

PRODUCT SPECIFICATION

产品规格书

Date 日期:

2023-5-11

Project Name 项目名:

3.7V 2600mAh high temperature battery

Manufacturer

生产制造商

CM Batteries Co.,Ltd

Customer ID

客户编码:

Project Code/项目代码	
Version NO./ 版本号	
Product Name/ 产品名称	
Model/ 型号	

Drafted By/ Date 拟定/日期	
Checked By/ Date 审核/日期	
Approval By/ Date 审批/日期	



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CMB Facotry:

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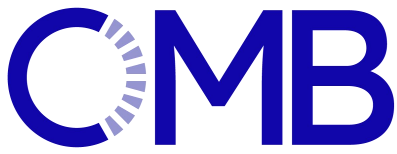
Manufacturing

Park,Tangxia Town

Dongguan

Guangdong,China

Customer Approval/ 客户确认	Checked By/Date by 审核/日期	Approval By/ Date 审批/日期
Company Seal/公章		



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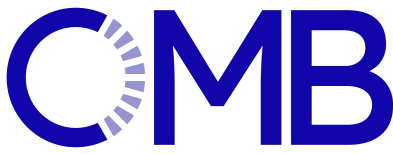
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Product Summary 产品概要

1. Standard 依据标准

This product complies with National Standard GB/T 31241-2014 《Lithium-ion Battery General Specifications》 of PRC.

本产品依据标准：中华人民共和国国家标准 GB/T 31241-2014 《用锂离子电池总规范》。

2. Production description 产品描述

a) Name 名称: High Temperature Battery

Mode 型号: TLH-EV012-1SIP-2600

b) Cell 电芯: HL18650U-3.6V/2600mAh

c) Warranty Year 保质期限: 3 Year

d) Structure Drawing 电池结构图: 69*19*19mm±1.5mm



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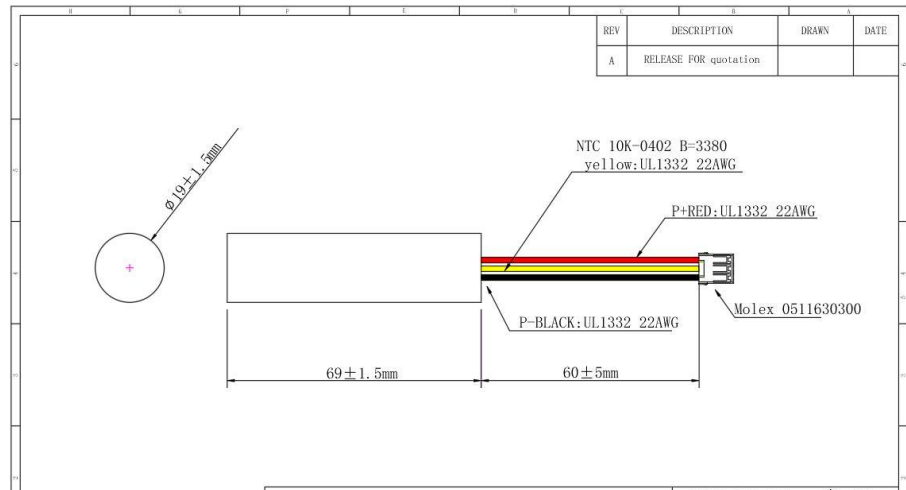
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3. Scope 范围

This specification applies to the technical requirements, test items, testing rules, safety warnings, packaging, transportation and storage of lithium-ion battery packs produced by CM BATTERIES.

本规格书适用于 CM BATTERIES CO.,Ltd 生产锂离子电池组的技术要求、测试项目、测试规则、

4. Standard 标准

National Standard GB/T 31241-2014 Lithium ion cells and batteries used in portable electronic equipments-Safety repuriements.

