

检测概要  
Test Summary

报告编号 Report No.	T8-20230428-R649	报告签发日期 Date of test report	2023年5月25日	样品名称 Sample name	可充式锂离子电池 Rechargeable Lithium-ion Cell
样品型号 Sample model	HB110580ENW-11	样品规格 Specification	3.89V 0.22Wh 55.5mAh	质量 (g) mass (g)	1.6
样品外观 Appearance	银色纽扣状金属外壳Silvery button metal shell				
制造商信息 Manufacturer Information	制造商名称 Manufacturer Name	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			
	电话号码 Telephone Number	+86-(0)593-258 3888	电子邮箱 E-mail	ND-Reception@ATLBattery.com	
	网址 Website	www.atlbattery.com			
实验室信息 Lab Information	实验室名称 Lab Name	东莞新能源科技有限公司中心实验室 Dongguan Amperex Technology Limited Central Lab			
	实验室地址 Lab 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			
	电话号码 Telephone Number	+86-0769-88980975	电子邮箱 E-mail	Lab-Service@ATLBattery.com	
	网址 Website	www.atlbattery.com			
序号 No.	测试项目名称 Name of test items	检测结果(合格/不合格) Test result (Pass/Fail)		备注 Remark	
T.1	高度模拟 Altitude simulation	合格 Passed		/	
T.2	温度试验 Thermal test	合格 Passed		/	
T.3	振动 Vibration	合格 Passed		/	
T.4	冲击 Shock	合格 Passed		/	
T.5	外部短路 External short-circuit	合格 Passed		/	
T.6	挤压 Crush	合格 Passed		/	
T.7	过度充电 Overcharge	/		电芯不适用 Not applicable for the cell	
T.8	强制放电 Forced discharge	合格 Passed		/	
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.7/Amend 1, 38.3 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11 Rev.7/Amend 1, 38.3			东莞新能源科技有限公司中心实验室 Dongguan Amperex Technology Limited Central Lab (签章) (signature) 签发日期: 2023年5月25日	
签名 Signature	郭佳丽	李作为: 技术负责人 Li Zuo Wei: Technical Director 郭佳丽: 中心主任 Guo Jiali: Center Director			



中国认可  
国际互认  
检测  
TESTING  
CNAS L3767

# UN38.3检测报告

## UN38.3 Test Report

样品名称:	可充式锂离子电池
Sample Name:	Rechargeable Lithium-ion Cell
样品型号:	HB110580ENW-11
Sample Model:	HB110580ENW-11
委托单位:	宁德新能源科技有限公司
Consignor:	Ningde Amperex Technology Limited

东莞新能源科技有限公司中心实验室  
Dongguan Amperex Technology Limited Central Lab

样品名称 Sample name	可充式锂离子电池 Rechargeable Lithium-ion Cell	测试类别 Test category	委托检测 After testing
样品型号 Sample model	HB110580ENW-11	样品接收日期 Accepted date	2023-05-05
样品规格 Sample specification	3.89V 0.22Wh 55.5mAh	测试开始日期 Test start date	2023-05-09
样品数量(个) Sample quantity (pcs.)	40	测试结束日期 Test end date	2023-05-19
委托单位信息 Consignor Information	委托单位 Consignor	宁德新能源科技有限公司 Ningde Amperex Technology Limited	
	委托单位地址 Consignor 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	
制造商信息 Manufacturer Information	制造商名称 Manufacturer Name	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	
	电话号码 Telephone Number	+86-(0)593-258 3888	电子邮箱 E-mail ND- Reception@ATLBattery.com
	网址 Website	www.atlbattery.com	
测试环境条件 Test environment condition	环境温度: 15°C - 25°C; 环境湿度: ≤ 75% RH Ambient temperature: 15°C - 25°C; Ambient humidity: ≤ 75% RH		
样品外观 Appearance	银色纽扣状金属外壳 Silvery button metal shell		
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.7/Amend 1, 38.3 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11 Rev.7/Amend 1, 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、强制放电 Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Crush, 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.7/Amend 1,38.3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.7/Amend 1,38.3		
测试人员 Testers	李雪姣 肖亮		 东莞新能源科技有限公司中心 实验室 Dongguan Amperex Technology Limited Central Lab (签章) (signature) 签发日期: 2023年5月25日
审核 Checker	李作为		
批准 Approval	郭佳丽 李作为: 技术负责人 Li Zuo Wei: Technical Director 郭佳丽: 中心主任 Guo Jiali: Center Director		

