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检测
TESTING
CNAS L4065



Report No.:
报告编号: KSXNY20181126U01

检测报告

TEST REPORT

NAME OF SAMPLE: Li-ion Polymer Battery

产品名称: 锂离子聚合物电池

CLIENT: Shenzhen Kamcy New Energy Products Co., Ltd

委托单位: 深圳市康胜新能源产品有限公司

CLASSIFICATION OF TEST: Commission test

检测类别: 委托检测

广州邦禾检测技术有限公司

Guangzhou MCM Certification and Testing Co., Ltd



General information 基本资料	
Name of samples 样品名称	Li-ion Polymer Battery 锂离子聚合物电池
Type/ Model 型号规格	802535 3.7V 680mAh 2.52Wh
Trade mark 商标	—
Commission by 委托单位	Shenzhen Kamcy New Energy Products Co.,Ltd 深圳市康胜新能源产品有限公司
Commissioner address 委托单位地址	2nd floor, Building 4, Chuangfu Industrial Zone, Shuike Road, Tiegang, Xixiang Town, Bao'an District, Shenzhen, China 深圳宝安区西乡铁岗水库路 172 号创富工业区 4 栋 2 楼
Manufacturer 制造商	Shenzhen Kamcy New Energy Products Co.,Ltd 深圳市康胜新能源产品有限公司
Manufacturer address 制造商地址	2nd floor, Building 4, Chuangfu Industrial Zone, Shuike Road, Tiegang, Xixiang Town, Bao'an District, Shenzhen, China 深圳宝安区西乡铁岗水库路 172 号创富工业区 4 栋 2 楼
Factory 生产厂	Shenzhen Kamcy New Energy Products Co.,Ltd 深圳市康胜新能源产品有限公司
Factory address 生产厂地址	2nd floor, Building 4, Chuangfu Industrial Zone, Shuike Road, Tiegang, Xixiang Town, Bao'an District, Shenzhen, China 深圳宝安区西乡铁岗水库路 172 号创富工业区 4 栋 2 楼
Appearance: 样品外观颜色	Silver 银白色
Sample status 样品状态	Good 完好
Quantity of sample 样品数量	43pcs
Sample identification 样品标识序号	c1#~c43#
Reference standard 参考标准	UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 section 38.3. 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 section 38.3.
Receiving date 接样日期	2018.11.26
Completing date 完成日期	2018.12.18

Test Conclusion

测试结论

No. 序号	Name of test 测试项目名称	Testing standard 测试标准	Test result 测试结果	Conclusion 本项结论	Remarks 备注
1	Altitude simulation 高度模拟	UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 section 38.3. 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 section 38.3.	See Appendix 1 见附表 1	Passed 合格	/
2	Thermal test 温度试验		See Appendix 2 见附表 2	Passed 合格	/
3	Vibration 振动		See Appendix 3 见附表 3	Passed 合格	/
4	Shock 冲击		See Appendix 4 见附表 4	Passed 合格	/
5	External Short-circuit 外部短路		See Appendix 5 见附表 5	Passed 合格	/
6	Impact 撞击		/	/	N/A 不适用
	Crush 挤压		See Appendix 6 见附表 6	Passed 合格	/
7	Overcharge 过度充电		See Appendix 7 见附表 7	Passed 合格	/
8	Forced discharge 强制放电		See Appendix 8 见附表 8	Passed 合格	/

Conclusion/结论:

The Li-ion Polymer Batteries submitted by Shenzhen Kamcy New Energy Products Co.,Ltd had passed the test items of UNITED NATIONS "Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria ST/SG/AC.10/11/Rev.6 section 38.3.

由深圳市康胜新能源产品有限公司送检的锂离子聚合物电池符合联合国《关于危险货物试验和标准手册》ST/SG/AC.10/11/Rev.6 section 38.3 的要求。

Seal/检测专用章:

Date of issue/日期: Jan. 18, 2019



WARM PROMPT: This test report can be used only for areas excluding Shanghai (not including the use of applying for the certification for safe transport of SRI DGI of the second research institute of CAAC).

