RATL

浙江霖润

新能源科技有限公司

Zhejiang Linrun New Energy Technology Co., Ltd.

聚焦绿色、低碳、循环发展的新能源电池领军企业

——掌握多项国际先进、国内领先核心技术

A leading enterprise in the new energy battery industry focusing on green, low-carbon and circular development mastering a number of internationally advanced and domestically leading core technologies

PART 01

企业介绍

Company Profile

RATL

企业简介 Company Profile

浙江霖润新能源科技有限公司

Zhejiang Linrun New Energy Technology Co., Ltd.

年产12 GWh新能源PACK电池

Annual production of 12 GWh for new energy battery Packs

浙江霖润新能源科技有限公司成立于2018年，位于浙江省苍南县工业园区嘉义路366号，长期与中国科学院长春应用化学研究所技术合作，成立了“蓄电池市场研发中心”并通过科学技术成果登记备案，此外公司荣获国家高新技术企业、省级专新特精企业、省级科技型企业等荣誉。公司掌握钠离子电池和磷酸铁锂电池串并联仿真模型等多种核心技术，在汽车启动/启停钠离子电池、船舶启动/储能电池（已通过中国船级社CCS认证）、通讯基站、备用电源、移动电源、光电储杆塔路灯蓄电池、便捷式轻型电动车等领域为客户提供多场景整体解决方案和稳定的产品全周期服务。

企业文化 Corporate Culture

中文全称：浙江霖润新能源科技有限公司

英文全称：RAPUN Active Torque Lithium

品牌缩写：RATL

R RAPUN（霖润），是品牌根基与身份。霖润，寓意如甘霖滋润万物，象征品牌以包容、厚德、坚韧的基因，扎根新能源领域，致力于为客户提供持续、高效、有温度的能源解决方案。

A Amperex（安培），是能源本质与动力核心作为电流的基本单位，精准锚定电池行业的本质属性。它象征霖润新能源以能源技术为基石，从电流的微小驱动出发，汇聚成驱动船舶、机械与未来的磅礴动力。

T Technology（科技），是创新引领与技术内核，彰显霖润以创新驱动发展的核心战略。坚持前沿研发投入，通过尖端技术与系统创新构建产品壁垒，以硬核实力引领行业，为客户提供可持续的核心竞争力。

L Limited（有限），是稳健经营与责任承诺，体现霖润合规为底、稳健为纲的经营哲学。以卓越治理保障长远发展，承诺为全球客户提供最可靠、最安全、最可持续的能源产品，践行绿色发展的社会责任。

核心使命：以匠心铸就动力，以绿色赋能未来。

战略愿景：成为全球细分领域新能源动力解决方案的引领者，做深做透，做精做专。

发展历程 Company Milestones

2018
公司成立
Incorporation

2019
省级科技型企业
Provincial-Level
Sci-Tech Enterprise

2020
首条锂离子电池
生产线投入生产
Commissioning of First
Lithium-ion Battery Production Line
与中国科学院长春应用化学研究所联合研发
低成本Ti-Mn-Fe基储氢材料及应用
Cooperate with Changchun Institute of Applied Chemistry, Chinese Academy of Sciences to develop low-cost Ti-Mn-Fe based hydrogen storage materials and their applications

2020
国家高新技术企业
National High-Tech Enterprise
省级科学技术成果
Provincial-Level Scientific and Technological Achievements

2022
省级创新型企业
Provincial-Level
Innovative Enterprise

2021
省级高新技术
企业研发中心
Provincial-Level
High-Tech Enterprise
R&D Center

2023
省级专精特新企业
Provincial-Level Specialized and Innovative SME
市级博士创新研究站
Municipal Doctoral
Innovation Research Station

2024
首条钠离子电池
生产线投入生产
Commissioning of First
Sodium-ion Battery
Production Line

2025
“尖兵”“领雁”重大
技术攻关项目
Vanguard and Flagship
Major Technology
Project

2026
船舶锂离子电池通过
中国船级社的CCS认证
Marine Lithium-ion
Batteries Certified by China
Classification
Society (CCS)

管理团队 Leadership Team

技术领军，管理卓越

郑光辉 董事长
Zheng Guanghui Chairman

深耕企业管理与市场分析20余年，拥有30余年动力设备制造及金属冶炼的资深阅历，贯通产业链关键环节

With over 20 years of experience in enterprise management and market analysis, complemented by 30+ years of extensive expertise in power equipment manufacturing and metal metallurgy, demonstrating comprehensive mastery of key industrial chain segments

徐象华 总经理
Xu Xianghua General manager

投身新能源电池技术领域逾20年，深度参与技术研发与团队管理，并拥有二十余项发明专利，积淀深厚、成果卓著

Over twenty years dedicated to the new energy battery sector, with deep involvement in technology development and team leadership, backed by 20+ invention patents and a proven track record of impactful achievements

王立民 中国科学院长春应化所研究员团队
Wang Limin Researcher Team of Changchun Yinghua Institute, Chinese Academy of Sciences

中国科学院长春应化所王立民研究员团队在储氢材料领域拥有逾三十年研发积淀，是国内最早开展相关研究的团队之一。已成功开发宽温域稀土储氢材料及其配套电池系统。课题组负责人王立民研究员于2000年获日本东北大学工学博士学位，2004年入选中国科学院“百人计划”。团队具备完善的硬件支撑条件，配备全套储氢材料合成、表征与测试设备，包括磁悬浮天平和多台PCT吸放氢测试系统等。

Professor Wang Limin's research team at the Changchun Institute of Applied Chemistry (CIAC), Chinese Academy of Sciences, possesses over three decades of R&D expertise in hydrogen storage materials, ranking among China's pioneering groups in this field. The team has successfully developed rare-earth-based hydrogen storage materials with wide operating temperature ranges and their integrated battery systems. Team leader Professor Wang Limin earned his Ph.D. in Engineering from Tohoku University (Japan) in 2000 and was selected for the CAS "Hundred Talents Program" in 2004. The laboratory maintains comprehensive infrastructure for hydrogen storage research, including full suites for material synthesis, characterization, and testing-equipped with magnetic suspension balances and multiple PCT hydrogen absorption/desorption measurement systems

