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ROYPOW Technology Co., Ltd.

Tel: +86 (0)752-327 9099

Email: sales@roypow.com
service@roypow.com
marketing@roypow.com

Web: www.roypow.com

Add: ROYPOW Industrial Park, No.16, Dongsheng South Road,
Chenjiang Street, Zhongkai High-Tech District, Huizhou City,
Guangdong Province, China

ROYPOW (USA) Technology Co., Ltd.

Tel: +1 512 688 5555 (Texas Office)

Email: sales@roypowusa.com
service@roypowusa.com

Web: www.roypow.com

Head Office: 5901 Triumph St, Commerce, CA 90040, USA
Texas Office: 2350 Campbell Creek Blvd #100 Richardson, TX 75082, USA
Florida Office: 277 Douglas Avenue, Unit 1004, Altamonte Springs, FL 32714, USA
Indiana Office: 5545 W Raymond St, Ste H Indianapolis, IN 46241, USA
Georgia Office: 1150 Cobb International Pl NW Ste A, Kennesaw, GA 30152, USA

ROYPOW Technology UK Limited

Tel: 079 3818 1019 / 07425566908

Email: sales.uk@roypow.com

Add: Unit F, Argent Court, Hook Rise South, Surbiton, Surrey KT6 7NL

ROYPOW Australia Technology Pty Ltd

Email: sales@roypowtech.com.au

Tel: +61 2 9873 3920

Web: www.roypowtech.com.au

Add: Unit 9/148 James Ruse Dr, Parramatta 2150, NSW, Australia



ROYPOW (Europe) Technology B.V.

Email: sales.eu@roypow.com

Tel: +31 702 001 114

Web: www.roypoweurope.com

Add: K.P. van der Mandelelaan 84, 3062 MB Rotterdam, The Netherlands

ROYPOW Technology GmbH

Tel: +49 (0) 6151 1546262

Email: sales.de@roypow.com

Web: www.roypow.gmbh

Add: Rosa-Parks-Straße 4, 64295 Darmstadt, Germany

ROYPOW株式会社

Tel: +81 090 7092 6969

Email: sales.jp@roypow.com

Web: www.roypow.co.jp

Add: 〒271-0094 千葉県松戸市上矢切299- 7

ROYPOW Technology Co., Ltd (Korea)

Tel: 1555-2016

Email: sales.kr@roypow.com

Add: 2305, 2306 GIDC Gwangmyeong Station A Dong, 43 Iljik-ro,
Gwangmyeong-si, Gyeonggi-do, Korea

PT ROYPOW HIGHTECH INDONESIA

Add: Horizon Industrial Park Factory, Type A, Lot 05, Sungai Pelunggut
Sub-district, Sagulung District, Batam City, Riau Islands Province, Indonesia



LiFePO₄ Batteries

for Material Handling Equipments

Drop-in lithium-ion
for lead-acid
alternatives



✉ sales@roypow.com
🌐 www.roypow.com



*ROYPOW,
Your Trusted Partner*

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LiFePO₄ Batteries for Forklifts

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ROYPOW Original Chargers for Forklifts



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 m² Headquarters Floor Area
2,500 m² Testing Center
402 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

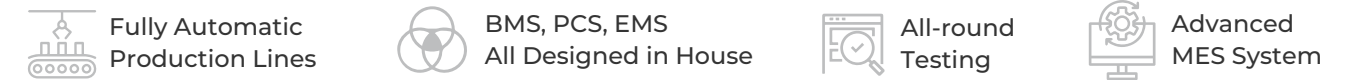


Product Certifications:

UL 1973, UL 9540A, UL 9540, UL 2580, UL 2271, UL 1741			FCC, IEC/EN 61000-6, BS EN IEC 61000-6
IEEE 1547			IEC 60730, ISO 13849-1
IEC 62619			UN 38.3
EN 62477, EN 62040, (EU) 2023/1542, EN 62109-1, EN 62109-2			RoHS Directive 2011/65/EU & (EU) 2015/863

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.



Global Sales and Service Network



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



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.

Retrofit Your Fleet to Lithium-ion Batteries.



