



UN38.3 检测报告

UN38.3 Test Report

样品名称:	可充电锂离子电池 HL40R
Sample Name:	Rechargeable Li-ion Battery HL40R
型号规格:	HL40R 3.7V 2000mAh 7.4Wh
Model:	
委托单位:	深圳市朗恒电子有限公司
Applicant:	SHEN ZHEN LANG HENG ELECTRONIC CO.,LTD
检测项目:	高度模拟、温度试验、振动、冲击、外部短路、挤压、过度充电、强制放电
Test Items:	Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Crush, Overcharge, Forced discharge
检测类别:	委托检测
Test Category:	Commission test

北京迪捷姆空运技术开发有限公司
Beijing DGM Air Transport Technology Co., Ltd.

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样品类型 Sample Type	锂离子电池 Li-ion Battery		商标 Trademark	//
			型号/规格 Model	HL40R 3.7V 2000mAh 7.4Wh
委托单位 Applicant	名称 Name	深圳市朗恒电子有限公司 SHEN ZHEN LANG HENG ELECTRONIC CO.,LTD		
	地址 Address	深圳市宝安 33 区东方明工业城二栋八楼 8/F, 2nd Building, DongFangMing Industrial Center, 33rd District, Bao'an, Shenzhen		
来样方式 Means of Receiving	委托方送样 Submitted by applicant		送样日期 Accepted Date	2020-07-15
检测日期 Test Date	2020-07-16~2020-08-03			
检测地点 Test Site	深圳实验室 Shenzhen Laboratory	出证地点 Certificate Site	深圳分公司 Shenzhen Branch	
检测项目 Test Items	高度模拟、温度试验、振动、冲击、外部短路、挤压、过度充电、强制放电 Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Crush, Overcharge, Forced discharge			
检测依据 Test Method	联合国《关于危险货物运输的建议书-试验和标准手册》(第 6 版修订一) 38.3 节 UN Recommendations on the Transport of Dangerous Goods Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 /Amend. 1/ Subsection 38.3			
检测结论 Conclusion	<p>根据联合国《关于危险货物运输的建议书-试验和标准手册》(第 6 版修订一) 38.3 节的规定, 该电池样品通过所有项目检测, 符合该条款的性能要求。</p> <p>The samples have passed all test items of UN Recommendations on the Transport of Dangerous Goods - Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6 /Amend. 1/ Subsection 38.3.</p> <p>检测单位(盖章) Test Lab(Stamp)</p> <p>签发日期(Issue Date): 2020 年 08 月 10 日</p>			

检测:

Tested by:

罗晓峰

审核:

Checked by:

王明

批准:

Approved by:

检测单位(盖章)

Test Lab(Stamp)

签发日期(Issue Date): 2020 年 08 月 10 日

电池信息			
Information for Battery			
电芯生产厂家 Cell manufacturer	江苏劲鹿新能源科技有限公司 Jiangsu JinLu New Energy Technology Co.,Ltd.		
电芯厂家联系电话 Phone number	15014897261	邮箱 e-mail	451292566@qq.com
电芯厂家地址 Address	江苏省宿迁市宿豫区太行山路 77 号 77 Taihang Mountain Road, Cebu Yu District, Jiangsu Province		
电芯厂家网址 Website	www.jlbattery.com		
Pack 厂家 Pack manufacturer	深圳市华安宏瑞科技有限公司 Shenzhen HuaGreen Technology Co.,Ltd.		
Pack 厂家联系电话 Phone number	13417321417	邮箱 e-mail	sales01@huagreen.com
Pack 厂家地址 Address	深圳市龙岗区宝龙工业区宝清路 8 号双环新一代信息技术产业园 B 栋 11 楼 11 Floor, Building B, Shuanghuan Industrial Park, No.8, Baoqing Road, Bao Long Industrial Park, Longgang District, Shenzhen		
Pack 厂家网址 Website	www.huagreen.com		

电芯参数			
Information for cell			
电芯型号 Cell Model	592754		
标称电压 Nominal Voltage	3.7V	额定容量 Rated Capacity	1000mAh(3.7Wh)
标准充电电流 Standard Charging Current	200mA	标准放电电流 Standard discharging Current	200mA
最大连续充电电流 Maximum charging current	500mA	最大放电电流 Maximum discharge current	1500 mA
充电限制电压 Limited charging voltage	4.2V	放电截止电压 Cut-Off voltage	3.0V
外观形状 Appearance	银色长方体 Silver cuboid	电芯尺寸 Cell size	52.4×26.2×5.6mm

