



UN38.3 测试报告

UN38.3 Test Report

样品名称:	可充电锂离子电池 ARB-L16-700U
Sample Name:	Rechargeable Li-ion Battery ARB-L16-700U
型号规格:	
Model:	ARB-L16-700U 3.6V 700mAh 2.52Wh
委托单位:	深圳市朗恒电子有限公司
Applicant:	SHEN ZHEN LANG HENG ELECTRONIC CO.,LTD
检验项目:	高度模拟、温度试验、振动、冲击、外部短路、挤压、过度充电、强制放电
Test Items:	Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Crush, Overcharge, Forced discharge
检验类别:	委托检验
Test Category:	Commission test

北京迪捷姆空运技术开发有限公司

Beijing DGM Air Transport Technology Co., Ltd.

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UN38.3 Test Report

样品名称 Sample Name	可充电锂离子电池 ARB-L16-700U Rechargeable Li-ion Battery ARB-L16-700U		商标 Trademark	FENIX
			型号/规格 Model	ARB-L16-700U 3.6V 700mAh2.52Wh
委托单位 Applicant	名称 Name	深圳市朗恒电子有限公司 SHEN ZHEN LANG HENG ELECTRONIC CO.,LTD		
	地址 Address	深圳市宝安区 33 区东方明工业城二栋八楼 8/F, 2nd Building, DongFangMing Industrial Center, 33rd District, Bao'an, Shenzhen		
生产厂家 Manufacturer	深圳市优能电源技术有限公司 SHENZHEN YOUR POWER TECHNOLOGY CO.,LTD.			
来样方式 Means of Receiving	委托方送样 Submitted by applicant		送样日期 Accepted Date	2016-12-15
检验日期 Test Date	2016-12-16~2017-01-03			
检验地点 Test Site	本检测室 (电池室) DGM(Battery room)			
检验项目 Test Items	高度模拟、温度试验、振动、冲击、外部短路、挤压、过度充电、强制放电 Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Crush, Overcharge, Forced discharge			
检验依据 Test Method	联合国《关于危险货物运输的建议书-试验和标准手册》(第 6 版) 38.3 节 UN Recommendations on the Transport of Dangerous Goods Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/ Subsection 38.3			
样品状态 Appearance	黑色圆柱体单芯电池, 约 $\Phi 16.74 \times 35.18$ mm. Black cylinder single cell battery, about $\Phi 16.74 \times 35.18$ mm.			
检验结论 Conclusion	根据联合国《关于危险货物运输的建议书-试验和标准手册》(第 6 版) 38.3 节的规定, 该电池样品通过所有项目检测, 符合该条款的性能要求。 The samples have passed all test items of UN Recommendations on the Transport of Dangerous Goods - Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/ Subsection 38.3. 检验单位(盖章) Test Lab(Stamp) 签发日期(Issue Date): 2017 年 01 月 10 日			
备注 Comment	单芯电池。 Single cell battery.			

检测:
Tested by:

罗晓峰

审核:
Checked by:

宋明

批准:
Approved by:

