, top, above F1	-	29.17	-	28.93	75
4	Charging stand inside, bottom, under U1	-	35.46	-	35.46	75
5	Charging stand outside, bottom, under U1	-	31.79	-	31.79	75
6	Charging stand inside, top, under battery compartment	-	25.88	-	25.88	75
7	Charging stand outside, top, under battery compartment	-	25.10	-	25.07	75
8	PWB on Charging stand, near U1	-	46.33	-	46.39	105
	Test duration, hr:min	-	2h	-	2h	
	Sample No.	-	1529366S4, 1529368S1	-	1529366S4, 1529368S1	
	Test Date	-	2013-01-22	-	2013-01-22	

- Thermocouple number assigned when applied to test sample.

The maximum measured temperatures **[**corrected to an ambient of _25___ °C**]** ~~**[**exceeded**]**~~ **[**did not exceed**]** the maximum allowable. In addition, there ~~**[**were**]**~~ **[**were no**]** temperatures that indicated a risk of fire or damage to materials in the product.

Tested by: _____ Date _____
Printed Name Signature

NORMAL TEMPERATURE TEST - SPECIFIC BATTERY: 33

(TEMPERATURE (NORMAL), CSA C22.2 No. 223) (6.3)

METHOD

[ ] Each direct plug-in unit was tested in both the horizontal and vertical positions.

[x] Each unit was tested in the indicated positions.

The output was connected to a battery load consisting of _____ Temperatures were measured by means of thermocouples secured by solder, tape, or waterglass.

Before each test the battery was discharged to

[ ] 0.9 V per cell (+) (for nickel-cadmium).
[ ] 1.75 V per cell (+) (for lead-acid or gell cell).
[x] _2.8___ V per cell (+) __Li-ion battery_.

[x] (+) ___ Li-ion battery __ discharged into a ~~**[**Battery Mfg. / Model No.**]**~~ load at a rate not exceeding the battery manufacturer's maximum recommended discharge rate of _2000_ **[**mA**]** ~~**[**A**]**~~. The discharge voltage was measured with the load connected.

[ ] a point where the intended end product would not reasonably perform its intended function.

[x] The unit was operated until temperatures peaked. The unit was then immediately connected to a second discharged battery load and operated until temperatures peaked.

[ ] The unit was operated until temperatures peaked. The unit was then immediately connected to another discharged battery load and operated until temperatures peaked. The sequence was repeated until maximum temperatures were attained.

[ ] The unit was operated until the visual charge status indicator indicated that the charge cycle was complete. The unit was then immediately connected to another discharged battery load and again operated until the visual charge status indicator indicated that the charge cycle was complete. The sequence was repeated until maximum temperatures were attained.

[ ] The unit was operated for _____ min. The unit was then connected to another battery load and again operated for _____ min. The sequence was repeated until maximum temperatures were attained.

Tested by: _____ Date _____
Printed Name Signature

NORMAL TEMPERATURE TEST - SPECIFIC BATTERY: (CONT'D)

[ ] The unit was operated until the visual charge status indicator indicated that the charge cycle was complete of for _____ min, whichever occurred first. The unit was then immediately connected to another discharged battery load and again operated until the visual charge status indicator indicated that the charge cycle was complete or for _____ min, whichever occurred first. The sequence was repeated until maximum temperatures were attained.

NOTE TO ENGINEER - This test is to be used for units intended to charge specific batteries.

Tested by: _____ Date _____

Printed Name Signature

NORMAL TEMPERATURE TEST - SPECIFIC BATTERY: (CONT'D)

RESULTS

Model GT-91126-0305-0.8

#	Location of Thermocouples	Maximum Temperature °C, Mounting Position: 100 V, 50 Hz Charging stand Horizontal		240 V, 50 Hz Charging stand Horizontal		Limit, °C
		-	Room Ambient	-	Room Ambient	21-30
1	Adaptor Enclosure outside, front, above T1	-	38.14	-	40.13	75
2	Enclosure outside, rear, near C2	-	35.40	-	35.74	75
3	Enclosure outside, top, above F1	-	30.76	-	30.48	75
4	Charging stand inside, bottom, under U1	-	37.73	-	36.95	75
5	Charging stand outside, bottom, under U1	-	33.37	-	32.87	75
6	Charging stand inside, top, under battery compartment	-	28.76	-	27.49	75
7	Charging stand outside, top, under battery compartment	-	27.68	-	26.65	75
8	PWB on Charging stand, near U1	-	49.06	-	48.12	105
	Test duration, hr:min	-	25	-	25	
	Sample No.	-	1529366S4, 1529368S1, 1533570S1, 1533571S1-S2	-	1529366S4, 1529368S1, 1533570S1, 1533571S1-S2	
	Test Date	-	2013-01-28 to 2013-01-29	-	2013-01-23 to 2013-01-24	

- Thermocouple number assigned when applied to test sample.

The maximum measured temperatures **[**corrected to an ambient of _25___ °C**]** ~~**[**exceeded**]~~ **[**did not exceed**]** the maximum allowable. In addition, there ~~**[**were**]~~ **[**were no**]** temperatures that indicated a risk of fire or damage to materials in the product.

Tested by: _____ Date _____
Printed Name Signature

NORMAL TEMPERATURE TEST - SPECIFIC BATTERY: (CONT'D)

Battery was discharged before test	Horizontal	
Voltage of battery after discharged, Vdc (1st cycle)	2.8	2.8
Voltage of battery after discharged, Vdc (2nd cycle)	2.8	2.8
Voltage of battery after discharged, Vdc (3rd cycle)	2.8	2.8
Voltage of battery after discharged, Vdc (4th cycle)	2.8	2.8
	100V, 50 Hz	240V, 50Hz

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST: 34

(DIELECTRIC STRENGTH, CSA C22.2 No.223) (6.4)

METHOD

One min following the preceding Normal Temperature Test, the following potentials were gradually applied and maintained for one min.

$[x] _1594____ V ac between primary circuits and exposed conductive surfaces ~~(+)~~.

$[x] _1594____ V ac between primary and secondary circuits ~~(+)~~.

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[x] 500 V ac between secondary circuits and exposed conductive parts ~~**[**with common connections disconnected**]**~~ ~~(+)~~.

[ ] _____ V dc between the leads of across-the-line capacitors.

[ ] _____ V ac between different windings of inductors located in primary circuits.

~~(+) - The AC potential resulted in excessive leakage through capacitors. Therefore, the capacitors were removed from the circuit for the AC potential. With the capacitors connected in the circuit, the unit was subjected to a DC potential of 1.414 times the AC rms potential.~~

[x] For evaluation to CSA C22.2 No. 223, after the samples had cooled to room temperature, the following 60 Hz potentials were applied for 1 min.

[ ] _____ V ac between primary current carrying parts and core. (Core treat as live)

$[x] __1594____ V ac between secondary current carrying parts and core.

$ - The test voltage was determined from the formula: 1000 + 2 x (Max. V peak value obtained in WORKING VOLTAGE MEASUREMENTS x 0.707) or 1480Vac, whichever higher.

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST: (CONT'D)

RESULTS

[X] The spacings and insulation withstood the application of the specified potentials for one min without indication of breakdown.

[ ] An indication of dielectric breakdown occurred during testing between

_____

_____

This does not comply with UL 1310.

[ ] An indication of dielectric breakdown occurred during testing between

_____

_____

This does not comply with CSA C22.2 No. 223.

Dielectric Test Observations:

Ambient Temperature, °C	^

Remark: Test voltage=1000Vac+420Vac*2*0.707= 1594Vac, Wayne Chow, 2013-01-18
Sample no.: 1529366S4, 1529368S1
Test date: 2013-01-22, 2013-01-24, 2013-01-29
Remark:
^:
Ambient on 2013-01-22: 22.6°C
Ambient on 2013-01-24: 22.5°C
Ambient on 2013-01-29: 22.5°C

Tested by: _____ Date _____
Printed Name Signature

ABNORMAL TESTS: 39 (6.7)

GENERAL

The following apply to each test identified as an Abnormal Test.

[x] During these tests each direct plug-in unit was draped with a double layer of cheesecloth.

[ ] During these tests each cord connected unit was placed on a tissue covered soft wood surface and draped with a double layer of cheesecloth.

[ ] The grounding means was connected to ground through a 3 A non-time-delay fuse.

[ ] The _____ circuit was made inoperative to allow the required output current to flow.

[ ] Any remaining outputs were **[**open circuited**] [**resistively loaded to result in minimum load**] [**loaded to normal value**]**. The test was repeated for each output.

[ ] Any remaining sections of a tapped winding were **[**open circuited**] [**resistively loaded to result in minimum load**] [**loaded to normal value**]**. The test was repeated for each section of a tapped winding.

[x] One minute following each test the Dielectric Voltage Withstand Test was conducted in accordance with the procedure described after the applicable test.

[x] For evaluations to CSA C22.2 No. 223:

[x] Some test potentials were applied after the unit had cooled to room ambient.

[x] The sample was connected to the supply through a Class A GFCI and the output of the unit was connected to ground.

[] The tests were repeated with input polarity reversed if all the following criteria were met:

The unit is of linear type.
The blades are of non-polarized type; and
The primary winding opens during the test (not thermally protected)

Tested by: _____ Date _____
Printed Name Signature

OUTPUT LOADING TEST - ABNORMAL: 39.2, 39.2A
(SECONDARY CIRCUIT PROTECTION, CSA C22.2 No. 223) (6.6)

Refer to the ABNORMAL TESTS, GENERAL section preceding this test for additional details.

METHOD A

The output under test was short-circuited and the sample was operated for ~~**[**7 h**]**~~ **[**15 days**]** if ~~**[**automatic reset protector operated**]**~~ **[**input current was not zero**];** or until the output current was interrupted by

[x] opening of a winding.
[ ] opening of a single operation thermal link.
[x] opening of a fuse.
[ ] 10 cycles of a manual reset protector (For UL 1310).
[ ] 50 cycles of a manual reset protector or solid state latch off circuit (For CSA C22.2 No. 223).
[x] ultimate results after opening of an electronic component.

[x] During this test the outer surface temperatures of the direct plug-in enclosure were measured.

Tested by: _____ Date _____
Printed Name Signature

OUTPUT LOADING TEST - ABNORMAL: (CONT'D)

METHOD B1

Each output under test was loaded as specified under Conditions of Test A through H, in that order. If a condition resulted in **[**7 h**]** ~~**[**15 days**]**~~ of continuous operation, no further tests were conducted. The load for Conditions A through H was readjusted, if necessary, one min after application of voltage to the primary.