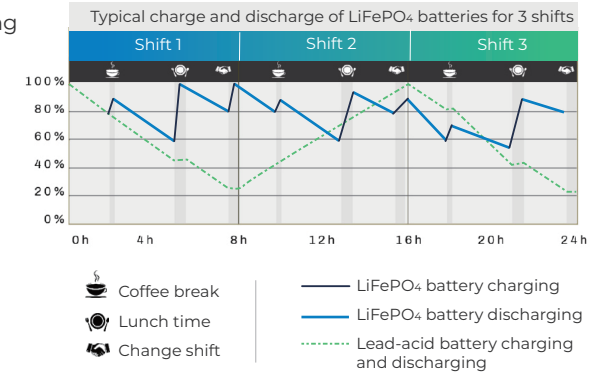
Benefits of Lithium-ion Batteries

Lead-acid	LiFePO ₄ battery	
 3 years design life	 up to 10 years design life Longer life 3 to 4 times lead-acid lifespan	✓ Reduces overall battery investment ✓ Eco-friendly ✓ Minimize the need for spares
 Frequent maintenance	 0 maintenance no need for regular filling of distilled water and electrolyte No maintenance	✓ No regular filling of distilled water ✓ Saving costs on labor and maintenance ✓ Less unplanned downtime and improved productivity ✓ No frequent battery replacements
 1-2 years warranty	 5 years warranty Extended warranty bring you peace of mind	✓ Durable and reliable ✓ Reduces maintenance and labor costs ✓ Quality guarantee

Reduce Downtime, Increase Equipment Availability

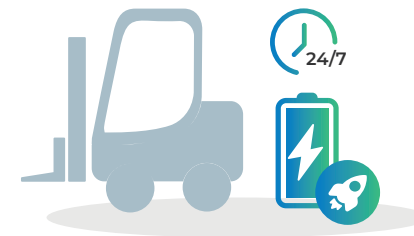
In day-to-day operations, the battery can be charged even during short breaks, such as taking a rest or changing shifts, effectively increasing productivity.

- ✓ 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

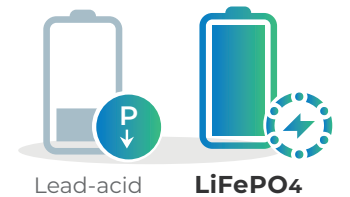
Why choose LiFePO₄ batteries for Forklifts?

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 LiFePO₄ batteries can offer you...

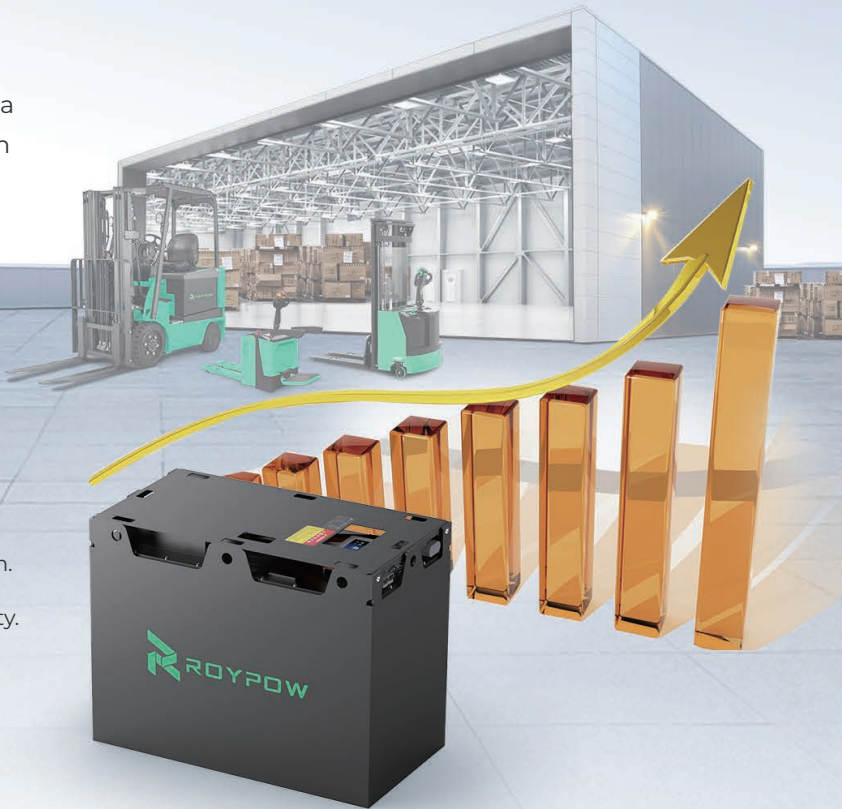
- ✓ Longer life reduces overall battery investment.
- ✓ No maintenance saves labor and maintenance costs.
- ✓ No gas or acid spills, avoids the space, equipment and running costs of a battery room and ventilation system.
- ✓ Energy saving and less downtime, improve productivity.

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

Below is the 5-year expenditure table comparing ROYPOW LiFePO₄ batteries with lead-acid batteries.

Purchases over 5 Years	Lead-acid Battery					LiFePO ₄ Battery	
Battery cost						5yr	
Maintenance						5yr	/
Electricity waste						5yr	/
Installation						5yr	
Shipping						5yr	

Remark: Actual costs may vary according to local conditions.



