



# COMPANY PROFILE

Hangzhou LIAO Technology Co., Ltd., established in 2009, is a leading manufacturer of prismatic aluminum shell LiFePO<sub>4</sub> battery cell as well as an integrator of battery system. We are a joint-stock company specializing in the fields of new energy & high technology and leading in R&D, manufacturing and marketing of LiFePO<sub>4</sub> battery. Our company is located in Hangzhou, China, which is near to Shanghai. Our batteries are of high safety, environmentally friendliness, long cycle life, low internal resistance, large capacity and light weight, widely used for energy storage and power supply systems such as solar energy storage system, telecommunication base station, UPS, electric two-wheeler, elderly mobility scooter and RV power battery etc. . Since our founding, we've worked with numerous clients throughout NA, EU, AU and Asia. OEM&ODM solutions are welcomed. LIAO has already got a high reputation around the world. LIAO has a top R&D team and an advanced high precision automatic production line formed by the idea of promoting green energysaving & emission reduction, developing low carbon cycle economy through the sustainable technology innovation and strict control in the process of production. We are sparing no effort to create the best top brand LIAO.

R&D Center Founded

Small Production of Prismatic  
Aluminum Lifepo<sub>4</sub> Battery in 2009

R&d About Various of Storage & Power Battery  
Systems Finished and Global Marketing in 2011

>2005

>2009

>2011

>2008

>2010

>2012

R&D Demonstration About Various  
of Battery System Completed

Production Line Completed  
and Put Into Operation

Establish a Sales Team and  
Initiate Market Promotion



# SALES NETWORK



Drive Power Supply For Caravan  
Entered the European Market

Selling of Various of  $\text{LiFePO}_4$  Battery  
Systems Steady Growth Since 2015

Expand Global Market Share  
(Australia, North America)

2013

2015

2021

2014

2017

2023~

Back-up Power Supply for Telecom  
Base Station Successfully Entered  
the Japan Market

Portable Energy Storage Systems  
Entered the European Market

Lay out High-end Market,  
Accumulate High-quality  
Customer Resources



# PRISMATIC $\text{LiFePO}_4$ CELL

## Introduction

The prismatic aluminum shell  $\text{LiFePO}_4$  battery cell is developed and manufactured by our company is the basic unit of the battery pack.

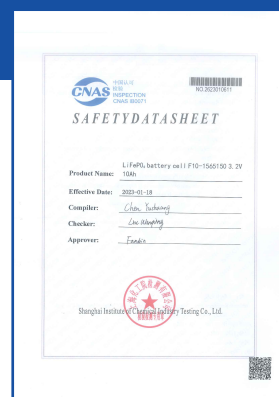
After 14 years of development, the manufacturing technology has become mature and the product stability is high. At present, our battery cells include:

10Ah, 12Ah, 15Ah, 20Ah, 50Ah, and 100Ah.

# Characteristics

- High Energy Density
- Excellent Safety Performance
- Long Lifespan

- No Memory Effect
- Wide Range Of Working Temperature
- Low Self-discharge Rate
- High Working Voltage
- Environmentally Friendly
- High Rate Discharge
- Ultra-low Temperature Resistance



Model No.	F10-1565150	F12-1865150	F15-2065150	F20-2290150	F50-23140160	F100-48173115
Nominal Capacity	10Ah	12Ah	15Ah	20Ah	50Ah	100Ah
Nominal Voltage	3.2					
Max. Continuous Charge Current	1C	1C	1C	1C	1C	1C
Max. Continuous Discharge Current	3C	3C	2C	2C	1C	1C
Cycle Life	2000 cycles					
-20°C Discharging Performance [0.2C]	≥60%					
60°C Discharging Performance [1C]	≥98%					
Internal Resistance (mΩ)	≤3.5	≤3.5	≤3	≤2	≤2.5	≤2.5
Weight (g)	275	325	352	545	966	2000
Charge Temperature	0-45°C					
Discharge Temperature	-20-60°C					
Storage Temperature	-20-45°C					
Dimension(mm)	15*65*150	18*65*150	20*65*150	22*90*150	23*140*160	48*173*115



