



中国认可
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检测
TESTING
CNAS L3767

检测报告

Test Report

报告编号 (Report No.): RTN-UN-1711-013

样 品 名 称: 锂离子聚合物电池
Sample Name: Li-ion polymer battery
样 品 型 号: BL270
Sample Model: BL270
委 托 单 位: 东莞新能源科技有限公司
Consignor: Dongguan Amperex Technology Limited

东莞新能源科技有限公司测试中心
Dongguan Amperex Technology Limited Test Center

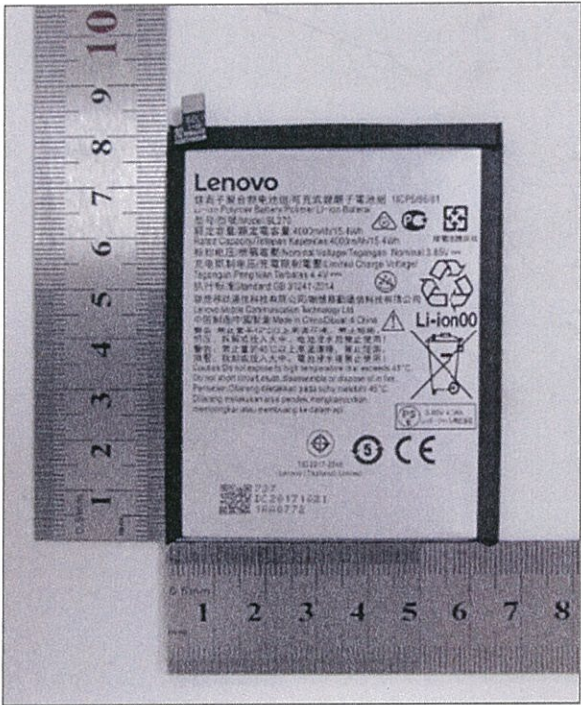
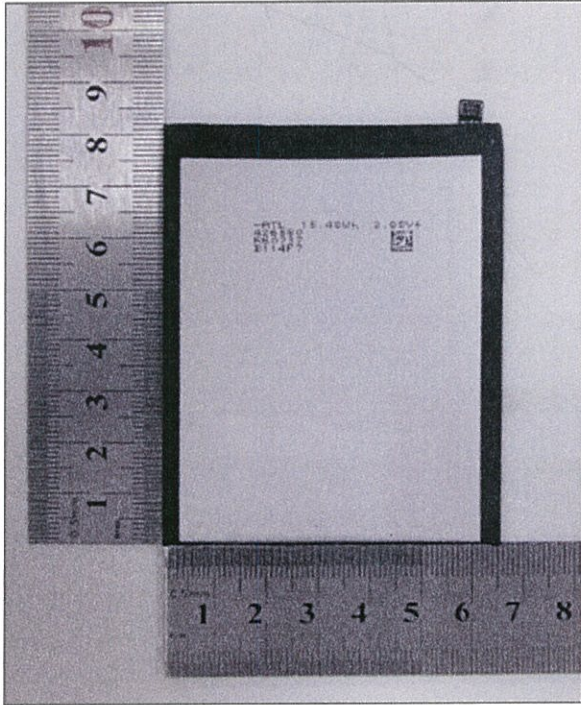
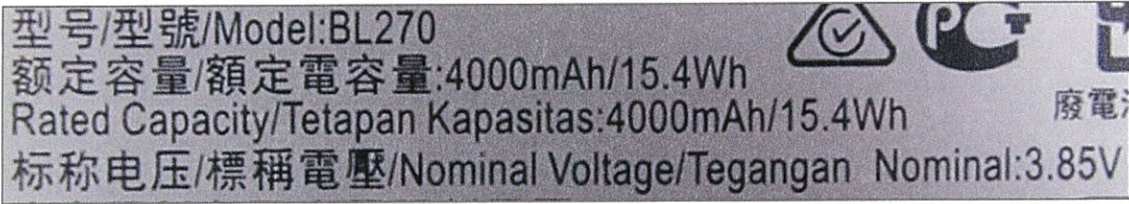


