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检测
TESTING
CNAS L3572

REPORT No.: SZ21120420D01

UN38.3 测试报告

UN38.3 Test Report

申请商 : 深圳市天珑移动技术有限公司
APPLICANT : Shenzhen Tinno Mobile Technology Corp.
产品名称 : 可充电聚合物锂离子电池
PRODUCT NAME : Rechargeable Li-ion Polymer Battery
型号/MODEL NAME : BAT-05000-01S
商标/TRADE NAME : sonim
品牌/BRAND NAME : sonim
额定值/RATING : 3.87 V, 4850 mAh, 18.76 Wh
接收日期 : 2021-12-31
RECEIPT DATE : 2021-12-31
测试日期 : 2021-12-31 to 2022-01-18
TEST DATE : 2021-12-31 to 2022-01-18
签发日期 : 2022-01-19
ISSUE DATE : 2022-01-19

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MORLAB

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测试报告声明

Test Report Declaration

申请商/Applicant	深圳市天珑移动技术有限公司 Shenzhen Tinno Mobile Technology Corp.	
申请商地址 Applicant Address	广东省深圳市南山区西丽仙洞路 33 号天珑大厦 TINNO Building, No.33, Xiandong Rd, Xili, Nanshan District, Shenzhen, Guangdong Province, PRC	
产品名称/ Product Name	可充电聚合物锂离子电池 Rechargeable Li-ion Polymer Battery	
型号/ Model Name	BAT-05000-01S	
额定值/ Rating	3.87 V, 4850 mAh, 18.76 Wh	
制造商信息 Manufacturer information	制造商 Manufacturer	东莞维科电池有限公司 Dongguan Veken Battery Co., Ltd.
	制造商地址 Manufacturer Address	东莞市横沥镇田坑村新城工业区兴华路 19 号 No.19, Xinghua Road, Xincheng Industrial Zone, Tiangkeng Village, Hengli Town, Dongguan City, Guangdong province, P.R.China
工厂信息 Factory information	工厂 Factory	东莞维科电池有限公司 Dongguan Veken Battery Co., Ltd.
	工厂地址 Factory Address	东莞市横沥镇田坑村新城工业区兴华路 19 号 No.19, Xinghua Road, Xincheng Industrial Zone, Tiangkeng Village, Hengli Town, Dongguan City, Guangdong province, P.R.China
尺寸/Size	60.1×85.0×6.1 mm	
电池信息 Battery information	内含电芯数量/Cells number	1pcs(1S1P)
	电芯型号/Cell model	575980PV
	物理特性/Physical description	棱形固体/ Prismatic solid
检验方法及判定标准 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》第七版第38.3节 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS, Manual of Tests and Criteria" ST/SG/AC.10/11/Rev.7, section 38.3	
测试项目 Test Items	高度模拟试验；温度试验；振动试验；冲击试验；外短路试验；挤压试验；过充电试验；强制放电 Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Crush, Overcharge, Force discharge	
测试结论 Conclusion	受检样品通过 UN 38.3 各项检测，检测结果合格 The sample has passed the test items of UN38.3	
备注/ Remarks	测试结果为临限值时，我司将出具测量不确定度,并依据 95%的置信区间，给出判定结果。 When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% Confidence intervals.	