研发团队 R&D Team

攻坚核心技术，驱动产品迭代

程勇 高级工程师 研究员
Cheng Yong Senior Engineer / Research Scientist

深耕高熵储氢合金、宽温镍氢电池及高性能锂离子电池负极材料体系，已获授权专利20余项，发表学术论文20余篇

Specializing in high-entropy hydrogen storage alloys, wide-temperature nickel-metal hydride batteries, and high-performance lithium-ion battery anode materials, with 20+ authorized patents and 20+ academic publications

尹东明 高级工程师
Yin Dongming Senior Engineer

攻关储能材料、宽温储氢及动力镍氢电池等核心技术的产业化应用研究

Dedicated to the industrial application of core energy storage technologies, including advanced materials, wide-temperature hydrogen storage, and power nickel-metal hydride batteries

孙渠汇 总工程师
Sun Quhui Chief Engineer

专注于新能源动力电池PACK热管理技术研究与应用，拥有多项相关发明及实用新型专利

Specializing in thermal management technology for new energy vehicle battery packs, with multiple invention and utility model patents

研发团队 R&D Team

王春丽 高级工程师
Wang Chunli Senior Engineer

聚焦新型储能材料、宽温储氢及动力镍氢电池等关键材料与系统技术的前沿探索与产业化应用

Pioneering the exploration and industrial application of next-generation energy storage materials, wide-temperature hydrogen storage, and power Ni-MH battery technologies

郑小康 产品研发工程师 副总经理
Zheng Xiaokang Product R&D Engineer / Vice President

在锂电与新兴钠离子电池技术的研发及系统集成（PACK）方面经验丰厚。其专业能力不仅限于技术开发，更体现在对产品源头品质与一致性的严格闭环管理。基于对各类应用场景的深度理解，能够精准进行技术选型与工程转化，为客户提供高性能、高安全性的定制化电池解决方案

With extensive experience in lithium-ion and emerging sodium-ion battery R&D and PACK systems integration, his expertise extends beyond technical development to include rigorous closed-loop management for superior quality and consistency. His deep understanding of diverse application scenarios enables precise technology selection and engineering translation, delivering high-performance, high-safety, customized battery solutions

华锦怀 技术研发工程师
Hua Jinhuai R&D Engineer

拥有材料科学与工程学士及化学硕士学位，在电化学领域具备深厚的理论根基。擅长从底层原理出发，主导电芯关键材料与电池管理系统（BMS）的创新研发，并将理论突破高效转化为产品解决方案。拥有卓越的科研与工程化能力，其创新成果已形成高质量学术论文（发表于中科院一区期刊）与多项发明专利

He holds a Bachelor's degree in Materials Science and Engineering and a Master's degree in Chemistry, which underpin his profound expertise in electrochemistry. Proficient in first-principles thinking, he spearheads innovative R&D on critical cell materials and BMS, efficiently transforming theoretical advances into practical product solutions. His outstanding research and engineering skills have yielded a robust intellectual property portfolio, featuring high-quality academic papers (published in CAS Zone 1 journals) and numerous invention patents

企业资质认定及荣誉 Certifications & Honors

资质认定齐全，管理体系完善


质量管理体系认证证书

浙江霖润新能源科技有限公司

GB/T19001-2016/ISO9001:2015


环境管理体系认证证书

浙江霖润新能源科技有限公司

GB/T24001-2016 / ISO14001:2015


职业健康安全管理体系认证证书

浙江霖润新能源科技有限公司

GB/T45001-2020/ISO 45001:2018

质量、环境、职业健康安全

Quality, Environment, Occupational Health and Safety


信息技术服务管理体系认证证书

浙江霖润新能源科技有限公司

ISO/IEC 20000-1:2018


信息安全管理体系认证证书

浙江霖润新能源科技有限公司

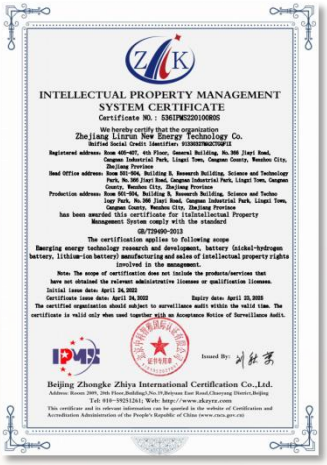
GB/T 22080-2016 idt ISO/IEC 27001:2013

信息安全、技术服务

Information Security & Technical Services


两化融合管理体系评定证书

浙江霖润新能源科技有限公司


INTELLECTUAL PROPERTY MANAGEMENT SYSTEM CERTIFICATE

Zhejiang Linrun New Energy Technology Co.

两化融合

Integration of Informatization and Industrialization

知识产权合规

Intellectual Property Compliance

企业资质认定及荣誉 Certifications & Honors

资质印证实力，荣誉见证卓越

省级科技型企业

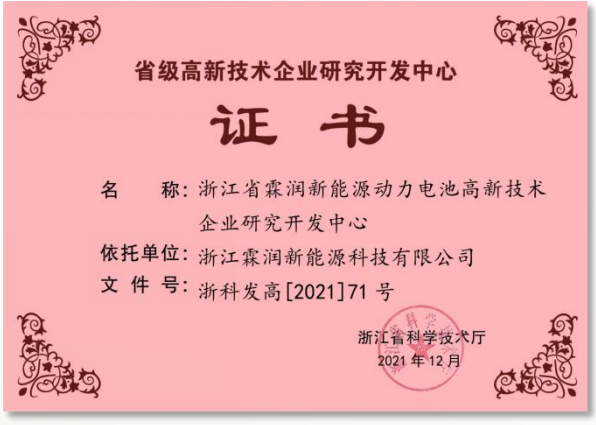
Provincial-Level Sci-Tech Enterprise

省级专精特新企业

Provincial-Level Specialized and Innovative SME

国家高新技术企业

National High-Tech Enterprise



省级高新技术企业研发中心

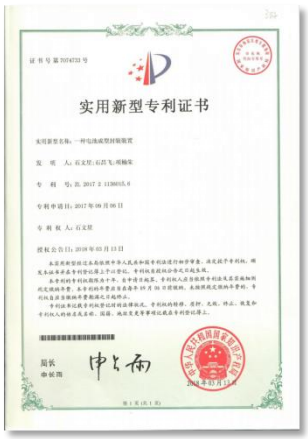
Provincial-Level High-Tech Enterprise R&D Center