温馨提示: 此份报告适用于“非上海地区”(不适用于申请中国民航局第二研究所危险品航空安全运输鉴定中心鉴定书)。

Tested by Cen Yansen

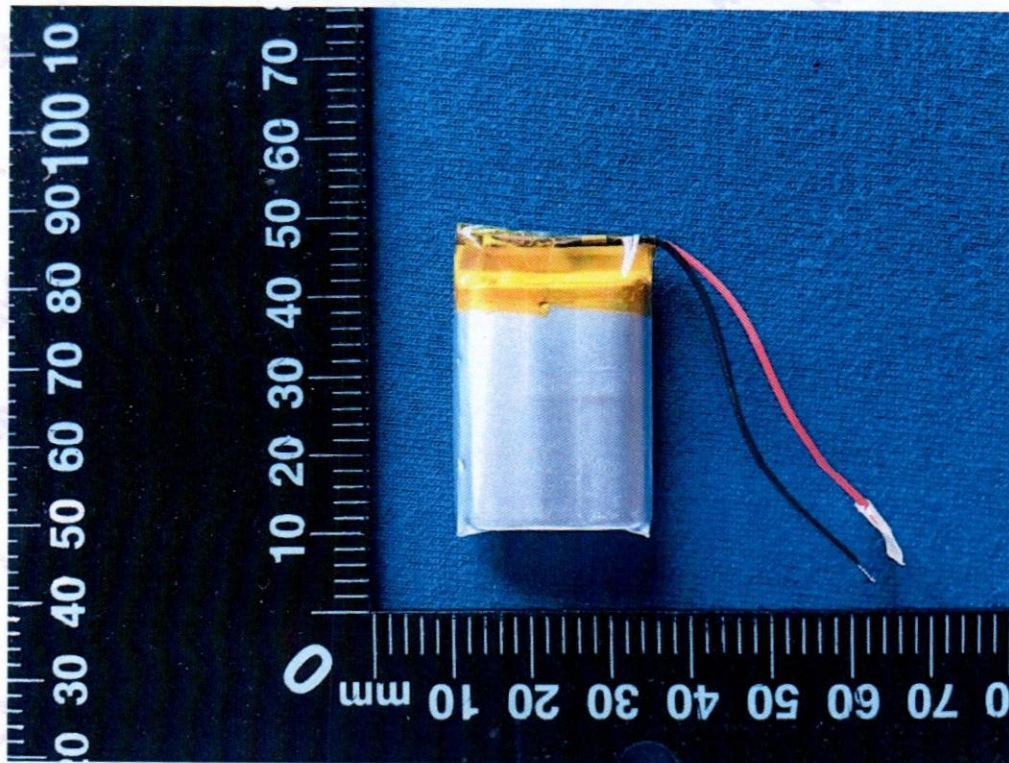
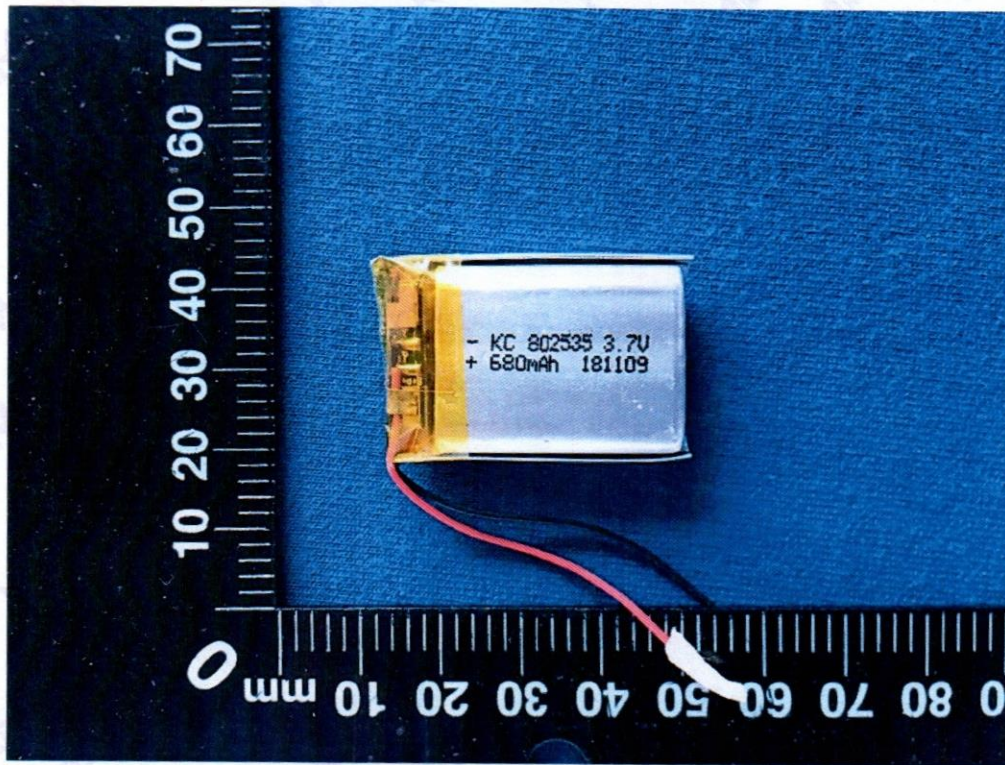
Reviewed by Huang Yining