Conditions of Test - The overload currents used in Conditions A through H were calculated as follows:

Condition	Method of Calculation
A	$I_L = I_R + 100\% (I_{max} - I_R)$
B	$I_L = I_R + 75\% (I_{max} - I_R)$
C	$I_L = I_R + 50\% (I_{max} - I_R)$
D	$I_L = I_R + 25\% (I_{max} - I_R)$
E	$I_L = I_R + 20\% (I_{max} - I_R)$
F	$I_L = I_R + 15\% (I_{max} - I_R)$
G	$I_L = I_R + 10\% (I_{max} - I_R)$
H	$I_L = I_R + 5\% (I_{max} - I_R)$
Where	I_L = Loaded output current
	I_R = Rated current
	I_{max} = Maximum current in accordance with the following table:

Unit Type	I_{max}
Inherently limited	As measured in Output Current and Power Test
Not inherently limited	$200/V_{max}$ [a]
[a] As measured in Maximum Output Voltage Test	

[ ] The alternate Method **[** D **] [** E1 **]** was used when Method A resulted in opening of **[**thermal link**] [**fuse**].**

METHOD B2 (CSA C22.2 No. 223)

Since short-circuiting the outputs resulted in the operation of an electronic protective circuit, the output was loaded to maximum current that resulted in 4 hours continuous operation without operation of the protective circuit.

Note: Method B1 can represent Method B2, provided that the load for any one of conditions A through H is the maximum current resulted in 4 h of continuous operation.

Tested by: _____ Date _____
Printed Name Signature

~~OUTPUT LOADING TEST - ABNORMAL: (CONT'D)~~

~~METHOD C (CSA C22.2 No. 223 or inherently-limited unit)~~

~~Since the unit met inherently limited Class 2 specifications or short-circuiting of the output resulted in opening of the transformer winding, the unit was tested at two intermediate equally divided load positions using a resistor connected across the output using the formula below. The resistance was adjusted to produce an output current between the maximum and rated load values. The units were draped with a double layer of cheesecloth. Each test was continued for a maximum of 15 days or until ultimate results occurred.~~

~~$I_1 = I_R + 1/3\ (I_{max} - I_R)$~~	
~~$I_2 = I_R + 2/3\ (I_{max} - I_R)$~~	
~~where~~	~~I_R = rated output current~~
	~~I_{max} = maximum output current obtained as measured in Output Current and Power Test~~

~~METHOD D (Alternate Method B1 & CSA C22.2 No. 223)~~

~~Since the load condition of Method A resulted in opening of a thermal link, the thermal link was shunted and the output under test gradually loaded to result in a winding temperature of **[**5°C above**] [**10°C lower than**]** the rated trip temperature of the protector as determined by a thermocouple attached to the body of the protector. The unit was operated for **[**7 h**] [**15 days**] [**4 h**]**.~~

~~Note: 10°C lower than the rated trip temperature and 4 h for CSA C22.2 No. 223.~~

~~METHOD E1 (Alternate Method B1)~~

~~Since the load condition of Method **[**A**]** resulted in opening of a fuse **[**Fuse F _____, rated _____ A**]**, the output under test was loaded to result in the fuse current noted under Results. For the condition, which resulted in continuous operation, the test was continued for **[**7 h**] [**15 days**]**.~~

Tested by: _____ Date _____
Printed Name Signature

~~OUTPUT LOADING TEST - ABNORMAL: (CONT'D)~~

~~METHOD E2 (CSA C22.2 NO. 223)~~

~~A sample employing a current fuse, rated _____ A, was subjected to this test. The actual fuse was replaced by another fuse of the smallest size, rated at least 135% of the rating of the protective device and connected in the circuit external to the unit. A variable resistive load was connected to the output of the unit and adjusted such that a current of _____ A (equal to 135% of the original fuse) flowed through the output. The test was continued for 1 hour.~~

~~The following Dielectric Voltage Withstand Test was conducted after each sample was cooled to room temperature.~~

Tested by: _____ Date _____
Printed Name Signature

OUTPUT LOADING TEST - ABNORMAL: (CONT'D)

RESULTS A

Model	Shorted Output (@)	Polarity	Maximum Outer Enclosure Temperature of Direct Plug-in, °C	Test Duration, min :sec	Comments / Observations	Sample No.	Test Date
GT-91126-0305-0.8	B+ to B-	-	25.8	15 days	No visible defect on enclosure	1529369S2, 1529366S2	2013-01-09 / 16:00 to 2013-01-24 / 16:00
	B+ to S/C (B- and NTC)	-	29.3	15 days	No visible defect on enclosure	1529369S1, 1529366S1	2013-01-09 / 16:00 to 2013-01-24 / 16:00

Ambient Temperature, ˚C	@

(@) - Output terminal with the worst result in the measurement tests is chosen.

Remark: @, Ambient during 2013-01-09 to 2013-01-24,
Max.: 26.9˚C
Min.: 24.5˚C
Wayne Chow, 2013-01-28

Tested by: _____ Date _____
Printed Name Signature

OUTPUT LOADING TEST - ABNORMAL: (CONT'D)

RESULTS B1

Model __GT-91126-0305-0.8__ (@)Output Tested __ B+ to S/C (B- and NTC)__

Test Condition	Output Current, A	Test Duration, min :sec	Comments/ Observations	Sample No.	Test Date
A	0.8085	7h	No visible defect on enclosure	1529369S3, 1529366S3, 1539045S1	2013-01-18
B	-	-	-	-	-
C	-	-	-	-	-
D	-	-	-	-	-
E	-	-	-	-	-
F	-	-	-	-	-
G	-	-	-	-	-
H	-	-	-	-	-

Ambient Temperature, ˚C	25.9

Test date: 2013-01-18
(@) - Output terminal with the worst result in the measurement tests is chosen.

Tested by: _____ Date _____
Printed Name Signature

OUTPUT LOADING TEST - ABNORMAL: (CONT'D)

RESULTS B2

Model	Output Tested (@)	Output Current, A	Test Duration, min :sec	Comments / Observations	Sample No.	Test Date
GT-91126-0305-0.8	B+ to B-					
	B+ to S7C (B- and NTC)					

Ambient Temperature, °C	

[X] Test method B2 was waived since Condition ____ in Results B1 was the maximum current resulted in ≥ 4 h of continuous operation. Therefore, Method B1 can represent Method B2.

(@) - Output terminal with the worst result in the measurement tests is chosen.

Tested by: _____ Date _____

Printed Name Signature

~~OUTPUT LOADING TEST - ABNORMAL: (CONT'D)~~

~~RESULTS C~~

~~Model~~	~~Polarity~~	~~I_1, A~~	~~Burnout Time, min :sec~~	~~Observations~~	~~Sample No.~~	~~Test Date~~

~~Model~~	~~Polarity~~	~~I_2, A~~	~~Burnout Time, min :sec~~	~~Observations~~	~~Sample No.~~	~~Test Date~~

~~Ambient Temperature, °C~~	

Tested by: _____ Date _____

Printed Name Signature

~~OUTPUT LOADING TEST - ABNORMAL: (CONT'D)~~

~~RESULTS D~~

~~Model~~	~~Output Overloaded~~	~~Cutout Temperature Rating of Protective Device, °C~~	~~Test Temperature Measured on Winding, °C~~	~~Comments/ Observations~~

~~Ambient Temperature, °C~~	

Tested by: _____ Date _____

Printed Name Signature

OUTPUT LOADING TEST - ABNORMAL: (CONT'D)

RESULTS E1

Model	Output Tested	Fuse Rating, [mA] [A]	n	Fuse Test Current	Test Duration	Comments/ Observation	Sample No.	Test Date

Ambient Temperature, °C	

NOTE TO LAB - The test current is calculated as follows:

$I_{FC}=1.1(I_{FR})[1+n(0.02)]$	
where:	I_{FC} is the fuse test current;
	I_{FR} is the fuse current rating; and
n is an appropriate integer ... -3, -2, -1, 0, 1, 2, 3, ...	

The test must be conducted for at least two load conditions, one where n=c results in continuous operation for 7 hrs [or 15 days if specified in the method], and one where n=c+1 results in the fuse opening prior to 7 hrs [or 15 days].

Tested by: _____ Date _____

Printed Name Signature

~~OUTPUT LOADING TEST - ABNORMAL: (CONT'D)~~

~~RESULTS E2~~

~~Model~~	~~Output Tested~~	~~Test current, A~~	~~Test Duration~~	~~Observations~~	~~Sample No.~~	~~Test Date~~

~~Ambient Temperature, °C~~	

Tested by: _____ Date _____
Printed Name Signature

OUTPUT LOADING TEST - ABNORMAL: (CONT'D)

RESULTS A to E

[X] During Method A, the exterior surface temperature rise of a direct plug-in unit did not exceed **[**65°C**]** ~~**[**125°C and the transformer burnout within 1 hour after initiation of the test**]**~~.

[ ] During Method A, the exterior surface temperature rise of a direct plug-in unit exceeded **[**65°C**] [**125°C and the transformer burnout within 1 hour after initiation of the test**]**. This does not comply with UL 1310.

[X] There was no indication of emission of flame or molten metal.

[ ] There was **[**charring**] [**flaming**]** of the **[**cheesecloth**] [**tissue paper**]**. This does not comply with UL 1310.

[X] There was no development of openings exposing live parts posing a risk of electric shock.

[ ] Openings developed which exposed live parts posing a risk of electric shock. This does not comply with UL 1310.

[X] The structural integrity of the direct plug-in enclosure was such that the unit could be removed from the receptacle without deformation of the enclosure posing a risk of electric shock.

Tested by: _____ Date _____
Printed Name Signature

OUTPUT LOADING TEST - ABNORMAL: (CONT'D)

[ ] The direct plug-in enclosure deformed during removal from the receptacle such that live parts posing a risk of electric shock were accessible. This does not comply with UL 1310.

[X] The branch circuit protection did not open.

[ ] The branch circuit protection opened. This does not comply with UL 1310.

~~**[ ]** The 3 A ground fuse remained intact.~~

~~**[ ]** The 3 A ground fuse opened. This does not comply with UL 1310.~~

[X] For evaluation to CSA C22.2 NO. 223, the Class A GFCI did not open.

[ ] The Class A GFCI opened. This does not comply with CSA C22.2 No. 223.

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST AFTER OUTPUT LOADING TEST: 34

(DIELECTRIC STRENGTH, CSA C22.2 No. 223) (6.4)

METHOD

One min following each of the preceding Output Loading Tests, the following potentials were gradually applied and maintained for one min.

$[x] _1594____ V ac between primary circuits and exposed conductive surfaces (+).

$[x] 1594 V ac between primary and secondary circuits (+).

(+) - The AC potential resulted in excessive leakage through capacitors. Therefore, the capacitors were removed from the circuit for the AC potential. With the capacitors connected in the circuit, the unit was subjected to a DC potential of 1.414 times the AC rms potential.

[x] For evaluation to CSA C22.2 NO. 223, after the samples had cooled to room temperature, the following 60 Hz potentials were applied for one minute:

[ ] _____ V ac between primary current carrying parts and core. (Core treat as live)

$[x] __1594____ V ac between secondary current carrying parts and core.

$ - The test voltage was determined from the formula: 1000 + 2 x (Max. V peak value obtained in WORKING VOLTAGE MEASUREMENTS x 0.707) or 1480Vac, whichever higher.