本产品依据标准：中华人民共和国国家标准 GB31241-2014《锂离子电池和蓄电池总规范》。

ONO. 序号	Item 项目	Parameter 参数	Remark 备注
1	Nominal Voltage 标称电压	3.7V	
2	Nominal Capacity 标称容量	2550Ah	@05.5C
3	Minimum Capacity 最小容量	/	
4	Shipment Voltage 装运电压		
5	Initial Internal Impedance 初始内部阻抗	≤50mΩ	AC 1KHZ
6	Standard Charge Voltage 标准充电电压	4.1V	
7	Standard Charge Current 标准充电电流	400mA	0.2C
8	Max. Charge Current 最大充电电流	1A	0.5C
9	StandardDischargeCurrent 标准放电电流	1.5A	0.75C
10	Max. Discharge Current 最大放电电流	3A	1.5C
11	Burst Discharge Current 突发放电电流	4A 20ms	
12	Discharge Cut-off Voltage 放电截止电压	2.8V	
13	Cycle life 循环寿命	≥2000cycles	Retention: ≥80%
14	Charge Temperature 充电温度	-20°C ~60°C	Standard Charge
15	Discharge Temperature 放电温度	-40°C ~85°C	Standard Discharge
		-40°C~ 85°C	≤1 months
		-20°C~ 45°C	≤3 months
16	Storage Temperature 储存温度	-10°C ~ 25°C	≤1 year
17	Weight 重量	About]50g	
18	Special Request 特殊技术要求		



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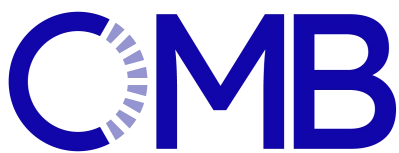
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Dongguan

Guangdong,China

5. Electrical Characteristics for BMS BMS 的电气参数

NO. 序号	Item 项目	Type 典型值	Error 公差	Unit 单元	Remark 备注
1	过充电保护电压 (单电池) Over charge protection voltage (single cell)	4.250	± 0.025	V	
	过充电保护的延迟时间 Delay time for over charge protection	500-1500		S	
	过充电保护电压 (单电池) Over charge protection voltage (single cell)	4.100	± 0.025	V	
2	过放电保护电压 (单电池) Over discharge protection voltage (single cell)	2.700	± 0.030	V	
	过放电保护的延迟时间 Delay time for over discharge protection	500-1500		S	
	过放电保护电压 (单电池) Over discharge release voltage (single cell)	3.000	± 0.030	V	
3	过放电保护电流 1 Over discharge protection current 1	25	± 3	A	0.05
	过放电保护 1 电流的延迟时间 Delay time for over discharge protection 1 current	700-1300		ms	
	过放电保护电流 2 Over discharge protection current 2	50	± 5	A	0.1
	过放电保护 2 电流的延迟时间 Delay time for over discharge protection 2 current	70-130		ms	
4	充电保护电流 1 Charge protection current 1	10 ± 5		A	0.02
	过充电保护 1 电流的延迟时间 Delay time for over charge protection 1 current	400-600		ms	
5	放电短路 Short Circuit in Discharge				0.02
6	充电高温保护 Charging high temperature protection	45 ± 4		°C	
	过充电保护温度 Over charge protection temperature	40 ± 4		°C	
	充电低温保护 Charging low temperature protection	0 ± 4		°C	
	充电低温回收 Charge low temperature recovery	5 ± 4		°C	
	放电高温保护 Discharge high temperature protection	60 ± 4		°C	
	放电高温回收 Discharge high temperature recovery	55 ± 4		°C	
	放电低温保护 Discharge low temperature protection	-20 ± 4		°C	
	低温下放电恢复 Discharge recovers at low temperatures	-15 ± 4		°C	
	温度保护延迟时间 Delay time for temperature protection	1-3		°C	
7	功耗 Power consumption	180		uA	
8	主回路导通电阻 Main loop on-resistance	40		mR	@1A



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6. Main Components List for BMS 主要元器件清单

NO. 序号	Component NO. 元器件号	Component Name	Component Specfication 元器件规格	Package Type 封装类型	Quality 数量	Manufacturer 制造商
1	U1	IC	S-8261DAY-M6TIU	SOT-23-6	1	Ablic Inc
2	U2/U3	MOSFET	MT8205A	TSSOP-8	2	MT
3	R1	Resistance	SMD 330Ω±5%	0402	1	YAGEO
4	R2	Resistance	SMD 470Ω±5%	0402	1	YAGEO
5	C1	Electric Capacitance	SMD 0.1μ F ± 20%	0402	1	YAGEO
6	R3	NTC	0402 10K 1% B=3380,NCPI5XH103F03RC		1	Murata
7	PCB		17.3mm*16.6mm*0.8mm±0.15mm		1	