电池参数			
Information for battery			
标准充电电流 Standard charging current	392mA	标准放电电流 Standard discharging current	392mA
最大连续充电电流 Maximum charging current	980mA	最大放电电流 Maximum discharge current	3000mA
充电限制电压 Limited charging voltage	4.2V	放电截止电压 Cut-Off voltage	2.75V
规格/型号 Model	HL40R 3.7V 2000mAh 7.4Wh	电池尺寸 Battery size	53.7×26.2×11.3mm
组成电芯数量 Number of cell	2 个电芯 Two cells	外观形状 Appearance	银色长方体 Silver cuboid

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序号 No.	检测项目 Test Items	标准要求或标准条款 Standard Requirement or the Clause of Standard	检测结果 Test Result	单项评价 Conclusion	备注 Remark
1	高度模拟 Altitude Simulation	ST/SG/AC.10/11/Rev.6/ Amend. 1/ Subsection 38.3 Test T.1	无泄漏、无排气、无解体、无破裂、无起火， 试验后的开路电压不低于试验前的 90%。 No leakage, no venting, no disassembly, no rupture and no fire. The open circuit voltage of each battery after testing is not less than 90% of its voltage immediately prior to this procedure.	符合 Pass	/
2	温度试验 Thermal Test	ST/SG/AC.10/11/Rev.6/ Amend. 1/ Subsection 38.3 Test T.2	无泄漏、无排气、无解体、无破裂、无起火， 试验后的开路电压不低于试验前的 90%。 No leakage, no venting, no disassembly, no rupture and no fire. The open circuit voltage of each battery after testing is not less than 90% of its voltage immediately prior to this procedure.	符合 Pass	/
3	振动 Vibration	ST/SG/AC.10/11/Rev.6/ Amend. 1/ Subsection 38.3 Test T.3	无泄漏、无排气、无解体、无破裂、无起火， 试验后的开路电压不低于试验前的 90%。 No leakage, no venting, no disassembly, no rupture and no fire. The open circuit voltage of each battery after testing is not less than 90% of its voltage immediately prior to this procedure.	符合 Pass	/
4	冲击 Shock	ST/SG/AC.10/11/Rev.6/ Amend. 1/ Subsection 38.3 Test T.4	无泄漏、无排气、无解体、无破裂、无起火， 试验后的开路电压不低于试验前的 90%。 No leakage, no venting, no disassembly, no rupture and no fire. The open circuit voltage of each battery after testing is not less than 90% of its voltage immediately prior to this procedure.	符合 Pass	/
5	外部短路 External Short Circuit	ST/SG/AC.10/11/Rev.6/ Amend. 1/ Subsection 38.3 Test T.5	外壳温度不超过 170 °C，无解体、无破裂、无 起火。 External temperature does not exceed 170°C. No disassembly, no rupture and no fire.	符合 Pass	/
6	挤压 Crush	ST/SG/AC.10/11/Rev.6/ Amend. 1/ Subsection 38.3 Test T.6	外壳温度不超过 170 °C，无解体、无起火。 External temperature does not exceed 170°C. No disassembly, no fire.	符合 Pass	/
7	过度充电 Overcharge	ST/SG/AC.10/11/Rev.6/ Amend. 1/ Subsection 38.3 Test T.7	无解体、无起火。 No disassembly, no fire.	符合 Pass	/
8	强制放电 Forced Discharge	ST/SG/AC.10/11/Rev.6/ Amend. 1/ Subsection 38.3 Test T.8	无解体、无起火。 No disassembly, no fire.	符合 Pass	/
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T.1: 高度模拟