### 样品描述及说明

Sample description

化学组分 Chemical composition	钴酸锂-石墨
测试用充电程序 Test charge program	按照制造商推荐的充电程序进行 (166.5mA CC to 4.3V ,CV to 83.25mA ; 83.25mA CC to 4.48V ,CV to 2.775mA )
测试用放电程序 Test discharge program	按照制造商推荐的放电程序进行 (166.5mA DC to 3.0V)

### 测试样品图片

Test sample image



图1: 正面  
Figure 1: Front side



图2: 反面  
Figure 2: Back side



图3: 标识  
Figure 3: Logo

序号 No	测试项目名称 Name of test	标准要求或标准号条款 Standard requirement or the clause number of standard	测试现象 Phenomenon	本项结论 Test conclusion	备注 Remarks
T.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》ST/SG/AC.10/11/ Rev.7/Amend 1, 38.3.4.1 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.7/Amend 1, 38.3.4.1	见附表1 See Appendix 1	合格 Passed	/
T.2	温度试验 Thermal test	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.7/Amend 1, 38.3.4.2 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.7/Amend 1, 38.3.4.2	见附表2 See Appendix 2	合格 Passed	/
T.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》ST/SG/AC.10/11/ Rev.7/Amend 1, 38.3.4.3 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.7/Amend 1, 38.3.4.3	见附表3 See Appendix 3	合格 Passed	/
T.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》ST/SG/AC.10/11/ Rev.7/Amend 1, 38.3.4.4 UN Manual of Test and Criteria ST/SG/ AC.10/11/Rev.7/Amend 1, 38.3.4.4	见附表4 See Appendix 4	合格 Passed	/
T.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》ST/SG/AC.10/11/ Rev.7/Amend 1, 38.3.4.5 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.7/Amend 1, 38.3.4.5	见附表5 See Appendix 5	合格 Passed	/
T.6	挤压 Crush	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.7/Amend 1, 38.3.4.6 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.7/Amend 1, 38.3.4.6	见附表6 See Appendix 6	合格 Passed	/
T.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》ST/SG/AC.10/11/ Rev.7/Amend 1, 38.3.4.7 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.7/Amend 1, 38.3.4.7	/	/	电芯不适 用 Not applicable for the cell
T.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》ST/SG/AC.10/11/ Rev.7/Amend 1, 38.3.4.8 UN Manual of Test and Criteria ST/ SG/ AC.10/11/Rev.7/Amend 1, 38.3.4.8	见附表8 See Appendix 8	合格 Passed	/

附表1  
Appendix 1

序号 No.	T.1	测试项目名称 Name of test items		高度模拟 Altitude simulation				
		样品质量 Sample mass(g)		质量损失 Mass loss (%)	开路电压 OCV (V)		剩余电压 Residual OCV (%)	测试现象 Phenomenon
		M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	FDY315D70547	1.5843	1.5846	-0.02	4.464	4.457	99.84	O
1cycle fully charged	FDY315D702FF	1.5848	1.5853	-0.03	4.465	4.458	99.84	O
1cycle fully charged	FDY315D708FE	1.5824	1.5826	-0.01	4.464	4.457	99.84	O
1cycle fully charged	FDY315D704FB	1.5839	1.5842	-0.02	4.463	4.456	99.84	O
1cycle fully charged	FDY315D70978	1.5837	1.5835	0.01	4.464	4.457	99.84	O
25cycles fully charged	FDY315D70502	1.5871	1.5873	-0.01	4.463	4.457	99.87	O
25cycles fully charged	FDY315E70279	1.5870	1.5867	0.02	4.463	4.458	99.89	O
25cycles fully charged	FDY315E701C9	1.5880	1.5885	-0.03	4.463	4.456	99.84	O
25cycles fully charged	FDY315E700E2	1.5881	1.5883	-0.01	4.464	4.457	99.84	O
25cycles fully charged	FDY315D708C9	1.5868	1.5869	-0.01	4.464	4.458	99.87	O

