



UN38.3 测试报告

UN38.3 Test Report

样品名称:	可充电锂离子电池 ARB-L1-2600 3.6V 2600mAh 9.36Wh
Sample Name:	Rechargeable Li-ion Battery ARB-L1-2600 3.6V 2600mAh 9.36Wh
型号规格:	ARB-L1-2600 3.6V 2600mAh 9.36Wh
Model:	
委托单位:	深圳市朗恒电子有限公司
Applicant:	Shenzhen Langheng Electronic Co., Ltd.
检验项目:	高度模拟、温度试验、振动、冲击、外部短路、撞击、过度充电、强制放电
Test Items:	Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Impact, 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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样品名称 Sample Name	可充电锂离子电池 ARB-L1-2600 3.6V 2600mAh 9.36Wh		商标 Trademark	FENIX
	Rechargeable Li-ion Battery ARB-L1-2600 3.6V 2600mAh 9.36Wh		型号/规格 Model	ARB-L1-2600 3.6V 2600mAh 9.36Wh
委托单位 Applicant	名称 Name	深圳市朗恒电子有限公司 Shenzhen Langheng Electronic Co., Ltd.		
	地址 Address	深圳市宝安 33 区东方明工业城二栋八楼 8/F, 2nd Building, DongFangMing Industrial Center, 33rd District, Bao'an, Shenzhen		
来样方式 Means of Receiving	委托方送样 Submitted by applicant		送样日期 Accepted Date	2017-07-27
检验日期 Test Date	2017-07-31~2017-08-27			
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、撞击、过度充电、强制放电 Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Impact, 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			
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 08 月 27 日			

检测:
Tested by:

罗青松

审核:
Checked by:

宋明

批准:
Approved by:

冯海

电芯信息 Information for cell			
电芯型号 Cell model	H18650CH	额定容量 Rated Capacity	2600mAh
最大连续充电电流 Maximum charging current	2600mA	最大放电电流 Maximum discharge current	2600mA
充电限制电压 Limited charging voltage	4.20V	放电截止电压 Cut-Off voltage	2.75V
外观形状 Appearance	灰色圆柱体 Grey cylinder	电芯尺寸 Cell size	Φ18.22×65.22mm
电芯生产厂家 Cell manufacturer	深圳市比克动力电池有限公司 Shenzhen BAK Power Battery Co.,Ltd		

电池信息 Information for battery			
规格/型号 Model	ARB-L1-2600 3.6V 2600mAh 9.36Wh	最大放电电流 Maximum discharge current	2600mA
充电限制电压 Limited charging voltage	4.2V	放电截止电压 Cut-Off voltage	2.75 V
最大连续充电电流 Maximum charging current	2600mA	电池尺寸 Battery size	Φ20×73 mm
组成电芯数量 Number of cell	单电芯 Single cell	外观形状 Appearance	黑-银白色圆柱体 Black-silvery white cylinder
Pack 厂家 Pack manufacturer	深圳市优能电源技术有限公司 Shenzhen Your Power Technology Co., Ltd.		

