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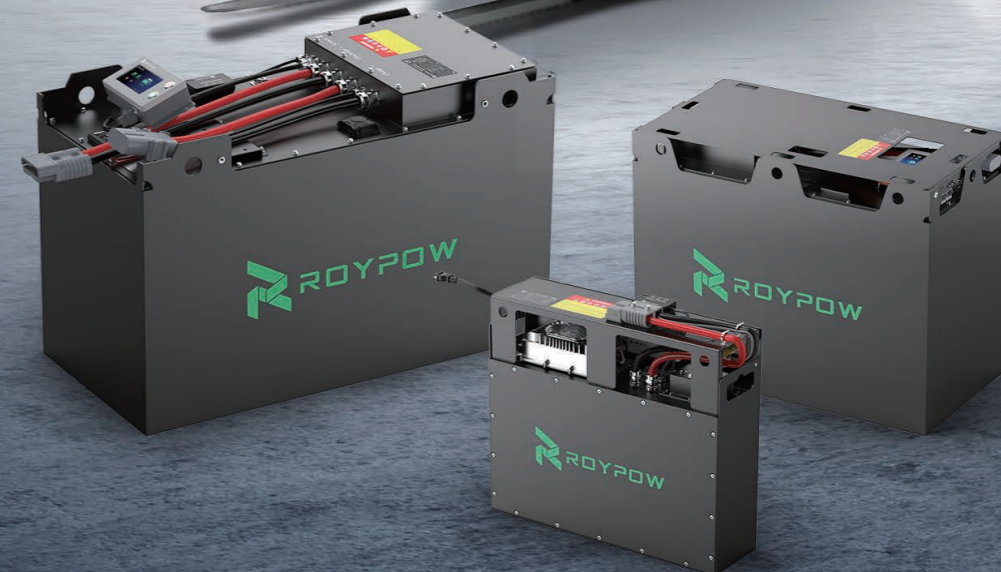
Version: June 11, 2026, LiFePO<sub>4</sub> Batteries for Forklifts



# LiFePO<sub>4</sub> Batteries

## for Material Handling Equipments

Drop-in lithium-ion  
for lead-acid  
alternatives



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Your Trusted Partner*

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# ROYPOW

## For One-stop New Energy Solutions

- R&D, manufacturing and sales of motive power systems and energy storage systems as one-stop solutions
- Fully automatic production lines, a full range of test equipment and an advanced MES
- Covering Complete Power Solutions for Off-Road Vehicles, Marine Power System, Jobsite ESS, Vehicle-Mounted ESS, and Electric Retrofit Solutions
- Self-development of power electronics technologies, including PCS, BMS, and EMS, as well as motor and controller motion control algorithms



**750+** Employees  
**200+** R&D People  
**105,000 m<sup>2</sup>** Headquarters Floor Area  
**2,500 m<sup>2</sup>** Testing Center  
**364** Patents

### Quality Control Certificates:

- ✓ Environmental Management System: ISO 14001:2015
- ✓ Occupational Health and Safety Management System: ISO 45001:2018
- ✓ Quality Management System: ISO 9001:2015, IATF16949:2016
- ✓ Information Security Management System: ISO/IEC 27001:2022
- ✓ Social Accountability Management System: SA8000:2014
- ✓ Hazardous Substance Process Management: IECQ QC 080000



### Product Certifications:

UL 1973, UL 9540A, UL 9540, UL 2580, UL 2271, UL 1741  
 IEEE 1547  
 IEC 62619  
 EN 62477, EN 62040, (EU) 2023/1542, EN 62109-1, EN 62109-2

UL, EMC, FCC, IEC/EN 61000-6, BS EN IEC 61000-6  
 IEC 60730, ISO 13849-1  
 UN 38.3  
 RoHS Directive 2011/65/EU & (EU) 2015/863

Function Safety, Transport, RoHS

### R&D and Manufacturing Highlights

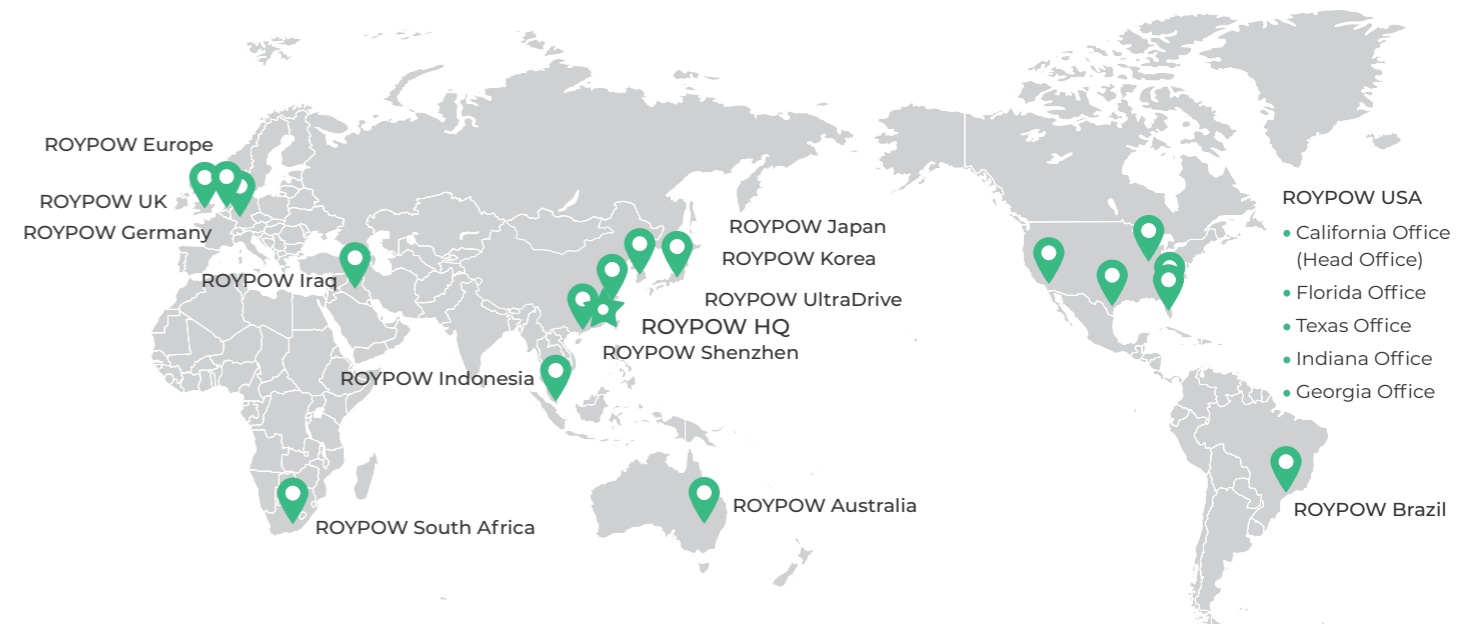
As a result of these investments, ROYPOW is capable of "end-to-end" integrated delivery, making our products out-perform the industry norms.

- Fully Automatic Production Lines
- BMS, PCS, EMS All Designed in House
- All-round Testing
- Advanced MES System

### Global Sales and Service Network

- Timely Delivery
- Hassle-free After-sales Service
- Fast Response Technical Support

ROYPOW has comprehensively unfolded its overseas market layout to ensure the localization of R&D, manufacturing, marketing and service, becoming one of your most reliable and valuable partners.