**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.

附表2  
Appendix 2

序号 No.	T.2	测试项目名称 Name of test items		温度试验 Thermal test				
		样品质量 Sample mass(g)		质量损失 Mass loss (%)	开路电压 OCV (V)		剩余电压 Residual OCV (%)	测试现象 Phenomenon
样品组别 Group	样品信息 Sample information (如Barcode)	M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	FDY315D70547	1.5846	1.5844	0.01	4.457	4.384	98.36	O
1cycle fully charged	FDY315D702FF	1.5853	1.5851	0.01	4.458	4.384	98.34	O
1cycle fully charged	FDY315D708FE	1.5826	1.5826	0.00	4.457	4.381	98.29	O
1cycle fully charged	FDY315D704FB	1.5842	1.5843	-0.01	4.456	4.380	98.29	O
1cycle fully charged	FDY315D70978	1.5835	1.5836	-0.01	4.457	4.381	98.29	O
25cycles fully charged	FDY315D70502	1.5873	1.5874	-0.01	4.457	4.387	98.43	O
25cycles fully charged	FDY315E70279	1.5867	1.5870	-0.02	4.458	4.389	98.45	O
25cycles fully charged	FDY315E701C9	1.5885	1.5885	0.00	4.456	4.387	98.45	O
25cycles fully charged	FDY315E700E2	1.5883	1.5886	-0.02	4.457	4.392	98.54	O
25cycles fully charged	FDY315D708C9	1.5869	1.5872	-0.02	4.458	4.393	98.54	O

**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.

附表3  
Appendix 3

序号 No.	T.3	测试项目名称 Name of test items		振动 Vibration					
		样品信息 Sample information (如Barcode)	样品质量 Sample mass(g)		质量损失 Mass loss (%)	开路电压 OCV (V)		剩余电压 Residual OCV (%)	测试现象 Phenom enon
			M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	FDY315D70547	1.5844	1.5840	0.03	4.384	4.383	99.98	O	
1cycle fully charged	FDY315D702FF	1.5851	1.5847	0.03	4.384	4.383	99.98	O	
1cycle fully charged	FDY315D708FE	1.5826	1.5821	0.03	4.381	4.381	100.00	O	
1cycle fully charged	FDY315D704F B	1.5843	1.5841	0.01	4.380	4.379	99.98	O	
1cycle fully charged	FDY315D70978	1.5836	1.5835	0.01	4.381	4.380	99.98	O	
25cycles fully charged	FDY315D70502	1.5874	1.5870	0.03	4.387	4.387	100.00	O	
25cycles fully charged	FDY315E70279	1.5870	1.5865	0.03	4.389	4.388	99.98	O	
25cycles fully charged	FDY315E701C9	1.5885	1.5881	0.03	4.387	4.387	100.00	O	
25cycles fully charged	FDY315E700E2	1.5886	1.5883	0.02	4.392	4.391	99.98	O	
25cycles fully charged	FDY315D708C9	1.5872	1.5869	0.02	4.393	4.393	100.00	O	

**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.



附表4  
Appendix 4

序号 No.	T.4	测试项目名称 Name of test items		冲击 Shock				
样品组别 Group	样品信息 Sample information (如Barcode)	样品质量 Sample mass(g)		质量损失 Mass loss (%)	开路电压 OCV (V)		剩余电压 Residual OCV (%)	测试现象 Phenomenon
		M1 (before test)	M2 (after test)		OCV1 (before test)	OCV2 (after test)		
1cycle fully charged	FDY315D70547	1.5840	1.5839	0.01	4.383	4.382	99.98	O
1cycle fully charged	FDY315D702FF	1.5847	1.5846	0.01	4.383	4.383	100.00	O
1cycle fully charged	FDY315D708FE	1.5821	1.5820	0.01	4.381	4.380	99.98	O
1cycle fully charged	FDY315D704F B	1.5841	1.5840	0.01	4.379	4.379	100.00	O
1cycle fully charged	FDY315D70978	1.5835	1.5832	0.02	4.380	4.380	100.00	O
25cycles fully charged	FDY315D70502	1.5870	1.5869	0.01	4.387	4.386	99.98	O
25cycles fully charged	FDY315E70279	1.5865	1.5863	0.01	4.388	4.388	100.00	O
25cycles fully charged	FDY315E701C9	1.5881	1.5880	0.01	4.387	4.386	99.98	O
25cycles fully charged	FDY315E700E2	1.5883	1.5882	0.01	4.391	4.391	100.00	O
25cycles fully charged	FDY315D708C9	1.5869	1.5867	0.01	4.393	4.392	99.98	O

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.