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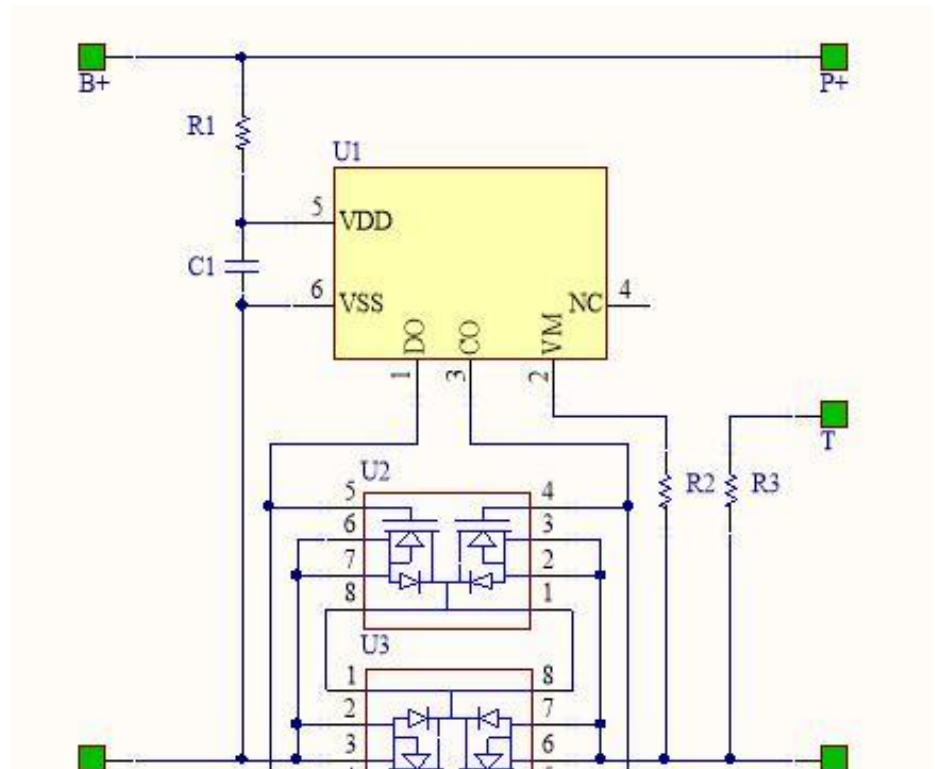
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7. BMS Layout and Diagram BMS 布局和示意图





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8. Material Sheet 材料表

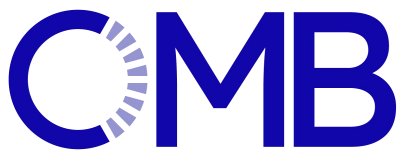
NO. 序号	Item 项目	Description 描述	QTY 数量	Unit 单元	Remark 备注
1	Battery cell 电芯	18650/2600mAh	1	PCS	
2	BMS 保护板	/	1	PCS	Guitar
3	Plastic housing 胶壳	/	1	Set	Guitar
4	Positive nickel sheet 正极电焊镍片	10*2.5+8*2.5*0.1mm			
5	Negative nickel sheet 负极电焊镍片	10*2.5+8*2.5*0.1mm			
6	Label 标签				

6.1. Battery Pack Reliability Test 电池组可靠性测试

6.1.1. Testing Condition 测试条件

Each test should be carried out under the standard atmospheric pressure conditions of the test unless otherwise specified.

除非另有规定，否则每次试验应在试验的标准大气压力条件下进行。



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Temperature 温度 20°C~30°C

Relative Humidity 相对湿度 45%~75%

Atmospheric Pressure 大气压力 86KP~106KP

Pre-cycle 预循环:

Do a pre-cycle before the test, charge at 0.2C5A at an ambient temperature of 25±5°C, and when the battery terminal reaches the charge limit voltage, put it on hold for 0.5 to 1 hour, and then discharge at 0.2C5A to the cut-off voltage.

测试前进行预循环, 在 25±5°C 的环境温度下以 0.2C5A 充电, 当电池端子达到充电极限电压时, 将其保持 0.5 至 1 小时, 然后以 0.2C5A 放电至截止电压。

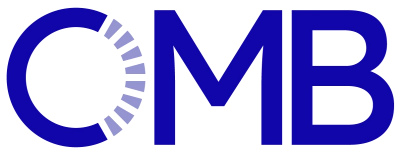
6.1.2. Requirements for measuring instruments and equipment