### Upgrading to New Technology, with Our Turnkey Solutions.

With years of dedication to new energy solutions, we are proud to offer customers professional solutions for:

- Complete Power Solutions for Off-Road Vehicles
- Marine Power System
- Jobsite ESS
- Vehicle-Mounted ESS
- Electric Retrofit Solutions
- Residential and C&I ESS



Retrofit Your Fleet to Lithium-ion Batteries.

# New Technology. Create Great Value for Your Business

Converting from lead-acid to lithium-ion is easy and cost-effective and increases the productivity of the fleets and the operator.



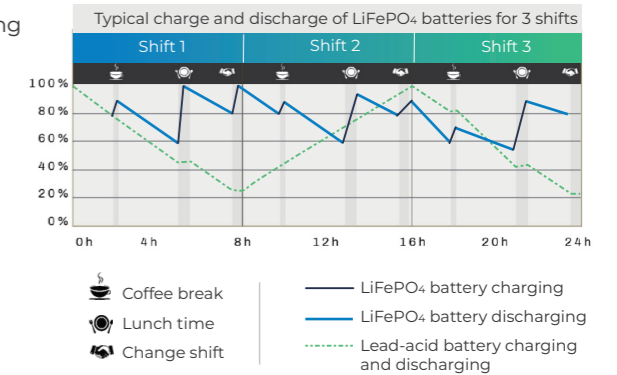
## Benefits of Lithium-ion Batteries

Lead-acid	LiFePO <sub>4</sub> battery	
 3 years design life	 <b>Longer life</b> up to 10 years design life 3 to 4 times lead-acid lifespan	<ul style="list-style-type: none"> <li>✓ Reduces overall battery investment</li> <li>✓ Eco-friendly</li> <li>✓ Minimize the need for spares</li> </ul>
 Frequent maintenance	 <b>0 maintenance</b> no need for regular filling of distilled water and electrolyte No maintenance	<ul style="list-style-type: none"> <li>✓ No regular filling of distilled water</li> <li>✓ Saving costs on labor and maintenance</li> <li>✓ Less unplanned downtime and improved productivity</li> <li>✓ No frequent battery replacements</li> </ul>
 1-2 years warranty	 <b>Extended warranty</b> 5 years warranty bring you peace of mind	<ul style="list-style-type: none"> <li>✓ Durable and reliable</li> <li>✓ Reduces maintenance and labor costs</li> <li>✓ Quality guarantee</li> </ul>

## Reduce Downtime, Increase Equipment Availability

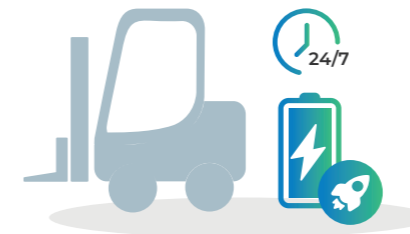
In day-to-day operations, the battery can be charged even during short breaks, such as taking a rest or changing shifts, effectively increasing productivity.

- ✓ Reduces the need for a full charge every time.
- ✓ Eliminates the need for frequent time-consuming battery swaps.
- ✓ Eliminates the risk of battery-changing accidents.
- ✓ Opportunity charge during breaks, lunch and at shift changes. Charge anytime equipment is not in use.



## Rapid Charging

Whether you have a single-shift or a large fleet working 24/7, fast charge is one of the most important advantages.



TIPS

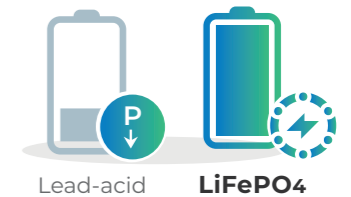
### Why choose LiFePO<sub>4</sub> batteries for Forklifts?

There are a few lithium-ion chemistries to choose from. ROYPOW uses LFP or Lithium Iron Phosphate, one of the most thermally stable and safe lithium-ion chemistries for Forklifts.

LFP offers longer life, is more energy-dense, more stable, is more compact, and weighs less than lead-acid. Our battery packs are sealed units requiring no daily or weekly watering and no maintenance. LFP is ideal for batteries used in Forklifts.

## Consistent Power

Lithium-ion batteries deliver consistently high performance, which maintains greater productivity even toward the end of a shift.



## Eliminate the Need for a Dedicated Charging Area and Frequent Battery Swaps

- ✓ Minimize the need to buy, store and maintain spares.
- ✓ Eliminate the cost and storage space required for additional lead-acid batteries.
- ✓ No gassing, no ventilation system needed when charging. No hazardous acid spills.



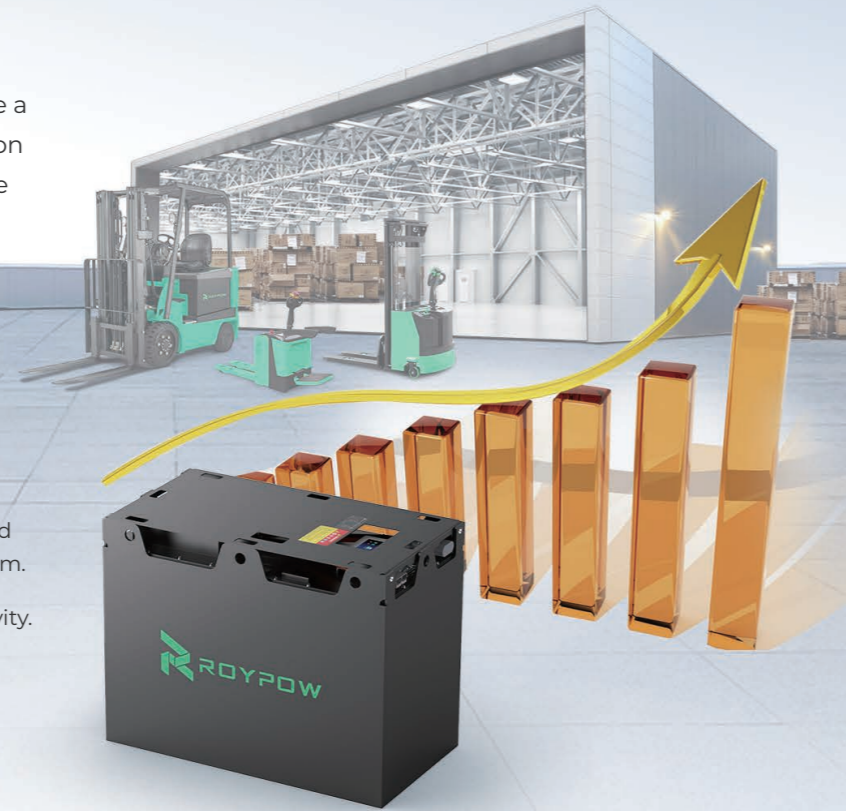
# Small Investment, Big Return



Converting your battery to lithium-ion may require a higher initial investment, but its ongoing savings on energy, equipment, labour and downtime can give you a more cost-effective bill in opposite.

## The LiFePO<sub>4</sub> batteries can offer you...

- ✓ Longer life reduces overall battery investment.
- ✓ No maintenance saves labor and maintenance costs.
- ✓ No gas or acid spills, avoids the space, equipment and running costs of a battery room and ventilation system.
- ✓ Energy saving and less downtime, improve productivity.



## 5-year Cost Comparison to Increase Your Overall Return on Investments.

Save Up to **70%** Expenses in 5 Years

Below is the 5-year expenditure table comparing ROYPOW LiFePO<sub>4</sub> batteries with lead-acid batteries.

