东莞新能德科技有限公司
Dongguan NVT Technology Co., Ltd.
东莞新能德科技有限公司中心实验室
广东省东莞市东坑镇角社村兴国中路 8 号

中国认可
国际互认
检测
TESTING
CNAS L10476

检测报告
Test Report

样品名称： 锂离子电池组
QM45 3.89V/4365mAh/16.98Wh

Name of Sample: RECHARGEABLE LITHIUM ION BATTERY
QM45 3.89V/4365mAh/16.98Wh

委托单位: 东莞新能德科技有限公司

Consignor: Dongguan NVT Technology Co., Ltd.

注：联合国《试验和标准手册》 UN38.3 ST/SG/AC.10/11/Rev.7/Amend.1 38.3.4.1~ 38.3.4.8 实验室已获得 CNAS 认可

东莞新能德科技有限公司中心实验室
报告专用章
东莞新能德科技有限公司中心实验室
Dongguan NVT Technology Co., Ltd. Central Laboratory

东莞新能德科技有限公司中心实验室检测报告

Dongguan NVT Technology Co., Ltd. Central Laboratory Test Report

样品名称 Name of Sample	中文 Chinese	锂离子电池组 QM45 3.89V/4365mAh/16.98Wh	
	英文 English	RECHARGEABLE LITHIUM ION BATTERY QM45 3.89V/4365mAh/16.98Wh	
样品编号 Sample No.	OT23092230		
委托单位 Consignor	东莞新能德科技有限公司 Dongguan NVT Technology Co., Ltd.		
生产单位 Manufacturer	东莞新能德科技有限公司 Dongguan NVT Technology Co., Ltd.		
检测方法 Test method	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7 Amend.1 Section 38.3 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Amend.1 Section 38.3		
判定标准 Criterion	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7 Amend.1 Section 38.3 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Amend.1 Section 38.3		
样品外观 Appearance	银色 Silver		
样品接受日期 Sample Receipt Date	2023-10-05	检测起 迄日期 Test Date	2023-10-10 ~ 2023-10-31
检测项目 Test Items	高度模拟；温度循环；振动；冲击；外短路；挤压；过充电；强制放电 Altitude simulation；Thermal test；Vibration；Shock；External short circuit；Crush；Overcharge；Forced discharge		
检测结论 Conclusion	经检测，该样品符合联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7 Amend.1 38.3 标准要求。 The sample has passed the test items of UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Amend.1 38.3 东莞新能德科技有限公司中心实验室 报告专用章 生效日期(Date)： 2023-11-10		
备注 Comment	/		
委托单位地址 Consignor Address	广东省东莞市东坑镇角社村兴国中路 8 号 No.8 Xingguo Middle Road, Jiaoshe Village, Dongkeng Town, Dongguan City, Guangdong Province	邮政编码 Post Code	523000

批准：
Approver:
职务：授权签字人
Title: Authorized signatory

审核：谭晓婕
Reviewer: Tanxiaojie

编制：刘彦宾
Compiler: Liu yanbin

东莞新能德科技有限公司中心实验室检测报告

Dongguan NVT Technology Co.,Ltd. Central Laboratory Test Report

序号 NO.	检测项目名称 Name of Test Items	标准要求或标准条款号 Standard requirement or The Clause Number of Standard	检测结果 Test Result	本项结论 Conclusion	备注 Remark
1	高度模拟 Altitude simulation	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.1 试验 T.1 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.1 Test T.1	见附表 1 See Appendix 1	合格 Pass	/
2	温度循环 Thermal test	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.2 试验 T.2 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.2 Test T.2	见附表 2 See Appendix 2	合格 Pass	/
3	振动 Vibration	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.3 试验 T.3 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.3 Test T.3	见附表 3 See Appendix 3	合格 Pass	/
4	冲击 Shock	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.4 试验 T.4 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.4 Test T.4	见附表 4 See Appendix 4	合格 Pass	/
5	外短路 External short circuit	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.5 试验 T.5 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.5 Test T.5	见附表 5 See Appendix 5	合格 Pass	/
6	挤压 Crush	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.6 试验 T.6 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.6 Test T.6	见附表 6 See Appendix 6	合格 Pass	/
7	过充电 Overcharge	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.7 试验 T.7 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.7 Test T.7	见附表 7 See Appendix 7	合格 Pass	/
8	强制放电 Forced discharge	联合国《试验和标准手册》 ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.8 试验 T.8 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7 Amend.1 38.3.4.8 Test T.8	见附表 8 See Appendix 8	合格 Pass	/