深圳市摩尔环宇通信技术有限公司检验报告

Shenzhen Morlab Communications Technology Co., Ltd. Test Report

序号 No.	检验项目名称 Name of test items	标准要求或标准款号 Standard Requirement or the Clause Number of Standard	检测结果 Test Result	本项结论 Test Conclusion	备注 Remarks
1	高度模拟试验 Altitude simulation	联合国《关于危险货物运输的建议书 试验和标准手册》(以下简称:试验和标准手册) UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7, 38.3 试验 T.1 Test T.1	见附表 1 See Appendix 1	合格 Passed	/
2	温度试验 Thermal Test	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7, 38.3 试验 T.2 Test T.2	见附表 2 See Appendix 2	合格 Passed	/
3	振动试验 Vibration	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7, 38.3 试验 T.3 Test T.3	见附表 3 See Appendix 3	合格 Passed	/
4	冲击试验 Shock	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7, 38.3 试验 T.4 Test T.4	见附表 4 See Appendix 4	合格 Passed	/
5	外短路试验 External short circuit	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7, 38.3 试验 T.5 Test T.5	见附表 5 See Appendix 5	合格 Passed	/
6	挤压试验 Crush	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7, 38.3 试验 T.6 Test T.6	见附表 6 See Appendix 6	合格 Passed	/
7	过充电试验 Overcharge	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7, 38.3 试验 T.7 Test T.7	见附表 7 See Appendix 7	合格 Passed	/
8	强制放电 Force discharge	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.7, 38.3 试验 T.8 Test T.8	见附表 8 See Appendix 8	合格 Passed	/
检验环境条件 Test Environment Condition		环境温度: 15~25℃ Ambient Temperature: 15~25℃			



Change History		
Version	Date	Reason for change
1.0	2022-01-19	First edition



检验报告-附件 1

Test Report-Appendix 1

序号 No.	1	检测项目名称 Name of test items		高度模拟试验 Altitude simulation				
		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
样品 编号 Sample No.	样品状态 Sample Status	质量 Weight/g	开路 电压 OCV/V	质量 Weight/g	开路 电压 OCV/V			
1	首次充满 Fully charged at first cycle	76.4790	4.419	76.4786	4.415	0.0005	99.91	O
2	首次充满 Fully charged at first cycle	75.5609	4.418	75.5603	4.415	0.0008	99.93	O
3	首次充满 Fully charged at first cycle	76.6070	4.416	76.6062	4.413	0.0010	99.93	O
4	首次充满 Fully charged at first cycle	75.9199	4.418	75.9194	4.414	0.0007	99.91	O
5	首次充满 Fully charged at first cycle	76.0593	4.417	76.0588	4.413	0.0007	99.91	O
6	25 次循环后充满 Fully charged after 25 cycles	76.3410	4.418	76.3402	4.413	0.0010	99.89	O
7	25 次循环后充满 Fully charged after 25 cycles	76.1501	4.419	76.1496	4.415	0.0007	99.91	O
8	25 次循环后充满 Fully charged after 25 cycles	76.3518	4.416	76.3515	4.412	0.0004	99.91	O
9	25 次循环后充满 Fully charged after 25 cycles	76.4845	4.417	76.4840	4.415	0.0007	99.95	O
10	25 次循环后充满 Fully charged after 25 cycles	76.0385	4.415	76.0381	4.412	0.0005	99.93	O

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, O-无漏液, 无解体, 无破裂, 无起火;

Remark: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O-No Leakage, No Venting, No Disassembly, No Rupture, No Fire



检验报告-附件 2

Test Report-Appendix 2

序号 No.	2	检测项目名称 Name of test items		热测试 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 Weight/g	开路 电压 OCV/V	质量 Weight/g	开路 电压 OCV/V			
1	首次充满 Fully charged at first cycle	76.4786	4.415	76.4728	4.381	0.0076	99.23	O
2	首次充满 Fully charged at first cycle	75.5603	4.415	75.5565	4.379	0.0050	99.18	O
3	首次充满 Fully charged at first cycle	76.6062	4.413	76.6018	4.378	0.0057	99.21	O
4	首次充满 Fully charged at first cycle	75.9194	4.414	75.9156	4.383	0.0050	99.30	O
5	首次充满 Fully charged at first cycle	76.0588	4.413	76.0545	4.378	0.0057	99.21	O
6	25次循环后充满 Fully charged after 25 cycles	76.3402	4.413	76.3386	4.381	0.0021	99.27	O
7	25次循环后充满 Fully charged after 25 cycles	76.1496	4.415	76.1472	4.383	0.0032	99.28	O
8	25次循环后充满 Fully charged after 25 cycles	76.3515	4.412	76.3475	4.377	0.0052	99.21	O
9	25次循环后充满 Fully charged after 25 cycles	76.4840	4.415	76.4813	4.377	0.0035	99.14	O
10	25次循环后充满 Fully charged after 25 cycles	76.0381	4.412	76.0339	4.375	0.0055	99.16	O