Purchases over 5 Years	Lead-acid Battery	LiFePO <sub>4</sub> Battery
Battery cost	5 stacks of coins	1 stack of coins
Maintenance	5 stacks of coins	/
Electricity waste	5 stacks of coins	/
Installation	5 stacks of coins	1 stack of coins
Shipping	5 stacks of coins	1 stack of coins

Remark: Actual costs may vary according to local conditions.

# ROYPOW Batteries with Smart & Integrated Systems

Provide exceptional performance to get the job done and improve your productivity, which means fewer hours of unplanned downtime and more productive hours on your work.

0 Maintenance  
Up to **3,500+** Cycle Life

5 yr Warranty  
Up to **10 yr** Design Life



## Durable

ROYPOW batteries have an IP65 ingress rating. They will provide fast lifting and travel speeds at all levels of discharge, under all-weather working conditions.



## 4G Modules (for Forklift Batteries)

4G modules are for remote monitoring of the battery SOC, temperature, as well as diagnosis and remote software upgrades. Solve software problems in real time.

## Built-in Protection

Intelligent BMS is for automatic cell balancing and advanced battery management. The LiFePO<sub>4</sub> batteries have greater thermal and chemical stability.

# Automotive-grade Battery Manufacturing

To build a world-renowned lithium-ion battery brand and provide better solutions for you.

## An Unmatched Power with High Compatibility for Multi-shift Applications.

Powerful and reliable, our batteries boost efficiency in material handling. Suitable for applications like logistics, manufacturing, daily goods transporting, etc.



ROYPOW delivers solutions for every brand and size of vehicle, they are generally applied in these famous forklift brands:



Aisle Master	Columbia	Heli	Komatsu	Nissan	TCM
AutoGuide	Combilift	Hoist	Linde	Pack Mule	Toyota
Baoli	Crown	Hubtex	Manitou	Raymond	UniCarriers
Bendi/Landoll	Doosan (Daewoo)	Hyster	Mariotti	Rico	Utivel
Big Joe	Drexel	Hyundai	Mitsubishi	Schreck	White
Blue Giant	Elwell-Parker	Jungheinrich	Motrec	Steinbock	World
Caterpillar	Flexi	Kalmar	Multiton	Taylor-Dunn	Yale
Clark	HC Forklift				

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# Which LiFePO<sub>4</sub> Battery is Suitable for Your Forklifts

We make 6 different voltages to cover all classes of equipment.



For Class **1** Forklifts

**36 V, 48 V, 72 V,  
80 V, 90 V Battery Systems**

For Counterbalance Forklifts

For Class **2** Forklifts

**36 V Battery System**

For Order Pickers, Reach Trucks



For Class **3** Forklifts

**24 V Battery System**

For Pallet Jacks, Stackers, Tugs

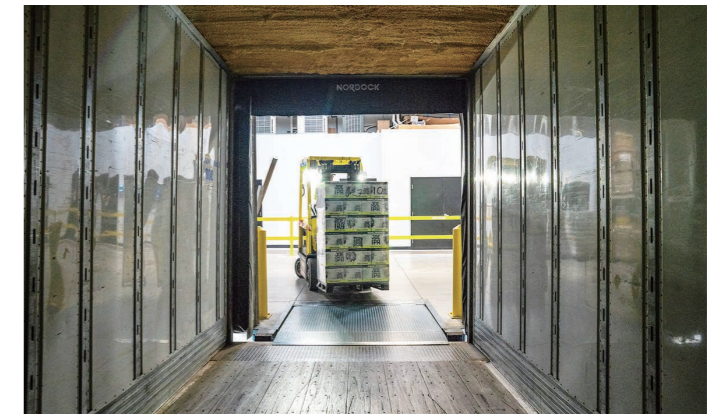


**One Stop**  
for All of Your Battery Needs!

# LiFePO<sub>4</sub> Batteries for Forklifts

Lithium drop-in replacements for lead-acid batteries.

- ✓ Retrofit your fleet to lithium-ion batteries and keep your equipment running all day long!
- ✓ Power your equipment up to 3 shifts a day!



## An Ideal Lithium-ion Solution

### Efficient

- ✓ High, consistent performance without the voltage drop at the end of the cycle.
- ✓ Reduce unplanned downtime with fast, efficient, opportunity charging.
- ✓ 10 years design life - a worthwhile upgrade.

### Green and Stable

- ✓ No acid spills, no noxious gas emissions.
- ✓ More thermal & chemical stability.
- ✓ Good for you and the planet.

### Flexible and Worry-free

- ✓ Zero maintenance, no need for water top-ups or electrolyte checks.
- ✓ No battery swapping, reduce related accidents and resulting employee injuries.
- ✓ No need for specific charging room.

Save Up to  
**70%**  
Expenses in 5 Years

# Why ROYPOW LiFePO<sub>4</sub> Batteries

**5 Year Warranty**  
5 year warranty brings you hassle-free experience.

**Steady Output**  
LiFePO<sub>4</sub> batteries keep a steady power output, which will not dramatically drop like lead-acid batteries.

**Fire Safety**  
Efficient and eco-friendly, the built-in hot aerosol fire extinguisher can quickly help with the fire fighting and reduce fire hazards for peace of mind.

**Heating Function (Optional)**  
The optional heating function can warm up the battery for optimal charging even at a low temperature of -20°C.

**4G Module**  
For product position tracking, battery health monitoring, and life cycle management.

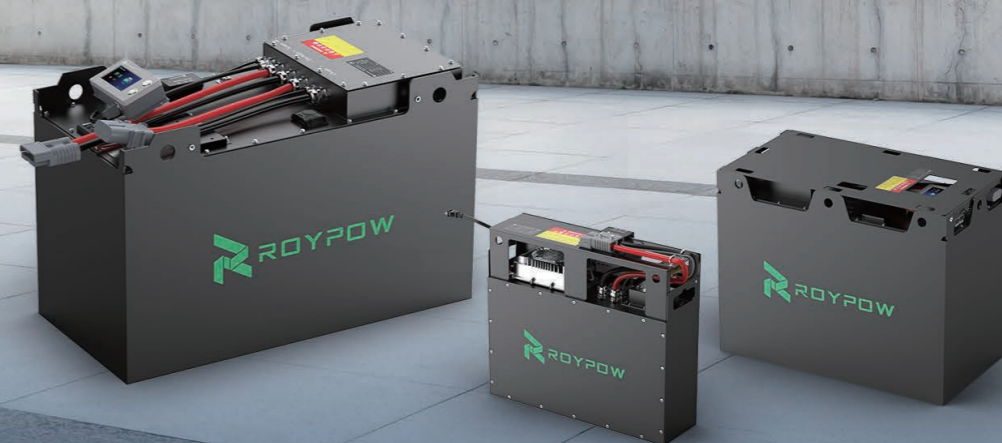
**3,500+ Cycle Life**  
ROYPOW LiFePO<sub>4</sub> batteries last so long that they outperform traditional batteries.

**SoC Meter**  
Display the battery's state of charge, status and malfunctioning information in real time.

**Anti-walking Function**  
It can prevent your equipment from a sudden start or moving during charging.

**Built-in Battery Management System (BMS)**  
The smart and reliable BMS can ensure a better performance, and deliver longer battery run time and lifespan.

**IP65 Protection**  
Rated at IP65 protection grade, ROYPOW batteries are waterproof and dust-proof to maintain stable performance under all-weather working conditions.