# Hybrid Power Station



## Characteristics

- Extreme power
- Long intensive use
- Built-in charger
- Maximum safety
- Low self-discharge
- Long service life

## Application Scenarios



**Offshore Drilling Platforms**



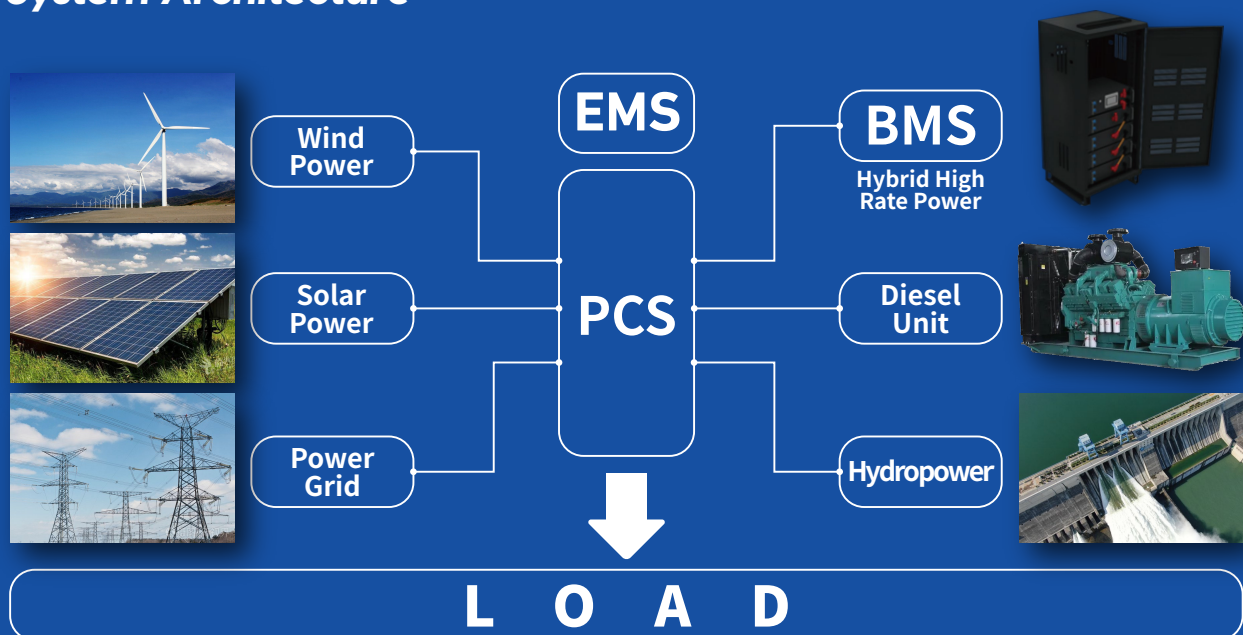
**Mine**



**Construction Site**

With batteries as the core, using solar, wind, water, fuel, and mains power sources for connection, intelligent management is carried out through BMS and EMS to achieve diversified voltage output, independent voltage regulation, energy storage peak shifting, and uninterrupted power supply.

## System Architecture





# Large Energy Storage System

## Characteristics

- High Energy Density
- High Efficiency
- High Safety
- Low Cost

## Application :

Energy storage at power generation side, peak shaving, smooth output, reduce waste light, and improve energy utilization efficiency

Large energy storage products use specialized energy storage cells, achieving large-scale applications of multi energy complementarity and integrated load storage in different fields such as power supply side, grid side, and user side, promoting energy structure transformation, achieving uninterrupted and reliable guarantee. There are many specifications such as 500KWh, 1MWh, and 2MWh.





# Multi-functional Backpack Power Supply



## Specification

Model	TABP1200
Nominal Voltage	50V
Nominal Capacity	25Ah
Weight	5Kg
Energy Storage	1260Wh

## Introduction

LIAO 's LABP model multi-functional backpack power supply adopts an intelligent battery management solution, which has the characteristics of large capacity, long endurance, and strong compatibility. It can achieve convenient and cordless operation of various garden and other electric tools.