6.1.2. 测量仪器设备要求

- The accuracy of the instrument for measuring voltage should not be lower than 0.5, and the internal resistance should not be less than 10KΩ/V.
测量电压的仪器的精度不应低于大于 0.5 内阻不应小于 10KΩ/V
- The accuracy of the instrument for measuring current shall not be lower than 0.5 grade.
电流测量仪器的精度不应低于 0.5 级
- The accuracy of the instrument for measuring time should not be less than ±0.1%.
仪器测量时间的精度不应低于±0.1%
- The accuracy of the instrument for measuring current shall not be lower than 0.5 grade.
电流测量仪器的精度不应低于 0.5 级
- The current of the constant current source is constant and adjustable, and its current variation should be within ±1% during charging or discharging.
恒流源的电流是恒定和可调的, 在充电或放电过程中其电流变化应在±1%以内
- The voltage of the constant voltage source is adjustable, and its voltage variation range is ±0.5%.
恒压源的电压是可调的, 其电压变化范围为±0.5%
- The accuracy of the dimension measuring instrument shall not be less than 0.02mm.
尺寸测量仪器的精度不应低于 0.02 毫米
- The sensitivity of the weighing instrument should not be less than 0.1g.
称重仪器的灵敏度不应低于 0.1g

6.2. Specifications for testing electrical performance parameters

6.2. 电气性能参数测试规范



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6.2.1.Charge Test 充电测试**• Test Method 测试方法:**

charge at 0.2C5A constant current at 25±5°C, change to constant voltage charging when the power terminal voltage reaches the limit voltage, stop charging until the charging current is less than or equal to 0.02C 5A, and the time does not exceed 8 hours.

在 25±5°C 下以 0.2C5A 恒定电流充电, 变为恒定电压当电源端电压达到极限电压时充电, 停止充电直到充电电流小于或等于 0.02C5A, 并且时间不超过 8 小时。

• Fast charging 快速充电:

Charge with a constant current of 1C5A at 25±5°C, and change to constant voltage charging when the voltage at the power supply terminal reaches the limit voltage, until the charging current is less than or equal to 0.02C 5A, and the time does not exceed 8 hours, then stop charging.

在 25±5°C 下用 1C5A 的恒定电流充电, 并变为恒定当电源端子处的电压达到限制电压, 直到充电电流小于或等于 0.02C 5A, 并且时间不超过 8 小时, 然后停止充电。

• Approval Standard 合格标准

Any charging mode can be used, and the charging current can reach a state of less than 0.02C 5A within 8 hours.

可以使用任何充电模式, 充电电流可以达到 8 小时内低于 0.02C 5A。

6.2.2. Discharge Test 放电试验**• Test Method 测试方法:****• Standard discharge 标准放电:**

Discharge at a constant current of 0.2C 5A to the discharge cut-off voltage under the condition of 25±5°C; the discharge time is not less than 5 hours; 以 0.2C 5A 的恒定电流放电至放电截止电压在 25±5°C 的条件下; 放电时间不少于 5 小时

• Rapid discharge 快速放电:

Discharge at a constant current of 1C 5A to the discharge cut-off voltage under the condition of 25±5°C; the discharge time is not less than 57 minutes. 在 25±5°C 的条件下, 以 1C 5A 的恒定电流放电至放电截止电压; 放电时间不小于 57 分钟

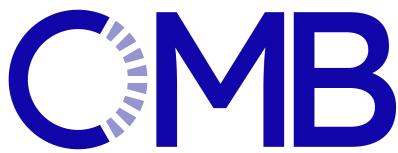
• Discharge temperature 排出温度:

The discharge process can be carried out at -20~60°C, without other bad conditions.

放电过程可以在 -20~60°C 下进行, 没有其他不良条件。

• Approval Standard 合格标准:

The discharge time is greater than the corresponding specification value. 放电时间大于相应的规格值。



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6.2.3. Rated Capacity 额定容量

• Test Method 测试方法:

At an ambient temperature of $25\pm 5^{\circ}\text{C}$, charge the battery according to the method described in Charging Performance;

在 $25\pm 5^{\circ}\text{C}$ 的环境温度下, 按照“充电性能”中所述的方法对蓄电池进行充电

After charging, place it at the same temperature of $25\pm 5^{\circ}\text{C}$ for 1 to 12 hours; 充电后, 将其置于 $25\pm 5^{\circ}\text{C}$ 的相同温度下 1 至 12 小时;

Under the condition of ambient temperature of $25\pm 5^{\circ}\text{C}$, discharge the battery according to the method described in discharge performance.

在环境温度为 $25\pm 5^{\circ}\text{C}$ 的条件下, 对蓄电池进行放电根据放电性能中描述的方法

• Approval Standard 合格标准:

The standard discharge time is greater than 5 hours, and the rapid discharge time is greater than 57 minutes.