# Specifications

Technical Specifications										Charge/Discharge Current			General			
Model	Nominal Voltage	Nominal Capacity	Nominal Energy	Cycle Life	Dimensions (L*W*H)	Weight lbs. (kg)	Charge Current	Continuous Discharge	Maximum Discharge	Casing Material	IP Rating	Certification				
<b>24 V System</b>																
F24100	25.6 V	100Ah	2.56 kWh	>3,500 times	25 x 7.09 x 21.2 inch (635 x 180 x 538.5 mm)	110.23 lbs (50 kg)	50 A	100 A	300 A (30 S)	Steel	IP65	/				
F24100M		100Ah	2.56 kWh		25 x 7.09 x 21.2 inch (635 x 180 x 538.5 mm)	110.23 lbs (50 kg)	30 A	100 A	300 A (30 S)			UL				
F24130		130Ah	3.33 kWh		24.57 x 7.24 x 24.69 inch (624 x 184 x 627 mm)	396.83 lbs (180 kg)	65 A	130A	390 A (30 S)			/				
F24150		150Ah	3.84 kWh		25 x 7.09 x 21.2 inch (635 x 180 x 538.5 mm)	132.28 lbs (60 kg)	75 A	150 A	450 A (30 S)			/				
F24150L		150Ah	3.84 kWh		25 x 7.09 x 21.2 inch (635 x 180 x 538.5 mm)	132.28 lbs (60 kg)	30 A	150 A	450 A (30 S)			UL				
F24200		200 Ah	5.12 kWh		28.35 x 8.27 x 24.80 inch (720 x 210 x 630 mm)	507.06 lbs (230 kg)	100 A	160 A	480A (30 S)			/				
F24230		210 Ah	5.38 kWh		24.57 x 11.18 x 24.69 inch (624 x 284 x 627 mm)	220.46 lbs (100 kg)	115 A	175 A	500 A (30 S)			/				
F24280		280 Ah	7.17 kWh		24.57 x 8.27 x 24.69 inch (624 x 210 x 627 mm)	242.51 lbs (110 kg)	140 A	175 A	500 A (30 S)			/				
F24314		320 Ah	8.19 kWh		25.59 x 13.78 x 18.50 inch (650 x 350 x 470 mm)	286.60 lbs (130 kg)	150 A	157 A	480 A (30 S)			/				
F24400		400 Ah	10.24 kWh		28.35 x 8.27 x 24.80 inch (720 x 210 x 630 mm)	551.16 lbs (260 kg)	200 A	400 A	500 A (30 S)			/				
F24460		460 Ah	11.78 kWh		30.59 x 12.80 x 22.48 inch (777 x 325 x 571 mm)	599.66 lbs (272 kg)	230 A	460 A	500 A (30 S)			/				
F24560		560 Ah	14.34 kWh		30.71 x 16.73 x 18.50 inch (780 x 425 x 470 mm)	848.78 lbs (385 kg)	200 A	320 A	500 A (30 S)			/				
F24560L		560 Ah	14.34 kWh		30.67 x 12.8 x 22.48 inch (779 x 325 x 571 mm)	848.78 lbs (385 kg)	100 A	320 A	500 A (30 S)			UL				
F24690		690 Ah	17.66 kWh		35.83 x 12.6 x 31.89 inch (910 x 320 x 810 mm)	1860.7 lbs (844 kg)	200 A	350 A	800 A (30 S)			/				
F24840		840 Ah	21.5 kWh		38.80 x 14.25 x 31 inch (985.5x 361.9 x 787.4 mm)	1567.49 lbs (711 kg)	300 A	350 A	800 A (30 S)			/				
<b>36 V System</b>																
F36460	38.4 V	460 Ah	17.66 kWh	>3,500 times	29.53 x 16.73 x 22.44 inch (750 x 425 x 570 mm)	617.29 lbs (280 kg)	200 A	350 A	500 A (30 S)	Steel	IP65	/				
F36560		560 Ah	21.5 kWh		32.87 x 16.73 x 22.44 inch (835 x 425 x 570 mm)	551.16 lbs (250 kg)	200 A	350 A	500 A (30 S)			/				
F36628		628 Ah	24.11 kWh		30.71 x 16.73 x 22.44 inch (780 x 425 x 570 mm)	617.29 lbs (280 kg)	200 A	350 A	800 A (30 S)			/				
F36628		628 Ah	24.11 kWh		31.50 x 24.61 x 16.54 inch (800 x 625 x 420 mm)	551.16 lbs (250 kg)	200 A	350 A	800 A (30 S)			/				
F36690AJ		690 Ah	26.50 kWh		35.43 x 16.73 x 22.44 inch (900 x 425 x 570 mm)	683.43 lbs (310 kg)	200 A	350 A	600 A (30 S)			UL				
F36690BC		690 Ah	26.50 kWh		38.19 x 20.39 x 29.49 inch (970 x 518 x 749 mm)	2705.07 lbs (1227 kg)	200 A	350 A	600 A (30 S)			UL				
F36840		840 Ah	32.26 kWh		34.65 x 29.92 x 18.11 inch (880 x 760 x 460 mm)	718.71 lbs (326 kg)	200 A	350 A	800 A (30 S)			/				
F36840		840 Ah	32.26 kWh		33.46 x 24.02 x 22.44 inch (850 x 610 x 570 mm)	749.57 lbs (340 kg)	200 A	350 A	800 A (30 S)			/				
F36840		840 Ah	32.26 kWh		33.46 x 16.93 x 28.35 inch (850 x 430 x 720 mm)	870.83 lbs(395 kg)	200 A	350 A	800 A (30 S)			/				
F36840		840 Ah	32.26 kWh		35.43 x 31.50 x 18.50 (900 x 800 x 470 mm)	683.43 lbs (310 kg)	200 A	350 A	800 A (30 S)			/				
<b>48 V System</b>																
F48230		51.2 V	230 Ah		11.78 kWh	>3,500 times	37.99 x 11.81 x 21.65 inch (965 x 300 x 550 mm)	815.71 lbs (370 kg)	165 A			160 A	480 A (30 S)	Steel	IP65	/
F48280			280 Ah		14.34 kWh		30.71 x 16.73 x 18.50 inch (780 x 425 x 470 mm)	396.83 lbs (180 kg)	140 A			160 A	480 A (30 S)			/
F48314			314 Ah		16.07 kWh		27.56 x 22.05 x 18.11 inch (700 x 560 x 460 mm)	507.06 lbs (230 kg)	157 A			175 A	500 A (30 S)			/
F48314			314 Ah		16.07 kWh		31.50 x 13.78 x 22.44 inch (800 x 350 x 570 mm)	617.29 lbs (280 kg)	157 A			175 A	500 A (30 S)			/
F48420AG	420 Ah		21.50 kWh	37.40 x 13.78 x 22.44 inch (950 x 350 x 570 mm)	661.39 lbs (300 kg)		200 A	350 A	600 A (30 S)	UL						
F48420CA	420 Ah		21.50 kWh	38.19 x 24.8 x 22.5 inch (970 x 630 x 571.5 mm)	661.39 lbs (300 kg)		200 A	350 A	600 A (30 S)	UL						
F48460	460 Ah		23.55 kWh	32.28 x 25.59 x 18.50 inch (820 x 650 x 470 mm)	639.34 lbs (290 kg)		200 A	320 A	500 A (30 S)	/						
F48460	460 Ah		23.55 kWh	31.50 x 16.73 x 22.44 inch (800 x 425 x 570 mm)	650.36 lbs (295 kg)		200 A	320 A	500 A (30 S)	/						
F48560	560 Ah		28.67 kWh	32.28 x 30.71 x 18.11 inch (820 x 780 x 460 mm)	683.43 lbs (310 kg)		200 A	350 A	800 A (30 S)	/						
F48560	560 Ah		28.67 kWh	35.43 x 31.89 x 13.78 inch (900 x 810 x 350 mm)	683.43 lbs (310 kg)		200 A	350 A	800 A (30 S)	/						
F48560X	560 Ah		28.67 kWh	35.43 x 16.73 x 22.44 inch (900 x 425 x 570 mm)	771.62 lbs (350 kg)		200 A	350 A	600 A (30 S)	UL						

# Specifications

The battery size can be customized to meet customer requirements.