附表5  
Appendix 5

序号NO.	T.5	测试项目名称 Name of test items	外部短路 External short circuit		
样品组别 Group		样品信息 Sample information (如Barcode)	样品表面最高温度 Max. External temperature (°C)	测试现象 Phenomenon	备注 Remark
1 cycle fully charged		FDY315D70547	103.1	O	/
1 cycle fully charged		FDY315D702FF	115.6	O	/
1 cycle fully charged		FDY315D708FE	112.5	O	/
1 cycle fully charged		FDY315D704FB	95.7	O	/
1 cycle fully charged		FDY315D70978	111.8	O	/
25cycles fully charged		FDY315D70502	95.2	O	/
25cycles fully charged		FDY315E70279	117.8	O	/
25cycles fully charged		FDY315E701C9	118.6	O	/
25cycles fully charged		FDY315E700E2	98.2	O	/
25cycles fully charged		FDY315D708C9	114.1	O	/

**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.**

附表6  
Appendix 6

序号NO.	T.6	测试项目名称 Name of test items	挤压 Crush		
样品组别 Group		样品信息 Sample information (如Barcode)	样品表面最高温度 Max. External temperature (°C)	测试现象 Phenomenon	备注 Remark
1cycle 50% capacity		FDY315D70627	45.3	O	/
1cycle 50% capacity		FDY315D706DA	38.2	O	/
1cycle 50% capacity		FDY315E700E8	32.0	O	/
1cycle 50% capacity		FDY315D70706	30.4	O	/
1cycle 50% capacity		FDY315D7079B	37.1	O	/
25cycles 50% capacity		FDY315D705F5	36.7	O	/
25cycles 50% capacity		FDY315C704B7	33.5	O	/
25cycles 50% capacity		FDY315D70032	30.8	O	/
25cycles 50% capacity		FDY315D700E2	43.7	O	/
25cycles 50% capacity		FDY315D7073A	39.4	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.**

附表7  
Appendix 7

序号 No.	T.7	测试项目名称 Name of test items	过度充电 Overcharge	
样品组别 Group		样品信息 Sample Information (如Barcode)	测试现象 Phenomenon	备注 Remark
/		/	/	/
<b>注: D-解体; F-起火; O-无解体, 无起火。</b> <b>Note: D-Disassembly, F-Fire, O-No disassembly, no fire.</b>				

附表8  
Appendix 8

序号NO.	T.8	测试项目名称 Name of test items		强制放电 Forced discharge	
		样品组别 Group	样品信息 Sample information (如Barcode)	测试现象 Phenomenon	备注 Remark
		1cycle fully discharged	FDY315D708CA	O	/
		1cycle fully discharged	FDY315E70021	O	/
		1cycle fully discharged	FDY315E70264	O	/
		1cycle fully discharged	FDY315E7011D	O	/
		1cycle fully discharged	FDY315C70658	O	/
		1cycle fully discharged	FDY315D7058B	O	/
		1cycle fully discharged	FDY315D7019E	O	/
		1cycle fully discharged	FDY315D708E9	O	/
		1cycle fully discharged	FDY315E70076	O	/
		1cycle fully discharged	FDY315D707AB	O	/
		25cycles fully discharged	FDY315D70B8E	O	/
		25cycles fully discharged	FDY315C70545	O	/
		25cycles fully discharged	FDY315D704CA	O	/
		25cycles fully discharged	FDY315D704DD	O	/
		25cycles fully discharged	FDY315D7001C	O	/
		25cycles fully discharged	FDY315D70161	O	/
		25cycles fully discharged	FDY315D704ED	O	/
		25cycles fully discharged	FDY315D70526	O	/
		25cycles fully discharged	FDY315D70625	O	/
		25cycles fully discharged	FDY315E7006D	O	/
<p>注: D-解体; F-起火; O-无解体, 无起火。            Note: D-Disassembly, F-Fire, O-No disassembly, no fire.</p>					

# 声明

## Statement

1. 检测报告无本实验室公章无效。

The test report is invalid if not affixed the official seal of the laboratory to it.

2. 检测报告涂改无效。

The test report is invalid if it is blotted out.

3. 送样委托检测结果，仅对所送样品有效。

The conclusion of the consignment test is only valid for the provided sample.

4. 对检测报告若有异议，应于收到报告之日起十五日内向检测单位提出。

Objections to the test report must be submitted to ATL Central Lab within 15 days.

5. 本报告未经本实验室书面许可，不可部分复制。

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### 东莞新能源科技有限公司中心实验室

Dongguan Amperex Technology Limited Central Lab

地址: 中国广东省东莞市松山湖科技园工业西路1号

Addr.: West Industrial Road 1#, Songshan Lake Industry Park, Dongguan City, Guangdong Province, P. R. China

电话 Tel. : +86-0769-88980975

邮箱 E-mail: Lab-Service@ATLBattery.com

网址 Website : www.atlbattery.com