UN38.3 测试报告

UN38.3 Test Report

样品名称： Sample Name:	可充电聚合物锂离子电池 HL12R Rechargeable Polymer Li-ion Battery HL12R
型号规格： Model:	HL12R 3.7V 950mAh 3.515Wh
委托单位： Applicant:	深圳市朗恒电子有限公司 SHEN ZHEN LANG HENG ELECTRONIC CO.,LTD
检验项目： 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
检验类别： Test Category:	委托检验 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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样品名称 Sample Name	可充电聚合物锂离子电池 HL12R Rechargeable Polymer Li-ion Battery HL12R		商标 Trademark	FENIX
			型号/规格 Model	HL12R 3.7V 950mAh3.515Wh
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	2017-08-17
检验日期 Test Date	2017-08-18～2017-09-11			
检验地点 Test Site	本检测室（电池室） DGM(Battery room)			
检验项目 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			
检验依据 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）38.3 节 UN Recommendations on the Transport of Dangerous Goods Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/ Subsection 38.3			
检验结论 Conclusion	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）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。 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/ Subsection 38.3. 检验单位(盖章) Test Lab(Stamp) 签发日期(Issue Date)：2017 年 11 月 27 日			

检测： Tested by:

审核： Checked by:

批准： Approved by:

电芯信息 Information for cell			
电芯型号 Cell model	HL12R	额定容量 Rated Capacity	950mAh
标称电压 Nominal Voltage	3.7V	最大放电电流 Maximum discharge current	1900mA
最大连续充电电流 Maximum charging current	950mA	放电截止电压 Cut-Off voltage	3.0V
充电限制电压 Limited charging voltage	4.2V	电芯尺寸 Cell size	41.0×22.4×9.5mm
外观形状 Appearence	银色长方体 Silvery cuboid		
电芯生产厂家 Cell manufacturer	吉安优特利科技有限公司 JI'AN UTILITY TECHNOLOGY CO.,LTD.		
Pack 厂家 Pack manufacturer	深圳市优特利电源有限公司 SHENZHEN UTILITY POWER SOURCE CO.,LTD.		

电池信息 Information for battery			
规格/型号 Model	//	最大放电电流 Maximum discharge current	//
充电限制电压 Limited charging voltage	//	放电截止电压 Cut-Off voltage	//
最大连续充电电流 Maximum charging current	//	电池尺寸 Battery size	//
组成电芯数量 Number of cell	//	外观形状 Appearence	//
Pack 厂家 Pack manufacturer	//		

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序号 No.	检验项目 Test Items	标准要求或标准条款 Standard Requirement or the Clause of Standard	检验结果 Test Result	单项评价 Conclusion	备注 Remark
1	高度模拟 Altitude Simulation	ST/SG/AC.10/11/Rev.6/ 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/ 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/ 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/ 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/ Subsection 38.3 Test T.5	外壳温度不超过 170 ℃，无解体、无破裂、无起火。 External temperature does not exceed 170℃. No disassembly, no rupture and no fire.	符合 Pass	/
6	挤压 Crush	ST/SG/AC.10/11/Rev.6/ Subsection 38.3 Test T.6	外壳温度不超过 170 ℃，无解体、无起火。 External temperature does not exceed 170℃. No disassembly, no fire.	符合 Pass	/
7	过度充电 Overcharge	ST/SG/AC.10/11/Rev.6/ 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/ 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	测试前 Pre-test		测试后 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	17.213	4.171	17.210	0.017	4.170	99.98	No
A2	首次完全充电 First cycle fully charged	17.159	4.193	17.156	0.017	4.189	99.90	No
A3	首次完全充电 First cycle fully charged	17.172	4.183	17.170	0.012	4.180	99.93	No
A4	首次完全充电 First cycle fully charged	17.225	4.173	17.221	0.023	4.172	99.98	No
A5	首次完全充电 First cycle fully charged	17.178	4.164	17.178	0.000	4.162	99.95	No
A6	首次完全充电 First cycle fully charged	17.073	4.168	17.071	0.012	4.167	99.98	No
A7	首次完全充电 First cycle fully charged	17.131	4.171	17.131	0.000	4.170	99.98	No
A8	首次完全充电 First cycle fully charged	17.192	4.173	17.190	0.012	4.172	99.98	No
A9	首次完全充电 First cycle fully charged	17.099	4.170	17.096	0.018	4.169	99.98	No
A10	首次完全充电 First cycle fully charged	17.098	4.184	17.096	0.012	4.183	99.98	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	测试前 Pre-test		测试后 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	17.210	4.170	17.209	0.006	4.121	98.82	No
A2	首次完全充电 First cycle fully charged	17.156	4.189	17.154	0.012	4.134	98.69	No
A3	首次完全充电 First cycle fully charged	17.170	4.180	17.168	0.012	4.129	98.78	No
A4	首次完全充电 First cycle fully charged	17.221	4.172	17.218	0.017	4.122	98.80	No
A5	首次完全充电 First cycle fully charged	17.178	4.162	17.177	0.006	4.115	98.87	No
A6	首次完全充电 First cycle fully charged	17.071	4.167	17.069	0.012	4.119	98.85	No
A7	首次完全充电 First cycle fully charged	17.131	4.170	17.130	0.006	4.122	98.85	No
A8	首次完全充电 First cycle fully charged	17.190	4.172	17.188	0.012	4.123	98.83	No
A9	首次完全充电 First cycle fully charged	17.096	4.169	17.095	0.006	4.121	98.85	No
A10	首次完全充电 First cycle fully charged	17.096	4.183	17.094	0.012	4.130	98.73	No
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T.3：振动
T.3：Vibration