标准放电时间大于 5 小时, 快速放电时间大于 57 分钟。

6.2.4. Charge Retention 电荷保持能力

• Test Method 测试方法:

At an ambient temperature of $25\pm 5^{\circ}\text{C}$, charge the battery according to the method described in Charging Performance;

在 $25\pm 5^{\circ}\text{C}$ 的环境温度下, 根据充电性能中描述的方法

Under the same ambient temperature of $25\pm 5^{\circ}\text{C}$, the battery should be stored for 30 days in an open circuit state;

在 $25\pm 5^{\circ}\text{C}$ 的相同环境温度下, 蓄电池应在开路状态下储存 30 天

Under the same ambient temperature of $25\pm 5^{\circ}\text{C}$, perform a standard discharge operation on the battery.

在 $25\pm 5^{\circ}\text{C}$ 的相同环境温度下, 执行标准电池的放电操作

• Approval Standard 合格标准:

Standard discharge time > 3.0 hours; no other failure conditions during discharge 标准放电时间 > 3.0 小时; 期间无其他故障情况排出

6.2.5. Internal Impedance 内部阻抗

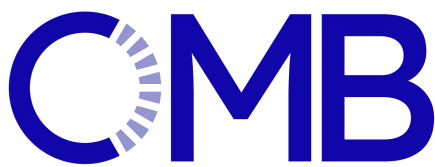
• Test Method 测试方法:

At an ambient temperature of $25\pm 5^{\circ}\text{C}$, use a dedicated battery comprehensive tester to measure the internal resistance between the positive and negative electrodes at the battery interface. The measurement should not be less than 5 times, and the corresponding valid results should be averaged.

在 $25\pm 5^{\circ}\text{C}$ 的环境温度下, 使用专用的蓄电池压缩测试仪测量正极和负极之间的内阻电池接口处的电极。测量值不应小于 5 次, 并且应该对相应的有效结果进行平均

• Approval Standard 合格标准:

Internal Impedance(内部阻抗) < 50mΩ



PRODUCT SPECIFICATION 产 品规格书

Date 日期:

2023-5-11

Project Name 项目名:

3.7V 2600mAh high temperature battery

Manufacturer**生产制造商**

CM Batteries Co.,Ltd

Customer ID**客户编码:**

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Manufacturing

Park, Tangxia Town

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Guangdong, China

6.2.6. Life Cycle Test 循环寿命测试**• Test Method 测试方法:**

The whole process of this test should be carried out at an ambient temperature of $25\pm 5^{\circ}\text{C}$;

本试验的整个过程应在 $25\pm 5^{\circ}\text{C}$ 的环境温度下进行

The cycle process includes two actions of charging and discharging, the cycle starts as charging, and the cycle ends as discharging;

循环过程包括充电和放电两个动作，循环以充电开始，循环以放电结束

Charge with 0.2C 5A constant current, change to constant voltage charging when the battery terminal voltage reaches the charging limit voltage, and stop charging when the charging current is less than or equal to 0.02C 5A;

0.2C 5A 恒流充电，改为恒压充电当电池端电压达到充电极限电压时，当充电电流小于或等于 0.02C5A 时停止充电；

After leaving it aside for 0.5 hours to 1 hour, discharge it with a constant current of 0.2 C5A. When the terminal voltage of the battery reaches the cut-off voltage, the discharge ends;

将其放置 0.5 小时至 1 小时后，用恒定电流放电为 0.2 C5A。当电池的端子电压达到截止电压时，放电结束；

After resting for 0.5 hours to 1 hour, enter the next charge and discharge cycle action.

休息 0.5 小时至 1 小时后，进入下一次充电和放电循环行动

• Approval Standard 合格标准:

Cycle Life 500 times, remaining capacity $\geq 80\%$ of initial capacity
循环寿命 500 次，剩余容量 \geq 初始容量的 80%。

6.3. Environmental Performance 环境性能**6.3.1. High Temperature Performance 高温性能****• Test Method 测试方法:**

After the standard 0.2C5A charge is completed at an ambient temperature of $25\pm 5^{\circ}\text{C}$, put the battery in a high-temperature box at $(55\pm 2)^{\circ}\text{C}$ and keep the temperature constant for 4 hours; discharge at a constant current of 0.2C5A to the discharge cut-off voltage, and the discharge ends.

在环境温度为 $25\pm 5^{\circ}\text{C}$ 的情况下，完成标准的 0.2C5A 充电后 $25\pm 5^{\circ}\text{C}$ ，将电池放在 $(55\pm 2)^{\circ}\text{C}$ 的高温箱中，并保持温度不变 4 小时。温度恒定 4 小时；以 0.2C5A 的恒定电流放电至放电截止电压，放电结束。

After the end of the test, place it for 2 hours under the condition of $25\pm 5^{\circ}\text{C}$, then make an appearance inspection.