Technical Specifications										Charge/Discharge Current			General			
Model	Nominal Voltage	Nominal Capacity	Nominal Energy	Cycle Life	Dimensions (L*W*H)	Weight lbs. (kg)	Charge Current	Continuous Discharge	Maximum Discharge	Casing Material	IP Rating	Certification				
<b>48 V System</b>																
F48560BS	51.2 V	560 Ah	28.67 kWh	>3,500 times	38.19 x 32.72 x 22.5 inch (970 x 831 x 571.5 mm)	3199 lbs (1451 kg)	200 A	350 A	600 A (30 S)	Steel	IP65	UL				
F48690W		690 Ah	35.33 kWh		37.80 x 16.73 x 22.83 inch (960 x 425 x 580 mm)	837.76 lbs (380 kg)	200 A	350 A	600 A (30 S)			UL				
F48690BD		690 Ah	35.33 kWh		38.19 x 32.72 x 22.5 inch (970 x 831 x 571.5 mm)	3199 lbs (1451 kg)	200 A	350 A	600 A (30 S)			UL				
F48690		690 Ah	35.33 kWh		34.65 x 29.92 x 18.50 inch (880 x 760 x 470 mm)	749.57 lbs (340 kg)	200 A	350 A	800 A (30 S)			/				
F48840		840 Ah	43 kWh		34.84 x 32.68 x 22.4 inch (885 x 830 x 570 mm)	529.11 lbs (240 kg)	400 A	320 A	800 A (30 S)			/				
F48840		840 Ah	43 kWh		32.28 x 24.8 x 22.44 inch (820 x 630 x 570 mm)	1135.38 lbs (515 kg)	400 A	320 A	800 A (30 S)			/				
F481120		1120 Ah	57.34 kWh		39.37 x 31.50 x 22.24 inch (1000 x 800 x 565 mm)	1256.64 lbs (570 kg)	300 A	320 A	800 A (30 S)			/				
<b>72 V System</b>																
F72460	73.6 V	460 Ah	33.86 kWh	>3,500 times	27.56 x 16.73 x 22.44 inch (700 x 425 x 570 mm)	925.94 lbs (420 kg)	200 A	320 A	500 A (30 S)	Steel	IP65	/				
F72460		460 Ah	33.86 kWh		25.59 x 24.80 x 18.50 inch (650 x 630 x 470 mm)	947.99 lbs (430 kg)	200 A	320 A	500 A (30 S)			/				
F72560		560 Ah	41.22 kWh		29.92 x 16.73 x 22.44 inch (760 x 425 x 570 mm)	1102.31 lbs (500 kg)	200 A	320 A	800 A (30 S)			/				
F72560		560 Ah	41.22 kWh		30.71 x 24.80 x 18.50 inch (780 x 630 x 470 mm)	1124.36 lbs (510 kg)	200 A	320 A	800 A (30 S)			/				
F72690		690 Ah	50.78 kWh		32.68 x 24.80 x 18.50 inch (830 x 630 x 470 mm)	1124.36 lbs (510 kg)	300 A	350 A	800 A (30 S)			/				
<b>80 V System</b>																
F80280	80 V	280 Ah	22.4 kWh	>3,500 times	35.43 x 16.73 x 22.44 inch (900 x 425 x 570 mm)	661.39 lbs (300 kg)	100 A	160 A	480 A (30 S)	Steel	IP65	/				
F80400		400 Ah	32.0 kWh		35.43 x 22.05 x 22.44 inch (900 x 560 x 570 mm)	925.94 lbs (420 kg)	200 A	320 A	500 A (30 S)			/				
F80460		460 Ah	36.8 kWh		32.28 x 24.61 x 22.83 inch (820 x 625 x 580 mm)	881.85 lbs (400 kg)	200 A	320 A	500 A (30 S)			/				
F80560		560 Ah	44.8 kWh		32.28 x 27.17 x 22.44 inch (820 x 690 x 570 mm)	1058.22 lbs (480 kg)	200 A	350 A	800 A (30 S)			/				
F80560		560 Ah	44.8 kWh		31.89 x 28.74 x 22.44 inch (810 x 730 x 570 mm)	1080.27 lbs (490 kg)	200 A	350 A	800 A (30 S)			/				
F80628		628Ah	50.24 kWh		35.43 x 31.89 x 22.44 inch (900 x 810 x 570 mm)	1102.31 lbs (500 kg)	200 A	350 A	800 A (30 S)			/				
F80690		690 Ah	55.2 kWh		38.58 x 31.89 x 22.44 inch (980 x 810 x 570 mm)	1025.15 lbs (465 kg)	200 A	350 A	800 A (30 S)			/				
F80690D		690 Ah	55.2 kWh		31.89 x 30.71 x 22.44 inch (810 x 780 x 570 mm)	1201.52 lbs (545 kg)	300 A	350 A	600 A (30 S)			UL				
F80690K		690 Ah	55.2 kWh		39.72 x 32.76 x 29.49 inch (1009 x 832 x 749 mm)	2705.07 lbs (1227 kg)	280 A	350 A	600 A (30 S)			UL				
F80840		840 Ah	67.2 kWh		39.37 x 32.28 x 22.44 inch (1000 x 820 x 570 mm)	1444.03 lbs (655 kg)	200 A	320 A	1000 A (30 S)			/				
F80942		942 Ah	75.36 kWh		40.47 x 39.33 x 30.87 inch (1028 x 999 x 784 mm)	4801.67 lbs (2178 kg)	300 A	320 A	1000 A (30 S)			/				
F801120		1120 Ah	89.6 kWh		48.62 x 40.71 x 34.45 inch (1235 x 1034 x 875 mm)	6503.64 lbs (2950 kg)	400 A	320 A	1000 A (30 S)			/				
<b>90 V System</b>																
F90460		89.6 V	460 Ah		41.22 kWh	>3,500 times	40.47 x 27.87 x 24.88 inch (1028 x 708 x 632 mm)	2667.59 lbs (1210 kg)	200 A			320 A	800 A (30 S)	Steel	IP65	/
F90560			560 Ah		50.18 kWh		40.47 x 33.66 x 30.87 inch (1028 x 855 x 784 mm)	4107.21 lbs (1863 kg)	300 A			320 A	1000 A (30 S)			/
F90560	560 Ah		50.18 kWh	40.47 x 38.98 x 30.87 inch (1028 x 990 x 784 mm)	4801.67 lbs (2178 kg)		200 A	320 A	1000 A (30 S)	/						
F90690	690 Ah		61.82 kWh	40.47 x 39.33 x 30.86 inch (1028 x 999 x 784 mm)	4801.67 lbs (2178 kg)		400 A	320 A	1000 A (30 S)	/						
F90840	840 Ah		75.26 kWh	40.47 x 39.33 x 30.86 inch (1028 x 999 x 784 mm)	4801.67 lbs (2178 kg)		400 A	640 A	1000 A (30 S)	/						
F901120	1120 Ah		100.35 kWh	50.55 x 40.71 x 30.86 inch (1284 x 1034 x 784 mm)	6139.87 lbs (2785 kg)		400 A	640 A	1000 A (30 S)	/						
<b>96 V System</b>																
F96840	96 V	840 Ah	80.64 kWh	>3,500 times	47.83 x 38.39 x 30.91 inch (1215 x 975 x 785 mm)	7054.79 lbs (3200 kg)	400 A	350 A	1000 A (30 S)	Steel	IP65	/				
F96942		942 Ah	90.43 kWh		47.83 x 38.39 x 30.91 inch (1215 x 975 x 785 mm)	7054.79 lbs (3200 kg)	400 A	350 A	1000 A (30 S)			/				
F961120		1120 Ah	107.52 kWh		55.91 x 24.21 x 30.91 inch (1420 x 615 x 785 mm A/B BOX)	9038.95 lbs (4100 kg)	400 A	350 A	1000 A (30 S)			/				
F961120		1120 Ah	107.52 kWh		47.83 x 28.15 x 30.51 inch (1215 x 715 x 775 mm A/B BOX)	8950.77 lbs (4060 kg)	400 A	350 A	1000 A (30 S)			/				
<b>Working Temperature Range</b>		<b>Charge</b>		<b>Discharge</b>		<b>Storage (1 month)</b>		<b>Storage (1 year)</b>								
		-4°F~131°F (-20°C ~ 55°C)		-4°F~131°F (-20°C ~ 55°C)		-4°F~131°F (-20°C ~ 55°C)		32°F~95°F (0°C~35°C)								