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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	撞击 Impact	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	51.4421	4.132	51.4420	0.00	4.131	99.98	No
A2	首次完全充电 First cycle fully charged	51.0394	4.126	51.0393	0.00	4.125	99.98	No
A3	首次完全充电 First cycle fully charged	51.4691	4.123	51.4693	0.00	4.121	99.95	No
A4	首次完全充电 First cycle fully charged	51.3875	4.130	51.3876	0.00	4.129	99.98	No
A5	首次完全充电 First cycle fully charged	51.5846	4.111	51.5845	0.00	4.108	99.93	No
A6	首次完全充电 First cycle fully charged	51.4426	4.123	51.4424	0.00	4.121	99.95	No
A7	首次完全充电 First cycle fully charged	50.6526	4.124	50.6524	0.00	4.123	99.98	No
A8	首次完全充电 First cycle fully charged	51.7649	4.122	51.7649	0.00	4.120	99.95	No
A9	首次完全充电 First cycle fully charged	51.2412	4.151	51.2413	0.00	4.148	99.93	No
A10	首次完全充电 First cycle fully charged	51.0488	4.137	51.0487	0.00	4.136	99.98	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	51.4420	4.131	51.4376	0.01	4.093	99.08	No
A2	首次完全充电 First cycle fully charged	51.0393	4.125	51.0347	0.01	4.083	98.98	No
A3	首次完全充电 First cycle fully charged	51.4693	4.121	51.4643	0.01	4.080	99.01	No
A4	首次完全充电 First cycle fully charged	51.3876	4.129	51.3824	0.01	4.086	98.96	No
A5	首次完全充电 First cycle fully charged	51.5845	4.108	51.5797	0.01	4.067	99.00	No
A6	首次完全充电 First cycle fully charged	51.4424	4.121	51.4380	0.01	4.081	99.03	No
A7	首次完全充电 First cycle fully charged	50.6524	4.123	50.6480	0.01	4.082	99.01	No
A8	首次完全充电 First cycle fully charged	51.7649	4.120	51.7599	0.01	4.076	98.93	No
A9	首次完全充电 First cycle fully charged	51.2413	4.148	51.2362	0.01	4.097	98.77	No
A10	首次完全充电 First cycle fully charged	51.0487	4.136	51.0448	0.01	4.091	98.91	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	开路电压 OCV	质量 Mass	质量损失 Mass Loss	开路电压 OCV	剩余电压 Residual	
		m ₁ (g)	V ₁ (V)	m ₂ (g)	(%)	V ₂ (V)	OCV (%)	
A1	首次完全充电 First cycle fully charged	51.4376	4.093	51.4362	0.00	4.093	100.00	No
A2	首次完全充电 First cycle fully charged	51.0347	4.083	51.0330	0.00	4.082	99.98	No
A3	首次完全充电 First cycle fully charged	51.4643	4.080	51.4621	0.00	4.078	99.95	No
A4	首次完全充电 First cycle fully charged	51.3824	4.086	51.3805	0.00	4.086	100.00	No
A5	首次完全充电 First cycle fully charged	51.5797	4.067	51.5778	0.00	4.065	99.95	No
A6	首次完全充电 First cycle fully charged	51.4380	4.081	51.4363	0.00	4.079	99.95	No
A7	首次完全充电 First cycle fully charged	50.6480	4.082	50.6481	0.00	4.081	99.98	No
A8	首次完全充电 First cycle fully charged	51.7599	4.076	51.7580	0.00	4.073	99.93	No
A9	首次完全充电 First cycle fully charged	51.2362	4.097	51.2360	0.00	4.095	99.95	No
A10	首次完全充电 First cycle fully charged	51.0448	4.091	51.0425	0.00	4.090	99.98	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	51.4362	4.093	51.4361	0.00	4.093	100.00	No
A2	首次完全充电 First cycle fully charged	51.0330	4.082	51.0330	0.00	4.082	100.00	No
A3	首次完全充电 First cycle fully charged	51.4621	4.078	51.4621	0.00	4.078	100.00	No
A4	首次完全充电 First cycle fully charged	51.3805	4.086	51.3806	0.00	4.087	100.02	No
A5	首次完全充电 First cycle fully charged	51.5778	4.065	51.5777	0.00	4.065	100.00	No
A6	首次完全充电 First cycle fully charged	51.4363	4.079	51.4362	0.00	4.079	100.00	No
A7	5 首次完全充电 First cycle fully charged	50.6481	4.081	50.6481	0.00	4.081	100.00	No
A8	首次完全充电 First cycle fully charged	51.7580	4.073	51.7580	0.00	4.073	100.00	No
A9	首次完全充电 First cycle fully charged	51.2360	4.095	51.2361	0.00	4.095	100.00	No
A10	首次完全充电 First cycle fully charged	51.0425	4.090	51.0424	0.00	4.090	100.00	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	56.8	No
A2	首次完全充电 First cycle fully charged	57.2	No
A3	首次完全充电 First cycle fully charged	56.8	No
A4	首次完全充电 First cycle fully charged	55.6	No
A5	首次完全充电 First cycle fully charged	56.3	No
A6	首次完全充电 First cycle fully charged	56.6	No
A7	首次完全充电 First cycle fully charged	55.5	No
A8	首次完全充电 First cycle fully charged	56.2	No
A9	首次完全充电 First cycle fully charged	55.6	No
A10	首次完全充电 First cycle fully charged	55.5	No
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T.6: 撞击**T.6: Impact**

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	98.0	No
B2	首次 50%容量 First cycle charged 50% rated capacity	100.7	No
B3	首次 50%容量 First cycle charged 50% rated capacity	125.5	No
B4	首次 50%容量 First cycle charged 50% rated capacity	107.4	No
B5	首次 50%容量 First cycle charged 50% rated capacity	117.6	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

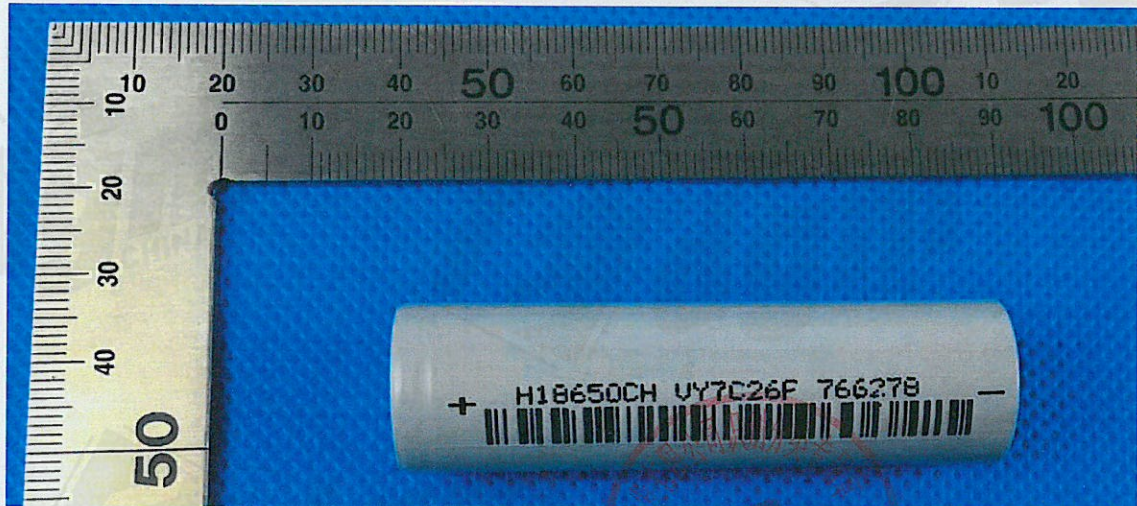
T.8: Forced Discharge

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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电芯照片



电池照片



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