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, O-无漏液, 无解体, 无破裂, 无起火;
Remark: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O-No Leakage, No Venting, No Disassembly, No Rupture, No Fire



检验报告-附件 3

Test Report-Appendix 3

序号 No.	3	检测项目名称 Name of test items		振动试验 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 Weight/g	开路 电压 OCV/V	质量 Weight/g	开路 电压 OCV/V			
1	首次充满 Fully charged at first cycle	76.4728	4.381	76.4723	4.379	0.0007	99.95	O
2	首次充满 Fully charged at first cycle	75.5565	4.379	75.5559	4.377	0.0008	99.95	O
3	首次充满 Fully charged at first cycle	76.6018	4.378	76.6012	4.375	0.0008	99.93	O
4	首次充满 Fully charged at first cycle	75.9156	4.383	75.9152	4.380	0.0005	99.93	O
5	首次充满 Fully charged at first cycle	76.0545	4.378	76.0538	4.375	0.0009	99.93	O
6	25次循环后充满 Fully charged after 25 cycles	76.3386	4.381	76.3382	4.379	0.0005	99.95	O
7	25次循环后充满 Fully charged after 25 cycles	76.1472	4.383	76.1465	4.381	0.0009	99.95	O
8	25次循环后充满 Fully charged after 25 cycles	76.3475	4.377	76.3468	4.373	0.0009	99.91	O
9	25次循环后充满 Fully charged after 25 cycles	76.4813	4.377	76.4807	4.374	0.0008	99.93	O
10	25次循环后充满 Fully charged after 25 cycles	76.0339	4.375	76.0333	4.371	0.0008	99.91	O

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, O-无漏液, 无解体, 无破裂, 无起火;

Remark: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O-No Leakage, No Venting, No Disassembly, No Rupture, No Fire



检验报告-附件 4

Test Report-Appendix 4

序号 No.	4	检测项目名称 Name of test items		冲击试验 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 Weight/g	开路 电压 OCV/V	质量 Weight/g	开路 电压 OCV/V			
1	首次充满 Fully charged at first cycle	76.4723	4.379	76.4715	4.377	0.0010	99.95	O
2	首次充满 Fully charged at first cycle	75.5559	4.377	75.5552	4.374	0.0009	99.93	O
3	首次充满 Fully charged at first cycle	76.6012	4.375	76.6003	4.371	0.0012	99.91	O
4	首次充满 Fully charged at first cycle	75.9152	4.380	75.9146	4.377	0.0008	99.93	O
5	首次充满 Fully charged at first cycle	76.0538	4.375	76.0531	4.373	0.0009	99.95	O
6	25 次循环后充满 Fully charged after 25 cycles	76.3382	4.379	76.3377	4.377	0.0007	99.95	O
7	25 次循环后充满 Fully charged after 25 cycles	76.1465	4.381	76.1459	4.378	0.0008	99.93	O
8	25 次循环后充满 Fully charged after 25 cycles	76.3468	4.373	76.3460	4.370	0.0010	99.93	O
9	25 次循环后充满 Fully charged after 25 cycles	76.4807	4.374	76.4796	4.3740	0.0014	100.00	O
10	25 次循环后充满 Fully charged after 25 cycles	76.0333	4.371	76.0324	4.367	0.0012	99.91	O

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, O-无漏液, 无解体, 无破裂, 无起火;

Remark: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O-No Leakage, No Venting, No Disassembly, No Rupture, No Fire