省级科学技术成果

Provincial-Level Scientific and Technological Achievements

科研实力强劲，技术壁垒高筑


发明专利证书


实用新型专利证书

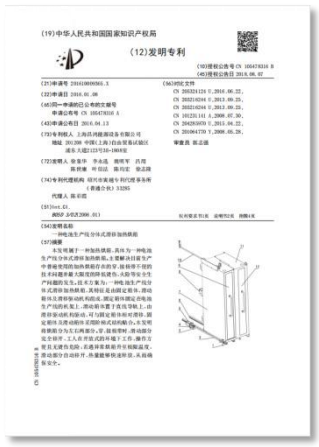

实用新型专利证书


实用新型专利证书


外观设计专利证书


外观设计专利证书


国家知识产权局 专利登记簿副本


(19)中华人民共和国国家知识产权局 (12)发明专利


外观设计专利证书


外观设计专利证书


国家知识产权局 专利登记簿副本


(19)中华人民共和国国家知识产权局 (12)发明专利

科研实力 Technical Expertise

外观设计专利、实用新型专利、发明专利

共计 41 项

Design Patents, Utility Model Patents, and Invention Patents: 41 in Total.

产品资质 Product Qualifications

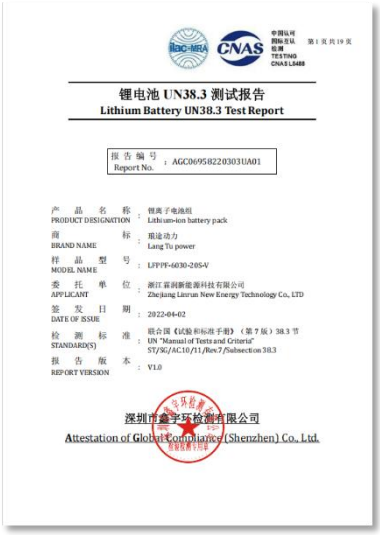
产品资质齐全，品质安全可靠


产品认证证书

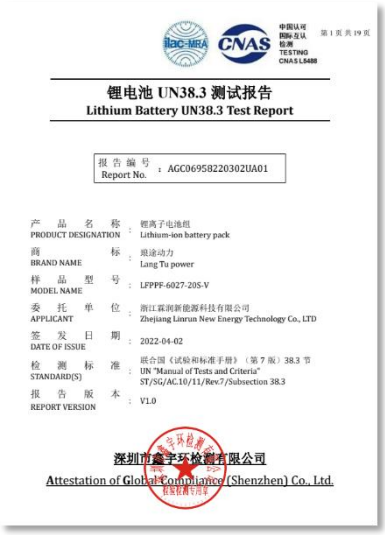
中国质量认证中心


产品认证证书

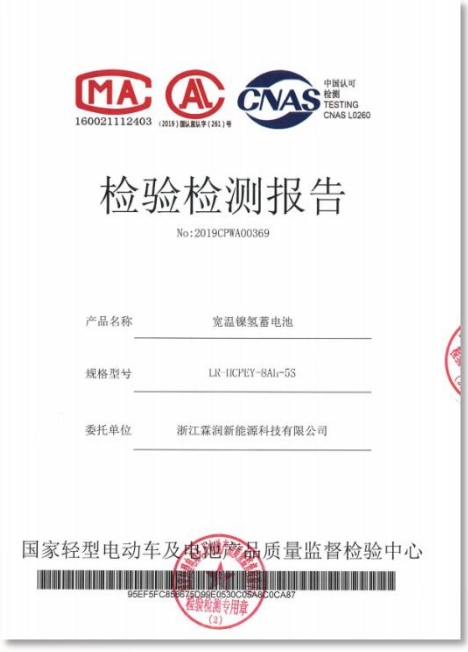
中国质量认证中心


锂电池 UN38.3 测试报告
Lithium Battery UN38.3 Test Report

深圳市鑫宇环检测有限公司
Attestation of Global Compliance (Shenzhen) Co., Ltd.


锂电池 UN38.3 测试报告
Lithium Battery UN38.3 Test Report

深圳市鑫宇环检测有限公司
Attestation of Global Compliance (Shenzhen) Co., Ltd.


检验检测报告

No:2019CPWA00369

产品名称 宽温镍氢蓄电池

规格型号 LR-HCPLY-8Ah-5S

委托单位 浙江霖润新能源科技有限公司

国家轻型电动车及电池产品质量监督检验中心


检验检测报告

No:2019CPWA00368

产品名称 宽温镍氢蓄电池组

规格型号 LR-HCPPY-20Ah-4S

委托单位 浙江霖润新能源科技有限公司

国家轻型电动车及电池产品质量监督检验中心


CQC 标志认证
试验报告

□新申请 ■变更 □监督 □复审 □其他：

申请编号： V2022CQC142002-940767

产品名称： 锂离子电池组

申请型号： 详见说明

检测机构：

查询码：T6J46UPY

产品检测报告

Product Test Report

产品资质 Product Qualifications

危险物品
DANGEROUS GOODS

航空运输条件鉴别报告书

Identification and Classification Report for Air Transport of Goods

报告编号：PEKGZ2022062233230A500001

生效日期：2022. 06. 23

委托单位：浙江霖润新能源科技有限公司

Applicant: Zhejiang Linrun New Energy Technology Co.,LTD

物品名称：锂离子电池组 LFPFF-6027-20S-V 64V 27Ah 1728Wh

Name of Goods: Lithium-ion battery pack LFPFF-6027-20S-V 64V 27Ah 1728Wh

北京迪捷姆空运技术开发有限公司

Beijing DGM Air Transport Technology Development Co.,Ltd.

海运 By Sea

货物运输条件鉴别报告书

Identification and Classification Report for Transport of Goods

危险物品
(Dangerous Goods)

报告编号：SHKGZ20220624022GIA160001

生效日期：2022.06.24

委托单位：浙江霖润新能源科技有限公司

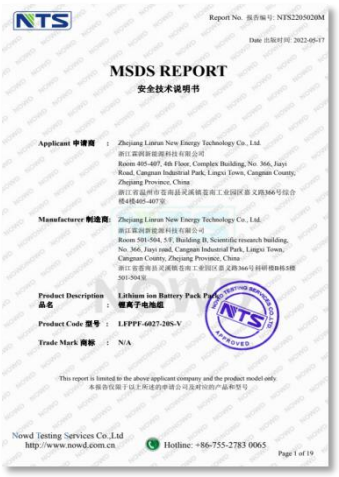
Applicant: Zhejiang Linrun New Energy Technology Co.,LTD

物品名称：锂离子电池组 LFPFF-6027-20S-V 64V 27Ah 1728Wh

Name of Goods: Lithium-ion battery pack LFPFF-6027-20S-V 64V 27Ah 1728Wh

北京迪捷姆空运技术开发有限公司

Beijing DGM Air Transport Technology Development Co.,Ltd.



