中国认可
国际互认
检测
TESTING
CNAS L9291

堆码试验报告
Stacking Test Report

包装容器名称：	五层瓦楞纸箱
Name of Packing container :	five layers of corrugated cartons
电 池 型 号 Battery Model :	CRY5001 • BAT
申 请 人 :	杭州兆华电子股份有限公司
Applicant :	Hangzhou CRYSOUND Electronics Co., Ltd.

DONGGUAN ZRLK TESTING TECHNOLOGY CO., LTD. Approved

东莞市中认联科检测技术有限公司
Dongguan ZRLK Testing Technology Co., Ltd.

东莞市中认联科检测技术有限公司
Dongguan ZRLK Testing Technology Co., Ltd.
广东省东莞市松山湖园区科技十路1号2栋
Building 2, No.1, Technology 10th Road, Songshan Lake Park, Dongguan, Guangdong, China
Tel: +86-769-26621775
Web: www.zrlklab.com
E-mail: Marketing@zrlklab.com

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样品名称 Sample name	中文 Chinese	五层瓦楞纸箱
	英文 English	five layers of corrugated cartons
电池型号 Battery Model	CRY5001 • BAT(额定值：10.8V 6800mAh 73.44Wh)	
样品编号 Sample No.	#01, #02, #03	
申请人名称 Name of Applicant	杭州兆华电子股份有限公司 Hangzhou CRYSOUND Electronics Co., Ltd.	
地址 Address	浙江省杭州市余杭区中泰街道仙桥路 10 号 3 幢 Building 3, No. 10, Xianqiao Road, Yuhang Dist, Hangzhou, China. 311121	
包装件制造商 Manufacturer of package	深圳市圭石南方科技发展有限公司 Shenzhen Grace Technology Development Co.,Ltd	
地址 Address	深圳市光明区玉塘街道长圳社区长兴科技工业园 2 栋三层 3/F, Building 2, Changxing Technology Industrial Park, Changzhen Community, Yutang Street, Guangming District, Shenzhen City,Guangdong, P.R.China	
包装箱制造厂家 Manufacturer of the packaging	深圳市冠通纸品有限公司 SHENZHEN GUANTONG ZHIPIN CO.,LTD.	
地址 Address	深圳市光明区玉塘街道长圳社区长兴科技工业园 1 栋三层(西)厂房 West,3/F, Building 1, Changxing Technology Industrial Park, Changzhen Community, Yutang Street, Guangming District, Shenzhen City, Guangdong , P.R.China.	
测试方法和判定标准 Test method and criterion	联合国《关于危险货物运输的建议书 规章范本》(23 修订版)包装的试验要求 6.1.5 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Model Regulations (23rd Rev. edition) test requirements for packaging 6.1.5	
包装容器名称及规格 Spec. and Name of Packing container	名称：五层瓦楞纸箱，尺寸：440*170*150mm	
包装说明 Packing Instruction	PI 965 IB	
包装情况说明 Packing method	长方形瓦楞纸箱(440*170*150mm)，内装 15 锂电池，电池净重约 6.81kg，包装件毛重 7.75kg。 Rectangle corrugated carton (440*170*150mm), containing 15 lithium ion batteries, the net weight of batteries is 6.81kg, the gross weight of package is 7.75kg.	
预处理环境条件 Pretreatment environment condition	环境温度： 21°C - 25°C; 环境湿度： 48%RH - 52%RH Ambient temperature: 21°C - 25°C, Ambient humidity: 48%RH - 52%RH	

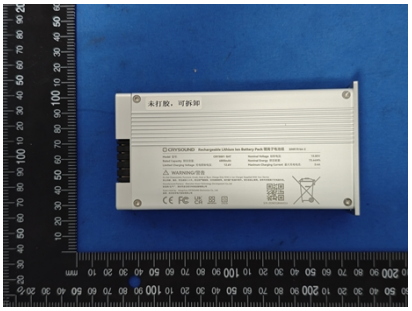
样品接收日期 Accepted date	2026-04-16	检测日期 Test date	2026-04-16 ~ 2026-04-20		
检测项目 Test items	3m stacking test 3m 堆码试验				
检测结论 Conclusion	堆码载荷 147.25kgf 24 小时后被测包装箱所装的电池未从内包装中漏出，五层瓦楞纸箱未显出可能对运输安全有不利影响的损坏，或者可能降低其强度或造成包装件堆码不稳定的变形。 Stacking load 147.25kgf for 24h, no sample leakage. None of the five layers of corrugated cartons showed any deterioration that could adversely affect the safety of transport, nor any deformation that could easily reduce its strength or cause the packing to be unstable. 签发日期(Issue date): 2026-04-20				
主检(测试工程师) Tested by: (Test engineer)	李奕霖 King Li	审核(项目工程师) Checker: (Project engineer)	张建斌 Ben Zhang	批准(技术总监) Approver: (Technical director)	马秀琴 Ailis Ma