Approved by Xu Hongbin

测试: Cen Yan Sen审核: Huang Yining批准: Xu Hongbin

Photos of samples and markings
样品及标识照片

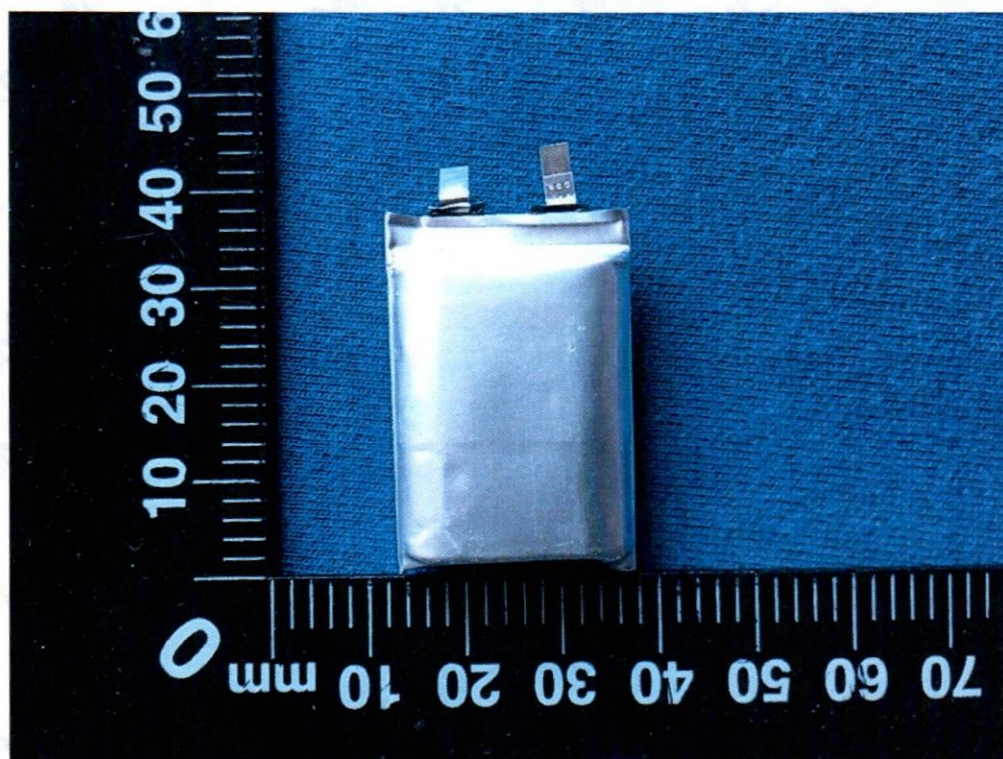
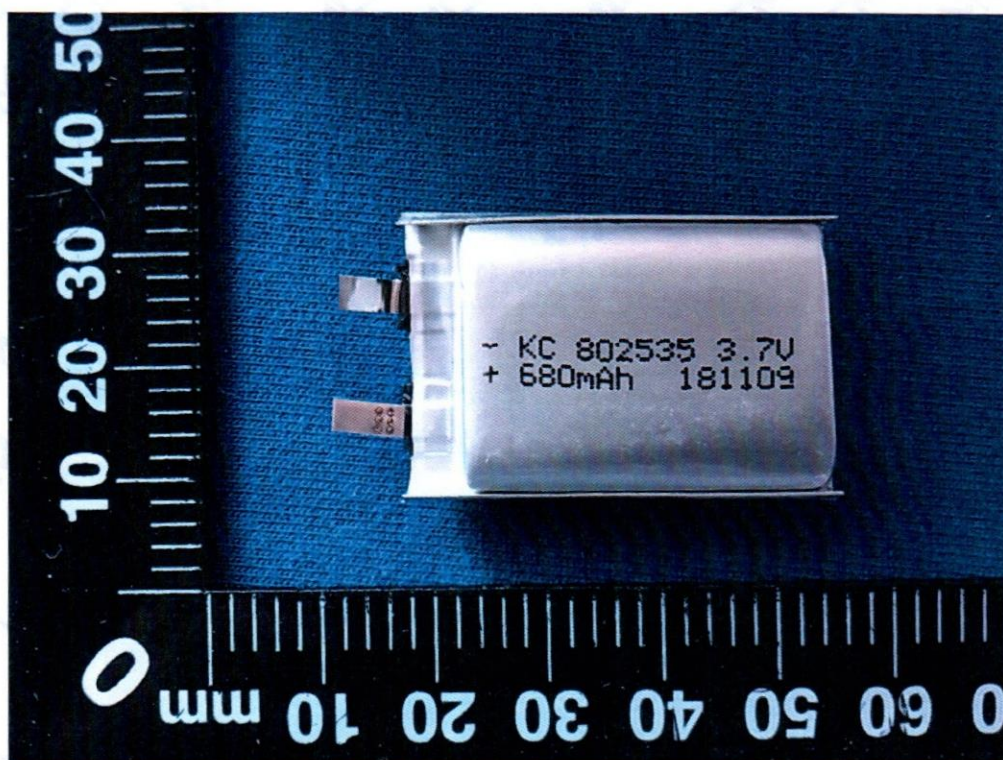
Battery (802535 3.7V 680mAh 2.52Wh)