MSDS REPORT

安全技术说明书

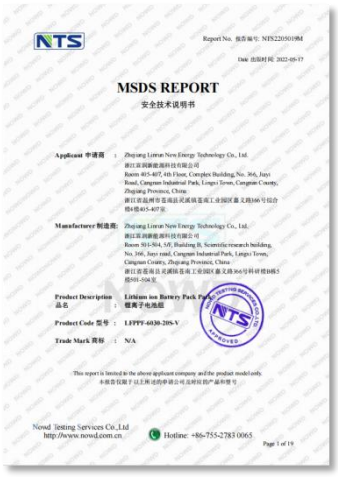
Applicant 申请商：Zhejiang Linrun New Energy Technology Co., Ltd.

Manufacturer 制造商：Zhejiang Linrun New Energy Technology Co., Ltd.

Product Description 品名：Lithium ion Battery Pack 锂离子电池组

Product Code 型号：LFPFF-6027-20S-V

Trade Mark 商标：N/A



MSDS REPORT

安全技术说明书

Applicant 申请商：Zhejiang Linrun New Energy Technology Co., Ltd.

Manufacturer 制造商：Zhejiang Linrun New Energy Technology Co., Ltd.

Product Description 品名：Lithium ion Battery Pack 锂离子电池组

Product Code 型号：LFPFF-6030-20S-V

Trade Mark 商标：N/A

产品运输条件报告
Product Transport Conditions Report

产品安全技术报告
Product Technical Safety Report

中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No. WZ25PTB00113

型式认可证书
CERTIFICATE OF TYPE APPROVAL

兹证明本证书所述制造厂具备按照下列标准的要求生产本证书所列产品的能力和条件。
This is to certify that the manufacturer stated in the certificate meets the requirements of the standards listed below and is available with the ability and conditions to produce the products described in the certificate.

制造厂/Manufacturer

浙江霖润新能源科技有限公司
Zhejiang Linrun New Energy Technology Co., Ltd

地址/Address

浙江省苍南县灵溪镇苍南工业园区嘉义路366号综合楼4楼405-407室
Room 405-407, 4th Floor, Comprehensive Building, No. 366 Jiayi Road, Cangnan Industrial Park, Lingxi Town, Cangnan County, Zhejiang Province

产品名称/Product

磷酸铁锂电池包
Lithium Iron Phosphate Battery Pack

附加标志/Notations

无/Nil.

认可标准/Approval Standard

1. 中国船级社《船舶应用电池动力规范》第1、6章；
Chapter 1,6, China Classification Society Rules for Battery Power for Ship Applications
2. 中国船级社《钢质海船入级规范》第4篇第1、3章；
Chapter1,3, Part Four of China Classification Society Rules for Classification of Sea-Going Steel Ships
3. 中国船级社《钢质内河船舶建造规范》第3篇第1、5章；
Chapter1,5, Part Three of China Classification Society Rules for Construction of Inland Steel Ships

用于/Intended for

产品用途/Application of products:船舶/Ships
产品使用限定条件/Restrictive condition of products:不适用于安装在开敞甲板/Not suitable for installed open deck on board

证书有效期至/This Certificate is valid until 2031年04月19日/Apr. 19,2031

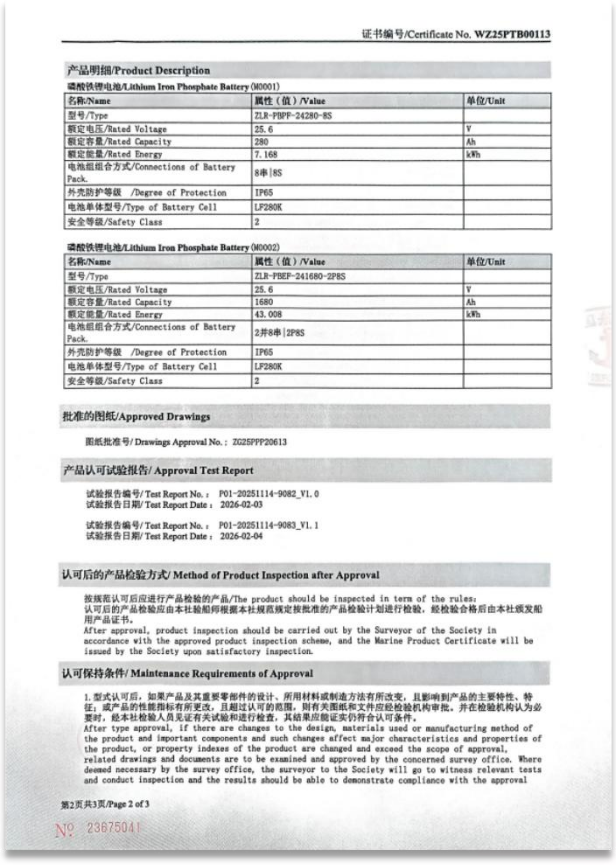
发证机构 Issued by 中国船级社温州办事处 CCS Wenzhou Office

签发日期 Date 2026年04月20日 Apr. 20,2026

UTN:P026-5944978

第1页共3页/Page 1 of 3

№ 23850496



证书编号/Certificate No. WZ25PTB00113

产品明细/Product Description

磷酸铁锂电池/Lithium Iron Phosphate Battery (M0001)

名称/Name	属性（值）/Value	单位/Unit
型号/Type	ZLR-PBPF-24280-8S	
额定电压/Rated Voltage	25.6	V
额定容量/Rated Capacity	280	Ah
额定能量/Rated Energy	7.168	kWh
电池组组合方式/Connections of Battery Pack.	8串1S	
外壳防护等级 /Degree of Protection	IP65	
电池单体型号/Type of Battery Cell	LF280K	
安全等级/Safety Class	2	

磷酸铁锂电池/Lithium Iron Phosphate Battery (M0002)