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST AFTER OUTPUT LOADING TEST:
(CONT'D)

RESULTS

[X] The spacings and insulation withstood the application of the specified potentials for one min without indication of breakdown.

[ ] An indication of dielectric breakdown occurred during testing between

_____

_____

This does not comply with UL 1310.

[ ] An indication of dielectric breakdown occurred during testing between

_____

_____

This does not comply with CSA C22.2 No. 223.

Dielectric Test Observations:

Ambient Temperature, °C on 2013-01-18	22.8
Ambient Temperature, °C on 2013-01-24	22.6

Remark: Test voltage=1000Vac+420Vac*2*0.707= 1594Vac, Wayne Chow, 2013-01-18
Sample no.: See page 40-41

Tested by: _____ Date _____
Printed Name Signature

COMPONENT BREAKDOWN TEST - ABNORMAL: 39.6

(ABNORMAL, CSA C22.2 No. 223) (6.7)

Refer to the ABNORMAL TESTS, GENERAL section preceding this test for additional details

METHOD A

The output voltage was measured under the indicated conditions of component fault simulation. The sample was operated **[**until ultimate results were observed**]** **[**~~for 4 hrs of cycling the automatic reset protector~~**]**. During the test the output voltage was monitored, and the maximum observed voltage was recorded.

METHOD B

Under the indicated conditions of individual component fault simulation, the output under test was resistively loaded, including short circuit, to result in maximum output current. Without further adjustment of the load, the supply circuit was de-energized and the sample was allowed to cool to room temperature. The supply circuit was then re-energized and the output current was measured 5 s after application of voltage to the primary. The sample was operated **[**until ultimate results were observed**]** **[**~~for 4 hrs of cycling the automatic reset protector~~**]**. During the test the output current was monitored starting at 5 s of operation, and the maximum observed current was recorded.

METHOD C

Under the indicated conditions of individual component fault simulation, the output under test was resistively loaded to result in maximum output power as determined by a watt meter. Without further adjustment of the load, the supply circuit was de-energized and the sample was allowed to cool to room temperature. The supply circuit was then re-energized and the output power was measured 5 s after application of voltage to the primary. The sample was operated **[**until ultimate results were observed**]** **[**~~for 4 hrs of cycling the automatic reset protector~~**]**. During the test the output power was monitored starting at 5 s of operation, and the maximum observed power was recorded.

Tested by: _____ Date _____
Printed Name Signature

COMPONENT BREAKDOWN TEST - ABNORMAL: (CONT'D)

RESULTS A, B, and C

Model GT-91126-0305-0.8

Fault Condition (S/C or O/C)	Maximum Output			Test Duration, min:sec	Observation	Sample No.
	V	A	W			
ZD1 ON CHARGING STAND S/C	-	-	-	1s	Unit Shut Down, ^	1529366S5, 1529369S3
	-	-	-	-	-	-
	-	-	-	-	-	-
R8 ON CHARGING STAND S/C	-	-	-	1s	Unit shut down, ^	1529366S5, 1529369S3
	-	-	-	-	-	-
	-	-	-	-	-	-

Model GT-41078-0505-USB

Fault Condition (S/C or O/C)	Maximum Output			Test Duration, min:sec	Observation	Sample No.
	V	A	W			
D4	-	-	-	1s	Unit Shut down, ^	1539044S1
	-	-	-	-	-	-
	-	-	-	-	-	-
ZD2	-	-	-	1s	Unit Shut down, ^	1539044S1
	-	-	-	-	-	-
	-	-	-	-	-	-
D3	-	-	-	1s	Unit Shut down, ^	1539044S1
	-	-	-	-	-	-
	-	-	-	-	-	-
DA1	-	-	-	1s	Fuse opened, ^	1539044S1
	-	-	-	-	-	-
	-	-	-	-	-	-

^ Remark: No visible defect on enclosure, Wayne Chow, 2013-01-19

Ambient Temperature, ˚C	26.4

Test date: 2013-01-19

Tested by: _____ Date _____
Printed Name Signature

COMPONENT BREAKDOWN TEST - ABNORMAL: (CONT'D)

~~[ ] The output voltage did not exceed 42.4 V peak for sinusoidal or nonsinusoidal ac.~~

~~[ ] The output voltage exceeded the allowable 42.4 V peak for sinusoidal or nonsinusoidal ac. This does not comply with UL 1310.~~

[X] The output voltage did not exceed ~~60~~ 42.4 V for continuous dc.

[ ] The output voltage exceeded 42.4 V for continuous dc. This does not comply with C22.2 223.

[ ] The output voltage exceeded 60 V for continuous dc. This does not comply with UL 1310.

~~[ ] The output voltage did not exceed the values specified in UL 1310 for composite AC and DC voltages.~~

~~[ ] The output voltage exceeded the values specified in UL 1310 for composite AC and DC voltages. This does not comply with UL 1310.~~

~~[ ] The output voltage did not exceed 24.8 V for dc interrupted at a rate of 200 Hz or less with approximately 50% duty cycle.~~

~~[ ] The output voltage exceeded 24.8 V for dc interrupted at a rate of 200 Hz or less with approximately 50% duty cycle. This does not comply with UL 1310.~~

Tested by: _____ Date _____
Printed Name Signature

COMPONENT BREAKDOWN TEST - ABNORMAL: (CONT'D)

[X] For inherently limited outputs:

[ ] The maximum output current and power did not exceed 8 A and 100 W, respectively, for AC outputs.

[X] The maximum output current and power did not exceed 8 A and 100 W, respectively, for DC outputs with a maximum voltage of 30 V.

[ ] The maximum output current and power did not exceed $150/V_{max}$ A and 100 W, respectively, for DC outputs with a maximum voltage over 30 V.

[ ] The maximum output current exceeded the allowable 8 A for AC outputs. This does not comply with UL 1310.

[ ] The maximum output current exceeded the allowable 8 A for DC outputs with a maximum voltage of 30 V. This does not comply with UL 1310.

[ ] The maximum output current exceeded the allowable $150/V_{max}$ A for DC outputs with a maximum voltage over 30 V. This does not comply with UL 1310.

[ ] The maximum output power exceeded the allowable 100 W. This does not comply with UL 1310.

[ ] For not inherently limited outputs:

[ ] The maximum output current and power did not exceed $1000/V_{max}$ A and 350 W, respectively, for outputs with a maximum voltage of 20 V.

[ ] The maximum output current and power did not exceed $1000/V_{max}$ A and 250 W, respectively, for outputs with a maximum voltage over 20 V.

[ ] The maximum output current exceeded $1000/V_{max}$. This does not comply with UL 1310.

[ ] The maximum output power exceeded 350 W for outputs with a maximum voltage of 15 V. This does not comply with UL 1310.

[ ] The maximum output power exceeded 250 W for outputs with a maximum voltage over 15 V. This does not comply with UL 1310.

Tested by: _____ Date _____
Printed Name Signature

COMPONENT BREAKDOWN TEST - ABNORMAL: (CONT'D)

[X] There was no indication of emission of flame or molten metal.

[ ] There was **[**charring**] [**flaming**]** of the **[**cheesecloth**] [**tissue paper**]**. This does not comply with UL 1310.

[X] There was no development of openings exposing live parts posing a risk of electric shock.

[ ] Openings developed which exposed live parts posing a risk of electric shock. This does not comply with UL 1310.

[X] The structural integrity of the direct plug-in enclosure was such that the unit could be removed from the receptacle without deformation of the enclosure posing a risk of electric shock.

[ ] The direct plug-in enclosure deformed during removal from the receptacle such that live parts posing a risk of electric shock were accessible. This does not comply with UL 1310.

[X] The branch circuit protection did not open.

[ ] The branch circuit protection opened. This does not comply with UL 1310.

~~**[ ]** The 3 A ground fuse remained intact.~~

~~**[ ]** The 3 A ground fuse opened. This does not comply with UL 1310.~~

[X] For evaluation to CSA C22.2 NO. 223, the Class A GFCI did not open.

[ ] The Class A GFCI open. This does not comply with CSA C22.2 No. 223.

NOTE TO LAB - Conduct this test in conjunction with the Maximum Output Voltage Test and the Output Current and Power Test.

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST AFTER COMPONENT BREAKDOWN TEST: 34

(DIELECTRIC STRENGTH, CSA C22.2 No. 223) (6.4)

METHOD

One min following each of the preceding Component Breakdown Tests, the following potentials were gradually applied and maintained for one min.

$[x] _1594____ V ac between primary circuits and exposed conductive surfaces (+).

$[x] _1594____ V ac between primary and secondary circuits (+).

(+) - The AC potential resulted in excessive leakage through capacitors. Therefore, the capacitors were removed from the circuit for the AC potential. With the capacitors connected in the circuit, the unit was subjected to a DC potential of 1.414 times the AC rms potential.

[x] CSA C22.2 NO. 223: After the samples had cooled to room temperature, the following 60 Hz potentials were applied for one minute:

[ ] _____V ac between primary current-carrying parts and core.

$[x] _1594_____ V ac between secondary current carrying parts and core.

$ - The test voltage was determined from the formula: 1000 + 2 x (Max. V peak value obtained in WORKING VOLTAGE MEASUREMENTS x 0.707) or 1480Vac, whichever higher.

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST AFTER COMPONENT BREAKDOWN TEST: (CONT'D)

RESULTS

[X] The spacings and insulation withstood the application of the specified potentials for one min without indication of breakdown.

[ ] An indication of dielectric breakdown occurred during testing between

---

This does not comply with UL 1310.

[ ] An indication of dielectric breakdown occurred during testing between

---

This does not comply with CSA C22.2 No. 223.

Dielectric Test Observations:

Ambient Temperature, °C	22.6

Remark: Test voltage=1000Vac+420Vac*2*0.707= 1594Vac, Wayne Chow, 2013-01-18
Sample no.: See page 53, Test date: 2013-01-19

Tested by: _____ Date 2010-02-02
Printed Name Signature

BACKFEED PROTECTION TEST (COMPONENT FAULT) - ABNORMAL: 39.8

Refer to the ABNORMAL TESTS, GENERAL section preceding this test for additional details.

METHOD

The battery charger output connector was connected to a backfeed source consisting of

[X] a fully charged battery of the type intended to be charged by the charger (__SB-202D (2900 mAh))

[ ] a dc source with a no load voltage rating equal to the output voltage rating of the battery charger and a nominal short-circuit capacity of 200 amperes.

With and without connection to the primary supply, component faults were introduced in the charger to result in backfeed of current into the output circuit. The test was continued until ultimate results were obtained. One minute following the test the sample was subjected to a dielectric voltage withstand test:

$[x] _1594____ V ac between primary circuits and exposed conductive surfaces ~~(+)~~.

$[x] _1594___ V ac between primary and secondary circuits ~~(+)~~.

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] 500 V ac between secondary circuits and exposed conductive parts ~~**[**with common connections disconnected**]**~~ (+).