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

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

5yr

Warranty

Up to

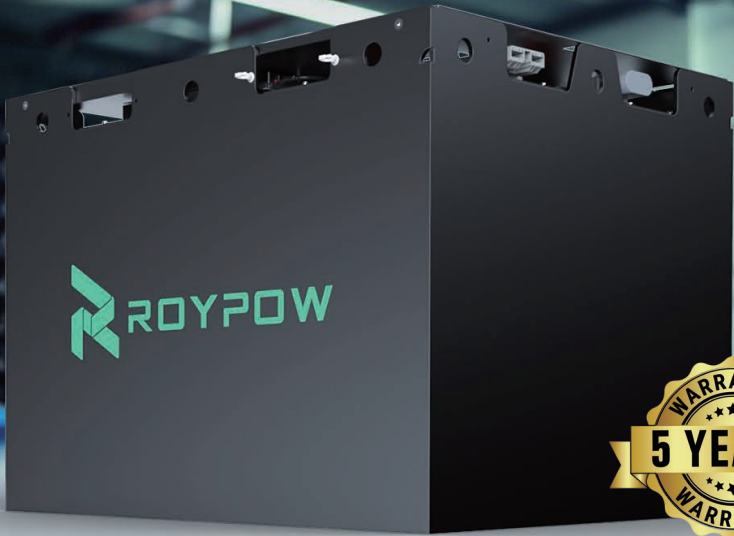
3,500+

Cycle Life

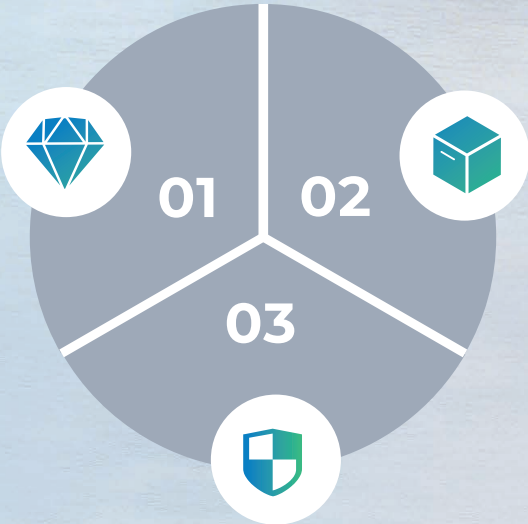
Up to

10yr

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

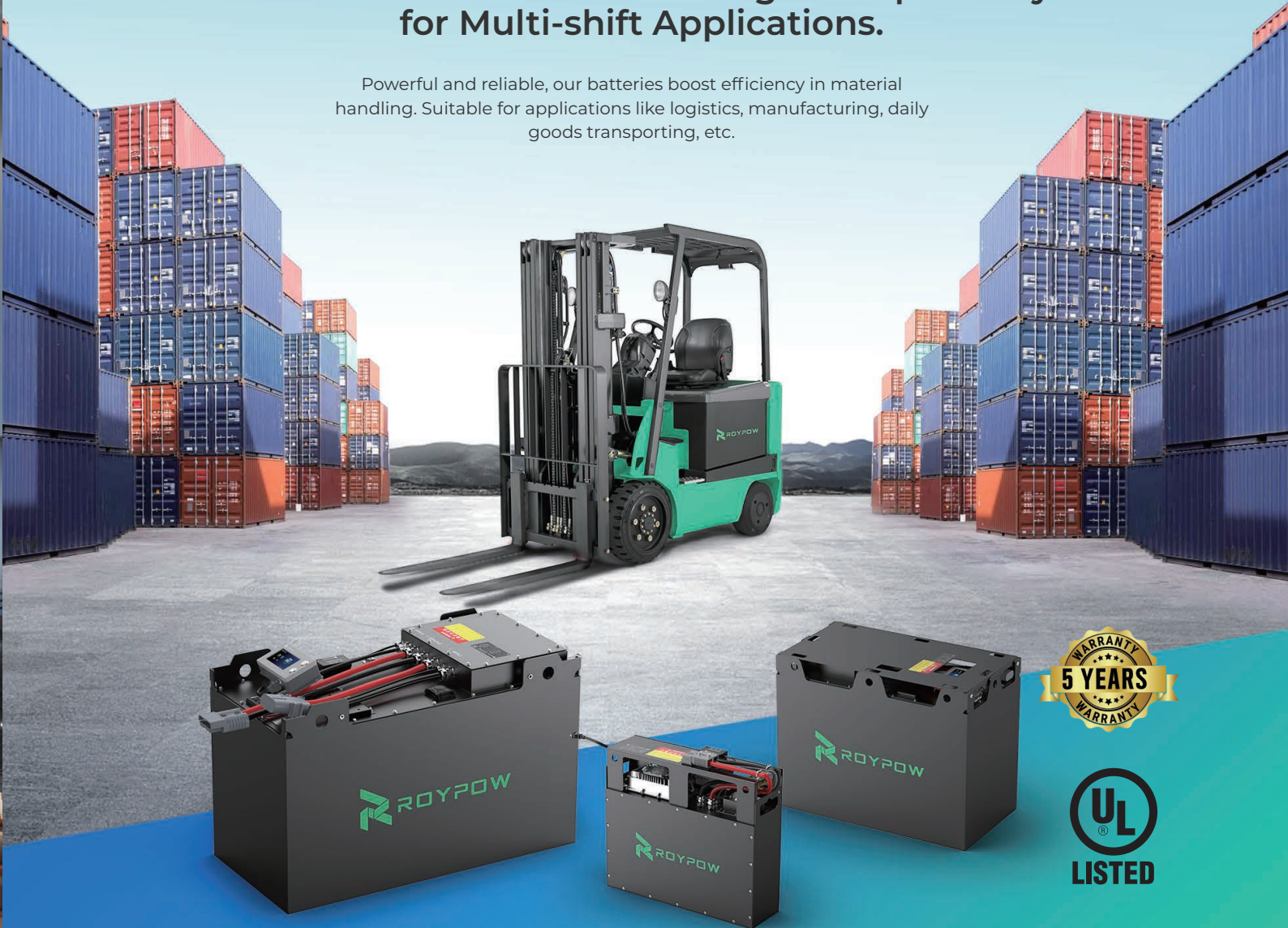
Intelligent BMS is for automatic cell balancing and advanced battery management. The LiFePO₄ batteries have greater thermal and chemical stability.