检验报告-附件 5

Test Report-Appendix 5

序号 No.	5	检测项目名称 Name of test items	外短路试验 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 Test Items / °C	其他现象 Other Event
1	首次充满 Fully charged at first cycle	58.9	O
2	首次充满 Fully charged at first cycle	57.8	O
3	首次充满 Fully charged at first cycle	58.0	O
4	首次充满 Fully charged at first cycle	58.7	O
5	首次充满 Fully charged at first cycle	58.0	O
6	25 次循环后充满 Fully charged after 25 cycles	58.2	O
7	25 次循环后充满 Fully charged after 25 cycles	59.0	O
8	25 次循环后充满 Fully charged after 25 cycles	57.7	O
9	25 次循环后充满 Fully charged after 25 cycles	57.8	O
10	25 次循环后充满 Fully charged after 25 cycles	57.6	O

备注: D-解体, R-破裂, F-起火, O-无解体, 无破裂, 无起火;
Remark: D-Disassembly, R-Rupture, F-Fire, O-No Disassembly, No Rupture, No Fire



检验报告-附件 6
Test Report-Appendix 6

序号 No.	6	检测项目名称 Name of test items	挤压试验 Crush
样品编号 Sample No.	样品状态 Sample status	样品表面最高温度 Max. External Test Items/ °C	其他现象 Other Event
11	首次 50%容量 50% of capacity at first cycle	21.8	O
12	首次 50%容量 50% of capacity at first cycle	21.8	O
13	首次 50%容量 50% of capacity at first cycle	21.9	O
14	首次 50%容量 50% of capacity at first cycle	22.0	O
15	首次 50%容量 50% of capacity at first cycle	21.7	O
16	25 次循环后 50%容量 50% of capacity after25 cycles	21.2	O
17	25 次循环后 50%容量 50% of capacity after25 cycles	21.2	O
18	25 次循环后 50%容量 50% of capacity after25 cycles	21.3	O
19	25 次循环后 50%容量 50% of capacity after25 cycles	20.4	O
20	25 次循环后 50%容量 50% of capacity after25 cycles	21.3	O

备注: D-解体, F-起火, O-无解体, 无起火;
Remark: D-Disassembly, F-Fire, O-No Disassembly, No Fire



检验报告-附件 7

Test Report-Appendix 7

序号 No.	7	检测项目名称 Name of test items	过充电试验 Overcharge
样品编号 Sample No.	样品状态 Sample status	其他现象 Other Event	
21	首次充满 Fully charged at first cycle		O
22	首次充满 Fully charged at first cycle		O
23	首次充满 Fully charged at first cycle		O
24	首次充满 Fully charged at first cycle		O
25	25 次循环后充满 Fully charged after 25 cycles		O
26	25 次循环后充满 Fully charged after 25 cycles		O
27	25 次循环后充满 Fully charged after 25 cycles		O
28	25 次循环后充满 Fully charged after 25 cycles		O

备注: D-解体, F-起火, O-无解体, 无起火;
Remark: D-Disassembly, F-Fire, O-No Disassembly, No Fire



检验报告-附件 8

Test Report-Appendix 8

序号 No.	8	检测项目名称 Name of test items	强制放电 Force discharge
样品编号 Sample No.	样品状态 Sample status	放电时间 (H) Discharge time	其他现象 Other Event
29	首次完全放电 Fully discharged at first cycle	1.43	○
30	首次完全放电 Fully discharged at first cycle	1.43	○
31	首次完全放电 Fully discharged at first cycle	1.43	○
32	首次完全放电 Fully discharged at first cycle	1.43	○
33	首次完全放电 Fully discharged at first cycle	1.43	○
34	首次完全放电 Fully discharged at first cycle	1.43	○
35	首次完全放电 Fully discharged at first cycle	1.43	○
36	首次完全放电 Fully discharged at first cycle	1.43	○
37	首次完全放电 Fully discharged at first cycle	1.43	○
38	首次完全放电 Fully discharged at first cycle	1.43	○
39	25 次循环后完全放电 Fully discharged after 25 cycles	1.43	○
40	25 次循环后完全放电 Fully discharged after 25 cycles	1.43	○