冯海

北京迪捷姆空运技术开发有限公司

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UN38.3 Test Report

序号 No.	检验项目 Test Items	标准要求或标准条款 Standard Requirement or the Clause of Standard	检验结果 Test Result	单项评价 Conclusion	备注 Remark
1	高度模拟 Altitude Simulation	ST/SG/AC.10/11/Rev.6/ Subsection 38.3 Test T.1	无泄漏、无排气、无解体、无破裂、无起火， 试验后的开路电压不低于试验前的 90%。 No leakage, no venting, no disassembly, no rupture and no fire. The open circuit voltage of each battery after testing is not less than 90% of its voltage immediately prior to this procedure.	符合 Pass	/
2	温度试验 Thermal Test	ST/SG/AC.10/11/Rev.6/ Subsection 38.3 Test T.2	无泄漏、无排气、无解体、无破裂、无起火， 试验后的开路电压不低于试验前的 90%。 No leakage, no venting, no disassembly, no rupture and no fire. The open circuit voltage of each battery after testing is not less than 90% of its voltage immediately prior to this procedure.	符合 Pass	/
3	振动 Vibration	ST/SG/AC.10/11/Rev.6/ Subsection 38.3 Test T.3	无泄漏、无排气、无解体、无破裂、无起火， 试验后的开路电压不低于试验前的 90%。 No leakage, no venting, no disassembly, no rupture and no fire. The open circuit voltage of each battery after testing is not less than 90% of its voltage immediately prior to this procedure.	符合 Pass	/
4	冲击 Shock	ST/SG/AC.10/11/Rev.6/ Subsection 38.3 Test T.4	无泄漏、无排气、无解体、无破裂、无起火， 试验后的开路电压不低于试验前的 90%。 No leakage, no venting, no disassembly, no rupture and no fire. The open circuit voltage of each battery after testing is not less than 90% of its voltage immediately prior to this procedure.	符合 Pass	/
5	外部短路 External Short Circuit	ST/SG/AC.10/11/Rev.6/ Subsection 38.3 Test T.5	外壳温度不超过 170 °C，无解体、无破裂、无 起火。 External temperature does not exceed 170°C. No disassembly, no rupture and no fire.	符合 Pass	/
6	挤压 Crush	ST/SG/AC.10/11/Rev.6/ Subsection 38.3 Test T.6	外壳温度不超过 170 °C，无解体、无起火。 External temperature does not exceed 170°C. No disassembly, no fire.	符合 Pass	/
7	过度充电 Overcharge	ST/SG/AC.10/11/Rev.6/ Subsection 38.3 Test T.7	无解体、无起火。 No disassembly, no fire.	符合 Pass	/
8	强制放电 Forced Discharge	ST/SG/AC.10/11/Rev.6/ Subsection 38.3 Test T.8	无解体、无起火。 No disassembly, no fire.	符合 Pass	/
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T.1: 高度模拟 T.1: Altitude Simulation

样品编号 Sample No.	样品状态 Sample Status	测试前 Pre-test		测试后 After-test				有无泄漏、排气、解体、破裂、起火 Leakage, Venting, Disassembly, Rupture, Fire(Yes/No)
		质量 Mass $m_1(g)$	开路电压 OCV $V_1(V)$	质量 Mass $m_2(g)$	质量损失 Mass Loss (%)	开路电压 OCV $V_2(V)$	剩余电压 Residual OCV (%)	
A1	首次完全充电 First cycle fully charged	18.476	4.166	18.474	0.011	4.153	99.69	No
A2	首次完全充电 First cycle fully charged	18.439	4.143	18.436	0.016	4.135	99.81	No
A3	首次完全充电 First cycle fully charged	19.351	4.142	19.351	0.000	4.139	99.93	No
A4	首次完全充电 First cycle fully charged	19.268	4.134	19.268	0.000	4.124	99.76	No
A5	首次完全充电 First cycle fully charged	18.490	4.154	18.490	0.000	4.138	99.61	No
A6	首次完全充电 First cycle fully charged	18.249	4.151	18.249	0.000	4.144	99.83	No
A7	首次完全充电 First cycle fully charged	18.328	4.164	18.322	0.033	4.150	99.66	No
A8	首次完全充电 First cycle fully charged	18.308	4.134	18.306	0.011	4.123	99.73	No
A9	首次完全充电 First cycle fully charged	18.363	4.138	18.362	0.005	4.130	99.81	No
A10	首次完全充电 First cycle fully charged	18.459	4.136	18.459	0.000	4.127	99.78	No
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T.2: 温度试验