Note: All data are based on ROYPOW standard test procedures, actual performance may vary according to local conditions.



-40°C ~ -20°C

# IP67 Anti-Freeze Lithium Battery for Forklifts

Power through the breeze.  
Unstoppable energy for your forklift in the cold.



- Less Capacity Loss
- Uncompromising Charging Efficiency
- Eco-friendliness



### IP67 Ingress Protection

External waterproof cable glands with seal rings for superior water tightness



### On-Board Thermal Insulation

Covered with quality thermal insulation design to avoid capacity loss

### Anti-Condensation Design

Effective water absorption designs keep the inside battery box dry



### Pre-Heating Function

Warm the battery for optimal charging even at a low temperature

### Intelligent BMS

Designed for peak efficiency, intelligent management and safe protections



### Opportunity Charging and Fast Charging

Can recharge in a short break to deal with multi-shift operations

### Lasts Longer

Have up to 10 years of lifespan. Withstand up to 3,500 cycles



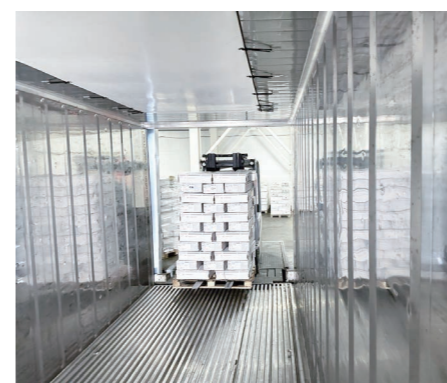
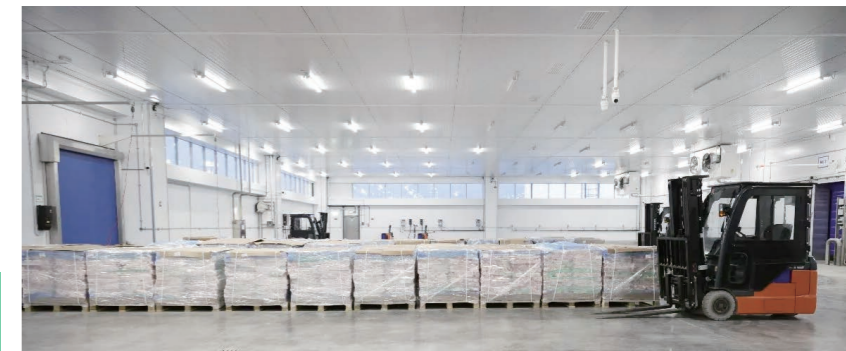
### Zero Maintenance

No need for water top-ups or electrolyte checks. No frequent battery swaps.

## Applications

Many products require constant refrigeration. Medicines, Food, Meat, Fruits, Vegetables, Dairy, and beverages require cold transportation as well as cold storage. For material handling in such cold storage warehouses,

ROYPOW cold storage lithium-ion battery solution is the best choice.



## Cold Storage Battery System Specification:

Rated Voltages:  
24 V, 36 V, 48 V, 72 V, 80 V, 96 V

Discharging temperature range:  
-20°C to +55°C

Available battery system energy content:  
2.56 kWh-116 kWh

Cold storage temperature range:  
-40°C to +55°C

## Charger Specification:

Rated Voltages:  
24 V, 36 V, 48 V, 72 V, 80 V, 96 V

Working temperature range:  
-20°C to +50°C

Input:  
220V AC single phase or 400V AC three phase

Working humidity:  
0%-95%RH

Available charging current:  
50A to 400A



# Explosion-Proof LiFePO<sub>4</sub> Batteries for Forklifts

Safety Without Compromise  
in Explosive Environments



**Internal Explosion-Proof Safety**  
The rugged, sealed design of the battery and electrical compartments ensures reliable protection against internal fire or explosion.

**Reinforced External Protection**  
Explosion-proof cover and casing feature high strength to effectively prevent strong impact, providing extra protection.

**Long Lifespan**  
Lasts long with 10 years of design life and over 3,500 times of cycle life.

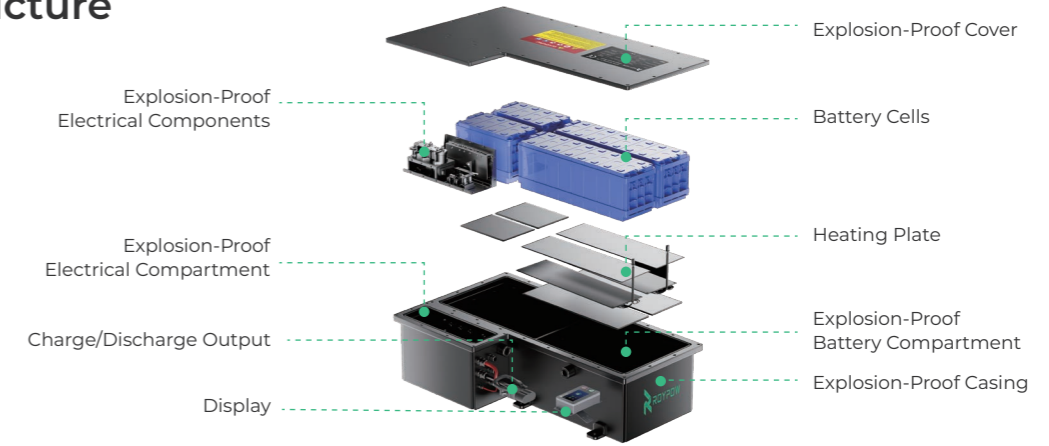
**Intelligent BMS**  
Designed for peak efficiency, intelligent battery status management, and safe operations.