Photos of samples and markings

电池样品照片及标识

Cell (802535 3.7V 680mAh 2.52Wh)



Appendix 1

附表 1

[illegible]

Appendix 2

附表 2

[illegible]

Appendix 3

附表 3

[illegible]

Appendix 4

附表 4

Test Items 测试项目	Shock 冲击						
1,1	Test procedure 测试步骤						
	Test cells and batteries shall be secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each battery, Each cell shall be subjected to a half-sine shock of peak acceleration of 150gn and pulse duration of 6 milliseconds. Alternatively, large cells may be subjected to a half-sine shock of peak acceleration of 50gn and pulse duration of 11 milliseconds. Each cell or battery shall be subjected to three shocks in the positive direction and to three shocks in the negative direction in each of three mutually perpendicular mounting positions of the cell or battery for a total of 18 shocks. 被测电芯和电池用坚硬的支架紧固在试验装置上，支架支撑着每个试验电池的所有安装面。每个电芯须经受 150gn 的最大加速度和脉冲持续时间为 6 毫秒的半正弦波冲击。另外，大电芯可能经受 50gn 的加速度和脉冲持续时间 11 毫秒的半正弦冲击。每个电池芯或电池应在三个垂直面的正向各承受 3 次冲击，负向再各承受 3 次冲击，共 18 次。						
1,2	Sample status 样品状态						
	C1#~C10#, at first cycle in fully charged states; C1#~C10#, 在第一个循环完全充电状态;						
1,3	Result 测试结果						
Sample No. 样品编号	Before 测试前		After 测试后		Mass loss 质量损失 (%)	Residual OCV 剩余电压 (%)	Test result 测试结果
	Mass 样品质量 (g)	Voltage 开路电压 (V)	Mass 样品质量 (g)	Voltage 开路电压 (V)			
C1#	12.781	4.10	12.780	4.09	0.008	99.76	O
C2#	13.040	4.10	13.040	4.09	0.000	99.76	O
C3#	12.814	4.10	12.813	4.09	0.008	99.76	O
C4#	12.954	4.10	12.954	4.10	0.000	100.00	O
C5#	12.765	4.09	12.765	4.09	0.000	100.00	O
C6#	12.933	4.09	12.933	4.09	0.000	100.00	O
C7#	12.802	4.09	12.801	4.09	0.008	100.00	O
C8#	12.769	4.10	12.768	4.09	0.008	99.76	O
C9#	12.034	4.10	12.034	4.09	0.000	99.76	O
C10#	12.858	4.10	12.857	4.10	0.008	100.00	O
Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O-No leakage, no venting, no disassembly, no rupture, no fire.							
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。							

