



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
QF50 3.91V/4850mAh/18.97Wh

Name of Sample: RECHARGEABLE LITHIUM ION BATTERY
QF50 3.91V/4850mAh/18.97Wh

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
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 QF50 3.91V/4850mAh/18.97Wh	
	英文 English	RECHARGEABLE LITHIUM ION BATTERY QF50 3.91V/4850mAh/18.97Wh	
样品编号 Sample No.	WT23063028		
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	2023-07-01	检测起 迄日期 Test Date	2023-07-01 ~ 2023-07-20
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 报告专用章 生效日期(Date): 2023-07-20		
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: 
Reviewer: Tan Xiaojie

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°C-25°C ; 环境湿度: /% Ambient temperature: 15°C-25°C ; 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

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	61.382	4.442	61.383	4.440	0.00	99.94	O
2	1 CYCLE 完全充电 1CYCLE Fully charged	61.218	4.440	61.218	4.435	0.00	99.91	O
3	1 CYCLE 完全充电 1CYCLE Fully charged	61.091	4.443	61.091	4.440	0.00	99.93	O
4	1 CYCLE 完全充电 1CYCLE Fully charged	61.343	4.443	61.344	4.440	0.00	99.94	O
5	1 CYCLE 完全充电 1CYCLE Fully charged	61.471	4.441	61.471	4.438	0.00	99.93	O
6	25 CYCLE 完全充电 25CYCLE Fully charged	61.243	4.451	61.242	4.448	0.00	99.95	O
7	25 CYCLE 完全充电 25CYCLE Fully charged	61.223	4.451	61.221	4.449	0.00	99.95	O
8	25 CYCLE 完全充电 25 CYCLE Fully charged	61.207	4.450	61.205	4.448	0.00	99.94	O
9	25 CYCLE 完全充电 25 CYCLE Fully charged	61.232	4.451	61.232	4.448	0.00	99.95	O
10	25 CYCLE 完全充电 25 CYCLE Fully charged	61.286	4.448	61.285	4.445	0.00	99.93	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.

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	61.383	4.440	61.376	4.359	0.01	98.19	O
2	1 CYCLE 完全充电 1CYCLE Fully charged	61.218	4.435	61.211	4.354	0.01	98.17	O
3	1 CYCLE 完全充电 1CYCLE Fully charged	61.091	4.440	61.084	4.358	0.01	98.15	O
4	1 CYCLE 完全充电 1CYCLE Fully charged	61.344	4.440	61.335	4.359	0.01	98.17	O
5	1 CYCLE 完全充电 1CYCLE Fully charged	61.471	4.438	61.464	4.356	0.01	98.14	O
6	25 CYCLE 完全充电 25CYCLE Fully charged	61.242	4.448	61.237	4.371	0.01	98.27	O
7	25 CYCLE 完全充电 25CYCLE Fully charged	61.221	4.449	61.217	4.371	0.01	98.24	O
8	25 CYCLE 完全充电 25 CYCLE Fully charged	61.205	4.448	61.201	4.367	0.01	98.19	O
9	25 CYCLE 完全充电 25 CYCLE Fully charged	61.232	4.448	61.226	4.370	0.01	98.24	O
10	25 CYCLE 完全充电 25 CYCLE Fully charged	61.285	4.445	61.280	4.364	0.01	98.17	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 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	61.376	4.359	61.377	4.358	0.00	99.98	O
2	1 CYCLE 完全充电 1CYCLE Fully charged	61.211	4.354	61.212	4.352	0.00	99.96	O
3	1 CYCLE 完全充电 1CYCLE Fully charged	61.084	4.358	61.085	4.357	0.00	99.97	O
4	1 CYCLE 完全充电 1CYCLE Fully charged	61.335	4.359	61.337	4.358	0.00	99.98	O
5	1 CYCLE 完全充电 1CYCLE Fully charged	61.464	4.356	61.465	4.355	0.00	99.98	O
6	25 CYCLE 完全充电 25CYCLE Fully charged	61.237	4.371	61.237	4.370	0.00	99.98	O
7	25 CYCLE 完全充电 25CYCLE Fully charged	61.217	4.371	61.218	4.370	0.00	99.98	O
8	25 CYCLE 完全充电 25 CYCLE Fully charged	61.201	4.367	61.202	4.366	0.00	99.98	O
9	25 CYCLE 完全充电 25 CYCLE Fully charged	61.226	4.370	61.228	4.369	0.00	99.98	O
10	25 CYCLE 完全充电 25 CYCLE Fully charged	61.280	4.364	61.282	4.362	0.00	99.96	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.