~~(+) - The ac potential resulted in excessive leakage through capacitors. Therefore, the capacitors were removed from the circuit for the AC potential. With the capacitors connected in the circuit, the unit was subjected to a DC potential of 1.414 times the AC rms potential.~~

$ - The test voltage was determined from the formula: 1000 + 2 x (Max. V peak value obtained in WORKING VOLTAGE MEASUREMENTS x 0.707) or 1480Vac, whichever higher.

Tested by: _____ Date 2010-02-02

Printed Name Signature

BACKFEED PROTECTION TEST (COMPONENT FAULT) - ABNORMAL: (CONT'D)

RESULTS

Model	Supply	Component	Condition (Open/Shorted)	Test Duration	Observations
GT-91126-0305-0.8	Battery	ZD1	Shorted	4h	No backfeed current, #,$,d3
	Battery	U1 (PIN 1-3)	Shorted	4h	No backfeed current, normal operate for 4h, d2,#
	Battery	C10	Shorted	4h	0.837A back feed current and only maintain for 1s, after 1s, no back feed current measured, #,$,d1
	240 V	ZD1	Shorted	4h	No backfeed current, d3,#
	240 V	U1 (PIN 1-3)	Shorted	4h	No backfeed current, d2,#
	240 V	C10	Shorted	4h	1.305A backfeed current and only maintain for 1s, after 1s, no backfeed current measured, d1, #

Remark: test date: d1: 2013-01-24, d2: 2013-01-25, d3: 2013-01-28,
#: No visible defect on enclosure
$: Unit Shut down
Sample no.: 1529369S3, 1529366S6, 1533569S1

Ambient Temperature, °C on 2013-01-24	24.6
Ambient Temperature, °C on 2013-01-25	24.6
Ambient Temperature, °C on 2013-01-28	24.4

[X] There was no emission of flame or molten material from the enclosure or output cord.

[ ] There was emission of flame or molten material from the enclosure or output cord.

[X] There was no development of openings exposing live parts posing a risk of electric shock.

[ ] Openings developed which exposed live parts posing a risk of electric shock. This does not comply with UL 1310.

Tested by: _____ Date _____
Printed Name Signature

[X] The structural integrity of the direct plug-in enclosure was such that the unit could be removed from the receptacle without deformation of the enclosure posing a risk of electric shock.

[ ] The direct plug-in enclosure deformed during removal from the receptacle such that live parts posing a risk of electric shock were accessible. This does not comply with UL 1310.

[X] The branch circuit protection did not open.

[ ] The branch circuit protection opened. This does not comply with UL 1310.

~~**[ ]** The 3 A ground fuse remained intact.~~

~~**[ ]** The 3 A ground fuse opened. This does not comply with UL 1310.~~

[X] There was no indication of dielectric breakdown.

[ ] There was indication of dielectric breakdown between _____.

Tested by: _____ Date _____
Printed Name Signature

IMPACT TEST: (DIRECT PLUG-IN UNIT) 46.2
(DROP AND IMPACT TEST, CSA C22.2 No. 223) (6.9)

METHOD

UL 1310: Three samples were subjected to this test. Each sample was dropped (free fall) three times in succession from a height of 3 feet (914mm) onto a hardwood surface[1]. Each of the drops resulted in the impact occurring at a point on the sample different from the impact points on the other drops. Following the impact test, the samples were subjected to the dielectric voltage withstand test.

[1] The hardwood surface consisted of a layer of nominal 1-inch (25mm) thick tongue-and-groove oak flooring [actual size 3/4 by 2-1/4 inch (19 by 57mm)] mounted on two layers of 3/4-inch (19-mm) thick plywood. The assembly rested on a concrete floor or the equivalent during the test.

CSA C22.2 No. 223: A sample was dropped three times in succession from a height of 900mm on the test floor[2]. Each of the three drops resulted in the impact occurring at a point different than the previous point. Following the impact test, the samples were subjected to the dielectric voltage withstand test.

[2] The test floor consisted of concrete covered with a nominal 3.2mm thick vinyl tile.

Tested by: _____ Date _____
Printed Name Signature

IMPACT TEST: (DIRECT PLUG-IN UNIT) (CONT'D)

RESULTS

Model	Sample No.	Drop No.	Area Tested	Observations
For UL 1310:				
GT-91126-0305-0.8	1529367S1, 1529364S1	1	Top	No visible defect
	1529367S1, 1529364S1	2	Bottom	No visible defect
	1529367S1, 1529364S1	3	Front	No visible defect
	1529369S2, 1529366S2	1	Rear	No visible defect
	1529369S2, 1529366S2	2	Left	No visible defect
	1529369S2, 1529366S2	3	Right	No visible defect
	1529369S1, 1529366S1	1	Top-rear-left corner	No visible defect
	1529369S1, 1529366S1	2	Bottom-front-right corner	No visible defect
	1529369S1, 1529366S1	3	Top-rear edge	No visible defect
For CSA C22.2 No. 223:				
GT-91126-0305-0.8	1529367S1, 1529364S1	1	Top	No visible defect
	1529367S1, 1529364S1	2	Bottom	No visible defect
	1529367S1, 1529364S1	3	Front	No visible defect

Ambient Temperature, °C	23.41

[X] There was no shattering, cracking, or other damage to the enclosure that would expose internal wiring or live parts.

[ ] There was damage to the enclosure which resulted in exposure of hazardous parts. This does not comply. The following parts were exposed: _____.

Test date: 2013-01-28

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST AFTER IMPACT TEST: 34

(DIELECTRIC STRENGTH, CSA C22.2 No. 223) (6.4)

METHOD

Following the preceding the Impact Test, the following potentials were gradually applied and maintained for one min.

$[x] _1594____ V ac between primary circuits and exposed conductive surfaces ~~(+)~~.

$[x] _1594____ V ac between primary and secondary circuits ~~(+)~~.

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[ ] _____ V ac between the _____ V and _____ V secondary circuits **[**with common connections disconnected**]** (+).

[x] 500 V ac between secondary circuits and exposed conductive parts ~~**[**with common connections disconnected**]** (+)~~.

[ ] _____ V dc between the leads of across-the-line capacitors.

[ ] _____ V ac between different windings of inductors located in primary circuits.

~~(+) - The AC potential resulted in excessive leakage through capacitors. Therefore, the capacitors were removed from the circuit for the AC potential. With the capacitors connected in the circuit, the unit was subjected to potential of 1.414 times the AC rms potential.~~

$ - The test voltage was determined from the formula: 1000 + 2 x (Max. V peak value obtained in WORKING VOLTAGE MEASUREMENTS x 0.707) or 1480Vac, whichever higher.

Remark: Test voltage=1000Vac+420Vac*2*0.707= 1594Vac, Wayne Chow, 2013-01-18

Tested by: _____ Date _____
Printed Name Signature

DIELECTRIC VOLTAGE WITHSTAND TEST AFTER IMPACT TEST (CONT'D):

RESULTS

[X] The spacings and insulation withstood the application of the specified potentials for one min without indication of breakdown.

[ ] An indication of dielectric breakdown occurred during testing between

_____

_____

This does not comply.

Dielectric Test Observations:

Ambient Temperature, ˚C	22.5

Test date: 2013-01-28, Sample no.: See page 63, Wayne Chow, 2013-01-28

Tested by: _____ Date _____
Printed Name Signature

MOLD STRESS RELIEF DISTORTION TEST: Table 25.1

METHOD

A sample of each model indicated below was placed in a (+) _70____°C oven for a period of 7 hrs. Upon removal each was examined for evidence of softening, cracking, warping or distortion. Each was also examined for exposed uninsulated live parts. After cooling to room temperature, The Strain Relief Test was repeated.

RESULTS

Model	Observations
GT-91126-0305-0.8	No visible defect on enclosure

Start		Stop	
Date	Time	Date	Time
2013-01-24	02:30	2013-01-24	09:30
Conditioning Temperature, °C	70		

[X] There was no softening, cracking, warping or other damage to the enclosure that would expose internal wiring or live parts.

[ ] There was damage to the enclosure which resulted in exposure of hazardous parts. This does not comply with UL746C. The following parts were exposed: _____.

(+) - Model with maximum enclosure temperature obtained in the Normal Temperature Test (normalized to 25°C) plus 10°C, or 70°C, whichever is higher.

Sample no.: 1539044S1, 1529366S6

Tested by: _____ Date _____

Printed Name Signature

Project no.: 12CA66833 Test ID: 36445 Test Date: 2013-01-22

Test Configuration
Test ID: 36445
Project no.: 12CA66833
File no.: E342800
Model no.: GT-91126-0305-0.8
Sample no.: 1529366S4, 1529368S1
Test Name: NORMAL TEMPERATURE TEST - GENERAL@100V, 50Hz
User Name : Wayne Chow
Normalization base(degC): 25
Test Mode: Max Temperature
Scan interval: 5 s
Test Time: 2013-01-22 11:29:32 to 2013-01-22 13:29:33
Termination: By Stopping criteria; Run 1.5 hr; 3 successive readings taken at intervals of 10% Percent of previously elapsed duration, but not less than 15 mins indicate within 1 degree

Test Equipment:
DL028: Cal date: 2012-3-29 ; Cal due date:2013-3-29

Test Summary
Report Gen. by Max. Rise

	Channel Name	Max Temp. degC	Date Time	Amb. Temp. degC	Temp. at Term. degC	Max Rise degC	Max Temp. Norm. to degC
0	DL028-1-1	22.67	2013-01-22 11:29:33	22.67	22.82	0	25.00
1	DL028-1-2	36.12	2013-01-22 12:40:48	22.79	35.68	13.33	38.33
2	DL028-1-3	32.26	2013-01-22 13:24:08	22.82	32.07	9.44	34.44
3	DL028-1-4	26.96	2013-01-22 13:05:53	22.79	26.78	4.17	29.17
4	DL028-1-5	33.25	2013-01-22 12:56:08	22.79	33.22	10.46	35.46
5	DL028-1-6	29.58	2013-01-22 12:31:58	22.79	29.58	6.79	31.79
6	DL028-1-7	23.67	2013-01-22 12:32:28	22.79	23.42	0.88	25.88
7	DL028-1-8	22.89	2013-01-22 12:10:43	22.79	22.7	0.1	25.10

Test by: Wayne Chow / _____ Sample no.: 1529366S4, 1529368S1 Test Name: NORMAL TEMPERATURE TEST - GENERAL@100V, 50Hz

Tested by: _____ Date _____

Printed Name Signature

Project no.: 12CA66833 Test ID: 36445 Test Date: 2013-01-22

	Channel Name	Max Temp. degC	Date Time	Amb. Temp. degC	Temp. at Term. degC	Max Rise degC	Max Temp. Norm. to degC
8	DL028-2-1	44.12	2013-01-22 12:33:23	22.79	44.02	21.33	46.33