名称/Name	属性（值）/Value	单位/Unit
型号/Type	ZLR-PBEP-241680-2P8S	
额定电压/Rated Voltage	25.6	V
额定容量/Rated Capacity	1680	Ah
额定能量/Rated Energy	43.008	kWh
电池组组合方式/Connections of Battery Pack.	2并8串 2P8S	
外壳防护等级 /Degree of Protection	IP65	
电池单体型号/Type of Battery Cell	LF280K	
安全等级/Safety Class	2	

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No.：ZG25PPP20613

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No.： P01-20251114-9082_V1.0
试验报告日期/ Test Report Date： 2026-02-03

试验报告编号/ Test Report No.： P01-20251114-9083_V1.1
试验报告日期/ Test Report Date： 2026-02-04

认可后的产品检验方式/ Method of Product Inspection after Approval

按规范认可后应进行产品检验的产品/The product should be inspected in term of the rules:
认可后的产品检验应由本社验船师根据本社规范规定按批准的产品检验计划进行检验，经检验合格后由本社颁发船用产品证书。
After approval, product inspection should be carried out by the Surveyor of the Society in accordance with the approved product inspection scheme, and the Marine Product Certificate will be issued by the Society upon satisfactory inspection.

认可保持条件/ Maintenance Requirements of Approval

1. 型式认可后，如果产品及其重要零部件的设计、所用材料或制造方法有所改变，且影响到产品的主要特性、特征；或产品的性能指标有所更改，且超过认可的范围，则有关图纸和文件应经检验机构审批，并在检验机构认为必要时，经本社检验人员见证有关试验和进行检查，其结果应能证实仍符合认可条件。
After type approval, if there are changes to the design, materials used or manufacturing method of the product and important components and such changes affect major characteristics and properties of the product, or property indexes of the product are changed and exceed the scope of approval, related drawings and documents are to be examined and approved by the concerned survey office. Where deemed necessary by the survey office, the surveyor to the Society will go to witness relevant tests and conduct inspection and the results should be able to demonstrate compliance with the approval

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№ 23675041

船舶锂离子启动/储能电池已通过中国船级社CCS认证
China Classification Society (CCS) Certification

PART 02

产品及技术

Products & Technologies

RATL

产品体系 Product Family

跨界赋能，全域适配

镍氢电池
Nickel-Metal Hydride Battery

锂离子电池
Lithium-ion Battery

钠离子电池
Sodium-ion Battery

镍氢电池 Nickel-Metal Hydride Battery

镍氢电池产品优势

高比功率 目前商业化功率型电池的比功率已达到**1350 W/kg**

High Specific Power Commercial power-type batteries deliver a specific power of 1350 W/kg

卓越循环寿命 动力型电池在80%放电深度下，循环寿命可达**10,000+**次

Excellent Cycle Life Power-type batteries achieve a cycle life of 10,000+ cycles at 80% depth of discharge

耐过充过放 可耐受**200%**过充，即使放电至**0 V**仍具备良好可恢复性

Overcharge/Discharge Tolerance Withstands 200% overcharge and maintains recoverable capacity even when discharged to 0 V

宽温域适应能力 正常工作温度范围**-45~60 °C**，储存耐受范围达**-50~70 °C**

Wide-Temperature Operation Functions effectively from -45 °C to 60 °C, with storage tolerance ranging from -50 °C to 70 °C

高标准安全验证 从容应对针刺、挤压、短路、跌落、加热及振动等严苛测试

Rigorous Safety Validation Successfully passes stringent tests including nail penetration, crush, short circuit, drop, heating, and vibration

绿色环保 从生产源头杜绝铅、镉等有毒重金属及氟的引入

Eco-Friendly Design Eliminates the use of toxic heavy metals (e.g., lead, cadmium) and fluorine from the production source

高回收价值 核心材料为高价值镍（Ni）及稀土，利于循环利用

High Recovery Value Core materials contain high-value nickel (Ni) and rare earth elements, facilitating efficient recycling

镍氢电池 Nickel-Metal Hydride Battery

储氢固氢技术成熟

固态储运，安全稳定

采用固态材料实现氢气的储存与输送，从根本上提供了更安全、更稳定的储运解决方案

Solid-State Storage & Transport: Safe and Stable Utilizes solid-state materials for hydrogen storage and transportation, delivering a fundamentally safer and more stable solution

高效储氢，条件温和

具备卓越的体积储氢密度，系统可在温和条件下稳定运行，无需依赖高压或隔热容器

Efficient Hydrogen Storage under Mild Conditions Achieves outstanding volumetric hydrogen density while operating reliably under moderate conditions, eliminating the need for high-pressure vessels or specialized insulation containers

核心材料，性能突破

依托关键材料技术突破，显著提升储氢综合性能，为系统能效奠定坚实基础

Core Material Breakthrough, Performance Advancement Enabled by key innovations in material technology, the system achieves significantly enhanced overall hydrogen storage performance, establishing a solid foundation for superior energy efficiency

宽温快储，系统协同

具备宽温域快速储氢能力，并通过联动制氢工作方法优化，实现系统整体能效提升

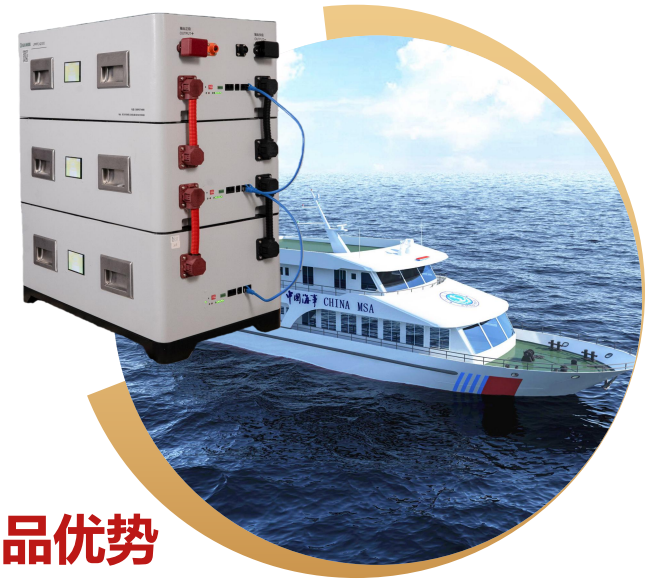
Broad-Temperature Rapid Storage with System Synergy The technology demonstrates rapid hydrogen absorption/desorption kinetics across wide temperature ranges, while optimized integration with hydrogen production workflows enables breakthrough system-level energy efficiency