**Fast Charging**  
Can be charged fully within 1 to 2 hours, enhancing material handling operation efficiency and productivity.

**Zero Maintenance**  
No watering, frequent maintenance, or swapping. Save maintenance costs.



## Structure



## Applications

Highly hazardous explosive gases, vapors, and dust often form during the production, storage, and transport of flammable substances across industries such as chemicals, pharmaceuticals, paper, food, and logistics. To maximize safety and minimize accident risks in hazardous zones during material handling,

ROYPOW offers batteries engineered to high safety and performance standards, guaranteeing comprehensive explosion protection.



## Explosion-Proof Battery Specifications:

Rated Voltages:  
25.6V, 38.4V, 51.2V, 76.8V, 80V, 96V, Max. 800V

Discharging Temperature Range:  
-20°C to +40°C / -4°F to 104°F

Available Battery System Capacity:  
105Ah, 210Ah, 280Ah, 315Ah, 420Ah, 560Ah, 840Ah

## Charger Specification:

Rated Voltages:  
25.6V, 38.4V, 51.2V, 76.8V, 80V, 96V, Max. 800V

Available Charging Current:  
50A to 400A

Input:  
220V AC Single Phase or 400V AC Three Phase

Working Temperature Range:  
-20°C to +50°C / -4°F to 122°F

Working Humidity:  
0% ~ 95%RH

NOTE: Charger need to be placed outside storage warehouse.

All data are based on ROYPOW standard test procedures. Actual performance may vary according to local conditions

# Air-Cooled LiFePO<sub>4</sub> Forklift Batteries

≈ **5°C** Lower than Standard Batteries

Engineered for optimized performance and extended runtime in light-duty material handling applications with frequent start-stop operations.



## Features

Intelligent Forced Air Cooling

Grade A LFP Cell

Built-in Fire Extinguishing System

10 Years of Design Life

Intelligent BMS

Smart 4G Module

Automotive-Grade Manufacturing Quality

>3,500 Times of Cycle Life

## Applications



High-temperature regions



Cargo handling yards



Chemical industry workplaces



Cold storage warehouses



Steel mills



Coal plants

## Battery Discharge Temperature Testing

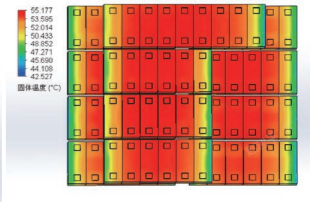
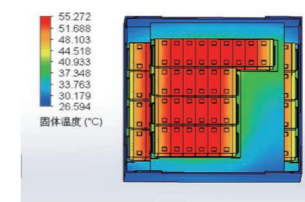
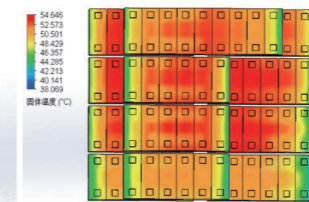
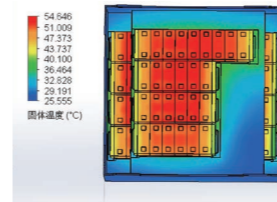
Testing condition: Discharge at 1C under 25°C ambient temperature.

ROYPOW Forced Air Cooling Solution

5°C Lower

VS

Natural Cooling Solution



Testing result: After one hour of discharge, the ROYPOW forklift battery with forced air cooling maintains a temperature **~5°C lower** than the standard battery with natural cooling.

## Specifications

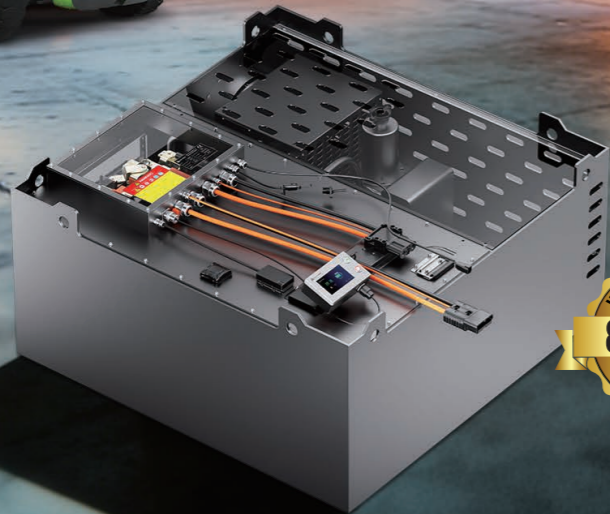
Item	F48560DZ	F80690AK	F80690AN	F80840K
Rated Voltage (V)	51.2	80	80	80
Voltage Range (V)	41.6-58.4	65-91.25	65-91.25	65-91.25
Rated Capacity (Ah)	560	690	690	840
Rated Energy (kWh)	28.67	55.2	55.2	67.2
Cycle Life (Times)	>3,500			
Continuous Charge / Discharge Current (A)	200 / 350	200 / 450	200 / 400	300 / 450
Peak Discharge Current (A)	420	540	480	540
Dimension (L x W x H, mm / inch)	1025 x 565 x 664 (40.35 x 25.82 x 26.14)	1020 x 980 x 760 (40.1 x 38.58 x 29.92)	1025 x 680 x 780 (40.35 x 26.77 x 30.71)	1025 x 999 x 770 (40.47 x 39.33 x 30.31)
Weight (kg / lbs)	960 / 2116	2070 / 4563	1420 / 2739	2100 / 4630
Counter Weight (kg / lbs)	732 / 1613	1731 / 3816	1110 / 2035	1335 / 2944
Ingress Rating	IP54			
Discharge Plug	Anderson SB350 Blue	REMA 320A Female	REMA 320A Female	REMA 320A Female
Charge Plug	REMA 320A Male	REMA 320A Male	REMA 320A Male	REMA 320A Male

Note: 1. Forklift battery solutions can be customized according to customer needs.

2. All data are based on ROYPOW standard test procedures, actual performance may vary according to local conditions.

# Liquid-Cooled LiFePO<sub>4</sub> Forklift Batteries

Longer Runtime | Higher Uptime | Lower Operating Costs



## Applications



Warehouses & Logistics



Manufacturing



Cold Chain



Ports & Terminals



Mining

## Liquid Cooling

Stable coolant temperature rise under both 0.5C and 1C discharge demonstrates effective thermal management, keeping cells within the optimal operating range.

Temperature/°C  
20 20.84 21.6 22.4 23.2

0.5 C

Outlet

Inlet

Temperature/°F  
68 69.4 70.8 72.3 73.7

Temperature/°C  
20 21.4 22.8 24.2 25.6

1.0 C

Outlet

Inlet

Temperature/°F  
68 70.5 73.0 75.5 78.0

- Efficient** Liquid Cooling
- Grade A** LFP Cell
- 3,500** Times of Cycle Life
- 30~60°C (-22~140°F)** Wide Operating Temperature Range
- Intelligent** BMS
- IP67** Ingress Rating



### More Consistent Power Under Heavy Loads

The liquid cooling system maintains cell temperature between 25°C (77°F) and 35°C (95°F) during heavy-load operation, ensuring stable power output throughout intensive, multi-shift forklift use.



### Extended Battery Life for Lower Lifetime Costs

By maintaining consistent thermal balance across all cells, the liquid-cooled design slows degradation and extends battery service life, reducing replacement and maintenance costs.