41	25 次循环后完全放电 Fully discharged after 25 cycles	1.43	O
42	25 次循环后完全放电 Fully discharged after 25 cycles	1.43	O
43	25 次循环后完全放电 Fully discharged after 25 cycles	1.43	O
44	25 次循环后完全放电 Fully discharged after 25 cycles	1.43	O
45	25 次循环后完全放电 Fully discharged after 25 cycles	1.43	O
46	25 次循环后完全放电 Fully discharged after 25 cycles	1.43	O
47	25 次循环后完全放电 Fully discharged after 25 cycles	1.43	O
48	25 次循环后完全放电 Fully discharged after 25 cycles	1.43	O
备注: D-解体, F-起火, O-无解体, 无起火; Remark: D-Disassembly, F-Fire, O-No Disassembly, No Fire 最大放电电流/ Max Continuous Discharge Current: <u>3416</u> mA			

样品图片 Photographs of the EUT

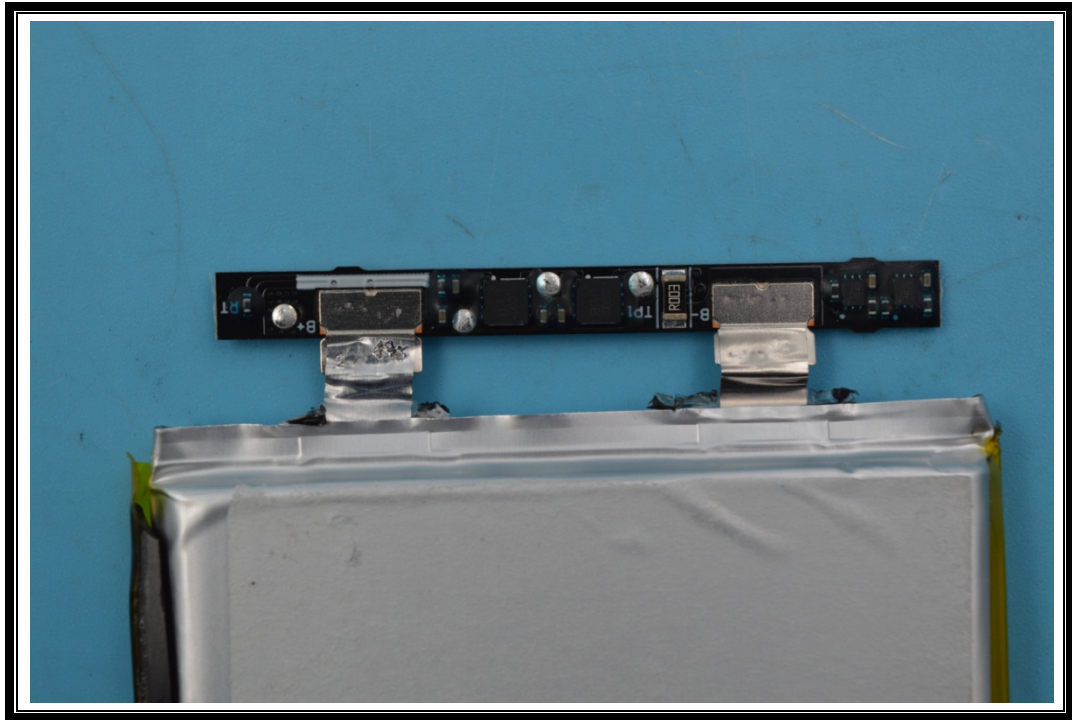
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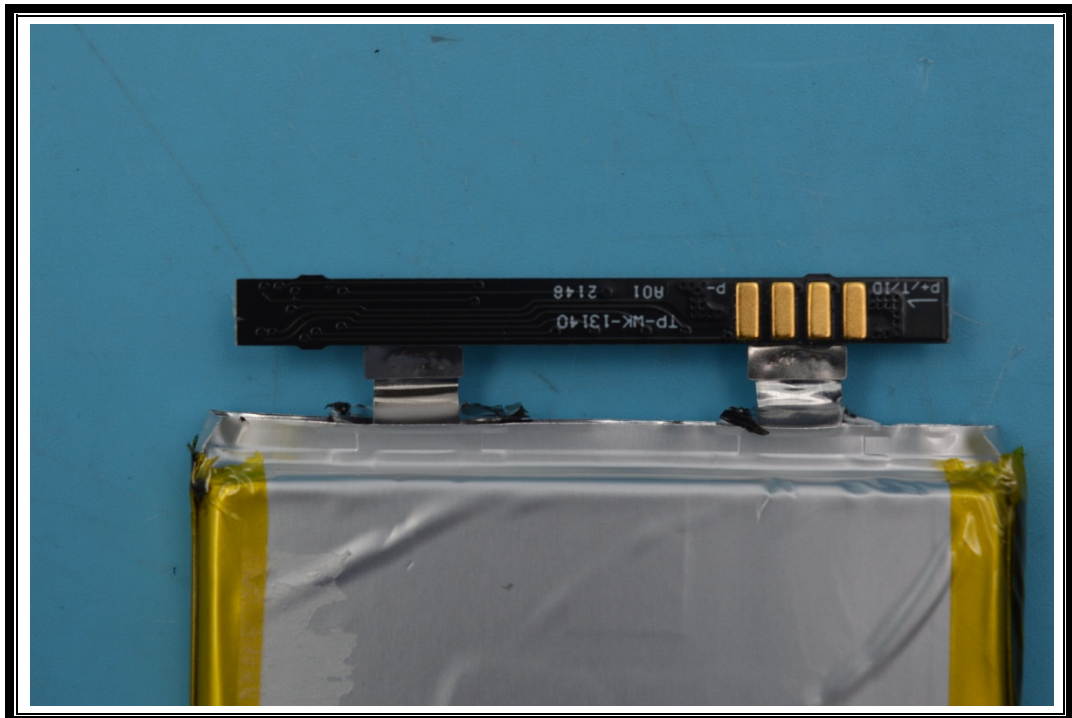
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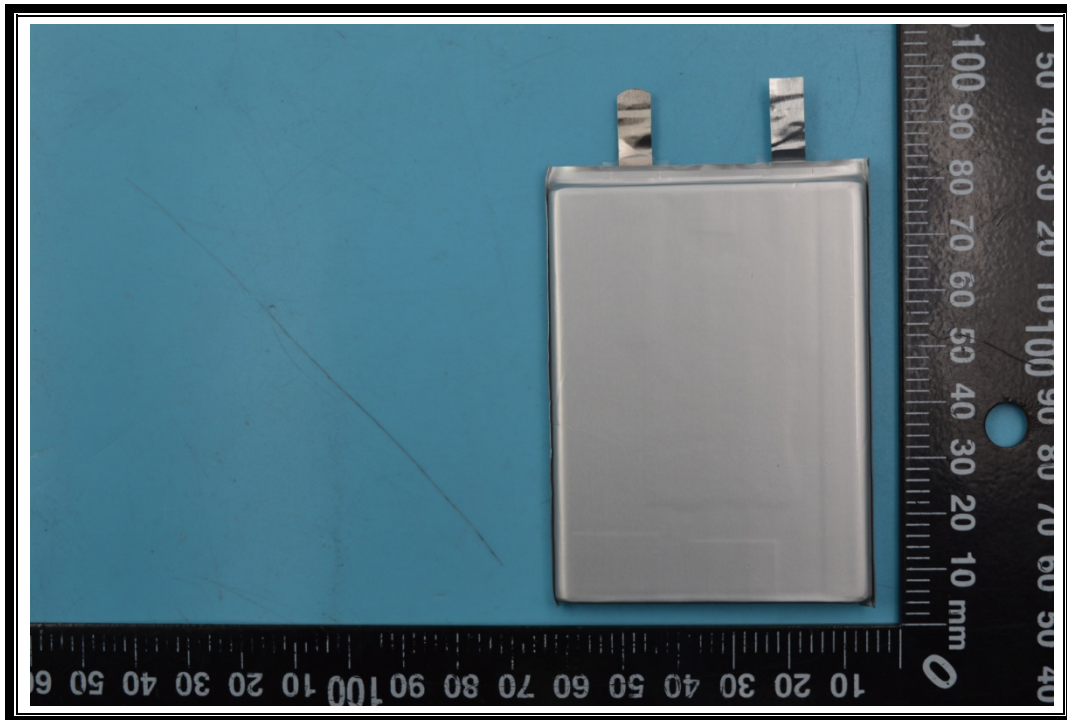
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5



