



Lab: **Energy Assurance, LLC**
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Test Summary per UN 38.3.5

Mfg Company Name	StorTronics
Mfg Company Address	31829 8 Mile Rd
Mfg Company City, State, Country, Postal Code	Livonia, MI, USA 48152
Mfg Contact Name	Jeff Helm
Mfg Contact Email	jhelm@stortronics.com
Mfg Contact Phone Number	248-875-3010

Product Name(s)	ST254900 - 3.3V 1.1Ah LIFEPO4 BATTERY PACK W/ PCM
Product Part Number(s)	ST254900
Nominal Voltage (V)	3.3
Rated Capacity (mAh)	1100
Mass (g)	43
Rated Energy (Wh)	4

Product Photo



Product Type	Single-Cell Battery Pack, Secondary (Lithium Ion), Small
Test Standard	UN38.3, UN Manual of Tests and Criteria, 7th Revised Edition, Effective January 1, 2020
Overall Test Result	PASS

Component Test Results

Overcharge (T.7)	PASS
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*Tests T.1 through T.5 are not applicable to a single-cell battery pack.

*Tests T.6 (Impact/Crush) and T.8 (Forced Discharge) are applicable to cell-level testing only.

Release Approved By

Name	John C. Copeland, Vice President and COO
Date	5/28/2021

Test Standard: UN38.3, UN Manual of Tests and Criteria, 7th Revised Edition,
Effective January 1, 2020



UN 38.3 Report - Small, Secondary, Single-Cell Battery Packs (T7-ONLY)

PROJECT NUMBER EA4142
DATE OF REPORT 5/28/2021
STATUS Compliant
DATE SAMPLES RECEIVED 5/18/2021

Contact Name Jeff Helm
Contact Email jhelm@stortronics.com
Contact Phone Number 248-875-3010
Company Name StorTronics
Company Address 31829 8 Mile Rd
Company City, State, Country, Postal Code Livonia, MI, USA 48152
Product Name(s) ST254900 - 3.3V 1.1Ah LiFePO4 BATTERY PACK W/ PCM
Product Part Number(s) ST254900

Nominal Voltage (V)	3.300		<u>Projected 25X Duration</u>
Rated Capacity (mAh)	1100		3 days
Charge Current for 25X cycling - CC mode (mA)	1100	[1C]	
Maximum Continuous Charge Current (mA)	4000		<u>Rated Energy</u>
Normal Charge Voltage (V)	3.600		4 Wh
Maximum Charge Voltage (V)	3.600		
End of Charge Current - CV mode (mA)	50	[0.05C]	
Discharge Current for 25X Cycling (mA)	1100	[1C]	
Maximum Specified Discharge Current (mA)	4000		
End of Discharge Voltage (V)	2.000		

Nominal Mass of Battery (grams) 43
Mass Loss Critical Threshold (Lookup) 0.002
Small or Large Battery (Lookup) Small
Mass Precision (Calculated Digits) 3

Sample Numbering Legend F Fresh (cycle 1); fully charged
C Cycled (cycle 50); fully charged
S (Spare)

V-Check Criteria

Post Test Voltage ≥ 90% Pre-Test Voltage

M-Check Criteria

Mass (M) of cell or	Mass loss limit
M<1g	0.5%
1g≤M≤75g	0.2%
M>75g	0.1%

Laboratory Address: Energy Assurance, LLC
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Gainesville, GA 30504 USA

<http://www.energy-assurance.com>

Report Summary Comments

Samples tested demonstrated compliance to the referenced standard.

Single-cell battery pack. Tests T1-T5 not required.

General notes regarding this report: Test results relate only to the items tested. Energy Assurance reserves the right to use approved partner laboratories in the delivery of services. This is denoted below by a "Y" in the OS field of each test section below. This report shall not be reproduced except in full without the approval of Energy Assurance, LLC.

Revision History

Rev	Date	Comments
1	5/28/2021	Initial issue

Reviewed & Released By:

John C. Copeland

Name John C. Copeland, Vice President and COO
Date 5/28/2021

Product Photo:



Overcharge (T.7)

Test Procedure: *The charge current shall be twice the manufacturer's recommended maximum continuous charge current. The minimum voltage of the test shall be as follows:*

(a) when the manufacturer's recommended charge voltage is not more than 18V, the minimum voltage of the test shall be the lesser of two times the maximum charge voltage of the battery or 22V.

(b) when the manufacturer's recommended charge voltage is more than 18V, the minimum voltage of the test shall be 1.2 times the maximum charge voltage.

Tests are to be conducted at ambient temperature. The duration of the test shall be 24 hours.

Date (Test Start)	5/24/2021	OS	N
Date (Test Finish)	5/26/2021	Tech	JG/BO
Model Tested	ST254900	Rated Capacity (mAh)	1100

Test Step Notes (T.7)

None

**For Dis-Assy & Fire, observation period is test completion + 7 days.*

Setup Conditions

		Dis-Assy		Fire		Overcharge Channel		Pass/Fail		Comments	
Charge Current	8000	mA	C5	N	N	Box-1,1	Pass	None			
			C6	N	N	Box-1,2	Pass	None			
			C7	N	N	Box-1,3	Pass	None			
			C8	N	N	Box-1,4	Pass	None			
Min Test Voltage	7.20	V	F5	N	N	Box-1,1	Pass	None			
			F6	N	N	Box-1,2	Pass	None			
			F7	N	N	Box-1,3	Pass	None			
			F8	N	N	Box-1,4	Pass	None			
Test Ambient	22.3	°C	S3				No Data	Spare3			
			S4				No Data	Spare4			

Measurement Equipment Information (Calibration details available upon request)

Ambient Temp Gauge	Digital Temperature-Humidity Meter, S/N 10
Overcharge System1	Overcharge Test Apparatus, 5 Channel, BOX1-20
Overcharge System2	Overcharge Test Apparatus, 5 Channel, BOX2-35