## Application Scenarios



# Caravan Mover Battery



## Characteristics

- Extreme power
- Light Weight
- Long intensive use
- Built-in charger
- Maximum safety
- Low self-discharge
- Long service life

Voltage	12V					
Nominal Voltage	12.8V					
Nominal Capacity	10Ah	12Ah	15Ah	20Ah	24Ah	30Ah
Item No.	LAXpower 1210	LAXpower 1212	LAXpower 1215	LAXpower 1220	LAXpower 1224	LAXpower 1230
Max Cont. Current	100A					
Momentary Current	200A					
Peak Current	300A					
Max Charging Current	2C( 20A/24A/30A/40A/48A/60A)					
Charging Voltage	14.6V					
Charging Current	4A					
AC Input	AC Input 100-240V					
Usage Temperature	-20 - 60°C					
Charging Temperature	0 - 45°C					
Storage Temperature	-10 - 45°C					
Weight	3.5kgs	3.6kgs	3.8kgs	4.5kgs	5.5kgs	5.6kgs
Warranty	2Years					
Cycle Life(80% DOD)	>2000Cycle					
IP Class	IP21					
Cell Chemistry	LiFePO <sub>4</sub>					
Cell Technology	Prismatic					
Dimensions	250x175x120mm					
Protection	Over Current, Over-under Voltage, Short-circuit, Over-temperature.					

With the enormous advantages, LIAO' s mover-drive power supply for caravan/RV,won the championships of C/P Ratio Ranking of Caravan Battery Products by ANWB. European Authority Magazine KCK,keep positive promoting for this MOVER battery system and this model continuously selling well in the markets.





# Back-up Battery

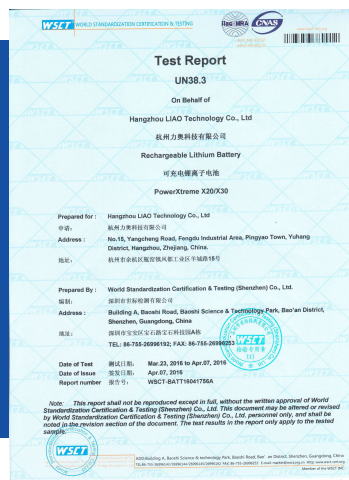
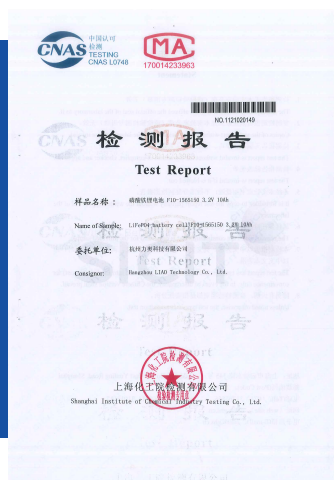


## Characteristics

- Built-in BMS with over temperature protection, over voltage protection, over current protection, short circuit protection, etc
- Equipped with portable handles for flexible move
- At 80% DoD, the cycles can reach up to 3000 or more
- The ingress protection of battery casing is IP65

Model No.	Rebak 4810	Rebak 4820	Rebak 4830	Rebak 4840	Rebak 4850	Rebak 48100
Nominal voltage	48V/51.2V					
Nominal capacity	10Ah	20Ah	30Ah	40Ah	50Ah	100Ah
Max. continuous charge current	As required					
Max. continuous discharge current	As required					
Cycle life	≥3000 times (0.2C current charge and discharge at 25°C 100%DOD, when Retention capacity≥ 80% of Rated Capacity).					
Charge temperature	0°C~45°C					
Discharge temperature	-20°C~60°C					
Storage temperature	-10°C~45°C					
Dimension	As required					
Application	Especially designed for telecommunication base station. Also can be used for Back-up power, solar & wind systems, home energy storage system, UPS, ect..					