样品名称 Sample name	锂离子聚合物电池 Li-ion polymer battery	测试类别 Test category	委托检测 After testing
样品型号 Sample model	BL270	样品接收日期 Accepted date	2017-11-25
样品规格 Sample specification	3.85V 15.4Wh	测试开始日期 Test start date	2017-11-28
样品数量(个) Sample quantity(pcs)	43	测试结束日期 Test end date	2017-12-26
委托单位 Consignor	东莞新能源科技有限公司 Dongguan Amperex Technology Limited		
委托单位地址 Consignor address	中国广东省东莞市松山湖科技园工业西路 1 号 West Industrial Road 1#, Songshan Lake Industry Park, Dongguan City, Guangdong Province, P. R. China		
制造商 Manufacturer	宁德新能源科技有限公司 Ningde Amperex Technology Limited		
制造商地址 Manufacturer address	中国福建省宁德市蕉城区漳湾镇新港路 1 号 No.1 XinGang Road, Zhangwan Town, JiaoCheng City, Ningde, Fujian Province, P.R. China		
测试环境条件 Test environment condition	环境温度: 15℃ - 25℃; 环境湿度: 45%~75% Ambient temperature: 15℃ - 25℃; Ambient humidity: 45%~75%		
样品外观 Appearance	银色尼龙/铝/聚丙烯复合膜 Silver nylon/Al/PP compound film		
测试方法和判定标准 Test method and criterion	联合国《关于危险货物运输的建议书 试验和标准手册》 ST/SG/AC.10/11 Rev.6, 38.3 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11 Rev.6, 38.3		
测试项目 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		
测试结论 Conclusion	经测试, 该样品符合联合国《关于危险货物运输的建议书 试验和标准手册》 ST/SG/AC.10/11 Rev.6, 38.3 标准的要求 The sample has passed the test items of UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11 Rev.6, 38.3		
测试人员 Testers	陈保霖 2017.12.27 王绪成 2017.12.27		
编制人员 Compiler	陈雅 2017.12.27		
审核 Checker	刘城钦 2017.12.27		
批准 Approval	郭佳丽 2017.12.27. 蔡京晶: 技术负责人 Cai JingJing: Technical Director 郭佳丽: 中心主任 Guo Jiali: Center Director		



东莞新能源科技有限公司
测试中心
Dongguan Amperex
Technology Limited Test Center
(签章)
(signature)

样品描述及说明 Sample description and description			
样品名称 Sample name	锂离子聚合物电池 Li-ion polymer battery	型号 Model	BL270
额定容量 Rated capacity	4000mAh	标称电压 Nominal voltage	3.85V
化学组分 Chemical composition	钴酸锂-石墨		
测试用充电程序 Test charge program	按照制造商规定的办法进行充电 (3A 恒流充电至 4.2V, 2.8A 恒流充电至 4.4V, 然后以 4.4V 恒压充电至 0.02C)		
测试用放电程序 Test using a program	按照制造商规定的电流进行恒流放电至放电截止电压 (以 0.5C 放电至 3.0V)		