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	UniCarriers
Baoli	Crown	Hubtex	Manitou	Rico	Utilev
Bendi/Landoll	Doosan (Daewoo)	Hyster	Mariotti	Schreck	White
Big Joe	Drexel	Hyundai	Mitsubishi	Steinbock	World
Blue Giant	Elwell-Parker	Jungheinrich	Motrec	Taylor-Dunn	Yale
Caterpillar	Flexi	Kalmar	Multiton		
Clark	HC Forklift				

Disclaimer: The information above is intended only to describe that products of ROYPOW are applicable to products of brands above under specific circumstances. It should not be regarded as any illegal use of third-party brands and trademarks. You should not infer that RoyPow has established or has any agency, employment, partnership or joint venture relationship with the companies above.

Which LiFePO₄ Battery is Suitable for Your Forklifts

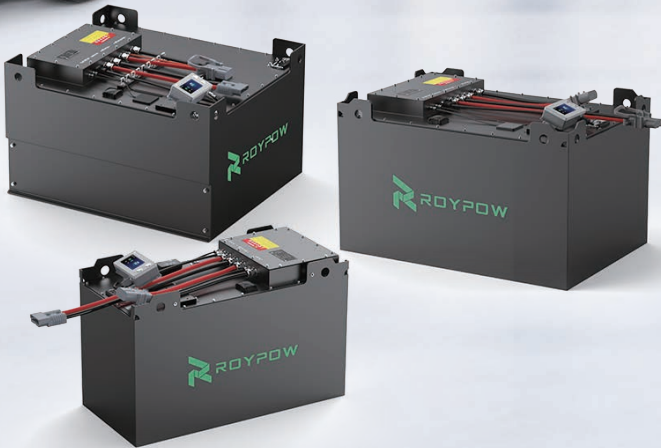
We make 6 different voltages to cover all classes of equipment.



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

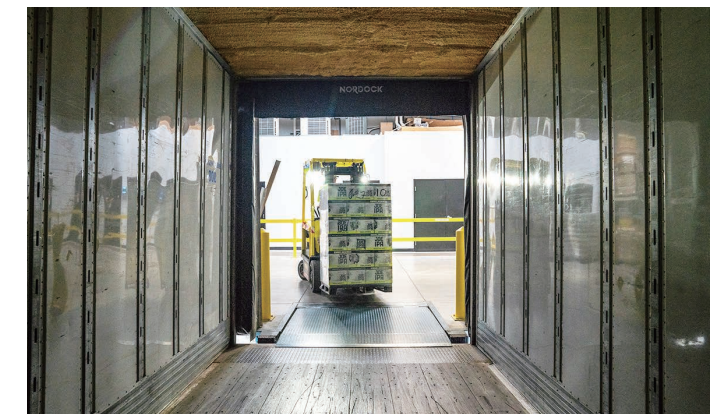


One Stop
for All of Your Battery Needs!

LiFePO₄ 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.