Appendix 5

附表 5

Test Items 测试项目	External short circuit 外部短路		
1,1	Test procedure 测试步骤		
	The cell or battery to be tested shall be heated for a period of time necessary to reach a homogeneous stabilized temperature of $57\pm4^{\circ}\text{C}$, measured on the external case. This period of time depends on the size and design of the cell or battery and should be assessed and documented. If this assessment is not feasible, the exposure time shall be at least 6 hours for small cells and small batteries, and 12 hours for large cells and large batteries. Then the cell or battery at $57\pm 4^{\circ}\text{C}$ shall be subjected to one short circuit condition with a total external resistance of less than 0,1 ohm. This short circuit condition is continued for at least one hour after the cell or battery external case temperature has returned to $57 \pm 4^{\circ}\text{C}$, or in the case of the large batteries, has decreased by half of the maximum temperature increase observed during the test and remains below that value. 待试验电芯或电池的温度须处于稳定状态, 使其外壳温度达到 $57\pm4^{\circ}\text{C}$, 测量外表温度, 这段时间取决于电芯或电池的尺寸和设计, 应该评估和记录。如果这个评估是不可行的, 曝光时间应小电芯和小电池至少 6 小时、大电芯和大型电池至少 12 个小时。接着使电芯或电池在 $57\pm4^{\circ}\text{C}$ 下经受总外阻小于 0,1 欧姆的短路状况。 这一短路状况应在电芯或电池外壳温度恢复至 $57\pm4^{\circ}\text{C}$ 后至少持续 1 小时。或对于大型电池, 已经下降至最高温度的一半, 测试期间的观察, 仍低于这个值。短路和降温阶段应当至少到环境温度。		
1,2	Sample status 样品状态		
	C1#~C10#, at first cycle in fully charged states; C1#~C10#, 在第一个循环完全充电状态;		
1,3	Result 测试结果		
Sample No. 样品编号	Max. External Temperature 样品表面最高温度 ($^{\circ}\text{C}$)	Test result 测试结果	Remark 备注
C1#	57.4	O	/
C2#	57.4	O	/
C3#	57.5	O	/
C4#	57.5	O	/
C5#	57.6	O	/
C6#	57.7	O	/
C7#	57.4	O	/
C8#	57.6	O	/
C9#	57.5	O	/
C10#	57.4	O	/
Note: D -Disassembly, R -Rupture, F-Fire, O- no disassembly, no rupture, no fire. 注: D- 解体; R- 破裂; F- 起火; O-无解体、无破裂、无起火。			

Appendix 6

附表 6

Test Items 测试项目	Crush 挤压		
1,1	Test procedure 测试步骤		
	A cell or component cell is to be crushed between two flat surfaces. The crushing is to be gradual with a speed of approximately 1,5cm/s at the first point of contact. The crushing is to be continued until the first of the three options below is reached. (a) The applied force reaches 13kN±0,78kN; (b) The voltage of the cell drops by at least 100 mV; or (c) The cell is deformed by 50% or more of its original thickness. Once the maximum pressure has been obtained, the voltage drops by 100mV or more, or the cell is deformed by at least 50% of its original thickness, the pressure shall be released. 电池芯或组成电池芯在两个平面间挤压。挤压在第一个接触点以约 1,5cm/s 的速度慢慢进行,直到下面三个选项之一达到为止: (a) 作用力达到 13kN±0,78kN; (b) 电池芯电压降至少达到 100mV; (c) 电池厚度和最初比较变形至少 50%。 一旦达到最大压力,电压降超过 100 mV 或者电池芯变形超过 50%,压力应该解除。		
1,2	Sample status 样品状态		
	C11#~C15#, at first cycle at 50% of the design rated capacity; C11#~C15#, 在第一个循环 50%的额定容量;		
1,3	Result 测试结果		
Sample No. 样品编号	Max. External Temperature 样品表面最高温度 (°C)	Test result 测试结果	Remark 备注
C11#	24.1	O	/
C12#	24.0	O	/
C13#	24.1	O	/
C14#	24.2	O	/
C15#	24.1	O	/
Note: D -Disassembly, F-Fire, O- no disassembly, no fire. 注: D- 解体; F- 起火; O-无解体、无起火。			