Stopping Criteria #1

Channel Index	Reading#1	Time#1	Reading#2	Time#2	Reading#3	Time#3
0	22.79	2013-01-22 12:59:33 PM	22.82	2013-01-22 1:14:33 PM	22.82	2013-01-22 1:29:33 PM
1	35.71	2013-01-22 12:59:33 PM	35.62	2013-01-22 1:14:33 PM	35.68	2013-01-22 1:29:33 PM
2	31.95	2013-01-22 12:59:33 PM	32.04	2013-01-22 1:14:33 PM	32.07	2013-01-22 1:29:33 PM
3	26.37	2013-01-22 12:59:33 PM	26.56	2013-01-22 1:14:33 PM	26.78	2013-01-22 1:29:33 PM
4	33.22	2013-01-22 12:59:33 PM	33.22	2013-01-22 1:14:33 PM	33.22	2013-01-22 1:29:33 PM
5	29.55	2013-01-22 12:59:33 PM	29.58	2013-01-22 1:14:33 PM	29.58	2013-01-22 1:29:33 PM
6	23.42	2013-01-22 12:59:33 PM	23.42	2013-01-22 1:14:33 PM	23.42	2013-01-22 1:29:33 PM
7	22.70	2013-01-22 12:59:33 PM	22.76	2013-01-22 1:14:33 PM	22.70	2013-01-22 1:29:33 PM
8	44.05	2013-01-22 12:59:33 PM	44.05	2013-01-22 1:14:33 PM	44.02	2013-01-22 1:29:33 PM

Trend Graph

Test by: Wayne Chow /

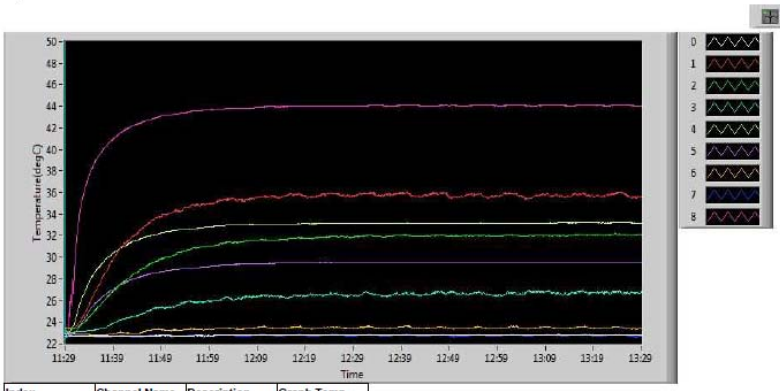
Sample no.: 1529366S4, 1529368S1

Test Name: NORMAL TEMPERATURE TEST - GENERAL@100V, 50Hz

Tested by: _____ Date _____

Printed Name Signature

Project no.: 12CA66833 Test ID: 36445 Test Date: 2013-01-22



Index	Channel Name	Description	Graph Temp.
0	DL028-1-1		22.67
1	DL028-1-2		23.54
2	DL028-1-3		23.45
3	DL028-1-4		23.11
4	DL028-1-5		22.98
5	DL028-1-6		22.92
6	DL028-1-7		22.92
7	DL028-1-8		22.64
8	DL028-2-1		23.23

Test by: Wayne Chow /

Sample no.: 1529366S4, 1529368S1

Test Name: NORMAL TEMPERATURE TEST - GENERAL@100V, 50Hz

Tested by: _____ Date _____

Printed Name Signature

Project no.: 12CA66833 Test ID: 36447 Test Date: 2013-01-22

Test Configuration
Test ID: 36447
Project no.: 12CA66833
File no.: E342800
Model no.: GT-91126-0305-0.8
Sample no.: 1529366S4, 1529368S1
Test Name: NORMAL TEMPERATURE TEST - GENERAL@240V, 50Hz
User Name : Wayne Chow
Normalization base(degC): 25
Test Mode: Max Temperature
Scan interval: 5 s
Test Time: 2013-01-22 14:03:03 to 2013-01-22 16:03:02
Termination: By Stopping criteria; Run 1.5 hr; 3 successive readings taken at intervals of 10% Percent of previously elapsed duration, but not less than 15 mins indicate within 1 degree

Test Equipment:
DL028: Cal date: 2012-3-29 ; Cal due date:2013-3-29

Test Summary
Report Gen. by Max. Rise

	Channel Name	Max Temp. degC	Date Time	Amb. Temp. degC	Temp. at Term. degC	Max Rise degC	Max Temp. Norm. to degC
0	DL028-1-1	22.79	2013-01-22 14:03:03	22.79	22.82	0	25.00
1	DL028-1-2	37.92	2013-01-22 15:14:48	22.82	37.58	15.1	40.10
2	DL028-1-3	32.54	2013-01-22 15:26:13	22.79	32.41	9.75	34.75
3	DL028-1-4	26.72	2013-01-22 15:36:33	22.79	26.5	3.93	28.93
4	DL028-1-5	33.25	2013-01-22 15:06:33	22.79	33.13	10.46	35.46
5	DL028-1-6	29.58	2013-01-22 15:00:23	22.79	29.42	6.79	31.79
6	DL028-1-7	23.67	2013-01-22 15:07:53	22.79	23.51	0.88	25.88
7	DL028-1-8	22.86	2013-01-22 15:07:03	22.79	22.76	0.07	25.07

Test by: Wayne Chow / _____ Sample no.: 1529366S4, 1529368S1 Test Name: NORMAL TEMPERATURE TEST - GENERAL@240V, 50Hz

Tested by: _____ Date _____

Printed Name Signature

Project no.: 12CA66833 Test ID: 36447 Test Date: 2013-01-22

	Channel Name	Max Temp. degC	Date Time	Amb. Temp. degC	Temp. at Term. degC	Max Rise degC	Max Temp. Norm. to degC
8	DL028-2-1	44.18	2013-01-22 15:07:53	22.79	44.02	21.39	46.39

Stopping Criteria #1

Channel Index	Reading#1	Time#1	Reading#2	Time#2	Reading#3	Time#3
0	22.79	2013-01-22 3:33:03 PM	22.79	2013-01-22 3:48:03 PM	22.82	2013-01-22 4:03:03 PM
1	37.39	2013-01-22 3:33:03 PM	37.67	2013-01-22 3:48:03 PM	37.58	2013-01-22 4:03:03 PM
2	32.41	2013-01-22 3:33:03 PM	32.44	2013-01-22 3:48:03 PM	32.41	2013-01-22 4:03:03 PM
3	26.47	2013-01-22 3:33:03 PM	26.40	2013-01-22 3:48:03 PM	26.50	2013-01-22 4:03:03 PM
4	33.19	2013-01-22 3:33:03 PM	33.22	2013-01-22 3:48:03 PM	33.13	2013-01-22 4:03:03 PM
5	29.55	2013-01-22 3:33:03 PM	29.55	2013-01-22 3:48:03 PM	29.42	2013-01-22 4:03:03 PM
6	23.42	2013-01-22 3:33:03 PM	23.42	2013-01-22 3:48:03 PM	23.51	2013-01-22 4:03:03 PM
7	22.70	2013-01-22 3:33:03 PM	22.73	2013-01-22 3:48:03 PM	22.76	2013-01-22 4:03:03 PM
8	44.05	2013-01-22 3:33:03 PM	44.05	2013-01-22 3:48:03 PM	44.02	2013-01-22 4:03:03 PM

Trend Graph

Test by: Wayne Chow /

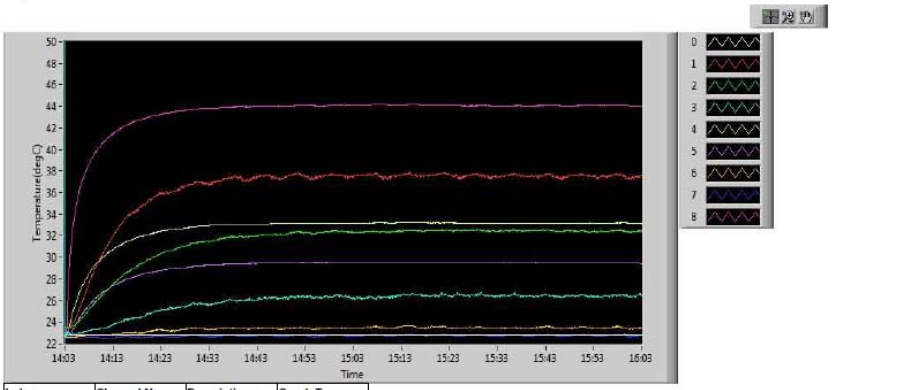
Sample no.: 1529366S4, 1529368S1

Test Name: NORMAL TEMPERATURE TEST - GENERAL@240V, 50Hz

Tested by: _____ Date _____

Printed Name Signature

Project no.: 12CA66833 Test ID: 36447 Test Date: 2013-01-22



Index	Channel Name	Description	Graph Temp.
0	DL028-1-1		22.79
1	DL028-1-2		23.63
2	DL028-1-3		23.57
3	DL028-1-4		23.11
4	DL028-1-5		22.79
5	DL028-1-6		22.79
6	DL028-1-7		22.67
7	DL028-1-8		22.51
8	DL028-2-1		22.95

Test by: Wayne Chow /

Sample no.: 1529366S4, 1529368S1

Test Name: NORMAL TEMPERATURE TEST - GENERAL@240V, 50Hz

Tested by: _____ Date _____

Printed Name Signature

Project no.: 12CA66833 Test ID: 36449 Test Date: 2013-01-23

Test Configuration
Test ID: 36449
Project no.: 12CA66833
File no.: E342800
Model no.: GT-91126-0305-0.8
Sample no.: 1529366S4, 1529368S1,1533570S1,1533571S1-S2, Wayne Chow, 2013-01-29
Test Name: NORMAL TEMPERATURE TEST - SPECIFIC BATTERY@240V
User Name : Wayne Chow
Normalization base(degC): 25
Test Mode: Max Temperature
Scan interval: 5 s
Test Time: 2013-01-23 09:12:18 to 2013-01-24 09:33:13
Termination: Manual termination

Test Equipment:
DL028: Cal date: 2012-3-29 ; Cal due date:2013-3-29

Test Summary
Report Gen. by Max. Rise

	Channel Name	Max Temp. degC	Date Time	Amb. Temp. degC	Temp. at Term. degC	Max Rise degC	Max Temp. Norm. to degC
0	DL028-1-1	22.48	2013-01-23 09:12:18	22.48	22.86	0	25.00
1	DL028-1-2	38.05	2013-01-23 11:59:28	22.92	24.35	15.13	40.13
2	DL028-1-3	33.63	2013-01-23 12:14:53	22.89	23.79	10.74	35.74
3	DL028-1-4	28.37	2013-01-23 12:10:43	22.89	23.39	5.48	30.48
4	DL028-1-5	34.81	2013-01-23 10:54:03	22.86	23.07	11.95	36.95
5	DL028-1-6	30.73	2013-01-23 10:54:53	22.86	23.01	7.87	32.87
6	DL028-1-7	25.38	2013-01-23 12:21:38	22.89	22.73	2.49	27.49
7	DL028-1-8	24.54	2013-01-23 12:37:43	22.89	22.61	1.65	26.65
8	DL028-2-1	45.98	2013-01-23 10:54:03	22.86	23.23	23.12	48.12