储发一体，应用配套

成功开发储氢-发电一体化系统，并提供燃加氢站/燃料电池等场景的配套技术解决方案

Integrated Storage & Power Generation Successfully developed an integrated hydrogen storage-power generation system, providing comprehensive technical solutions for application scenarios including hydrogen refueling stations and fuel cells

锂离子电池 Lithium-ion Battery



锂离子电池产品优势

高能量密度
商业化功率型电池的体积能量密度可达≥340 Wh/L

High Energy Density Commercial power-type batteries achieve a volumetric energy density of ≥340 Wh/L

长循环寿命
动力型电池在0.5 C充放电条件下，循环寿命可达8000次以上

Long Cycle Life Power-type batteries achieve over 8,000 cycles at 0.5 C charge-discharge rate

高倍率低温放电
电池组在-10 °C环境中以≥1.5 C倍率持续放电至截止电压，容量保持率仍不低于90%

High-Rate Low-Temperature Discharge Performance The battery module maintains ≥ 90% capacity retention when discharging at ≥1.5C to cutoff voltage in -10 °C environments

高温性能卓越
在+55 °C高温环境下放电至截止电压，电池组容量保持率不低于100%

Excellent High-Temperature Performance The battery pack maintains at least 100% capacity retention when discharged to cut-off voltage at +55 °C

全面安全认证
通过短路、挤压、针刺、跌落、加热、振动等多项极限安全测试，均无起火或爆炸现象

Comprehensive Safety Certification The battery system has passed a series of extreme safety tests-including short circuit, crush, nail penetration, drop, heating, and vibration, without any fire or explosion incidents

优异荷电保持
电池组在开路状态下静置28天，容量保持率仍不低于100%

Excellent Charge Retention The battery pack remains at 100% capacity retention after 28 days in open circuit

锂离子电池 Lithium-ion Battery

船舶锂离子储能电池

超长寿命设计

循环寿命高达**8000次**，设计使用寿命达**24年**，为传统铅酸电池的近**12倍**

Extended Life Design With a cycle life of up to 6,000 cycles and a design service life of 18 years, it delivers nearly 4 times the longevity of traditional lead-acid batteries

高效能源管理

可利用船舶富余能源（如太阳能）实现充电储能，显著提升能源综合利用效率，每年可降低燃油成本**1-2万**元

Efficient Energy Management Utilizes surplus vessel energy sources (e.g., solar power) for charging and storage, significantly improving comprehensive energy utilization efficiency and reducing annual fuel costs by 10,000-20,000 RMB

宽域功率应用

单组船舶锂离子储能电池即可支持照明、冰箱、空调、雷达、仪器及生活电器等多种负载

Wide-Range Power Applications A single marine lithium-ion energy storage battery unit supports diverse loads including lighting, refrigeration, air conditioning, radar, navigation instruments, and domestic appliances

舶锂离子启动电池

卓越续航能力

在满电状态下，可持续启动高达**80次**，续航能力为传统铅酸电池的近**7倍**

Exceptional Endurance Capability Marine lithium-ion starting batteries can perform up to 80 consecutive starts on a full charge, providing nearly 7 times the endurance of traditional lead-acid batteries

超长使用寿命

设计寿命可达**24年**，为传统铅酸电池的近**12倍**

Exceptional Service Life The start-stop battery offers a design life of up to 15 years, nearly 8 times that of traditional lead-acid batteries

钠离子电池 Sodium-ion Battery

钠离子电池产品优势

高倍率脉冲启动
钠离子电池可输出更高倍率脉冲电流，实现更快、更强启动性能，展现卓越的大电流瞬时启动能力

High-Rate Pulse Starting Sodium-ion batteries deliver higher pulse current rates, enabling faster and more powerful starting performance. They demonstrate exceptional instantaneous high-current starting capability

超宽温域工作
在**-40 °C至70 °C**范围内均可稳定工作，其在**-40 °C**极低温环境下容量保持率仍超**80%**，保障冬季启停系统可靠运行

Ultra-Wide Temperature Operation Performing reliably across an extensive -40 °C to 70 °C range, the battery maintains over 80% capacity retention even under extreme -40 °C conditions, ensuring dependable start-stop system operation in winter

超长循环寿命
循环寿命超**3000次**，为传统铅酸电池的**7-15倍**，可轻松应对每日高频启停需求，显著提升全生命周期经济性

Extended Cycle Life With a cycle life exceeding 3,000 cycles-7 to 15 times that of traditional lead-acid batteries-it easily meets daily high-frequency start-stop demands, significantly enhancing lifecycle economic efficiency

低压无损储运
支持放电至低压进行安全运输与存储，无性能损伤，充电即可恢复使用，显著降低储运成本与安全风险

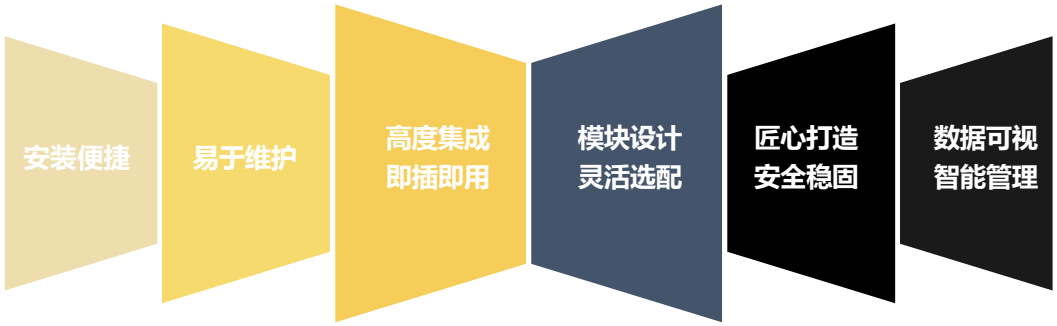
Zero-Voltage Safe Storage & Transport Enables safe transportation and storage at 0 V state without performance degradation. Full functionality is immediately restored upon recharge, significantly reducing storage costs and safety risks