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.

Green and Stable

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

Save Up to
70%
Expenses in 5 Years

Why ROYPOW LiFePO₄ Batteries

Retrofit Your Fleet to Lithium-ion Batteries.



5 Year Warranty

5 year warranty brings you hassle-free experience.



Steady Output

LiFePO₄ batteries keep a steady power output, which will not dramatically drop like lead-acid batteries.



4G Module

For product position tracking, battery health monitoring, and life cycle management.



3,500+ Cycle Life

ROYPOW LiFePO₄ batteries last so long that they outperform traditional batteries.



Built-in Battery Management System (BMS)

The smart and reliable BMS can ensure a better performance, and deliver longer battery run time and lifespan.



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.



SoC Meter

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



IP65 Protection

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



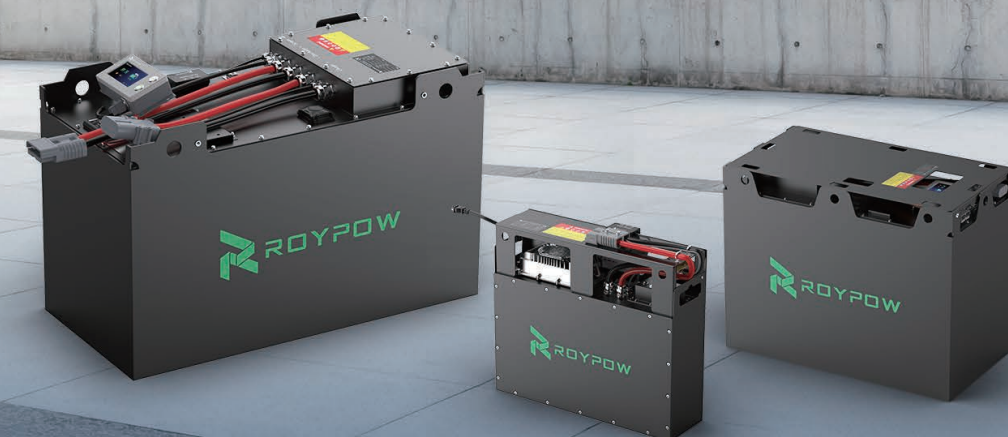
Heating Function (Optional)

The optional heating function can warm up the battery for optimal charging even at a low temperature of -20°C.



Anti-walking Function

It can prevent your equipment from a sudden start or moving during charging.



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
24 V System												
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)			/
36 V System												
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)			/
		560 Ah	21.504 kWh		31.50 x 29.92 x 13.78 inch (800 x 760 x 350 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)			/
		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)			/
		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)			/
		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)			/
		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)			/
48 V System												
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)			/
		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)			/
		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
48 V System												
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)			/
		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)			/
72 V System												
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	/
		460 Ah	33.86 kWh		25.59 x 24.80 x 18.50 inch (650 x 430 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)			/
		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)			/
80 V System												
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)			/
		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)			/
90 V System												
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)			/
96 V System												
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)			/
Working Temperature Range		Charge -4°F~131°F (-20°C ~ 55°C)		Discharge -4°F~131°F (-20°C ~ 55°C)		Storage (1 month) -4°F~131°F (-20°C ~ 55°C)			Storage (1 year) 32°F~95°F (0°C~35°C)			

-40°C ~ -20°C

IP67 Anti-Freeze Lithium Battery for Forklifts

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



Waterproof
Cable Glands

- 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 Insualtion

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



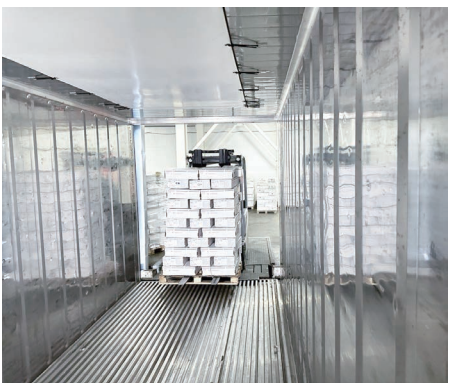
Zero Maintenance

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 LiFePO₄ 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.