测试样品图 Test sample image	
	
图 1: 正面 Figure 1: positive	图 2: 反面 Figure 2: negative
	
图 3: 标识 Figure 3: Logo	

序号 No.	测试项目名称 Name of test	标准要求或标准条款号 Standard requirement or the clause number of standard	测试结果 Test result	本项结论 Test conclusion	备注 Remark
1	高度模拟 Altitude simulation	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T1; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.6, 38.3 Test 1	见附表 1 See Appendix 1	合格 Passed	/
2	温度试验 Thermal	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T2; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.6, 38.3 Test 2	见附表 2 See Appendix 2	合格 Passed	/
3	振动 Vibration	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T3; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.6, 38.3 Test 3	见附表 3 See Appendix 3	合格 Passed	/
4	冲击 Shock	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T4; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.6, 38.3 Test 4	见附表 4 See Appendix 4	合格 Passed	/
5	外部短路 External short-circuit	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T5; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.6, 38.3 Test 5	见附表 5 See Appendix 5	合格 Passed	/
6	挤压/撞击 Crush/Impact	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T6; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.6, 38.3 Test 6	见附表 6 See Appendix 6	合格 Passed	/
7	过度充电 Overcharge	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T7; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.6, 38.3 Test 7	见附表 7 See Appendix 7	合格 Passed	/
8	强制放电 Forced discharge	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T8; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.6, 38.3 Test 8	见附表 8 See Appendix 8	合格 Passed	/
分包测试情况 Subcontracted test condition		测试项目 Test items	/		
		分包实验室 Subcontracted Laboratory	名称 Name	/	邮编 Post code
			地址 Address	/	电话 Tel.

序号 No.	1	测试项目名称 Name of test items	高度模拟 Altitude simulation					
样品编号 Sample No.	样品状态 Sample status	测试前 Before test		测试后 After test		质量损失 Mass loss (%)	剩余电压 Residual OCV (%)	测试结果 Test result
		质量 m_1 (g)	开路电压 U_1 (V)	质量 m_2 (g)	开路电压 U_2 (V)			
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0773	首次完全充电 1cyc fully charged	53.8670	4.364	53.8660	4.358	0.00%	99.86%	O
8S%SB18C21722%736 1056143ATL17AM----- -----NVT1AA0630	首次完全充电 1cyc fully charged	53.9957	4.364	53.9952	4.357	0.00%	99.84%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0772	首次完全充电 1cyc fully charged	54.2574	4.365	54.2564	4.358	0.00%	99.84%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA1232	首次完全充电 1cyc fully charged	54.0777	4.364	54.0773	4.357	0.00%	99.84%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0785	首次完全充电 1cyc fully charged	53.7550	4.364	53.7547	4.357	0.00%	99.84%	O
8S%SB18C21722%736 1056143ATL17AM----- -----NVT1AA0837	首次完全充电 1cyc fully charged	54.1618	4.363	54.1610	4.357	0.00%	99.86%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0409	首次完全充电 1cyc fully charged	53.9914	4.364	53.9872	4.356	0.01%	99.82%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0408	首次完全充电 1cyc fully charged	54.1134	4.365	54.1081	4.359	0.01%	99.86%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0363	首次完全充电 1cyc fully charged	54.1103	4.366	54.1060	4.360	0.01%	99.86%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0410	首次完全充电 1cyc fully charged	54.1917	4.365	54.1868	4.358	0.01%	99.84%	O
以下空白								

注: L-泄漏; V-排气; D-解体; R-破裂; F-起火; O-无泄漏, 无排气, 无解体, 无破裂, 无起火。

Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No leakage, no venting, no disassembly, no rupture & no fire.

序号 No.	2	测试项目名称 Name of test items		温度试验 Thermal test				
样品编号 Sample No.	样品状态 Sample status	测试前 Before test		测试后 After test		质量损失 Mass loss (%)	剩余电压 Residual OCV (%)	测试结果 Test result
		质量 m_1 (g)	开路电压 U_1 (V)	质量 m_2 (g)	开路电压 U_2 (V)			
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0773	首次完全充电 1cyc fully charged	53.8660	4.358	53.8622	4.285	0.01%	98.32%	O
8S%SB18C21722%736 1056143ATL17AM----- -----NVT1AA0630	首次完全充电 1cyc fully charged	53.9952	4.357	53.9917	4.285	0.01%	98.35%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0772	首次完全充电 1cyc fully charged	54.2564	4.358	54.2525	4.287	0.01%	98.37%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA1232	首次完全充电 1cyc fully charged	54.0773	4.357	54.0729	4.285	0.01%	98.35%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0785	首次完全充电 1cyc fully charged	53.7547	4.357	53.7508	4.285	0.01%	98.35%	O
8S%SB18C21722%736 1056143ATL17AM----- -----NVT1AA0837	首次完全充电 1cyc fully charged	54.1610	4.357	54.1575	4.286	0.01%	98.37%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0409	首次完全充电 1cyc fully charged	53.9872	4.356	53.9865	4.284	0.00%	98.35%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0408	首次完全充电 1cyc fully charged	54.1081	4.359	54.1084	4.290	0.00%	98.42%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0363	首次完全充电 1cyc fully charged	54.1060	4.360	54.1052	4.288	0.00%	98.35%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0410	首次完全充电 1cyc fully charged	54.1868	4.358	54.1863	4.288	0.00%	98.39%	O
以下空白								