Appendix 7

附表 7

Test Items 测试项目	Overcharge 过度充电		
1,1	Test procedure 测试步骤		
	When the manufacturer's recommended charge voltage is not more than 18V, the minimum voltage of the test shall be the lesser of two times the maximum charge voltage of the battery or 22V. 制造商建议的充电电压不大于 18 伏时，实验的最小电压应是电池组最大充电电压的两倍或 22 伏两者中的较小者。	The manufacturer's recommended maximum charge voltage is 4.23V. The manufacturer's recommended maximum continuous charge current is 340mA. The voltage of the test is 8.46V. And the Current is 680mA. 厂家推荐最大充电电压为 4, 23V，厂家推荐最大充电电流为 340mA。测试的电压为 8. 46V，电流为 680mA。	
	When the manufacturer's recommended charge voltage is more than 18V, the minimum voltage of the test shall be 1,2 times maximum charge voltage. 制造商建议的充电电压大于 18 伏时，实验的最小电压应是最大充电电压的 1, 2 倍。	/	
1,2	Sample status 样品状态		
	C16#~C19#, at first cycle in fully charged states; C16#~C19#, 在第一个循环完全充电状态;		
	C20#~C23#, after 50 cycles ending in fully charged states; C20#~C23#, 在第五十个循环完全充电状态;		
1,3	Result 测试结果		
Sample No. 样品编号	Voltage Before test (V) 测试前开路电压 (V)	Test result 测试结果	Remark 备注
C16#	4.17	O	/
C17#	4.18	O	/
C18#	4.17	O	/
C19#	4.17	O	/
C20#	4.17	O	/
C21#	4.18	O	/
C22#	4.18	O	/
C23#	4.18	O	/
Note: D -Disassembly, F-Fire, O- no disassembly, no fire. 注: D- 解体; F- 起火; O-无解体、无起火。			

Appendix 8

附表 8

Test Items 测试项目	Forced discharge 强制放电				
1,1	Test procedure 测试步骤				
	Each cell shall be forced discharged at ambient temperature by connecting it in series with a 12V D. C, power supply at an initial current equal to the maximum discharge current specified by the manufacturer The specified discharge current is to be obtained by connecting a resistive load of the appropriate size and rating in series with the test cell, Each cell shall be forced discharged for a time interval(in hours) equal to its rated capacity divided by the initial test current(in ampere). 在 $20 \pm 5^{\circ}\text{C}$ 的环境温度下, 将单个电芯连接在 12V 的直流电源上进行强制放电, 此直流电源提供每个电芯初始电流为制造厂指定的最大放电电流, 放电时间为额定容量除以初始电流。				
1,2	Sample status 样品状态				
	C24#~C33#, at first cycle in fully discharged states; C24#~C33#, 在第一个循环完全放电状态;				
	C34#~C43#, after 50 cycles ending in fully discharged states; C34#~C43#, 在第五十个循环完全放电状态;				
1,3	Result 测试结果				
Sample No. 样品编号	Voltage Before test 测试前开路电压 (V)	Test result 测试结果	Sample No. 样品编号	Voltage Before test 测试前开路电压 (V)	Test result 测试结果
C24#	2.975	O	C34#	2.981	O
C25#	2.989	O	C35#	2.983	O
C26#	2.977	O	C36#	2.978	O
C27#	2.976	O	C37#	2.984	O
C28#	2.978	O	C38#	2.991	O
C29#	2.984	O	C39#	2.984	O
C30#	2.991	O	C40#	2.991	O
C31#	2.974	O	C41#	2.974	O
C32#	2.989	O	C42#	2.975	O
C33#	2.977	O	C43#	2.989	O
Note: D -Disassembly, F-Fire, O- no disassembly, no fire. 注: D- 解体; F- 起火; O-无解体、无起火。					

注 意 事 项

Important

1. 本报告无检测单位检测专用章、骑缝章无效。

The test report is invalid without the special seal for testing and Paging seal of Guangzhou MCM Certification and Testing Co., Ltd.

2. 未经本试验室书面同意，不得部分地复制本报告。

Nobody is allowed to photocopy or partly photocopy this test report without written permission of Guangzhou MCM Certification and Testing Co., Ltd.

3. 本报告无批准人、审核人及检测人签名无效。

The test report is invalid without the signatures of Approver, Checker and Tester.

4. 本报告涂改无效。

The test report is invalid if altered.

5. 对检测报告若有异议，应于收到报告之日起十五天内向检测单位提出。

Objections to the test report must be submitted to Guangzhou MCM Certification and Testing Co., Ltd. Within 15 days.

6. 本报告仅对来样负责。

The test report is valid for the tested samples only.

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