检测环境条件 Test Environment Condition	环境温度：15℃-25℃ ； 环境湿度：/% Ambient temperature: 15℃-25℃ ; Ambient humidity: /%				
分包检验情况 Subcontracted Test Condition	检测项目 Test Item	无 NA			
	分包实验室 Subcontracted Laboratory	名称 Name	/	邮编 Post Code	/
		地址 Address	/	电话 Tel	/

东莞新能德科技有限公司中心实验室检测报告-附表 1

Dongguan NVT Technology Co., Ltd. Central Laboratory Test Report- Appendix 1

序号 No.	1	检测项目名称 Name of Test Items		高度模拟 Altitude simulation				
样品编号 Sample No.	样品状态 Sample Status	试验前 Before		试验后 After		质量损失 Mass Loss(%)	剩余电压 Residual OCV(%)	其他现象 Other Event
		质量 Mass(g)	开路电压 OCV(V)	质量 Mass(g)	开路电压 OCV(V)			
1	1 CYCLE 完全充电 1CYCLE Fully charged	65.136	4.426	65.136	4.423	0.00	99.93	O
2	1 CYCLE 完全充电 1CYCLE Fully charged	65.027	4.429	65.026	4.426	0.00	99.93	O
3	1 CYCLE 完全充电 1CYCLE Fully charged	65.073	4.428	65.073	4.425	0.00	99.93	O
4	1 CYCLE 完全充电 1CYCLE Fully charged	64.923	4.427	64.923	4.424	0.00	99.93	O
5	1 CYCLE 完全充电 1CYCLE Fully charged	64.931	4.429	64.931	4.426	0.00	99.92	O
6	25 CYCLE 完全充电 25CYCLE Fully charged	64.008	4.434	64.008	4.431	0.00	99.94	O
7	25 CYCLE 完全充电 25CYCLE Fully charged	65.172	4.436	65.171	4.434	0.00	99.95	O
8	25 CYCLE 完全充电 25 CYCLE Fully charged	64.914	4.436	64.914	4.434	0.00	99.95	O
9	25 CYCLE 完全充电 25 CYCLE Fully charged	64.902	4.433	64.902	4.430	0.00	99.93	O
10	25 CYCLE 完全充电 25 CYCLE Fully charged	64.930	4.435	64.929	4.432	0.00	99.94	O
以下空白	This space intentionally left blank							

备注：L-泄漏 V-漏气 D-解体 R-破裂 F-起火 O-无泄漏、无漏气、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.

东莞新能德科技有限公司中心实验室检测报告-附表 2

Dongguan NVT Technology Co., Ltd. Central Laboratory Test Report- Appendix 2

序号 No.	2	检测项目名称 Name of Test Items		温度循环 Thermal test				
样品编号 Sample No.	样品状态 Sample Status	试验前 Before		试验后 After		质量损失 Mass Loss(%)	剩余电压 Residual OCV(%)	其他现象 Other Event
		质量 Mass(g)	开路电压 OCV(V)	质量 Mass(g)	开路电压 OCV(V)			
1	1 CYCLE 完全充电 1CYCLE Fully charged	65.136	4.423	65.132	4.342	0.01	98.18	O
2	1 CYCLE 完全充电 1CYCLE Fully charged	65.026	4.426	65.023	4.345	0.00	98.17	O
3	1 CYCLE 完全充电 1CYCLE Fully charged	65.073	4.425	65.069	4.344	0.01	98.17	O
4	1 CYCLE 完全充电 1CYCLE Fully charged	64.923	4.424	64.919	4.344	0.01	98.19	O
5	1 CYCLE 完全充电 1CYCLE Fully charged	64.931	4.426	64.927	4.340	0.01	98.07	O
6	25 CYCLE 完全充电 25CYCLE Fully charged	64.008	4.431	64.004	4.352	0.01	98.23	O
7	25 CYCLE 完全充电 25CYCLE Fully charged	65.171	4.434	65.168	4.357	0.00	98.25	O
8	25 CYCLE 完全充电 25 CYCLE Fully charged	64.914	4.434	64.910	4.356	0.01	98.24	O
9	25 CYCLE 完全充电 25 CYCLE Fully charged	64.902	4.430	64.898	4.350	0.01	98.19	O
10	25 CYCLE 完全充电 25 CYCLE Fully charged	64.929	4.432	64.925	4.354	0.01	98.24	O
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备注：L-泄漏 V-漏气 D-解体 R-破裂 F-起火 O-无泄漏、无漏气、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.