注: L-泄漏; V-排气; D-解体; R-破裂; F-起火; O-无泄漏, 无排气, 无解体, 无破裂, 无起火。

Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No leakage, no venting, no disassembly, no rupture & no fire.

序号 No.	3	测试项目名称 Name of test items		振动 Vibration				
样品编号 Sample No.	样品状态 Sample status	测试前 Before test		测试后 After test		质量损失 Mass loss (%)	剩余电压 Residual OCV (%)	测试结果 Test result
		质量 m_1 (g)	开路电压 U_1 (V)	质量 m_2 (g)	开路电压 U_2 (V)			
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0773	首次完全充电 1cyc fully charged	53.8622	4.285	53.8574	4.284	0.01%	99.98%	O
8S%SB18C21722%736 1056143ATL17AM----- -----NVT1AA0630	首次完全充电 1cyc fully charged	53.9917	4.285	53.9870	4.284	0.01%	99.98%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0772	首次完全充电 1cyc fully charged	54.2525	4.287	54.2476	4.286	0.01%	99.98%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA1232	首次完全充电 1cyc fully charged	54.0729	4.285	54.0685	4.284	0.01%	99.98%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0785	首次完全充电 1cyc fully charged	53.7508	4.285	53.7456	4.284	0.01%	99.98%	O
8S%SB18C21722%736 1056143ATL17AM----- -----NVT1AA0837	首次完全充电 1cyc fully charged	54.1575	4.286	54.1522	4.285	0.01%	99.98%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0409	首次完全充电 1cyc fully charged	53.9865	4.284	53.9814	4.283	0.01%	99.98%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0408	首次完全充电 1cyc fully charged	54.1084	4.290	54.1029	4.289	0.01%	99.98%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0363	首次完全充电 1cyc fully charged	54.1052	4.288	54.0997	4.287	0.01%	99.98%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0410	首次完全充电 1cyc fully charged	54.1863	4.288	54.1810	4.287	0.01%	99.98%	O
以下空白								

注: L-泄漏; V-排气; D-解体; R-破裂; F-起火; O-无泄漏, 无排气, 无解体, 无破裂, 无起火。

Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No leakage, no venting, no disassembly, no rupture & no fire.

序号 No.	4	测试项目名称 Name of test items		冲击 Shock				
样品编号 Sample No.	样品状态 Sample status	测试前 Before test		测试后 After test		质量损失 Mass loss (%)	剩余电压 Residual OCV (%)	测试结果 Test result
		质量 m_1 (g)	开路电压 U_1 (V)	质量 m_2 (g)	开路电压 U_2 (V)			
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0773	首次完全充电 1cyc fully charged	53.8574	4.284	53.8585	4.283	0.00%	99.98%	O
8S%SB18C21722%736 1056143ATL17AM----- -----NVT1AA0630	首次完全充电 1cyc fully charged	53.9870	4.284	53.9873	4.284	0.00%	100.00%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0772	首次完全充电 1cyc fully charged	54.2476	4.286	54.2484	4.286	0.00%	100.00%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA1232	首次完全充电 1cyc fully charged	54.0685	4.284	54.0685	4.283	0.00%	99.98%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0785	首次完全充电 1cyc fully charged	53.7456	4.284	53.7463	4.284	0.00%	100.00%	O
8S%SB18C21722%736 1056143ATL17AM----- -----NVT1AA0837	首次完全充电 1cyc fully charged	54.1522	4.285	54.1522	4.285	0.00%	100.00%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0409	首次完全充电 1cyc fully charged	53.9814	4.283	53.9826	4.282	0.00%	99.98%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0408	首次完全充电 1cyc fully charged	54.1029	4.289	54.1040	4.288	0.00%	99.98%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0363	首次完全充电 1cyc fully charged	54.0997	4.287	54.1014	4.286	0.00%	99.98%	O
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0410	首次完全充电 1cyc fully charged	54.1810	4.287	54.1828	4.287	0.00%	100.00%	O
以下空白								