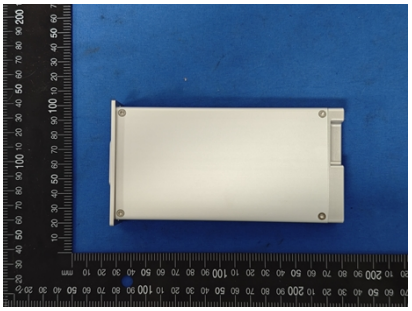
序号 No.	测试项目名称 Name of test	标准要求或标准条款号 Standard requirement or the clause number of standard	测试结果 Test result	本项结论 Test conclusion	备注 Remarks
1	3 米堆码试验 3m Stacking Test	联合国《关于危险货物运输的建议书 规章范本》(23 修订版)第 6 部分包装的试验要求 6.1.5 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Model Regulations (23rd Rev. edition) test requirements for packaging's 6.1.5	电池未从内包装中漏出，包装件未发生形变。 The battery does not leak out of the inner package and the package is not deformed.	合格 Passed	/
2	堆码载荷 Stacking load	联合国《关于危险货物运输的建议书 规章范本》(23 修订版)第 6 部分包装的试验要求 6.1.5 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Model Regulations (23rd Rev. edition) test requirements for packaging's 6.1.5	按照如下公式计算堆码载荷为：147.25kgf $P = K \times \left(\frac{H-h}{h}\right) \times m$ P—加载的负何，单位为千克; K—劣变系数 1; H—堆码高度 3 米; h—单个包装件高度，单位为米; m-单个包装件毛重，单位为千克 The stacking load is calculated as follows: 147.25kgf P—Load loaded in kilograms K—Coefficient of inferiority 1 H—Stacking height is 3 meters m—Gross weight of a single package in kg	合格 Passed	/
测试环境条件 Test environment condition		环境温度: 21°C - 25°C; 环境湿度: 48%RH - 52%RH Ambient temperature: 21°C - 25°C, Ambient humidity: 48%RH - 52%RH			

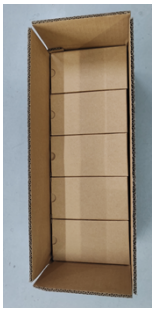
测试设备 Test Equipment：

设备名称 Equipment name	设备编号 Equipment Number	设备型号 Equipment Model	校准日期 Cla. Date	下次校准日期 Next Cal. Date
电池堆码试验机 Battery stacking tester	ZKSB-1127	ASTD-DM-2T	2025-09-02	2026-09-01
卷尺 Tapeline	ZKSS-1013	25FT	2025-12-16	2026-12-15
电子台秤 Electronic platform scale	ZKSB-1057	M8B	2025-12-17	2026-12-16
温湿度记录仪 Temperature and humidity recorder	ZKSB-1064	TH10R	2025-12-17	2026-12-16

包装件内部和外部图片
The package photo







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注意事项
Important Notice

1. 本报告无 ZRLK 盖章无效。
   The test report is invalid without the official stamp of ZRLK.
2. 未经本试验室书面同意，不得复制或部分地复制本报告。
   Nobody is allowed to photocopy or partly photocopy this report without written permission of ZRLK.
3. 本报告无批准人、审核人及编制人签名无效。
   The test report is invalid without the signatures of Approver, Checker and Compiler.
4. 客户必须如实提供样品及资料，并保证申报品名和样品以及运输货物相同，否则本检测单位不承担任何相关责任。
   The client should provide samples and relevant data, at the same time, they should guarantee the consistence of the product's name the declared, the samples they provided and the goods to be transported. Otherwise we will not bear any relevant responsibilities.
5. 准备提交运输的包装已按照本章节的有关要求进行了试验，使用其他包装方法或部件可能使其无效。试验报告的副本须提供给有关当局。
   The packaging prepared as for transport was tested in accordance with the appropriate requirements of this Chapter and that the use of other packaging methods or components may render it invalid. A copy of the test report shall be available to the competent authority.
6. 本报告涂改无效。
   The test report is invalid if altered.
7. 对检验报告若有异议，应于收到报告之日起十五天内向检验单位提出 。
   Objection to the test report must be submitted to ZRLK within 15 days.
8. 本报告仅对送检样品负责。
   The test report is valid for the tested samples only.
9. 任何情况下检测单位的赔偿责任都不会超过检测单位就本次检测所收取的检测费用。
   ZRLK's liability under no circumstance will exceed the testing fee received from applicant for test conducted hereof this testing report.
10. 本报告中的中文内容仅供参考。
    The Chinese contents in this report are only for reference.