东莞新能德科技有限公司中心实验室检测报告-附表 3

Dongguan NVT Technology Co., Ltd. Central Laboratory Test Report- Appendix 3

序号 No.	3	检测项目名称 Name of Test Items		振动 Vibration				
样品编号 Sample No.	样品状态 Sample Status	试验前 Before		试验后 After		质量损失 Mass Loss(%)	剩余电压 Residual OCV(%)	其他现象 Other Event
		质量 Mass(g)	开路电压 OCV(V)	质量 Mass(g)	开路电压 OCV(V)			
1	1 CYCLE 完全充电 1CYCLE Fully charged	65.132	4.342	65.134	4.341	0.00	99.97	O
2	1 CYCLE 完全充电 1CYCLE Fully charged	65.023	4.345	65.024	4.344	0.00	99.97	O
3	1 CYCLE 完全充电 1CYCLE Fully charged	65.069	4.344	65.072	4.342	0.00	99.97	O
4	1 CYCLE 完全充电 1CYCLE Fully charged	64.919	4.344	64.921	4.343	0.00	99.97	O
5	1 CYCLE 完全充电 1CYCLE Fully charged	64.927	4.340	64.929	4.339	0.00	99.97	O
6	25 CYCLE 完全充电 25CYCLE Fully charged	64.004	4.352	64.007	4.351	0.00	99.97	O
7	25 CYCLE 完全充电 25CYCLE Fully charged	65.168	4.357	65.172	4.355	-0.01	99.97	O
8	25 CYCLE 完全充电 25 CYCLE Fully charged	64.910	4.356	64.914	4.355	-0.01	99.97	O
9	25 CYCLE 完全充电 25 CYCLE Fully charged	64.898	4.350	64.903	4.349	-0.01	99.97	O
10	25 CYCLE 完全充电 25 CYCLE Fully charged	64.925	4.354	64.931	4.353	-0.01	99.97	O
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备注：L-泄漏 V-漏气 D-解体 R-破裂 F-起火 O-无泄漏、无漏气、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.

东莞新能德科技有限公司中心实验室检测报告-附表 4

Dongguan NVT Technology Co., Ltd. Central Laboratory Test Report- Appendix 4

序号 No.	4	检测项目名称 Name of Test Items		冲击 Shock				
样品编号 Sample No.	样品状态 Sample Status	试验前 Before		试验后 After		质量损失 Mass Loss(%)	剩余电压 Residual OCV(%)	其他现象 Other Event
		质量 Mass(g)	开路电压 OCV(V)	质量 Mass(g)	开路电压 OCV(V)			
1	1 CYCLE 完全充电 1CYCLE Fully charged	65.134	4.341	65.134	4.341	0.00	100.00	O
2	1 CYCLE 完全充电 1CYCLE Fully charged	65.024	4.344	65.024	4.344	0.00	100.00	O
3	1 CYCLE 完全充电 1CYCLE Fully charged	65.072	4.342	65.072	4.342	0.00	100.00	O
4	1 CYCLE 完全充电 1CYCLE Fully charged	64.921	4.343	64.921	4.343	0.00	100.00	O
5	1 CYCLE 完全充电 1CYCLE Fully charged	64.929	4.339	64.928	4.339	0.00	100.00	O
6	25 CYCLE 完全充电 25CYCLE Fully charged	64.007	4.351	64.007	4.351	0.00	100.00	O
7	25 CYCLE 完全充电 25CYCLE Fully charged	65.172	4.355	65.172	4.355	0.00	100.00	O
8	25 CYCLE 完全充电 25 CYCLE Fully charged	64.914	4.355	64.914	4.355	0.00	100.00	O
9	25 CYCLE 完全充电 25 CYCLE Fully charged	64.903	4.349	64.903	4.349	0.00	100.00	O
10	25 CYCLE 完全充电 25 CYCLE Fully charged	64.931	4.353	64.930	4.353	0.00	100.00	O
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备注：L-泄漏 V-漏气 D-解体 R-破裂 F-起火 O-无泄漏、无漏气、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.