样品编号 Sample No.	样品状态 Sample Status	测试前 Pre-test		测试后 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	17.209	4.121	17.208	0.006	4.118	99.93	No
A2	首次完全充电 First cycle fully charged	17.154	4.134	17.152	0.012	4.131	99.93	No
A3	首次完全充电 First cycle fully charged	17.168	4.129	17.166	0.012	4.125	99.90	No
A4	首次完全充电 First cycle fully charged	17.218	4.122	17.216	0.012	4.119	99.93	No
A5	首次完全充电 First cycle fully charged	17.177	4.115	17.176	0.006	4.112	99.93	No
A6	首次完全充电 First cycle fully charged	17.069	4.119	17.067	0.012	4.116	99.93	No
A7	首次完全充电 First cycle fully charged	17.130	4.122	17.129	0.006	4.118	99.90	No
A8	首次完全充电 First cycle fully charged	17.188	4.123	17.185	0.017	4.120	99.93	No
A9	首次完全充电 First cycle fully charged	17.095	4.121	17.094	0.006	4.118	99.93	No
A10	首次完全充电 First cycle fully charged	17.094	4.130	17.092	0.012	4.126	99.90	No
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T.4：冲击

T.4：Shock

样品编号 Sample No.	样品状态 Sample Status	测试前 Pre-test		测试后 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	17.208	4.118	17.208	0.000	4.118	100.00	No
A2	首次完全充电 First cycle fully charged	17.152	4.131	17.152	0.000	4.130	99.98	No
A3	首次完全充电 First cycle fully charged	17.166	4.125	17.165	0.006	4.125	100.00	No
A4	首次完全充电 First cycle fully charged	17.216	4.119	17.214	0.012	4.118	99.98	No
A5	首次完全充电 First cycle fully charged	17.176	4.112	17.175	0.006	4.112	100.00	No
A6	首次完全充电 First cycle fully charged	17.067	4.116	17.067	0.000	4.115	99.98	No
A7	5 首次完全充电 First cycle fully charged	17.129	4.118	17.127	0.012	4.116	99.95	No
A8	首次完全充电 First cycle fully charged	17.185	4.120	17.185	0.000	4.119	99.98	No
A9	首次完全充电 First cycle fully charged	17.094	4.118	17.092	0.012	4.116	99.95	No
A10	首次完全充电 First cycle fully charged	17.092	4.126	17.091	0.006	4.125	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(℃) Highest External Temperature/℃	有无解体、破裂、起火 Disassembly, Rupture, Fire(Yes/No)
A1	首次完全充电 First cycle fully charged	60.3	No
A2	首次完全充电 First cycle fully charged	59.9	No
A3	首次完全充电 First cycle fully charged	58.7	No
A4	首次完全充电 First cycle fully charged	60.1	No
A5	首次完全充电 First cycle fully charged	59.7	No
A6	首次完全充电 First cycle fully charged	59.4	No
A7	首次完全充电 First cycle fully charged	59.6	No
A8	首次完全充电 First cycle fully charged	60.2	No
A9	首次完全充电 First cycle fully charged	58.6	No
A10	首次完全充电 First cycle fully charged	59.8	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(℃) Highest External Temperature/℃	有无解体、起火 Disassembly, Fire(Yes/No)
B1	首次 50%容量 First cycle charged 50% rated capacity	31.9	No
B2	首次 50%容量 First cycle charged 50% rated capacity	32.2	No
B3	首次 50%容量 First cycle charged 50% rated capacity	31.6	No
B4	首次 50%容量 First cycle charged 50% rated capacity	31.5	No
B5	首次 50%容量 First cycle charged 50% rated capacity	32.7	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	50 次完全充电 50 cycles fully charged	No
C6	50 次完全充电 50 cycles fully charged	No
C7	50 次完全充电 50 cycles fully charged	No
C8	50 次完全充电 50 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	50 次完全放电 50 cycles fully discharged	No
D12	50 次完全放电 50 cycles fully discharged	No
D13	50 次完全放电 50 cycles fully discharged	No
D14	50 次完全放电 50 cycles fully discharged	No
D15	50 次完全放电 50 cycles fully discharged	No
D16	50 次完全放电 50 cycles fully discharged	No
D17	50 次完全放电 50 cycles fully discharged	No
D18	50 次完全放电 50 cycles fully discharged	No
D19	50 次完全放电 50 cycles fully discharged	No
D20	50 次完全放电 50 cycles fully discharged	No
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电芯照片：

* End of the report *