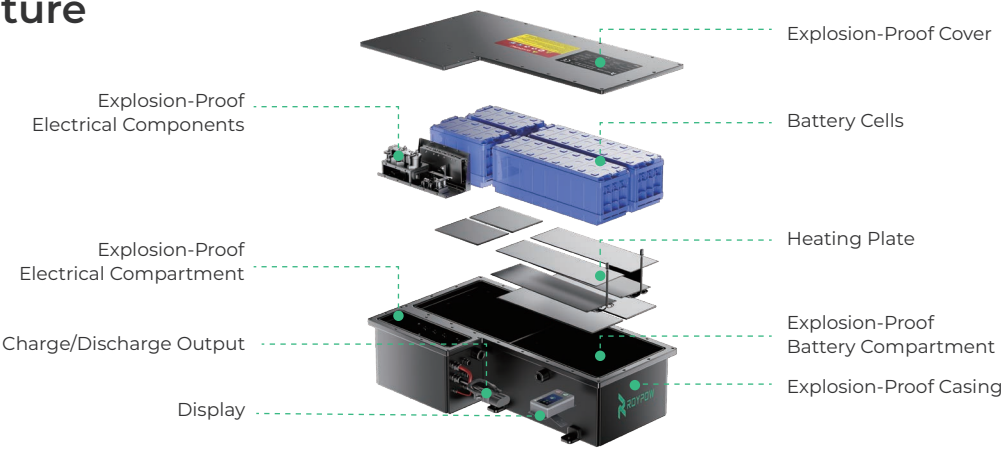
Intelligent BMS
Designed for peak efficiency, intelligent battery status management, and safe operations.

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 LiFePO₄ 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