Test by: Wayne Chow /

Sample no.: 1529366S4, 1529368S1
1533570S1,1533571S1-S2, Wayne Chow, 2013-01-29

Test Name: NORMAL TEMPERATURE TEST - SPECIFIC BATTERY@240V

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Project no.: 12CA66833 Test ID: 36449 Test Date: 2013-01-23

Stopping Criteria #1

Channel Index
0
1
2
3
4
5
6
7
8

Trend Graph

Test by: Wayne Chow /

Sample no.: 1529366S4, 1529368S1 1533570S1, 1533571S1-S2, Wayne Chow, 2013-01-23

Test Name: NORMAL TEMPERATURE TEST - SPECIFIC BATTERY@240V

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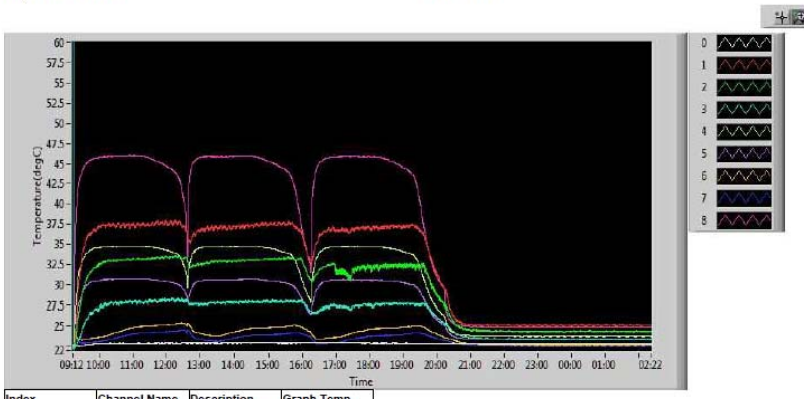
Tested by: _____ Date _____

Printed Name Signature

Project no.: 12CA66833 Test ID: 36449 Test Date: 2013-01-23



Index	Channel Name	Description	Graph Temp.
0	DL028-1-1		22.48
1	DL028-1-2		22.42
2	DL028-1-3		22.36
3	DL028-1-4		22.33
4	DL028-1-5		22.51
5	DL028-1-6		22.54
6	DL028-1-7		22.58
7	DL028-1-8		22.51
8	DL028-2-1		22.67

Test by: Wayne Chow /

Sample no.: 1529366S4, 1529368S1

Test Name: NORMAL TEMPERATURE TEST - SPECIFIC BATTERY@240V

1533570S1, 1533571S1-S2, Wayne Chow, 2013-01-29

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Tested by: _____ Date _____

Printed Name Signature

Project no.: 12CA66833 Test ID: 36467 Test Date: 2013-01-28

Test Configuration
Test ID: 36467
Project no.: 12CA66833
File no.: E342800
Model no.: GT-91126-0305-0.8
Sample no.: 152936654, 152936851 1533570S1, 1533571S1-S2, Wayne Chow, 2013-01-29
Test Name: NORMAL TEMPERATURE TEST - SPECIFIC BATTERY@100V
User Name : Wayne Chow
Normalization base(degC): 25
Test Mode: Max Temperature
Scan interval: 10 s
Test Time: 2013-01-28 09:11:58 to 2013-01-29 09:56:58
Termination: Manual termination

Test Equipment:
DL028: Cal date: 2012-3-29 ; Cal due date:2013-3-29

Test Summary
Report Gen. by Max. Rise

	Channel Name	Max Temp. degC	Date Time	Amb. Temp. degC	Temp. at Term. degC	Max Rise degC	Max Temp. Norm. to degC
0	DL028-1-1	21.52	2013-01-28 09:11:58	21.52	22.51	0	25.00
1	DL028-1-2	35.81	2013-01-28 11:38:28	22.67	24.29	13.14	38.14
2	DL028-1-3	33.04	2013-01-28 12:14:48	22.64	23.67	10.4	35.40
3	DL028-1-4	28.43	2013-01-28 11:40:18	22.67	22.95	5.76	30.76
4	DL028-1-5	35.34	2013-01-28 13:22:08	22.61	23.57	12.73	37.73
5	DL028-1-6	30.98	2013-01-28 13:22:08	22.61	23.14	8.37	33.37
6	DL028-1-7	26.4	2013-01-28 17:28:08	22.64	22.45	3.76	28.76
7	DL028-1-8	25.32	2013-01-28 17:28:08	22.64	22.39	2.68	27.68
8	DL028-2-1	46.7	2013-01-28 13:17:58	22.64	24.75	24.06	49.06

Test by: Wayne Chow / Sample no.: 152936654, 152936851 Test Name: NORMAL TEMPERATURE TEST - SPECIFIC BATTERY@100V

1533570S1, 1533571S1-S2, Wayne Chow, 2013-01-29

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Project no.: 12CA66833 Test ID: 36467 Test Date: 2013-01-28

Stopping Criteria #1

Channel Index
0
1
2
3
4
5
6
7
8

Trend Graph

Test by: Wayne Chow / Sample no.: 152936S4, 152936S1 Test Name: NORMAL TEMPERATURE TEST - SPECIFIC BATTERY@100V

1533570S1, 1533571S1-S2, Wayne Chow, 2013-01-29

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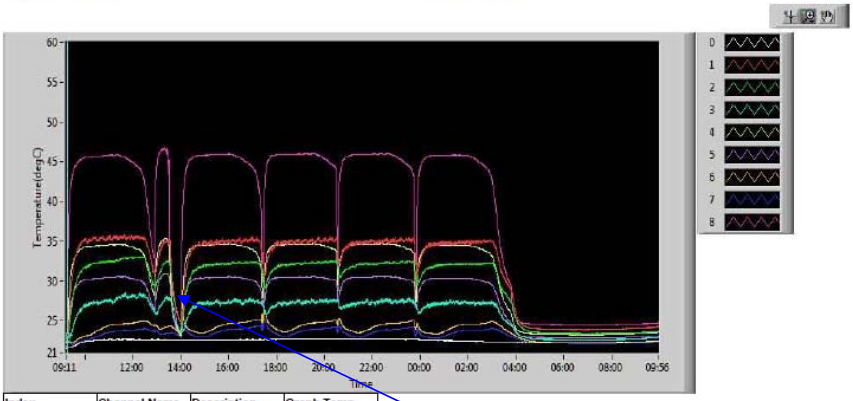
Tested by: _____ Date _____

Printed Name Signature

Project no.: 12CA66833 Test ID: 36467 Test Date: 2013-01-28



Index	Channel Name	Description	Graph Temp.
0	DL028-1-1		21.55
1	DL028-1-2		23.17
2	DL028-1-3		22.64
3	DL028-1-4		22.17
4	DL028-1-5		22.17
5	DL028-1-6		22.11
6	DL028-1-7		21.98
7	DL028-1-8		21.95
8	DL028-2-1		22.54

The second cycle was interrupted due to the bad contact of batteries, Wayne Chow, 2013-01-29.

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Test by: Wayne Chow /

Sample no.: 1529366S4, 1529368S1 1533570S1, 1533571S1-S2, Wayne Chow, 2013-01-29

Test Name: NORMAL TEMPERATURE TEST - SPECIFIC BATTERY@100V

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Tested by: _____ Date _____

Printed Name Signature

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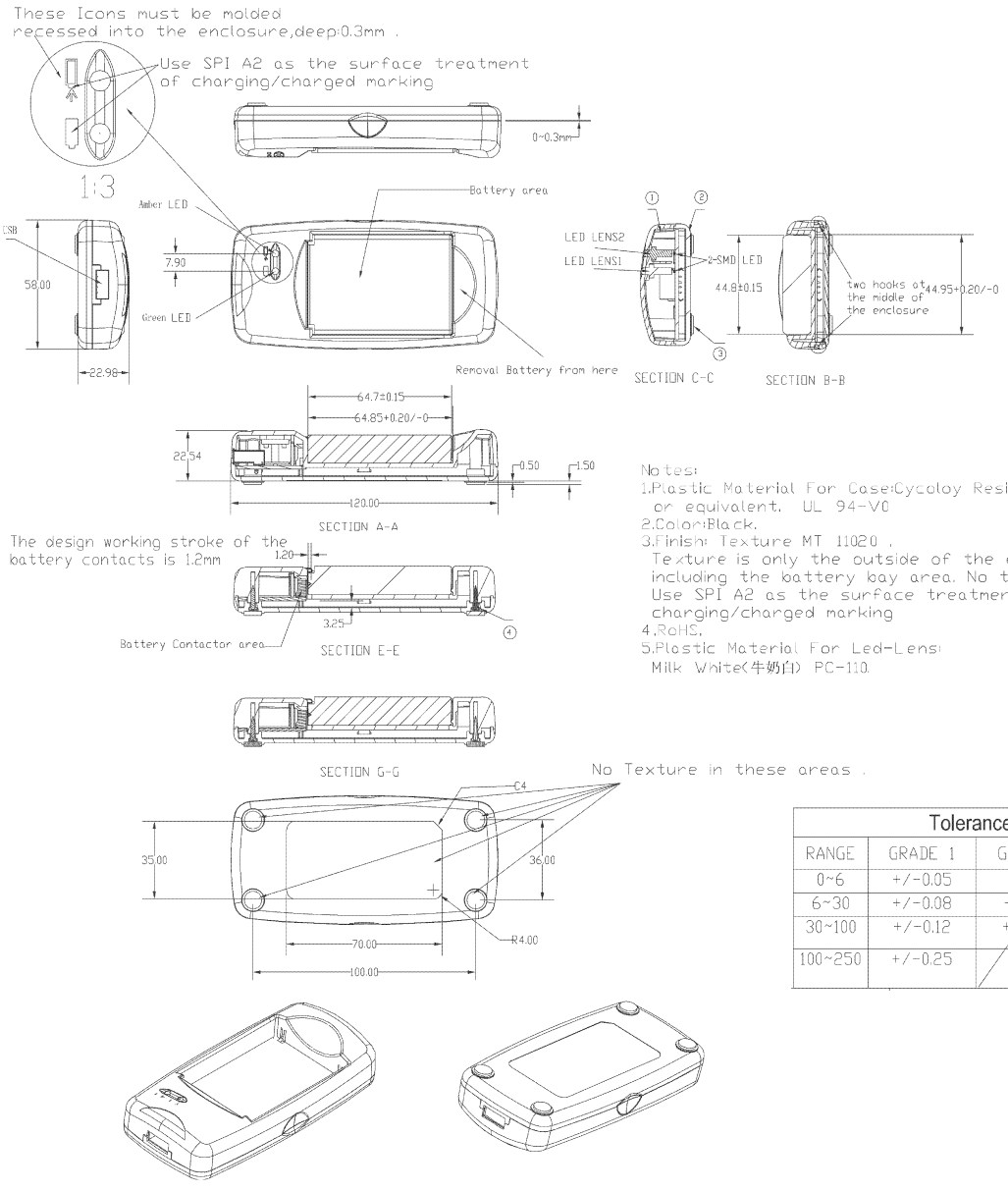
4. Mechanical Enclosure:

All dimensions are in millimeter unless otherwise specified.