试验结束后，在 $25\pm 5^{\circ}\text{C}$ 的条件下放置 2 小时，然后进行外观检查。

Under the same ambient temperature of $25\pm 5^{\circ}\text{C}$, perform a standard discharge operation on the battery.

在相同的环境温度 $25\pm 5^{\circ}\text{C}$ 下，对电池进行标准放电操作。对电池进行放电操作。



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• Approval Standard 合格标准:

When the battery is at $55\pm 2^\circ\text{C}$, the discharge capacity is not less than the minimum capacity of the product; the battery has no deformation, leakage, smoke or fire.

当电池在 $55\pm 2^\circ\text{C}$ 时, 放电容量不低于产品的最小容量; 电池没有变形、漏液、冒烟或起火。

6.3.2. Low Temperature Performance 低温性能

• Test Method 测试方法:

After the standard 0.2C 5A charging is completed at an ambient temperature of $25\pm 5^\circ\text{C}$, put the battery in a low-temperature box at $(-20\pm 2)^\circ\text{C}$ for 16 to 24 hours discharge it at a constant current of 0.2C 5A to 2.75V, and the discharge ends.

在环境温度为 $25\pm 5^\circ\text{C}$ 的情况下完成标准的 0.2C 5A 充电后, 将电池放在 $(-20\pm 2)^\circ\text{C}$ 的低温箱中 16 至 24 小时, 以 0.2C 5A 的恒定电流放电至 2.75V, 然后放电结束。

After the end of the test, place it for 2 hours under the condition of $25\pm 5^\circ\text{C}$, then make an appearance inspection.

试验结束后, 在 $25\pm 5^\circ\text{C}$ 的条件下放置 2 小时, 然后进行外观检查。

• Approval Standard 合格标准:

The battery is at $-20\pm 2^\circ\text{C}$, and the discharge capacity is not less than 60%* nominal capacity; the battery has no deformation, leakage, smoke or fire.

蓄电池处于 $-20\pm 2^\circ\text{C}$, 放电容量不低于 60%*标称容量; 电池没有变形、泄漏、冒烟或起火。

6.3.3. Constant Temperature and Humidity Performance 恒温恒湿性能

• Test Method 测试方法:

After the standard 0.2C5A charging at an ambient temperature of $25\pm 5^\circ\text{C}$, put the battery in a constant temperature and humidity box at 40°C and 95%RH for 48 hours, and then restore it for 2 hours at an ambient temperature of $25\pm 5^\circ\text{C}$; use a constant current of 0.2C5A Discharge to 2.75V, the discharge ends;

在环境温度为 $25\pm 5^\circ\text{C}$ 的情况下进行标准的 0.2C5A 充电后, 将电池放在 40°C 和 95%RH 的恒温恒湿箱中 48 小时, 然后在环境温度为 $25\pm 5^\circ\text{C}$ 的情况下恢复 2 小时。蓄电池在 40°C 和 95%RH 的恒温恒湿箱中放置 48 小时, 然后在 $25\pm 5^\circ\text{C}$ 的环境温度下恢复 2 小时; 使用 0.2C5A 的恒定电流 放电至 2.75V, 放电结束;

After the end of the test, place it for 2 hours under the condition of $25\pm 5^\circ\text{C}$, then make an appearance inspection.

试验结束后, 在 $25\pm 5^\circ\text{C}$ 的条件下放置 2 小时, 然后进行外观检查。

• Approval Standard 合格标准:

There should be no obvious deformation, rust, smoke or explosion on the appearance of the battery. Discharge at 0.2C 5A, discharge capacity 60%* nominal capacity.

蓄电池的外观不应有明显的变形、生锈、冒烟或爆炸等现象。蓄电池的外观不应有明显的变形、生锈、冒烟或爆炸。在 0.2C 5A 时放电, 放电容量为 60%*标称容量。



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6.3.4. Heat Test 热测试**• Test Method 测试方法:**

After standard 0.2C 5A charging at ambient temperature;

在环境温度下, 经过标准的 0.2C 5A 充电;

Put the sample into the hot box, raise the temperature to $130^{\circ}\text{C}\pm 2^{\circ}\text{C}$ at a rate of $(5^{\circ}\text{C}\pm 2^{\circ}\text{C})/\text{min}$ and keep it warm for 30min;

将样品放入热箱, 以 $(5^{\circ}\text{C}\pm 2^{\circ}\text{C})/\text{分钟}$ 的速度升温至 $130^{\circ}\text{C}\pm 2^{\circ}\text{C}$, 保温 30 分钟;

• Approval Standard 合格标准:

No fire, no explosion.