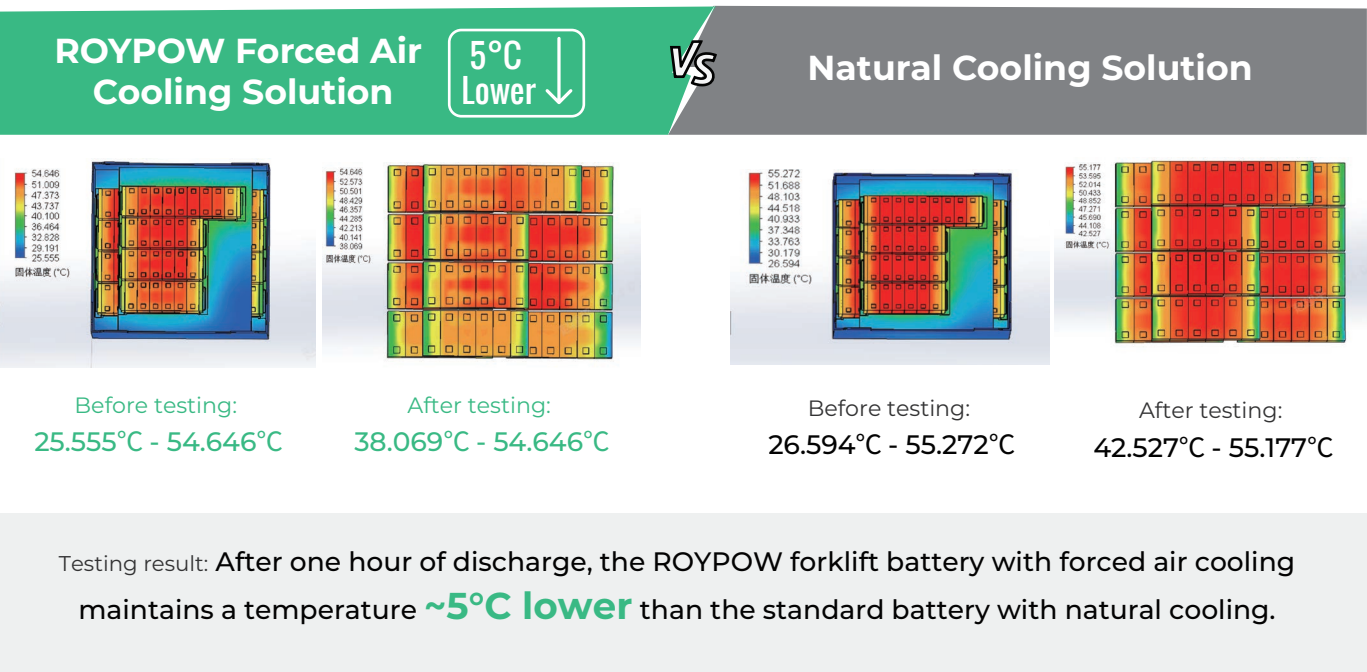
Steel
mills



Coal
plants

Battery Discharge Temperature Testing

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



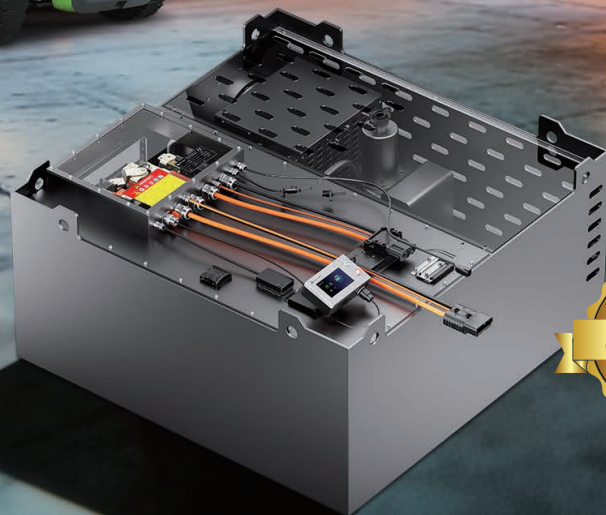
Specifications

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 LiFePO₄ Forklift Batteries

Longer Runtime | Higher Uptime | Lower Operating Costs



Applications



Warehouses & Logistics



Manufacturing



Cold Chain



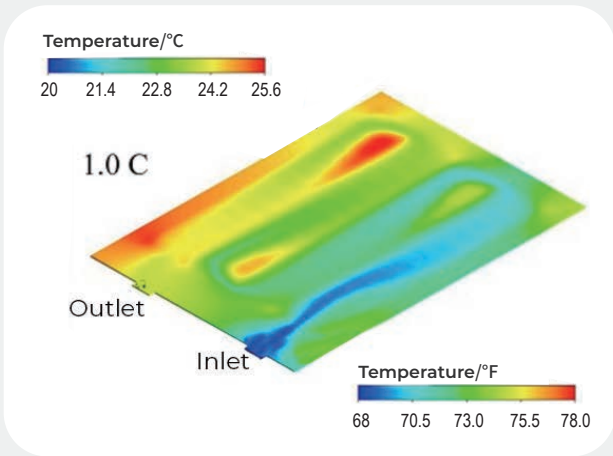
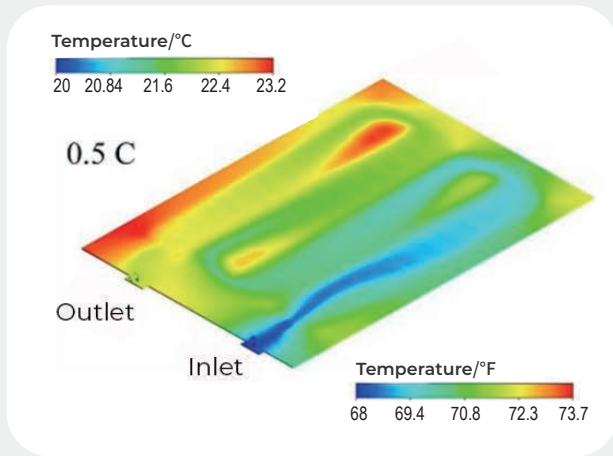
Ports & Terminals



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.



- 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

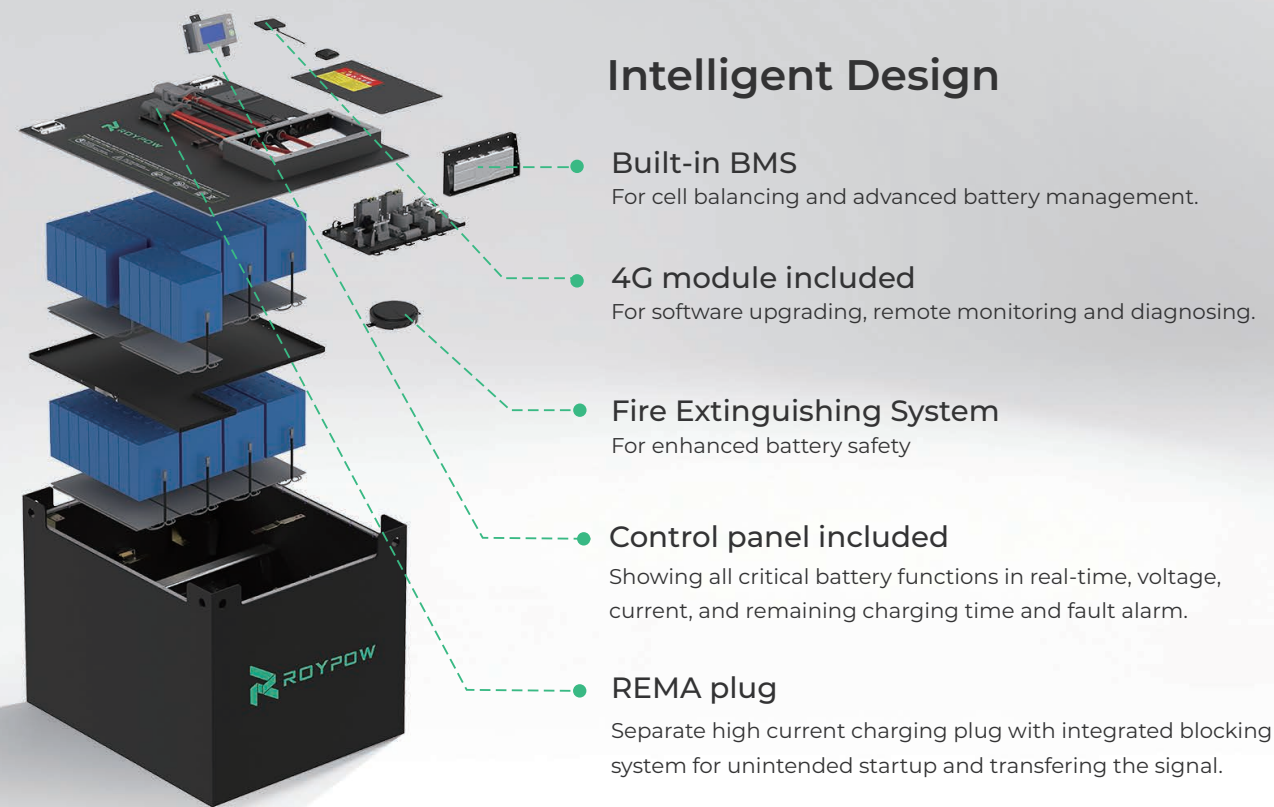
Water Pump Rated Head / Flow:
8 m / 30 L/min