4.1. Assembly Drawing



Notes:
1.Plastic Material For Case:Cycoloy Resin C2950 or equivalent. UL 94-V0
2.Color:Black.
3.Finish: Texture MT 11020 .
Texture is only the outside of the enclosure including the battery bay area. No texture inside.
Use SPI A2 as the surface treatment of charging/charged marking
4.RoHS.
5.Plastic Material For Led-Lens:
Milk White(牛奶白) PC-110.

Tolerance table			
RANGE	GRADE 1	GRADE 2	GRADE 3
0~6	+/-0.05	+/-0.1	+/-0.2
6~30	+/-0.08	+/-0.15	+/-0.3
30~100	+/-0.12	+/-0.25	+/-0.5
100~250	+/-0.25	+/-0.4	+/-0.8

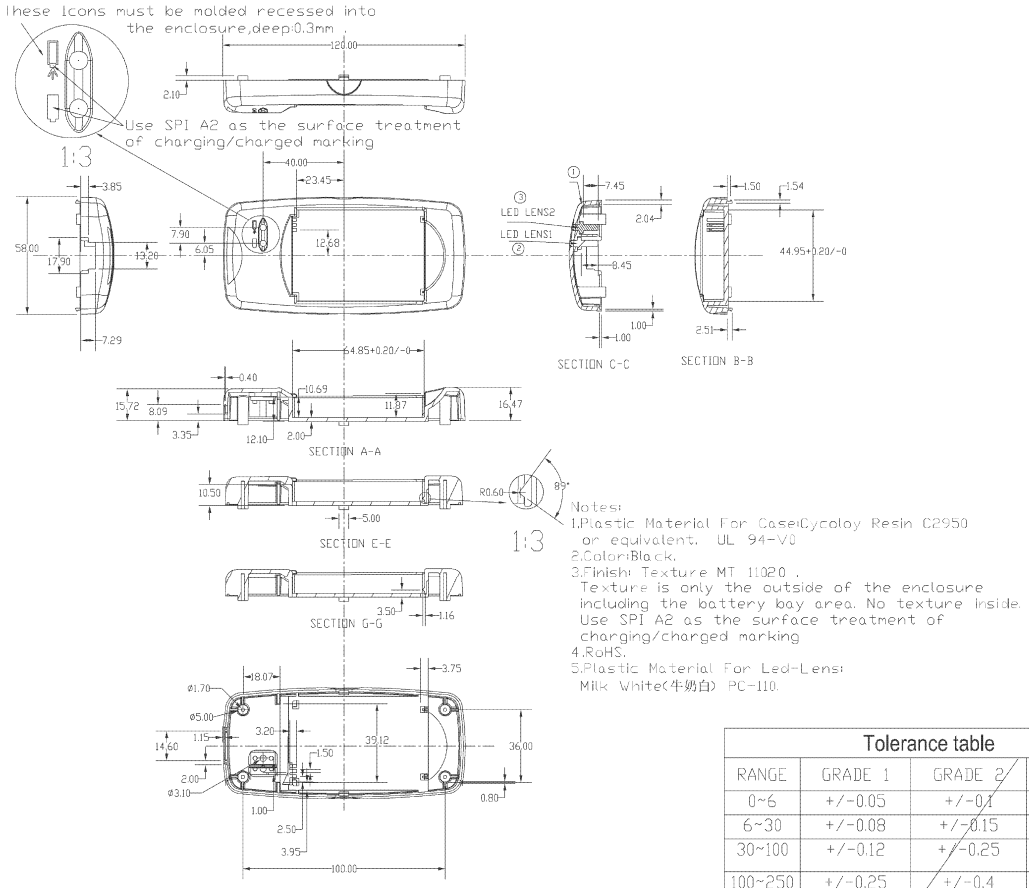
Item	PART NO	Name	Material	Unit	QTY
④	470-00021210(R)	Screw	Cross recess R head Tapping screw M2*10 black zincification	PCS	4
③	461-02020004(R)	Rubber Feet	Silicon rubber (One side should have glue)	PCS	4
②	460-01430008(R)	Button-Enclosure	PC/ABS(C2950)	PCS	1
①	460-01430007(R)	LED-LENS2	Milk White(牛奶白) PC-110	PCS	1
		LED-LENS1	Milk White(牛奶白) PC-110	PCS	1
		Top-Enclosure	PC/ABS(C2950)	PCS	1

DASH NO	PART NO	REV.	DESCRIPTION	NOTES
Jabil Battery Charger Assembly Drawing				

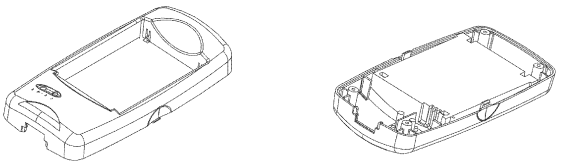
GlobTek, Inc.
www.globtek.com
186 Veterans Dr. Northvale, NJ 07647
Tel. 201-784-1000 Fax 201.784.0111

DWG TITLE:	Lithium-Ion Battery Charger, 4.2V, 800mA	
MODEL NO:	GT-91126-0305-0.8	REV. I
PART NO:	**GT-91126-0305-0.8JLR**	SHEET 7 OF 16

4.2. Top Enclosure Drawing



Tolerance table			
RANGE	GRADE 1	GRADE 2	GRADE 3
0~6	+/-0.05	+/-0.1	+/-0.2
6~30	+/-0.08	+/-0.15	+/-0.3
30~100	+/-0.12	+/-0.25	+/-0.5
100~250	+/-0.25	+/-0.4	+/-0.8



Item	Name	Material	Unit	QTY
③	LED-LENS2	Milk White(牛奶白) PC-110	PCS	1
②	LED-LENS1	Milk White(牛奶白) PC-110	PCS	1
①	Top-Enclosure	PC ABS(C2950)	PCS	1

DASH NO	PART NO	REV.	DESCRIPTION	NOTES
460-01430007(R)				

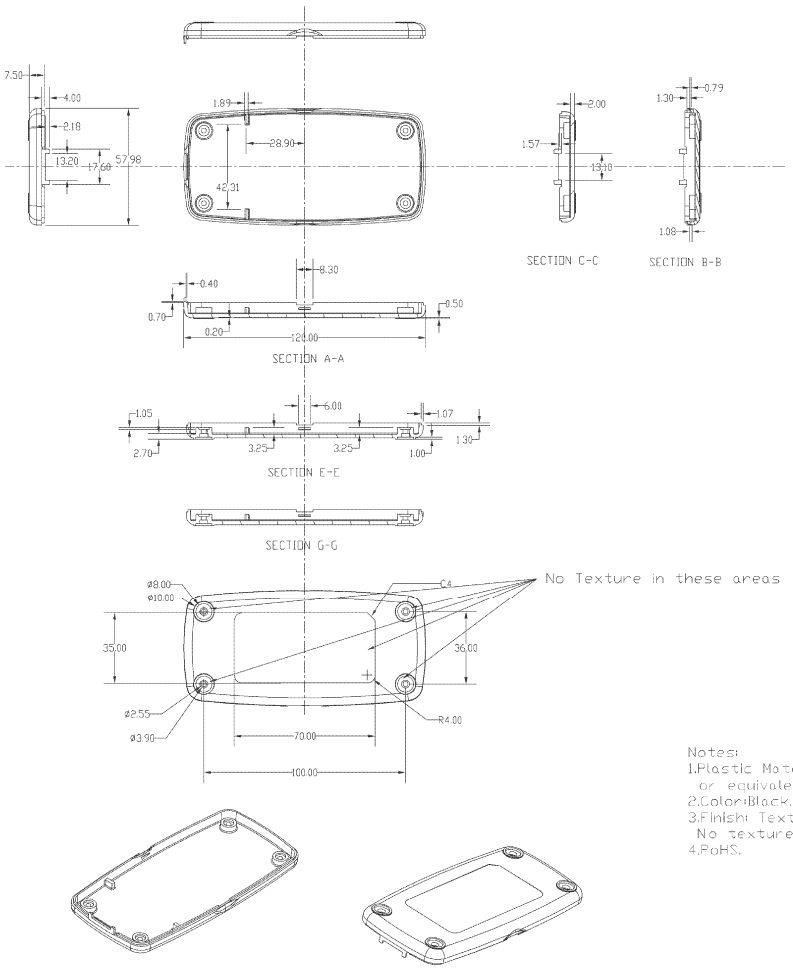
GlobTek, Inc.
www.globtek.com
186 Veterans Dr. Northvale, NJ 07647
Tel. 201-784-1000 Fax 201.784.0111

DWG TITLE: Lithium-Ion Battery Charger, 4.2V, 800mA

MODEL NO: GT-91126-0305-0.8 REV. I

PART NO: **GT-91126-0305-0.8JLR**

4.3. Bottom Enclosure Drawing



Notes:
1.Plastic Material For Case:Cycoloy Resin C2950 or equivalent. UL 94-V0
2.Color:Black.
3.Finish: Texture MT 11020 .
No texture inside enclosure,only outside
4.RoHS.