东莞新能德科技有限公司中心实验室检测报告-附表 5

Dongguan NVT Technology Co., Ltd. Central Laboratory Test Report- Appendix 5

序号 No.	5	检测项目名称 Name of Test Items	外短路 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(℃)	其他现象 Other Event
1	1 CYCLE 完全充电 1CYCLE Fully charged	57.60	O
2	1 CYCLE 完全充电 1CYCLE Fully charged	57.30	O
3	1 CYCLE 完全充电 1CYCLE Fully charged	57.25	O
4	1 CYCLE 完全充电 1CYCLE Fully charged	57.35	O
5	1 CYCLE 完全充电 1CYCLE Fully charged	57.30	O
6	25 CYCLE 完全充电 25CYCLE Fully charged	57.20	O
7	25 CYCLE 完全充电 25CYCLE Fully charged	57.20	O
8	25 CYCLE 完全充电 25 CYCLE Fully charged	57.20	O
9	25 CYCLE 完全充电 25 CYCLE Fully charged	57.30	O
10	25 CYCLE 完全充电 25 CYCLE Fully charged	57.20	O
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备注：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.

东莞新能德科技有限公司中心实验室检测报告-附表 6

Dongguan NVT Technology Co., Ltd. Central Laboratory Test Report- Appendix 6

序号 No.	6	检测项目名称 Name of Test Items	挤压 Crush
样品编号 Sample No.	样品状态 Sample Status	样品表面最高温度 Max External Temperature(℃)	其他现象 Other Event
11	1 CYCLE 50% 容量 1 CYCLE 50% Capacity	23.75	O
12	1 CYCLE 50% 容量 1 CYCLE 50% Capacity	23.75	O
13	1 CYCLE 50% 容量 1 CYCLE 50% Capacity	23.85	O
14	1 CYCLE 50% 容量 1 CYCLE 50% Capacity	23.50	O
15	1 CYCLE 50% 容量 1 CYCLE 50% Capacity	23.50	O
16	25 CYCLE 50% 容量 25 CYCLE 50% Capacity	23.40	O
17	25 CYCLE 50% 容量 25 CYCLE 50% Capacity	23.40	O
18	25 CYCLE 50% 容量 25 CYCLE 50% Capacity	23.50	O
19	25 CYCLE 50% 容量 25 CYCLE 50% Capacity	23.65	O
20	25 CYCLE 50% 容量 25 CYCLE 50% Capacity	23.50	O
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备注：D-解体 F-起火 O-无解体、无起火。
Note: D-Disassembly F-Fire O- No Disassembly, No Fire.