T.2: Thermal Test

样品编号 Sample No.	样品状态 Sample Status	测试前 Pre-test		测试后 After-test				有无泄漏、排气、 解体、破裂、起火 Leakage, Venting, Disassembly, Rupture, Fire(Yes/No)
		质量 Mass $m_1(g)$	开路电压 OCV $V_1(V)$	质量 Mass $m_2(g)$	质量损失 Mass Loss (%)	开路电压 OCV $V_2(V)$	剩余电压 Residual OCV (%)	
A1	首次完全充电 First cycle fully charged	18.474	4.153	18.466	0.043	3.947	95.04	No
A2	首次完全充电 First cycle fully charged	18.436	4.135	18.429	0.038	3.947	95.04	No
A3	首次完全充电 First cycle fully charged	19.351	4.139	19.331	0.103	3.905	94.35	No
A4	首次完全充电 First cycle fully charged	19.268	4.124	19.252	0.083	3.908	94.76	No
A5	首次完全充电 First cycle fully charged	18.490	4.138	18.480	0.054	3.916	94.64	No
A6	首次完全充电 First cycle fully charged	18.249	4.144	18.241	0.044	3.957	95.49	No
A7	首次完全充电 First cycle fully charged	18.322	4.150	18.311	0.060	3.939	94.92	No
A8	首次完全充电 First cycle fully charged	18.306	4.123	18.293	0.071	3.866	93.77	No
A9	首次完全充电 First cycle fully charged	18.362	4.130	18.354	0.044	3.944	95.49	No
A10	首次完全充电 First cycle fully charged	18.459	4.127	18.444	0.027	3.944	95.57	No
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T.3: 振动

T.3: Vibration

样品编号 Sample No.	样品状态 Sample Status	测试前 Pre-test		测试后 After-test				有无泄漏、排气、 解体、破裂、起火 Leakage, Venting, Disassembly, Rupture, Fire(Yes/No)
		质量 Mass $m_1(g)$	开路电压 OCV $V_1(V)$	质量 Mass $m_2(g)$	质量损失 Mass Loss (%)	开路电压 OCV $V_2(V)$	剩余电压 Residual OCV (%)	
A1	首次完全充电 First cycle fully charged	18.466	3.947	18.461	0.027	3.933	99.65	No
A2	首次完全充电 First cycle fully charged	18.429	3.947	18.424	0.027	3.934	99.67	No
A3	首次完全充电 First cycle fully charged	19.331	3.905	19.330	0.005	3.891	99.64	No
A4	首次完全充电 First cycle fully charged	19.252	3.908	19.248	0.021	3.895	99.67	No
A5	首次完全充电 First cycle fully charged	18.480	3.916	18.479	0.005	3.904	99.69	No
A6	首次完全充电 First cycle fully charged	18.241	3.957	18.234	0.038	3.943	99.65	No
A7	首次完全充电 First cycle fully charged	18.311	3.939	18.308	0.016	3.926	99.67	No
A8	首次完全充电 First cycle fully charged	18.293	3.866	18.290	0.016	3.852	99.64	No
A9	首次完全充电 First cycle fully charged	18.354	3.944	18.349	0.027	3.931	99.67	No
A10	首次完全充电 First cycle fully charged	18.444	3.944	18.439	0.027	3.932	99.70	No

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T.4: 冲击

T.4: Shock

样品编号 Sample No.	样品状态 Sample Status	测试前 Pre-test		测试后 After-test				有无泄漏、排气、 解体、破裂、起火 Leakage, Venting, Disassembly, Rupture, Fire(Yes/No)
		质量 Mass $m_1(g)$	开路电压 OCV $V_1(V)$	质量 Mass $m_2(g)$	质量损失 Mass Loss (%)	开路电压 OCV $V_2(V)$	剩余电压 Residual OCV (%)	
A1	首次完全充电 First cycle fully charged	18.461	3.933	18.459	0.011	3.931	99.95	No
A2	首次完全充电 First cycle fully charged	18.424	3.934	18.424	0.000	3.932	99.95	No
A3	首次完全充电 First cycle fully charged	19.330	3.891	19.330	0.000	3.888	99.92	No
A4	首次完全充电 First cycle fully charged	19.248	3.895	19.248	0.000	3.893	99.95	No
A5	首次完全充电 First cycle fully charged	18.479	3.904	18.475	0.022	3.902	99.95	No
A6	首次完全充电 First cycle fully charged	18.234	3.943	18.234	0.000	3.941	99.95	No
A7	首次完全充电 First cycle fully charged	18.308	3.926	18.308	0.000	3.924	99.95	No
A8	首次完全充电 First cycle fully charged	18.290	3.852	18.290	0.000	3.850	99.95	No
A9	首次完全充电 First cycle fully charged	18.349	3.931	18.349	0.000	3.929	99.95	No
A10	首次完全充电 First cycle fully charged	18.439	3.932	18.437	0.022	3.930	99.95	No
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T.5: 外部短路**T.5: External Short Circuit**