T.1: Altitude Simulation

样品编号 Sample No.	样品状态 Sample Status	检测前 Pre-test		检测后 After-test				有无泄漏、排气、解体、破裂、起火 Leakage, Venting, Disassembly, Rupture, Fire(Yes/No)
		质量 Mass	开路电压 OCV	质量 Mass	质量损失 Mass Loss	开路电压 OCV	剩余电压 Residual	
		$m_1(g)$	$V_1(V)$	$m_2(g)$	(%)	$V_2(V)$	OCV (%)	
A1	首次完全充电 First cycle fully charged	33.917	4.192	33.914	0.009	4.188	99.90	No
A2	首次完全充电 First cycle fully charged	34.214	4.194	34.211	0.009	4.191	99.93	No
A3	首次完全充电 First cycle fully charged	33.944	4.191	33.941	0.009	4.187	99.90	No
A4	首次完全充电 First cycle fully charged	34.052	4.193	34.048	0.012	4.190	99.93	No
A5	25次完全充电 25 cycles fully charged	34.042	4.186	34.038	0.012	4.183	99.93	No
A6	25次完全充电 25 cycles fully charged	33.796	4.185	33.793	0.009	4.182	99.93	No
A7	25次完全充电 25 cycles fully charged	33.619	4.182	33.617	0.006	4.179	99.93	No
A8	25次完全充电 25 cycles fully charged	33.793	4.184	33.790	0.009	4.181	99.93	No

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T.2: 温度试验

T.2: Thermal Test

样品编号 Sample No.	样品状态 Sample Status	检测前 Pre-test		检测后 After-test				有无泄漏、排气、 解体、破裂、起火 Leakage, Venting, Disassembly, Rupture, Fire(Yes/No)
		质量 Mass	开路电压 OCV	质量 Mass	质量损失 Mass Loss	开路电压 OCV	剩余电压 Residual	
		m ₁ (g)	V ₁ (V)	m ₂ (g)	(%)	V ₂ (V)	OCV (%)	
A1	首次完全充电 First cycle fully charged	33.914	4.188	33.906	0.024	4.105	98.02	No
A2	首次完全充电 First cycle fully charged	34.211	4.191	34.206	0.015	4.108	98.02	No
A3	首次完全充电 First cycle fully charged	33.941	4.187	33.938	0.009	4.108	98.11	No
A4	首次完全充电 First cycle fully charged	34.048	4.190	34.042	0.018	4.106	98.00	No
-A5	25 次完全充电 25 cycles fully charged	34.038	4.183	34.033	0.015	4.108	98.21	No
A6	25 次完全充电 25 cycles fully charged	33.793	4.182	33.787	0.018	4.102	98.09	No
A7	25 次完全充电 25 cycles fully charged	33.617	4.179	33.612	0.015	4.099	98.09	No
A8	25 次完全充电 25 cycles fully charged	33.790	4.181	33.786	0.012	4.100	98.06	No

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T.3: 振动

T.3: Vibration

样品编号 Sample No.	样品状态 Sample Status	检测前 Pre-test		检测后 After-test				有无泄漏、排气、 解体、破裂、起火 Leakage, Venting, Disassembly, Rupture, Fire(Yes/No)
		质量 Mass	开路电压 OCV	质量 Mass	质量损失 Mass Loss	开路电压 OCV	剩余电压 Residual	
		m ₁ (g)	V ₁ (V)	m ₂ (g)	(%)	V ₂ (V)	OCV (%)	
A1	首次完全充电 First cycle fully charged	33.906	4.105	33.905	0.003	4.103	99.95	No
A2	首次完全充电 First cycle fully charged	34.206	4.108	34.203	0.009	4.105	99.93	No
A3	首次完全充电 First cycle fully charged	33.938	4.108	33.935	0.009	4.106	99.95	No
A4	首次完全充电 First cycle fully charged	34.042	4.106	34.041	0.003	4.103	99.93	No
A5	25 次完全充电 25 cycles fully charged	34.033	4.108	34.032	0.003	4.105	99.93	No
A6	25 次完全充电 25 cycles fully charged	33.787	4.102	33.785	0.006	4.100	99.95	No
A7	25 次完全充电 25 cycles fully charged	33.612	4.099	33.610	0.006	4.098	99.98	No
A8	25 次完全充电 25 cycles fully charged	33.786	4.100	33.784	0.006	4.099	99.98	No
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T.4: 冲击