没有火灾, 没有爆炸。

6.3.5.Vibration Test 振动测试**• Test Method 测试方法:**

As to the UN transportation regulation(axis with cylindrical cells) 7Hz 200Hz 7Hz for 15min, repetition 12 times totally 3hours, the acceleration 1g during 7 to 18Hz And 8g (amplitude 1.6mm) up to 200Hz.

对于联合国运输规定(带圆柱形电池的轴) 7Hz 200Hz 7Hz 15 分钟, 重复 12 次, 共 3 小时, 在 7-18Hz 期间加速度为 1g 和 8g (振幅 1.6mm) 到 200Hz。

• Approval Standard 合格标准:

No fire, no explosion, no leakage.

没有火灾, 没有爆炸, 没有泄漏。

6.4. Battery Safety Protection Performance Test Range 电池安全保护性能测试范围**6.4.1.Overcharge Protection 过度充电保护****• Test Method 测试方法:**

After standard 1C 5A charging at ambient temperature;

在环境温度下, 经过标准的 1C 5A 充电;

2C5A current, 2 times the standard voltage charging for 8 hours, and then proceed as follows:

2C5A 电流, 2 倍标准电压充电 8 小时, 然后按以下步骤进行:

Standard discharge to termination voltage;标准放电至终止电压

Standard charge to limit voltage;标准充电, 以限制电压

Standard discharge to cut-off voltage.标准放电至切断电压

• Approval Standard 合格标准:

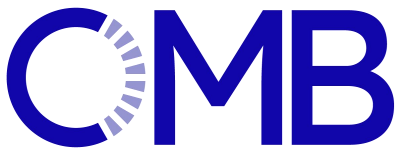
No fire, no explosion. Battery voltage < overcharge protection voltage.

不起火, 不爆炸。电池电压<过充电保护电压。

6.4.2. Over discharge Test 过度放电测试**• Test Method 测试方法:**

After the standard 0.2C5A charging at ambient temperature;

在环境温度下的标准 0.2C5A 充电后;



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Under the condition of ambient temperature $25\pm 5^{\circ}\text{C}$,the battery is discharged To the cut-off voltage at 0.2C 5A and connected to an external $(30\times n)\ \Omega$ load for 24hours. Then proceed as follows:

在环境温度为 $25\pm 5^{\circ}\text{C}$ 的条件下, 在 0.2C 5A 的条件下将电池放电到截止电压, 并与外部 $(30\times n)\ \Omega$ 负载连接 24 小时。然后进行如下操作:

Standard charge to limit voltage;标准充电, 以限制电压

Standard discharge to end voltage;标准放电到终端电压

At ambient temperature, discharge at 0.01 C5A until the discharge current is 0A
在环境温度下, 以 0.01 C5A 放电, 直到放电电流为 0A。

The battery should not explode, catch fire, smoke or leak.

电池不应爆炸、起火、冒烟或泄漏。

6.4.3. External Short-circuit Test 外部短路测试

• Test Method 测试方法:

After charging at 0.2C5A at ambient temperature; short-circuit the positive and negative poles with a $0.1\ \Omega$ resistor for 1.5 hours; after the short circuit is disconnected, charge for 10 seconds with a current of 0.2C5A, and then measure the battery voltage.

在环境温度下以 0.2C5A 充电后, 用 $0.1\ \Omega$ 的电阻将正负极短路 1.5 小时。用一个 $0.1\ \Omega$ 的电阻将正负极短路 1.5 小时。短路断开后, 以 0.2C5A 的电流充电 10 秒, 然后测量电池电压。

• Approval Standard 合格标准:

Battery voltage discharge cut-off voltage; the battery should not explode, fire, smoke or leak.

蓄电池的放电电压为截止电压; 蓄电池不应发生爆炸、火灾、冒烟或泄漏。

7. Transportation, Storage 运输、存储

7.1. Transportation 运输

The battery should be packed into a box for transportation at a 30% load.

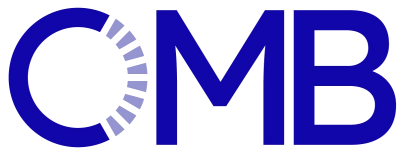
During the transportation, it should prevent severe vibration, impact or squeeze, prevent sun and rain, and adapt to the transportation of sea, land and air.