东莞新能德科技有限公司中心实验室检测报告-附表 7

Dongguan NVT Technology Co., Ltd. Central Laboratory Test Report- Appendix 7

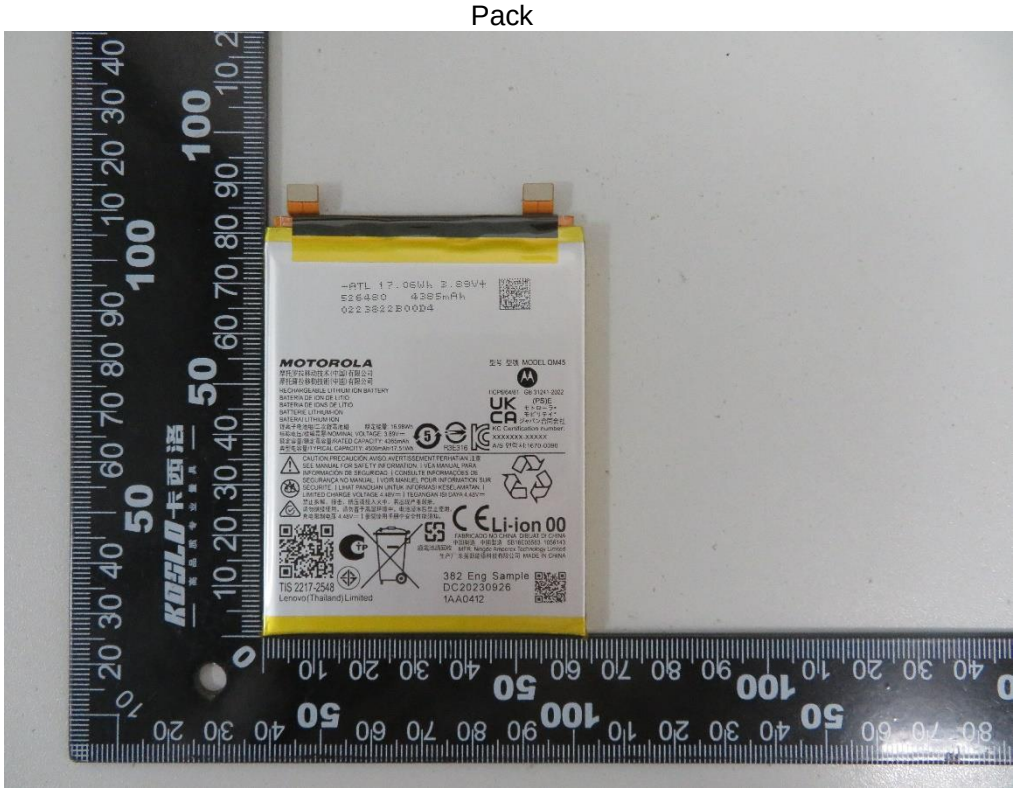
序号 No.	7	检测项目名称 Name of Test Items	过充电 Overcharge
样品编号 Sample No.	样品状态 Sample Status	其他现象 Other Event	
21	1 CYCLE 完全充电 1CYCLE Fully charged	O	
22	1 CYCLE 完全充电 1CYCLE Fully charged	O	
23	1 CYCLE 完全充电 1CYCLE Fully charged	O	
24	1 CYCLE 完全充电 1CYCLE Fully charged	O	
25	25 CYCLE 完全充电 25CYCLE Fully charged	O	
26	25 CYCLE 完全充电 25CYCLE Fully charged	O	
27	25 CYCLE 完全充电 25CYCLE Fully charged	O	
28	25 CYCLE 完全充电 25CYCLE Fully charged	O	
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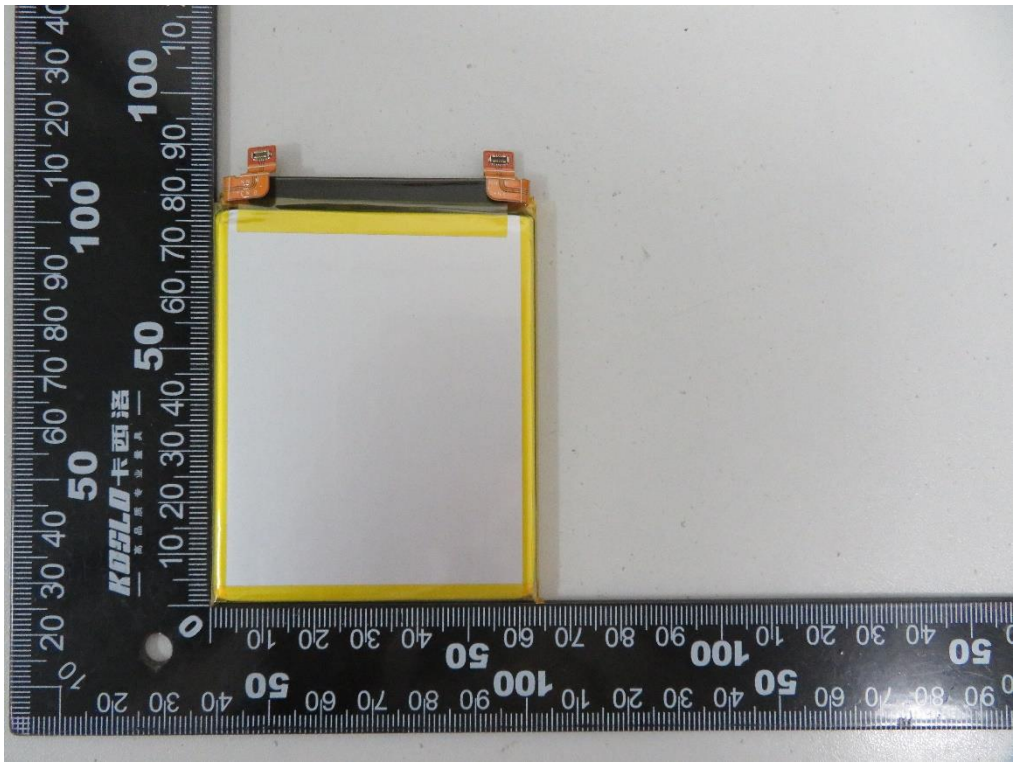
备注：D-解体 F-起火 O-无解体、无起火。
Note: D-Disassembly F-Fire O- No Disassembly, No Fire.