T.4: Shock

样品编号 Sample No.	样品状态 Sample Status	检测前 Pre-test		检测后 After-test				有无泄漏、排气、 解体、破裂、起火 Leakage, Venting, Disassembly, Rupture, Fire(Yes/No)
		质量 Mass m ₁ (g)	开路电压 OCV V ₁ (V)	质量 Mass m ₂ (g)	质量损失 Mass Loss (%)	开路电压 OCV V ₂ (V)	剩余电压 Residual OCV (%)	
A1	首次完全充电 First cycle fully charged	33.905	4.103	33.905	0.000	4.102	99.98	No
A2	首次完全充电 First cycle fully charged	34.203	4.105	34.202	0.003	4.105	100.00	No
A3	首次完全充电 First cycle fully charged	33.935	4.106	33.934	0.003	4.105	99.98	No
A4	首次完全充电 First cycle fully charged	34.041	4.103	34.041	0.000	4.102	99.98	No
A5	25 次完全充电 25 cycles fully charged	34.032	4.105	34.032	0.000	4.104	99.98	No
A6	25 次完全充电 25 cycles fully charged	33.785	4.100	33.784	0.003	4.099	99.98	No
A7	25 次完全充电 25 cycles fully charged	33.610	4.098	33.609	0.003	4.098	100.00	No
A8	25 次完全充电 25 cycles fully charged	33.784	4.099	33.784	0.000	4.098	99.98	No

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T.5: 外部短路**T.5: External Short Circuit**

样品编号 Sample No	样品状态 Sample Status	样品表面最高温度(°C) Highest External Temperature/°C	有无解体、破裂、起火 Disassembly, Rupture, Fire(Yes/No)
A1	首次完全充电 First cycle fully charged	56.3	No
A2	首次完全充电 First cycle fully charged	57.1	No
A3	首次完全充电 First cycle fully charged	56.2	No
A4	首次完全充电 First cycle fully charged	56.5	No
A5	25 次完全充电 25 cycles fully charged	57.0	No
A6	25 次完全充电 25 cycles fully charged	56.4	No
A7	25 次完全充电 25 cycles fully charged	56.9	No
A8	25 次完全充电 25 cycles fully charged	56.6	No

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T.6: 挤压**T.6: Crush**

样品编号 Sample No.	样品状态 Sample Status	样品表面最高温度(°C) Highest External Temperature/°C	有无解体、起火 Disassembly, Fire(Yes/No)
B1	首次 50%容量 First cycle charged 50% rated capacity	35.3	No
B2	首次 50%容量 First cycle charged 50% rated capacity	35.5	No
B3	首次 50%容量 First cycle charged 50% rated capacity	35.5	No
B4	首次 50%容量 First cycle charged 50% rated capacity	35.4	No
B5	首次 50%容量 First cycle charged 50% rated capacity	35.7	No
B6	25 次 50%容量 25 cycle charged 50% rated capacity	35.6	No
B7	25 次 50%容量 25 cycle charged 50% rated capacity	35.5	No
B8	25 次 50%容量 25 cycle charged 50% rated capacity	35.8	No
B9	25 次 50%容量 25 cycle charged 50% rated capacity	35.3	No
B10	25 次 50%容量 25 cycle charged 50% rated capacity	35.6	No
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T.7: 过度充电

T.7: Overcharge

样品编号 Sample No.	样品状态 Sample Status	有无解体、起火 Disassembly, Fire(Yes/No)
C1	首次完全充电 First cycle fully charged	No
C2	首次完全充电 First cycle fully charged	No
C3	首次完全充电 First cycle fully charged	No
C4	首次完全充电 First cycle fully charged	No
C5	25次完全充电 25 cycles fully charged	No
C6	25次完全充电 25 cycles fully charged	No
C7	25次完全充电 25 cycles fully charged	No
C8	25次完全充电 25 cycles fully charged	No