The 48V rack-mounted back-up power supply series used for telecommunication base station is one of LIAO's most exported products, with specifications of 48V 10Ah, 20Ah, 30Ah, 40Ah, 50Ah, and 100Ah. Among them, the 48V 100Ah battery pack customized by KDDI Telecom Corporate in Japan was sold more than 8000 sets with installed quantities almost covering the entire Japan Island. KDDI is one of the top three telecommunications companies in Japan as well as one of the Fortune 500 companies in the world. LIAO's technology in energy storage projects has already been mature and can maximum fulfill every customer' s needs.



# Battery For Medical Device



## Characteristics

- Built-in BMS with over temperature protection, over voltage protection, over current protection, short circuit protection, etc
- Battery module can be in series use
- At 80% DoD, the cycles can reach up to 3000 or more
- The ingress protection of battery casing is IP65

Nominal voltage	512V
Nominal capacity	27Ah $\pm$ 3%
Max. charge current	27A
Max. discharge current	135A (5C)
Cycle life	$\geq$ 2000
Charge temperature	0°C~45°C
Discharge temperature	-20°C~60°C
Storage temperature	-10°C~45°C
Weight	120Kg
Dimension(mm)	L 800 W 350 H 880



1. Built-in vehicle grade prismatic aluminum shell lithium iron phosphate battery cells, with characteristics of high power, high safety, and long service life.
2. 512V high voltage, 5C high current discharge capacity, high work efficiency, and a maximum continuous output of 60KW.
3. Equipped with a 7-inch touch screen, it can display various battery information.
4. Equipped with the low battery alarm prompt function, it can automatically shut down the system below the set value to prevent overdischarge of the battery cells.
5. In the case of automatic shutdown or manual shutdown at low battery power, there is no power consumption for BMS.
6. Built-in RS485, CANBUS communication ports, and various dry contact signal interfaces, it can achieve multi-purpose communication and remote monitoring.



# Portable Power Station


















## Characteristics

- Large Capacity
- LED Lamp
- Compact Portable Lightweight
- Strong Aluminum Shell
- DC Input(12V-24V)
- Type-C Port
- USB Quick Charge
- Solar Charging

Model No.	PS-1000
Battery capacity	972Wh
Solar panel charging	about 7-8 hours
DC port output	12V / 3A
Output of on-board equipment	12V / 8 A
Weight	8.6kg
Battery type	LiFePO <sub>4</sub>
Adapter charging	about 7-8 hours
USB-A output*2	18W
AC output	100V/110V or 220V/230V
Operating temperature	0°C ~ 45°C
Certifications	CE、PSE、RoHS、FCC



 <p>Mini Fridge(200W) 3-12 Hours</p>	 <p>Electric Drill(500W) 1-1.5 Hours</p>	 <p>TV(60W) 10-12 Hours</p>
 <p>Electric Grill(800W) 0.8-1 Hours</p>	 <p>Rice Cooker(700W) 0.8-1.5 Hours</p>	 <p>Fan(18W) 30-40 Hours</p>
 <p>CPAP Machine(40W) 15-20 Hours</p>	 <p>Desktop PC(200W) 2.5-3 Hours</p>	 <p>Table lamp(40W) 15-20 Hours</p>
 <p>Drone(60Wh) 8-12 Times</p>	 <p>Laptop(50Wh) 10-15 Times</p>	 <p>Camera(30W) 20-25 times</p>
 <p>GoPro(14.5Wh) 40-50 Times</p>	 <p>iPad(15Wh) 40-50 Times</p>	 <p>Phone(12Wh) 50-60 Times</p>



LIAO is devoted to product innovation and intellectual property protection, and has obtained 6 invention patents and 31 utility model patents.

# Invention patents



# Utility model patents







**Cross-border integration,  
Continuous innovation, Robust lifestyles**

Add No.15 Yangcheng Road,  
Pingyao, Yuhang, Hangzhou,  
Zhejiang 311115, China

Tel +86(0)571-81107039  
Fax +86(0)571-81107038  
Email [liao@hz-liao.com](mailto:liao@hz-liao.com) [sales@hz-liao.com](mailto:sales@hz-liao.com)

[www.liaobattery.com](http://www.liaobattery.com)

ISO9001 ISO14001 ISO45001 CE UN38.3 SDS UL