序号 No.	8	检测项目名称 Name of Test Items	强制放电 Forced discharge
样品编号 Sample No.	样品状态 Sample Status	其他现象 Other Event	
29	1 CYCLE 完全放电 1CYCLE Fully discharged	O	
30	1 CYCLE 完全放电 1CYCLE Fully discharged	O	
31	1 CYCLE 完全放电 1 CYCLE Fully discharged	O	
32	1 CYCLE 完全放电 1 CYCLE Fully discharged	O	
33	1 CYCLE 完全放电 1 CYCLE Fully discharged	O	
34	1 CYCLE 完全放电 1 CYCLE Fully discharged	O	
35	1 CYCLE 完全放电 1 CYCLE Fully discharged	O	
36	1 CYCLE 完全放电 1 CYCLE Fully discharged	O	
37	1 CYCLE 完全放电 1 CYCLE Fully discharged	O	
38	1 CYCLE 完全放电 1 CYCLE Fully discharged	O	
39	25 CYCLE 完全放电 25 CYCLE Fully discharge	O	
40	25 CYCLE 完全放电 25 CYCLE Fully discharged	O	
41	25 CYCLE 完全放电 25 CYCLE Fully discharged	O	
42	25 CYCLE 完全放电 25 CYCLE Fully discharged	O	

43	25 CYCLE 完全放电 25 CYCLE Fully discharged	O
44	25 CYCLE 完全放电 25 CYCLE Fully discharged	O
45	25 CYCLE 完全放电 25 CYCLE Fully discharged	O
46	25 CYCLE 完全放电 25 CYCLE Fully discharged	O
47	25 CYCLE 完全放电 25 CYCLE Fully discharged	O
48	25 CYCLE 完全放电 25 CYCLE Fully discharged	O
备注：D-解体 F-起火 O-无解体、无起火。 Note: D-Disassembly F-Fire O- No Disassembly, No Fire.		

Pack





The end

声 明

Statement

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.

检测报告涂改无效。

The test report is invalid if it is blotted out.

送样委托检测结果，仅对所送样品有效。

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

以报告签发日起，15 天内可发起检测报告申诉，超过申请有效期的报告，不予受理。

A test report complaint may be initiated within 15 days from the date of issuance of the report, and a report exceeding the validity period of the application shall not be accepted.

本报告未经本实验室书面许可，不可部分复制。

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东莞新能德科技有限公司中心实验室

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