高安全特性
具备更高热失控起始温度与更大内阻，热失控过程放热平缓，显著降低爆燃风险

Enhanced Safety Characteristics Featuring higher thermal runaway onset temperature and increased internal resistance, the battery exhibits a gradual heat release process during thermal runaway, significantly reducing the risk of explosion and fire

智能系统 Intelligent System

霖润智慧储能系统



智能光储联动
Smart Solar-Storage Synergy

系统具备广泛兼容性，内置PCS光储逆变器可直接对接光伏组件，实现高效灵活的清洁能源部署 System-wide compatibility, the system features built-in PCS (Power Conversion System) solar-storage inverters that interface directly with photovoltaic modules, enabling highly efficient and flexible deployment of clean energy solutions

智能运维支持
Intelligent Operation-Maintenance Support

通过APP远程诊断功能，运维人员可快速定位故障并实时响应，大幅缩短排查与维修周期，有效提升设备可用率 Remote diagnostics via mobile App, maintenance personnel can rapidly identify faults and implement real-time responses through the dedicated application, significantly reducing troubleshooting and repair cycles while effectively improving equipment availability

灵活场景定制
Flexible Scenario Customization

具备高度可扩展性，可精准适配特定场景需求，支持额外备电、辅助计量等定制化功能，满足多元化能源管理需求 Highly scalable & precision-adaptive, the system delivers exceptional extensibility with precision adaptation to specific operational scenarios, supporting customized functions including extended backup power and auxiliary metering to meet diverse energy management requirements

PART 03

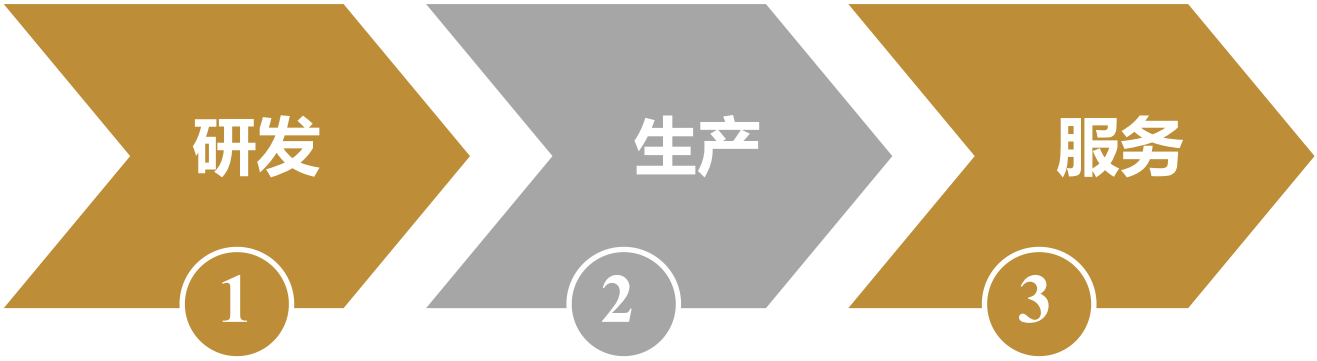
研发生产体系

R&D and Manufacturing System

RATL

研发生产服务 R&D, Manufacturing & Services

研发前瞻，生产精益，服务周全



一站式储能系统服务 One-Stop Energy Storage System Services

为客户提供覆盖户用、通信、工商业、公共事业及特种设备等多领域的储能产品定制与代工服务。公司配备全自动化产线，具备强大产能与卓越品控，精准满足多元化客户需求

We provide customized energy storage product design and OEM/ODM services spanning residential, telecommunications, commercial & industrial, utility, and special equipment applications. Equipped with fully automated production lines, we deliver robust manufacturing capacity and exceptional quality control to precisely meet diverse client requirements

专业研发团队 Professional R&D Team

团队涵盖结构、电气、软件及工业设计全链路工程师

Our team brings together engineers across structural, electrical, software, and industrial design disciplines

全链路智能管控 Full-Link Smart Management & Control

集成**BMS+EMS+PCS**行业领先技术架构

Integrated BMS + EMS + PCS industry-leading technology architecture, precisely adapted to diverse application scenarios

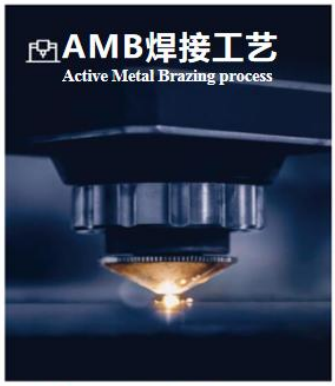
全球市场验证 Global Market Validation

产品全面通过全球主流市场准入认证，认证通过率达**100%**，远销全球**100**余个国家和地区

All products fully certified for global market access with 100% certification success rate, exported to over 100 countries and regions worldwide

生产工艺 Production Process

智造引领工艺革新，效率驱动成本优化



降本增效 质造优势

Cost Reduction & Efficiency Enhancement Manufacturing Excellence

PART 04

产品及应用

Products & Applications

RATL

钠离子电池产品 Sodium-ion Battery Products

钠离子汽车启停电池 Sodium-ion Automotive Start-Stop Battery


H4-12V-400


H5-12V-500

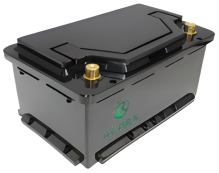

H6-12V-600


H7-12V-750


H8-12V-840


H9-12V-900

定制化产品


汽车R款启停电池 H5-12V-500-R


卡车启动电池 LR-N100-24V

产品型号 Product Models
H4-12V-400 / H5-12V-500 / H6-12V-600
H7-12V-750 / H8-12V-840 / H9-12V-900

产品尺寸 Product Dimensions (长*宽*高，mm)
207*175*190 / 245*175*190 / 281*175*190
315*175*190 / 354*175*190 / 398*175*190

CCA(A) 500 / 660 / 850 / 1000 / 1200 / 1600

额定容量(Ah) Rated Capacity (Ah) 20 / 30 / 40 / 50 / 60 / 70

标称电压(V) Nominal Voltage (V) 12

工作温度 Operating Temperature -40 °C-70 °C

循环次数(次) Cycle Life (cycles) 3000

防水等级 IP Rating IP67

锂离子电池产品 Lithium-ion Battery Products

二轮车用锂离子电池 Two-Wheeler Lithium-ion Batteries

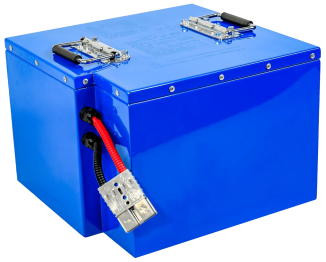




产品规格 Product Specifications

48V15Ah / 48V20Ah / 48V30Ah /48V52Ah / 60V30Ah / 60V50Ah / 60V63Ah / 72V20Ah / 72V30Ah / 72V52Ah / 72V76Ah