注: L-泄漏; V-排气; D-解体; R-破裂; F-起火; O-无泄漏, 无排气, 无解体, 无破裂, 无起火。

Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No leakage, no venting, no disassembly, no rupture & no fire.

序号 No.	5	测试项目名称 Name of test items	外部短路 External short circuit		
样品编号 Sample No.	样品状态 Sample status	样品表面最高温度 Max. External Temperature (°C)	测试结果 Test result	备注 Remark	
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0773	首次完全充电 1cyc fully charged	57.9	O	/	
8S%SB18C21722%736 1056143ATL17AM----- -----NVT1AA0630	首次完全充电 1cyc fully charged	58.0	O	/	
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0772	首次完全充电 1cyc fully charged	58.1	O	/	
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA1232	首次完全充电 1cyc fully charged	58.2	O	/	
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0785	首次完全充电 1cyc fully charged	57.8	O	/	
8S%SB18C21722%736 1056143ATL17AM----- -----NVT1AA0837	首次完全充电 1cyc fully charged	57.8	O	/	
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0409	首次完全充电 1cyc fully charged	57.8	O	/	
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0408	首次完全充电 1cyc fully charged	57.8	O	/	
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0363	首次完全充电 1cyc fully charged	57.5	O	/	
8S%SB18C21722%737 1056143ATL17AM----- -----NVT1AA0410	首次完全充电 1cyc fully charged	57.1	O	/	
以下空白					
注: D-解体; R-破裂; F-起火; O-无解体, 无破裂, 无起火。 Note: D-Disassembly, R-Rupture, F-Fire, O- No disassembly, no rupture & no fire.					

[illegible]

注: D-解体; F-起火; O-无解体, 无起火。

Note: D-Disassembly, F-Fire, O- No disassembly, no fire.

[illegible]

序号 No.	8	测试项目名称 Name of test items	强制放电 Forced discharge
样品编号 Sample No.	样品状态 Sample status	测试结果 Test result	备注 Remark
R60737B112B7	首次完全放电 1cyc fully discharged	O	/
R60737C10676	首次完全放电 1cyc fully discharged	O	/
R60736G111E7	首次完全放电 1cyc fully discharged	O	/
R60737B11C44	首次完全放电 1cyc fully discharged	O	/
R60736A109C0	首次完全放电 1cyc fully discharged	O	/
R60736G1008A	首次完全放电 1cyc fully discharged	O	/
R60737C1073F	首次完全放电 1cyc fully discharged	O	/
R60737B11627	首次完全放电 1cyc fully discharged	O	/
R60737A130E3	首次完全放电 1cyc fully discharged	O	/
R60737A130E5	首次完全放电 1cyc fully discharged	O	/
R60737C10687	50 次完全放电 50yc fully discharged	O	/
R60736G11972	50 次完全放电 50yc fully discharged	O	/
R60737A12D84	50 次完全放电 50yc fully discharged	O	/
R60737A12D83	50 次完全放电 50yc fully discharged	O	/
R60736G11DC8	50 次完全放电 50yc fully discharged	O	/
R60737A120E5	50 次完全放电 50yc fully discharged	O	/
R60737A12F47	50 次完全放电 50yc fully discharged	O	/
R60737B11022	50 次完全放电 50yc fully discharged	O	/
R60737B11C94	50 次完全放电 50yc fully discharged	O	/
R60737A1172E	50 次完全放电 50yc fully discharged	O	/

注: D-解体; F-起火; O-无解体, 无起火。

Note: D-Disassembly, F-Fire, O- No disassembly, no fire.

声 明

Statement



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