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.



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.

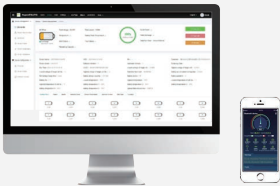
4G Module (for Forklift Batteries)



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



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.



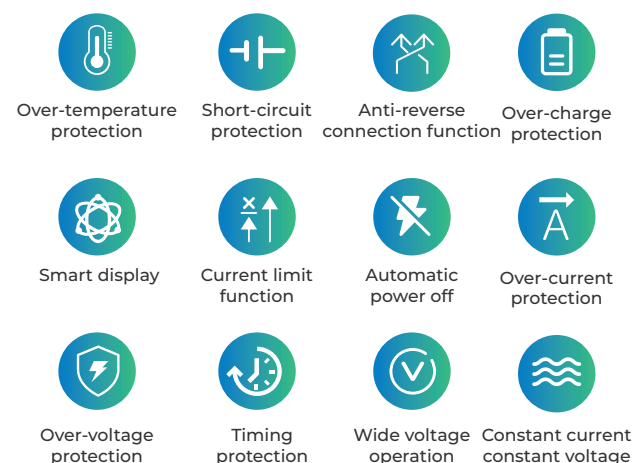
Intelligent Charging Management

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.

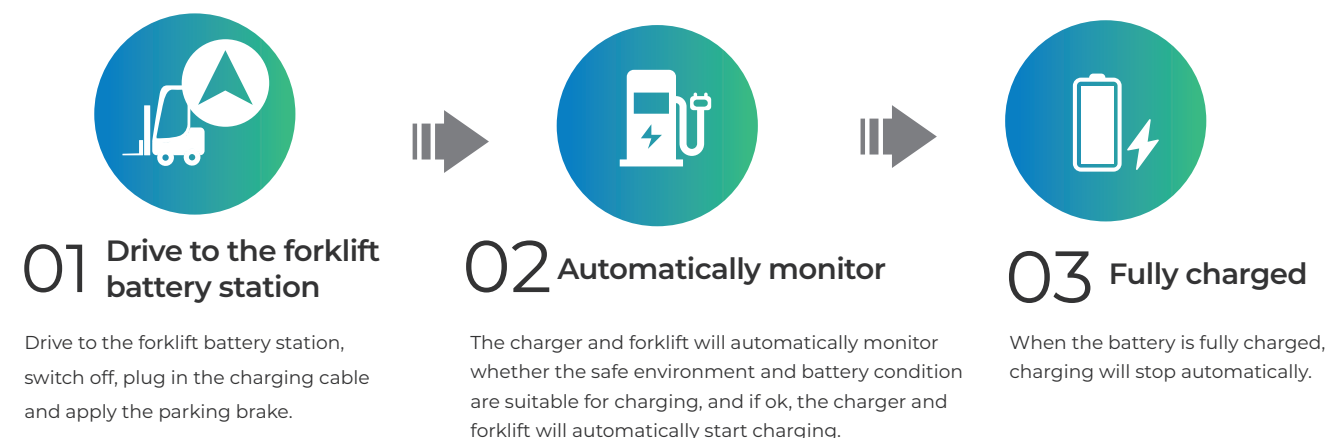
When the battery is at a low voltage, the battery can be charged at low current to ensure battery safety.

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



How to Charge? Easy and safe

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



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.

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.

TIPS