三轮车用锂离子电池 Three-Wheeler Li-ion Batteries



产品规格 Product Specifications

60V80Ah / 60V110Ah / 60V150Ah / 60V180Ah / 60V200Ah / 60V240Ah / 60V300Ah / 60V350Ah / 72V80Ah / 72V110Ah / 72V150Ah / 72V180Ah / 72V200Ah / 72V300Ah / 72V320Ah

海钓游艇电池 Marine Battery for Sportfishing

产品规格 Product Specifications

24V200Ah / 24V300Ah / 36V320Ah

海钓游艇电池 Marine Battery for Sportfishing

产品规格 Product Specifications

24V200Ah / 24V300Ah

锂离子电池产品 Lithium-ion Battery Products

船舶锂离子启动电池 Marine Lithium-ion Starting Battery

产品型号 ZLR-PBPF-24280-8S
Product Models

产品尺寸 515*370*240
Product Dimensions

CCA(A) 50±5%

额定容量(Ah) 280
Rated Capacity (Ah)

使用年限(年) 24+
Service life (years)

标称电压(V) 25.6
Nominal Voltage (V)

工作温度 -10 ℃-55 ℃
Operating Temperature

循环次数(次) 8000+
Cycle Life (cycles)

防水等级 IP65
IP Rating

锂离子电池产品 Lithium-ion Battery Products

船舶锂离子储能电池 Marine Lithium-ion Energy Storage Battery

产品型号 ZLR-PBPF-241680-2P8S
Product Models

产品尺寸 720*410*800
Product Dimensions

CCA(A) 320±5%

额定容量(Ah) 1680
Rated Capacity (Ah)

使用年限(年) 24+
Service life (years)

标称电压(V) 25.6
Nominal Voltage (V)

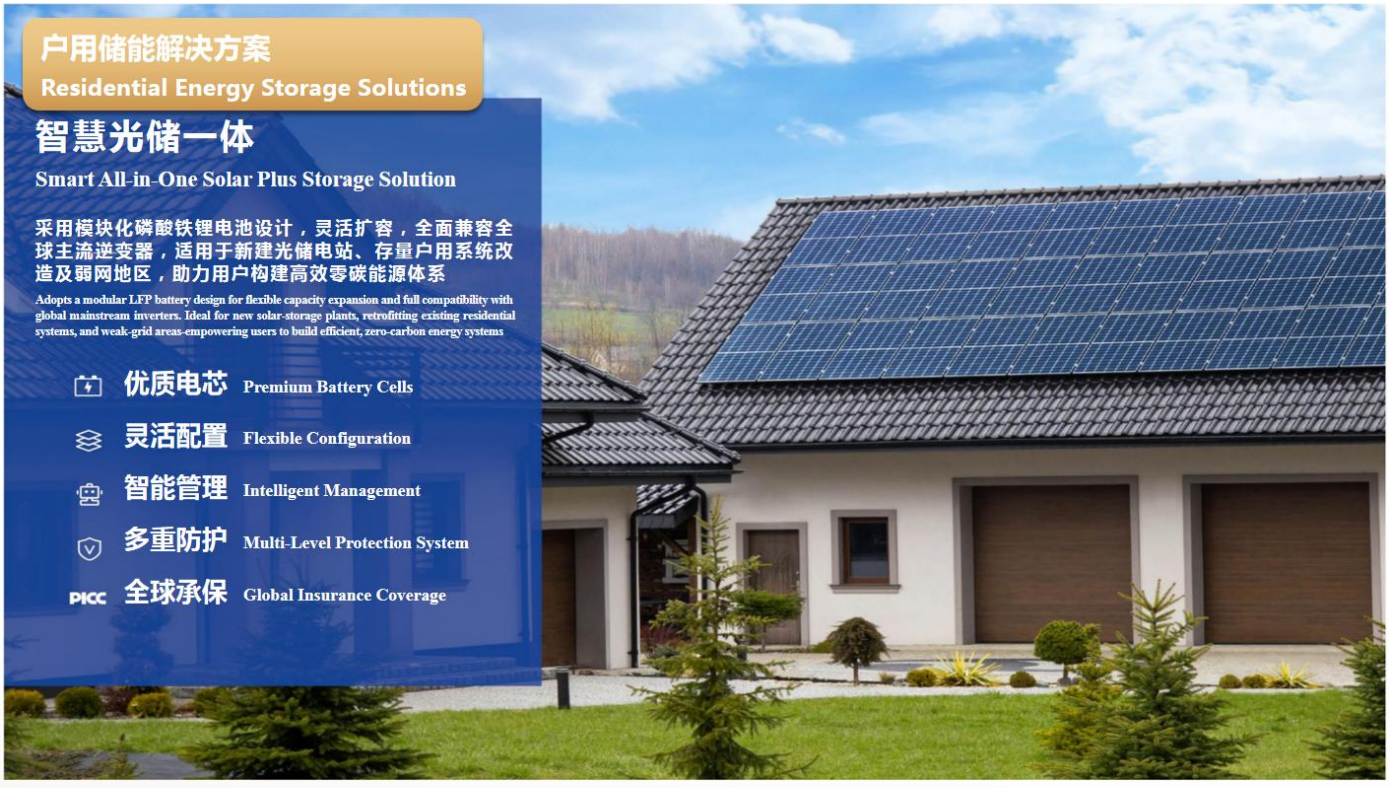
工作温度 -10 ℃-55 ℃
Operating Temperature

循环次数(次) 8000+
Cycle Life (cycles)

防水等级 IP65
IP Rating

锂离子电池产品 Lithium-ion Battery Products

技术底座坚实，应用场景无界



RATL

浙江霖润

新能源科技有限公司

Zhejiang Linrun New Energy Technology Co., Ltd.

联系方式：138 0957 4000

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公司地址：浙江省温州市苍南县嘉义路366号