样品编号 Sample No	样品状态 Sample Status	样品表面最高温度(℃) Highest External Temperature/℃	有无解体、破裂、起火 Disassembly, Rupture, Fire(Yes/No)
A1	首次完全充电 First cycle fully charged	58.4	No
A2	首次完全充电 First cycle fully charged	57.9	No
A3	首次完全充电 First cycle fully charged	57.4	No
A4	首次完全充电 First cycle fully charged	58.2	No
A5	首次完全充电 First cycle fully charged	58.1	No
A6	首次完全充电 First cycle fully charged	58.3	No
A7	首次完全充电 First cycle fully charged	57.5	No
A8	首次完全充电 First cycle fully charged	57.8	No
A9	首次完全充电 First cycle fully charged	58.3	No
A10	首次完全充电 First cycle fully charged	57.7	No
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T.6:挤压
T.6: Crush

样品编号 Sample No.	样品状态 Sample Status	样品表面最高温度(℃) Highest External Temperature/℃	有无解体、起火 Disassembly, Fire(Yes/No)
B1	首次 50%容量 First cycle charged 50% rated capacity	101.0	No
B2	首次 50%容量 First cycle charged 50% rated capacity	100.5	No
B3	首次 50%容量 First cycle charged 50% rated capacity	35.8	No
B4	首次 50%容量 First cycle charged 50% rated capacity	33.9	No
B5	首次 50%容量 First cycle charged 50% rated capacity	124.6	No
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T.7: 过度充电

T.7: Overcharge

样品编号 Sample No.	样品状态 Sample Status	有无解体、起火 Disassembly, Fire(Yes/No)
C1	首次完全充电 First cycle fully charged	No
C2	首次完全充电 First cycle fully charged	No
C3	首次完全充电 First cycle fully charged	No
C4	首次完全充电 First cycle fully charged	No
C5	50 次完全充电 50 cycles fully charged	No
C6	50 次完全充电 50 cycles fully charged	No
C7	50 次完全充电 50 cycles fully charged	No
C8	50 次完全充电 50 cycles fully charged	No
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T.8: 强制放电

T.8: Forced Discharge

样品编号 Sample No.	样品状态 Sample Status	有无解体、起火 Disassembly, Fire(Yes/No)
D1	首次完全放电 First cycle fully discharged	No
D2	首次完全放电 First cycle fully discharged	No
D3	首次完全放电 First cycle fully discharged	No
D4	首次完全放电 First cycle fully discharged	No
D5	首次完全放电 First cycle fully discharged	No
D6	首次完全放电 First cycle fully discharged	No
D7	首次完全放电 First cycle fully discharged	No
D8	首次完全放电 First cycle fully discharged	No
D9	首次完全放电 First cycle fully discharged	No
D10	首次完全放电 First cycle fully discharged	No
D11	50 次完全放电 50 cycles fully discharged	No
D12	50 次完全放电 50 cycles fully discharged	No
D13	50 次完全放电 50 cycles fully discharged	No
D14	50 次完全放电 50 cycles fully discharged	No
D15	50 次完全放电 50 cycles fully discharged	No
D16	50 次完全放电 50 cycles fully discharged	No
D17	50 次完全放电 50 cycles fully discharged	No
D18	50 次完全放电 50 cycles fully discharged	No
D19	50 次完全放电 50 cycles fully discharged	No
D20	50 次完全放电 50 cycles fully discharged	No
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电池照片

* The end of report *