Tolerance table			
RANGE	GRADE 1	GRADE 2	GRADE 3
0~6	+/-0.05	+/-0.1	+/-0.2
6~30	+/-0.08	+/-0.15	+/-0.3
30~100	+/-0.12	+/-0.25	+/-0.5
100~250	+/-0.25	+/-0.4	+/-0.8

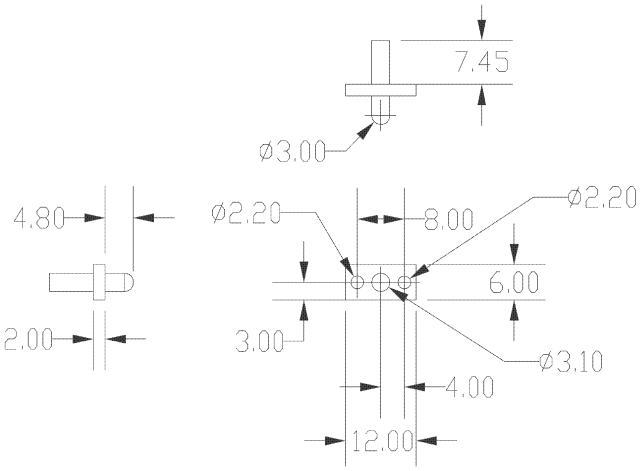
DASH NO	PART NO	REV.	DESCRIPTION	NOTES
460-01430008(R)				

GlobTek, Inc.
www.globtek.com
186 Veterans Dr. Northvale, NJ 07647
Tel. 201-784-1000 Fax 201.784.0111

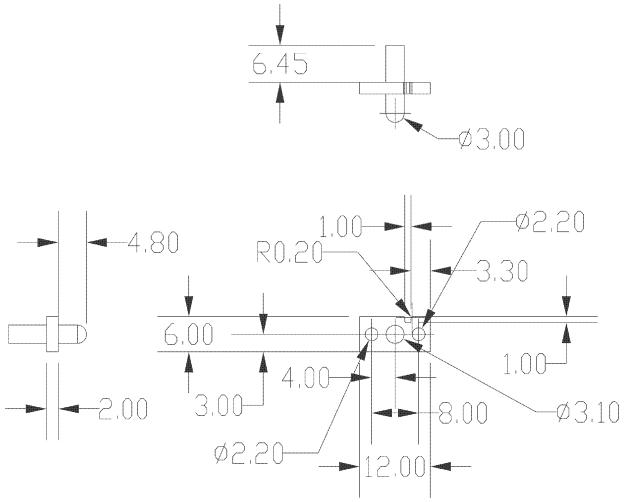
DWG TITLE:	Lithium-Ion Battery Charger, 4.2V, 800mA	
MODEL NO:	GT-91126-0305-0.8	REV. I
PART NO:	**GT-91126-0305-0.8JLR**	SHEET 9 OF 16

5. LED Lens

5.1. LED Lens 1 for Top Enclosure



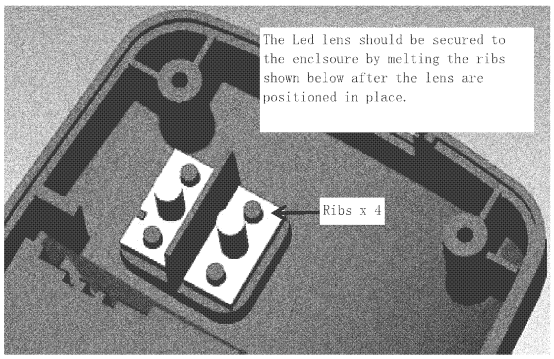
5.2. LED Lens 2 for Top Enclosure



Notes:
1.Plastic Material For Led-Lens: Milk White PC-110.
2.RoHS.

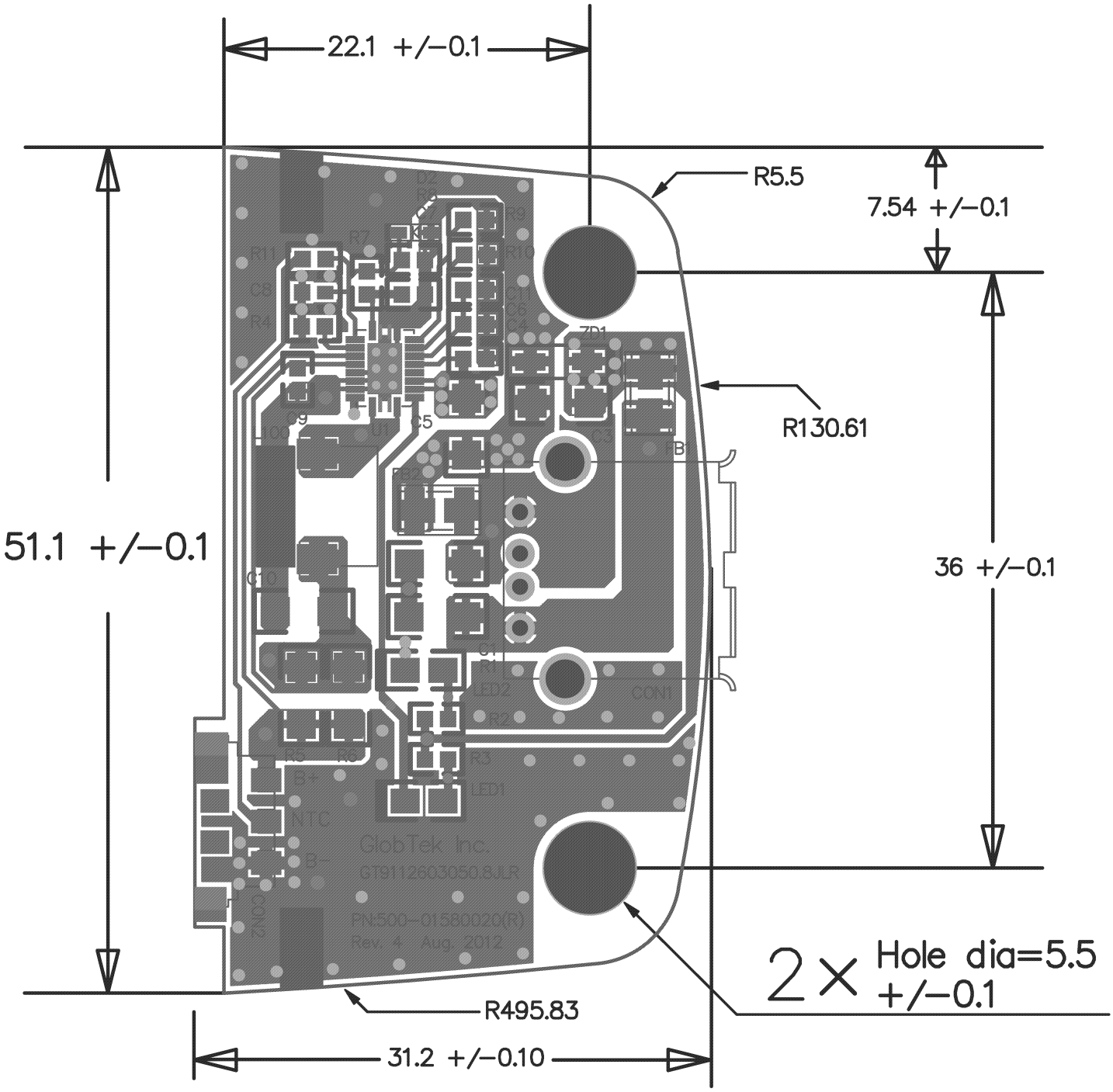
Tolerance table			
RANGE	GRADE 1	GRADE 2	GRADE 3
0~6	+/-0.05	+/-0.1	+/-0.2
6~30	+/-0.08	+/-0.15	+/-0.3
30~100	+/-0.12	+/-0.25	+/-0.5
100~250	+/-0.25	+/-0.4	+/-0.8

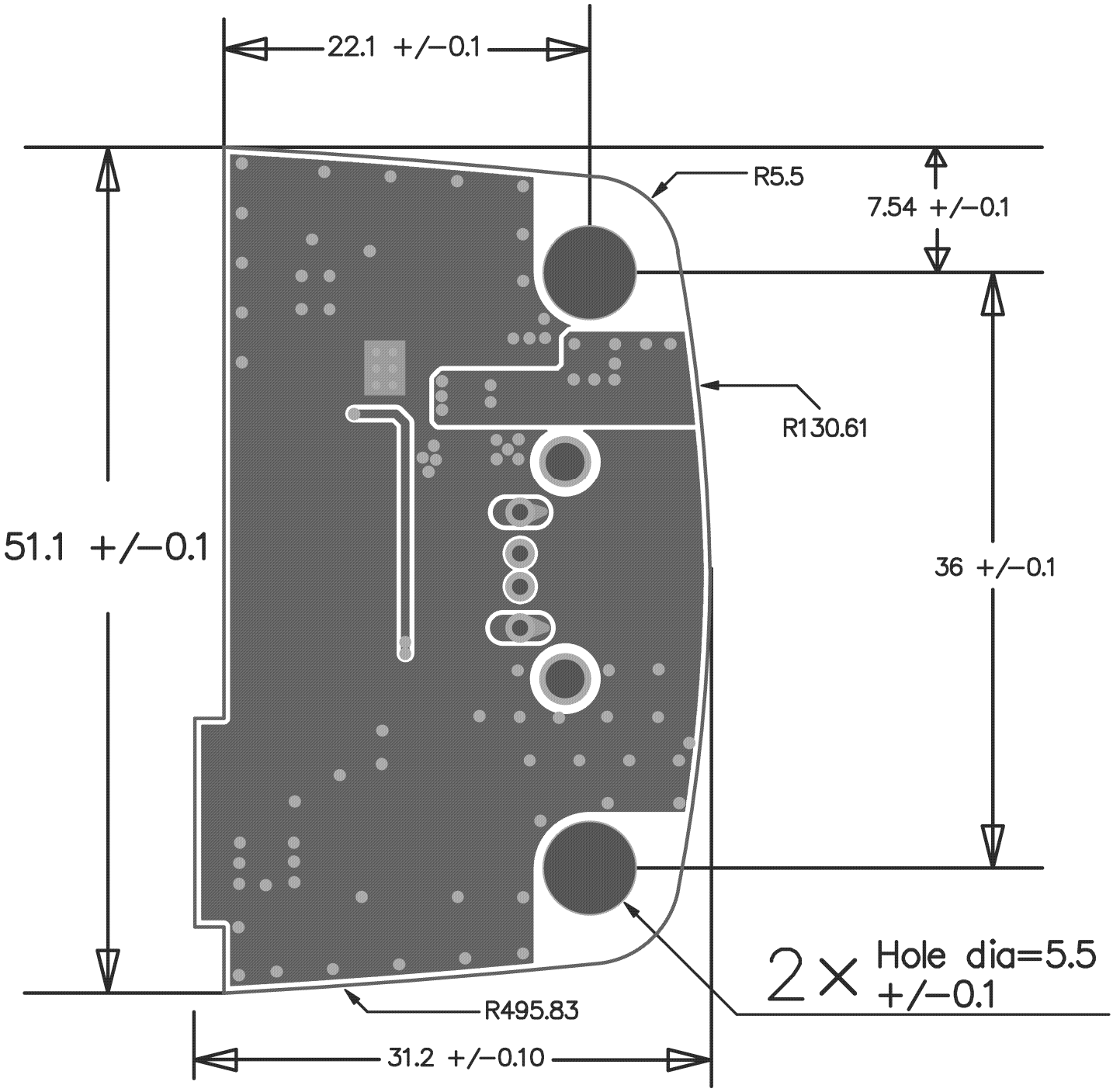
5.3. LED Mounting Drawing



GlobTek, Inc.
www.globtek.com
186 Veterans Dr. Northvale, NJ 07647
Tel. 201-784-1000 Fax 201.784.0111

DWG TITLE:	Lithium-Ion Battery Charger, 4.2V, 800mA	
MODEL NO:	GT-91126-0305-0.8	REV. I
PART NO:	**GT-91126-0305-0.8JLR**	SHEET 10 OF 16


22.1 +/−0.1
R5.5
7.54 +/−0.1
R130.61
51.1 +/−0.1
36 +/−0.1
2 × Hole dia=5.5 +/−0.1
R495.83
31.2 +/−0.10


22.1 +/−0.1
R5.5
7.54 +/−0.1
R130.61
51.1 +/−0.1
36 +/−0.1
2 × Hole dia=5.5 +/−0.1
R495.83
31.2 +/−0.10