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	61.377	4.358	61.377	4.358	0.00	99.99	O
2	1 CYCLE 完全充电 1CYCLE Fully charged	61.212	4.352	61.211	4.352	0.00	99.99	O
3	1 CYCLE 完全充电 1CYCLE Fully charged	61.085	4.357	61.085	4.357	0.00	100.00	O
4	1 CYCLE 完全充电 1CYCLE Fully charged	61.337	4.358	61.337	4.357	0.00	99.99	O
5	1 CYCLE 完全充电 1CYCLE Fully charged	61.465	4.355	61.465	4.355	0.00	99.99	O
6	25 CYCLE 完全充电 25CYCLE Fully charged	61.237	4.370	61.237	4.370	0.00	100.00	O
7	25 CYCLE 完全充电 25CYCLE Fully charged	61.218	4.370	61.218	4.369	0.00	100.00	O
8	25 CYCLE 完全充电 25 CYCLE Fully charged	61.202	4.366	61.201	4.366	0.00	100.00	O
9	25 CYCLE 完全充电 25 CYCLE Fully charged	61.228	4.369	61.227	4.369	0.00	100.00	O
10	25 CYCLE 完全充电 25 CYCLE Fully charged	61.282	4.362	61.282	4.362	0.00	99.99	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 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(°C)	其他现象 Other Event
1	1 CYCLE 完全充电 1CYCLE Fully charged	58.40	O
2	1 CYCLE 完全充电 1CYCLE Fully charged	58.00	O
3	1 CYCLE 完全充电 1CYCLE Fully charged	58.50	O
4	1 CYCLE 完全充电 1CYCLE Fully charged	59.00	O
5	1 CYCLE 完全充电 1CYCLE Fully charged	57.90	O
6	25 CYCLE 完全充电 25CYCLE Fully charged	57.60	O
7	25 CYCLE 完全充电 25CYCLE Fully charged	58.50	O
8	25 CYCLE 完全充电 25 CYCLE Fully charged	58.00	O
9	25 CYCLE 完全充电 25 CYCLE Fully charged	58.80	O
10	25 CYCLE 完全充电 25 CYCLE Fully charged	58.00	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(°C)	其他现象 Other Event
11	1 CYCLE 50% 容量 1 CYCLE 50% Capacity	22.65	O
12	1 CYCLE 50% 容量 1 CYCLE 50% Capacity	23.65	O
13	1 CYCLE 50% 容量 1 CYCLE 50% Capacity	23.90	O
14	1 CYCLE 50% 容量 1 CYCLE 50% Capacity	23.60	O
15	1 CYCLE 50% 容量 1 CYCLE 50% Capacity	25.15	O
16	25 CYCLE 50% 容量 25 CYCLE 50% Capacity	23.45	O
17	25 CYCLE 50% 容量 25 CYCLE 50% Capacity	23.30	O
18	25 CYCLE 50% 容量 25 CYCLE 50% Capacity	24.00	O
19	25 CYCLE 50% 容量 25 CYCLE 50% Capacity	24.10	O
20	25 CYCLE 50% 容量 25 CYCLE 50% Capacity	25.10	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.			

东莞新能德科技有限公司中心实验室检测报告-附表 8

Dongguan NVT Technology Co., Ltd. Central Laboratory Test Report- Appendix 8

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		0
30	1 CYCLE 完全放电 1CYCLE Fully discharged		0
31	1 CYCLE 完全放电 1 CYCLE Fully discharged		0
32	1 CYCLE 完全放电 1 CYCLE Fully discharged		0
33	1 CYCLE 完全放电 1 CYCLE Fully discharged		0
34	1 CYCLE 完全放电 1 CYCLE Fully discharged		0
35	1 CYCLE 完全放电 1 CYCLE Fully discharged		0
36	1 CYCLE 完全放电 1 CYCLE Fully discharged		0
37	1 CYCLE 完全放电 1 CYCLE Fully discharged		0
38	1 CYCLE 完全放电 1 CYCLE Fully discharged		0
39	25 CYCLE 完全放电 25 CYCLE Fully discharge		0
40	25 CYCLE 完全放电 25 CYCLE Fully discharged		0
41	25 CYCLE 完全放电 25 CYCLE Fully discharged		0
42	25 CYCLE 完全放电 25 CYCLE Fully discharged		0

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.

东莞新能德科技有限公司中心实验室检测报告-附图

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

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 consignment 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.

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