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T.8: 强制放电

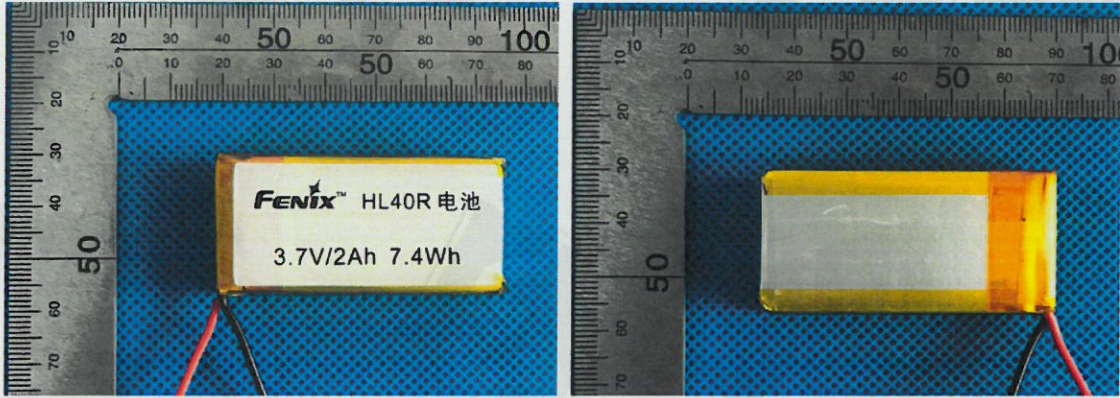
T.8: Forced Discharge

样品编号 Sample No.	样品状态 Sample Status	有无解体、起火 Disassembly, Fire(Yes/No)
D1	首次完全放电 First cycle fully discharged	No
D2	首次完全放电 First cycle fully discharged	No
D3	首次完全放电 First cycle fully discharged	No
D4	首次完全放电 First cycle fully discharged	No
D5	首次完全放电 First cycle fully discharged	No
D6	首次完全放电 First cycle fully discharged	No
D7	首次完全放电 First cycle fully discharged	No
D8	首次完全放电 First cycle fully discharged	No
D9	首次完全放电 First cycle fully discharged	No
D10	首次完全放电 First cycle fully discharged	No
D11	25 次完全放电 25 cycles fully discharged	No
D12	25 次完全放电 25 cycles fully discharged	No
D13	25 次完全放电 25 cycles fully discharged	No
D14	25 次完全放电 25 cycles fully discharged	No
D15	25 次完全放电 25 cycles fully discharged	No
D16	25 次完全放电 25 cycles fully discharged	No
D17	25 次完全放电 25 cycles fully discharged	No
D18	25 次完全放电 25 cycles fully discharged	No
D19	25 次完全放电 25 cycles fully discharged	No
D20	25 次完全放电 25 cycles fully discharged	No
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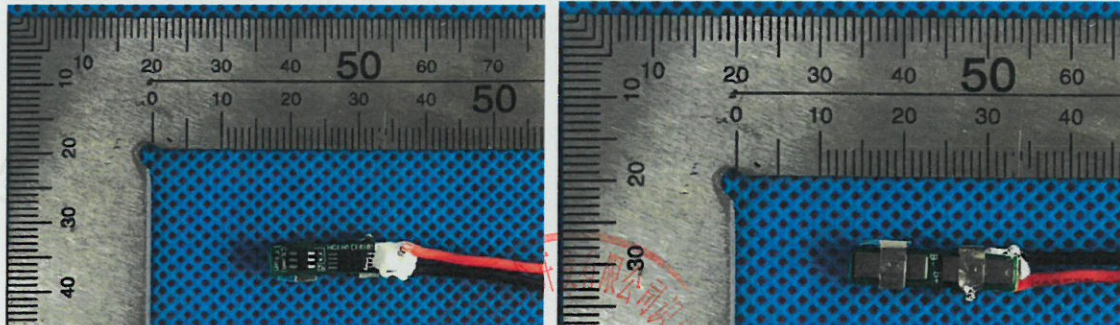
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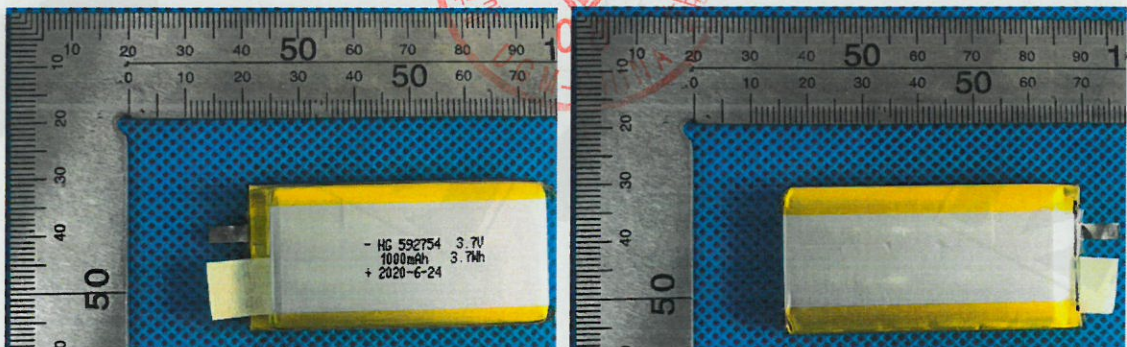
电池图片/Battery pictures



保护装置/Protective devices



内部电芯/Internal cell



* End of the report *