蓄电池应按 30% 的负荷装入箱内运输。在运输过程中, 应防止剧烈振动、撞击或挤压, 防止日晒雨淋, 适应海、陆、空的运输。

7.2. Storage 存储

The battery should be stored in a clean and dry and ventilated room with a ambient temperature of -5°C to 35°C . It should avoid contact with corrosive substances and stay away from the fire source and thermal source.

蓄电池应存放在清洁、干燥、通风的室内, 环境温度为 -5°C 至 35°C 。应避免接触腐蚀性物质, 并远离火源和热源。



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8. Handling Instructions 操作说明

Read the following precautions carefully to ensure the correct use of lithium ion batteries. CM BATTERIES is not responsible for any problems arising from the following precautions.

仔细阅读以下预防措施, 以确保正确使用锂离子电池。CM BATTERIES 不負責任何引起的任何問題負責。

Danger! 危險!

- Do not put the battery into the water or wet it!
請勿將電池放入水中或將其弄濕!
- It is forbidden to charge the battery under the source of fire or extremely heat! Do not use or store batteries near the heat source (such as fire or heater)! If the battery leaks or produces a odor, it should be immediately removed from the open flame;
嚴禁在火源或極熱的情況下給電池充電! 不要在熱源(如火或加熱器)附近使用或儲存電池! 如果電池發生洩漏或產生異味, 應立即將其從明火上移開。
- Do not use any chargers other than those recommended!
請不要使用推薦以外的任何充電器!
- Do not reverse the positive (+) and negative (-) terminals.
不要把正(+)和負(-)的終端對調。
- Do not put the battery into the fire or heat it to the battery!
不要把電池放入火中或加熱到電池!
- Do not short-circuit the battery by connecting wires or other metal objects to the positive (+) and negative (-) terminals.
不要將電線或其他金屬物體連接到電池的正極(+)和負極(-), 使電池短路。正極(+)和負極(-)端子上連接電線或其他金屬物體, 不要使電池短路。
- Do not pierce the battery casing with a nail or other sharp object, break it open with a hammer, or step on it.
不要用釘子或其他尖銳物體刺穿電池外殼, 不要用錘子砸開電池外殼, 也不要踩在上面。用錘子砸開它, 或踩在它上面。
- Do not strike, throw or subject the battery to sever physical shock.
請勿敲擊、投擲或使電池受到嚴重的物理衝擊。
- Do not directly solder the battery terminals.
不要直接焊接電池端子。
- Do not attempt to disassemble or modify the battery in any way.
不要試圖以任何方式拆卸或修改電池。
- Do not place the battery in a microwave oven or pressurized container.
不要把電池放在微波爐或加壓的容器中。
- Do not use the battery in combination with primary batteries (such as dry-cell batteries) or batteries of different Capacity type or brand.
請勿將電池與原電池(如干電池)或不同容量類型或品牌的電池一起使用。)或不同容量類型或品牌的蓄電池。



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- Do not use the battery if it gives off an odor, generates heat, becomes discolored or deformed, or appears abnormal in any way. If the battery is in use or being recharged, remove it from the device or charger immediately and discontinue use.

如果电池发出异味，产生热量，变色或变形，或出现任何异常，请不要使用。如果电池正在使用或正在充电，请立即将其从设备或充电器中取出，并停止使用。

Caution! 注意事项!

Do not use or store the battery where is exposed to extremely hot, such as under window of a car indirect sunlight in a hot day. Otherwise, the battery may be over heated. This can also reduce battery performance and/or shorten cycle life.

If the electrolyte enters the eyes after the battery leaks, do not wipe it, apply water to rinse, and immediately seek medical assistance. If you do not deal with it in time, your eyes will be harmed.

The battery can only be used under the following conditions, otherwise it will reduce the performance of the battery or shorten the service life of the battery.

不要在极热的地方使用或存放电池，例如在热天的汽车窗下，在间接的阳光下。否则，电池可能会过热。这也会降低电池性能和/或缩短循环寿命。

如果电池泄漏后，电解液进入眼睛，不要擦拭，用清水冲洗。水冲洗，并立即寻求医疗援助。如果你不及时处理如果不及处理，你的眼睛会受到伤害。

蓄电池只能在以下条件下使用，否则会降低电池的性能或缩短电池的使用寿命。

Operating Environment 工作环境:

Charge 充电: 0 ° C~45 ° C

Discharge 放电: -20° C~60° C

Storage for 30 days 储存 30 天: -20° C~60° C

Storage for 90 days 储存 90 天: -20° C~45° C