### Engineered for Enhanced Safety & Reliability

Rugged, vibration-resistant design with multi-level protection maintains reliable operation and reduces downtime in demanding material handling conditions.



### Optimized Performance in Low-Temperature Environments

Built-in thermal insulation design effectively prevents heat loss and maximizes usable energy even at temperatures down to -30°C (-22°F), ensuring reliable operation and sustained performance in cold environments.

## Technical Specifications

*Voltages and capacities are customized to meet specific needs.*

Rated Voltages:  
**48V, 72V, 80V, 90V, 96V, 114V**

Rated Cooling Power:  
**2kW**

Operating Voltage Range:  
**40~135V**

Optimal Battery Operating Temperature:  
**20°C~35°C (68°F~95°F)**

Battery Energy:  
**23~143kWh**

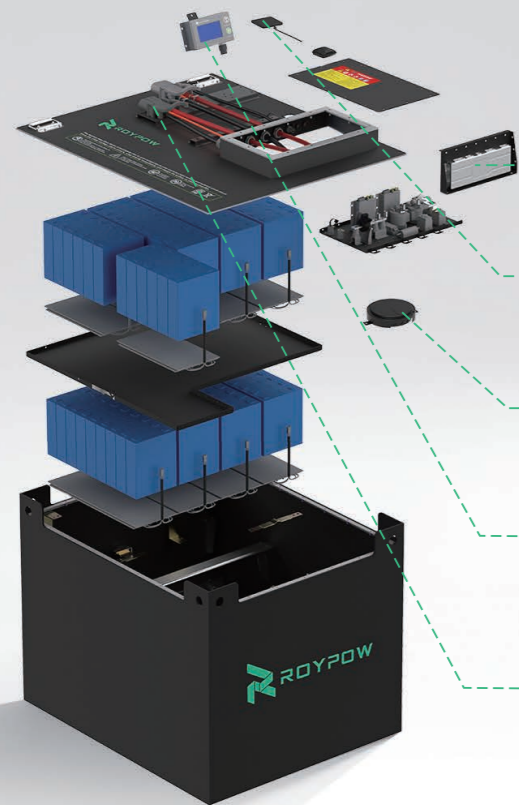
Water Pump Rated Head / Flow:  
**8 m / 30 L/min**

Liquid Inlet/Outlet Temperature:  
**20°C (68°F) / 21~24°C (69.8~75.2°F)**

All data are based on ROYPOW standard test procedures, actual performance may vary according to local conditions.

# More about ROYPOW Lithium-ion Batteries

Quality and safety always come first. Except those benefits, we also have intelligent design from our professional R&D team.



## Intelligent Design

- **Built-in BMS**  
For cell balancing and advanced battery management.
- **4G module included**  
For software upgrading, remote monitoring and diagnosing.
- **Fire Extinguishing System**  
For enhanced battery safety
- **Control panel included**  
Showing all critical battery functions in real-time, voltage, current, and remaining charging time and fault alarm.
- **REMA plug**  
Separate high current charging plug with integrated blocking system for unintended startup and transferring the signal.



## Aerosol Fire Extinguishing System

When the temperature reaches 177.8°C/352.04°F, the electric start signal or heat-sensitive line triggers the aerosol generator, releasing heat through a redox reaction. This decomposes the chemical coolant, enabling joint fire extinguishing by both the aerosol and coolant.



- **Compact Size**
- **Rapid Extinguishing**
- **Maintenance-Free**
- **Non-Toxic, Non-Corrosive, and Ozone-Safe**

## Battery Management System (BMS)

The built-in BMS is equipped with automotive-grade components assuring safety, top quality and high energy density to provide a fully optimized solution for demanding industrial applications.

BMS software ensures the battery provides peak performance when in operation, delivers longer run time between charges, maximizes the total battery lifespan and to communicate well between the charger, battery and users.



The BMS can offer:

### All-time Cell Balancing and Battery Management.

Through the intelligent balancing strategy, balancing between individual cells can be realized. The BMS can keep the battery's consistency at all times when in operation, maximizing the battery efficiency and improving the battery's working life.

### Battery Real-time Monitoring and Communication Through CAN.

Monitoring cell voltage, electric current and battery temperature so that any movement outside the normal range disconnects the cell or the entire battery.

### Fault Alarm and Safety Protection.

When the battery is less than 10%, it will beep to prompt for charging in case of stopping somewhere far away from the charge station suddenly without notice. Over/under voltage, low/over temperature, over current or other faults will prompt to make the battery safe. Safety always comes first.

## 4G Module (for Forklift Batteries)

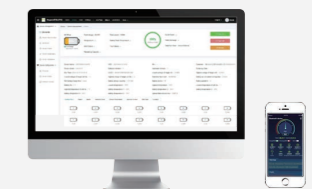


ROYPOW smart 4G module can realize remote monitoring in real time, even in different countries. If some faults occur, you can get an alarm in time. Once the faults can not be solved, you can get a remote diagnosis online from us to solve the problems as soon as possible.

With OTA (over the air), remote software upgrades can solve software problems in time, and GPS can lock the forklift automatically if necessary.

## Smart On-line Cloud Platform

TIPS



It provides integrated battery system management information, including battery quantities, real-time data and status, positions and trajectories, alarm record, etc. One phone or one computer can monitor all the batteries, no matter where you are, very easy and convenient to manage.

# Original Chargers for Forklift

ROYPOW professional charger enables optimal battery performance and the best communication between the charger and the battery.















## Intelligent Charging Management

To use the ROYPOW charger, the battery management system (BMS) can control the charging current according to different temperatures and SOC of the batteries.

ROYPOW's intelligent BMS ensures the safety of the battery and improves the charging efficiency.

When the battery is at a low voltage, the battery can be charged at low current to ensure battery safety.

When the battery is less than 10%, it will beep to prompt for charging.

 Over-temperature protection	 Short-circuit protection	 Anti-reverse connection function	 Over-charge protection
 Smart display	 Current limit function	 Automatic power off	 Over-current protection
 Over-voltage protection	 Timing protection	 Wide voltage operation	 Constant current constant voltage

## How to Charge? Easy and safe

**i** During the charging process, power to the lift is disconnected to prevent drive off.



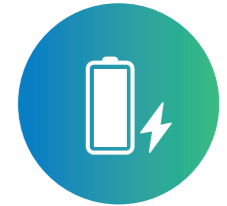
### 01 Drive to the forklift battery station

Drive to the forklift battery station, switch off, plug in the charging cable and apply the parking brake.



### 02 Automatically monitor

The charger and forklift will automatically monitor whether the safe environment and battery condition are suitable for charging, and if ok, the charger and forklift will automatically start charging.



### 03 Fully charged

When the battery is fully charged, charging will stop automatically.

## Smart Display

Once the charger is connected, it will show the battery status, and the operator can leave the truck between shifts and have a rest.



## Where do ROYPOW lithium-ion batteries charge? Flexible

- ✓ The batteries can be charged in the truck. No frequent battery swaps or battery storage room are required.
- ✓ The charging stations can be located anywhere in the facility that will promote proper charging by the operator. Eliminate charging room and related ventilation equipment.

TIPS

### Compare to the charging location for lead-acid batteries:

Lead-acid batteries need extra batteries and battery storage room for swapping. And they also need a specific charging room with a ventilation system to avoid noxious gas when charging.