6





仪器设备清单/ List of test equipment used:

条款 Clause	仪器设备名称 equipment	型号 model	系列号 Serial No.	厂商 Manufacturer	校准日期 Calibration date	失效日期 Expiration date
样品预处理 Sample pretreatment	高性能电池检测系统 High-performance battery detection system	CT-4008-5V 6A-S1	T1806-1675 42~T1806-1 67548	newaretechnology	2021-07-15	2022-07-14
	电子天平 Electronic scale	JM-B30002	370	Zhuji Chaoze Weighing	2021-10-25	2022-10-24
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2021-10-20	2022-10-19
高度模拟试验 Altitude simulation	低气压箱 Vacuum chamber	CHKX-125	110711	gzgongwen	2021-03-17	2022-03-16
	电子天平 Electronic scale	JM-B30002	370	Zhuji Chaoze Weighing	2021-10-25	2022-10-24
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2021-10-20	2022-10-19
温度试验 Thermal Test	快速温变箱 Rapid temperature change box	QW1070P6 W15	12174318	ESPEC	2021-03-17	2022-03-16
	电子天平 Electronic scale	JM-B30002	370	Zhuji Chaoze Weighing	2021-10-25	2022-10-24
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2021-10-20	2022-10-19



振动试验 Vibration	振动试验台 Vibration test bench	ES-30-370	D1203045	donglingtech	2021-10-20	2022-10-19
	电子天平 Electronic scale	JM-B30002	370	Zhuji Chaoze Weighing	2021-10-25	2022-10-24
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2021-10-20	2022-10-19
冲击试验 Shock	冲击碰撞试验台 Shock Test System	SY11-50	5120315/J1 20315	donglingtech	2021-03-18	2022-03-17
	电子天平 Electronic scale	JM-B30002	370	Zhuji Chaoze Weighing	2021-10-25	2022-10-24
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2021-10-20	2022-10-19
外短路试验 External short circuit	防爆温箱 explosion-proof oven	DE207C	A08351	Chongqing Hanba	2021-03-17	2022-03-16
	微电阻测试仪 Milliohm-meter	TOS8010	TM200445	TOSSTAR	2021-03-17	2022-03-16
	短路器 Short circuit	MORLAB-B 01	/	/	2021-03-17	2022-03-16
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2021-10-20	2022-10-19



<input checked="" type="checkbox"/> 挤压试验 Crush <input type="checkbox"/> 撞击试验 Impact	<input checked="" type="checkbox"/> 挤压试验机 Crush Apparatus	BE-6045-2T	2018111300 1	DongGuan Bell	2021-10-20	2022-10-19
	<input type="checkbox"/> 电池冲击试验机 Battery impact Apparatus	BE-5066	2008091034 6	DongGuan Bell	2021-03-17	2023-03-16
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2021-10-20	2022-10-19
过充电试验 Overcharge	电池充放电系统 Battery Testing System	BTS-30V20 A-8CH	19ME19040 8006	BETTATEQ	2021-07-15	2022-07-14
	防爆温箱 explosion-proof oven	DE207C	A08351	Chongqing Hanba	2021-03-17	2022-03-16
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2021-10-20	2022-10-19
强制放电 Force discharge	直流电源 DC power supply	KXN-6050D	18K6050D0 40094	zhaoxinpowe r	2021-10-20	2022-10-19
	电子负载 Electronic load	IT8512A+	8021430107 37010063	ITECH	2021-07-15	2022-07-14
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2021-10-20	2022-10-19



Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525
E-mail:	service@morlab.cn
Website	www.morlab.cn

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

***** END OF REPORT *****