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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

Email: 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 29185 0814

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) 176 2358 8956

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: 2405, GIDC Gwangmyeong station A Dong, 43 Iljik-ro, Gwangmyeong-si, Gyeonggi-do, Korea

ROYPOW Battery Technology (Pty) Ltd

Email: sales.za@roypow.com

Tel: +27 10 900 5808

Add: 53 Lake Rd, Longmeadow Business Estate, Edenvale, 1609, South Africa

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



Lithium battery solutions

LiFePO₄ Batteries for Construction Machinery

Powering Equipment Excellence,
Redefining Unmatched Productivity



sales@roypow.com
www.roypow.com



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
330 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
 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**
GRID **Function Safety** **IEC 60730, ISO 13849-1**
CB **Transport** **UN 38.3**
CE **RoHS** **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.

- 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





Efficient and Stable

- ✓ More power with a high rate of discharge
- ✓ Consistent performance without the voltage drop at the end of the cycle
- ✓ Reduced unplanned downtime and maximized uptime



Worry-Free and Cost-Effective

- ✓ Long lifespan and no need for more batteries
- ✓ Zero maintenance and no frequent battery swaps
- ✓ Reduced battery maintenance labor costs



Green and Sustainable

- ✓ Reduced carbon footprint
- ✓ Good for excavator operators and the planet

LiFePO₄ Batteries for Construction Machinery

In the battery-powered construction machinery industry, business requires batteries that won't tire out no matter the task. ROYPOW comes in handy and gives your heavy-duty equipment full performance capacity.

Embedded with ROYPOW batteries inside, businesses can expect uncompromising power performance and capability comparable to traditional diesel-powered solutions while reducing carbon footprint and enhancing sustainability and profitability.



*Ideal Power Solutions
for A Full Day's Heavy-Duty Construction Work*



Efficient Liquid Cooling

Maintain temperature difference, ensure stable and consistent performance, and extend the battery lifespan.



Grade A LFP Cells

Ensure unmatched reliability and longevity in demanding conditions.



Rugged Durability

From the ruggedized, heavy-duty base to the internal structural supports, the batteries withstand the harsh vibrations and shocks of outdoor construction.



Long Lifespan

The batteries are designed for longevity with a lifespan of up to 10 years and can withstand over 4,000 times of deep charge and discharge.



Intelligent BMS

Ensure optimal battery performance and maximize efficiency.



Built-in Fire Extinguishing System

Each battery is equipped with one or more specially designed fire extinguisher devices for fire protection.



IP68 Ingress Rating

The electrical components are fully enclosed to protect from dust and water ingress to fit different construction site environments.



4G Intelligent Control

Support real-time monitoring, enabling efficient battery management and minimizing downtime.



Low Temperature Heating

The heating function will activate for stable charging and discharge at a low temperature during the cold months.



Technical Specifications

Pack Model	C150	C230	C304	G150	G230	G304
Dimension (mm/inch)	1070x630x200 mm (42.13x24.8x7.87 inch)	1070x630x240 mm (42.13x24.8x9.45 inch)	956x630x200 mm (37.64x24.8x7.87 inch)	956x630x240 mm (37.64x24.8x9.45 inch)		
Rated Capacity (Ah)	150	230	304	150	239	304
Rated Voltage (V)	153.6	153.6	115.2	124.8	124.8	96
Rated Energy (kWh)	23.04	35.32	35.02	18.72	28.7	29.18
Cooling Method	Liquid Cooling					

Electrical Performance Parameters

Working Voltage Range (V)	0°C < T ≤ 65°C	120~175.2	120~175.2	90~131.4	97.5~142.35	97.5~142.35	75~109.5
	-20°C ≤ T ≤ 0°C	96~175.2	96~175.2	72~131.4	78~142.35	78~142.35	60~109.5

Max. Continuous Charge Rate	1C					
Pulse Discharge Rate	3C@10s					
Pulse Regeneration Rate	1.5C@30s					
Max. System Voltage	750V					
Max. System Series Connection	4S	4S	5S	5S	5S	6S
Max. System Parallel Connection	3P					

Electrical Performance Parameters

Certification	R100, UN38.3
Ingress Protection	IP68, IPX9K

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



High Reliability

Built to withstand harsh environments, extending service life while reducing maintenance and replacement costs.



Extended Cycle Life

Over 4,000 cycles for consistent performance throughout the battery's lifespan.



Superior Vibration Resistance

Withstands vibrations up to six times higher than the toughest passenger-vehicle standard, delivering lasting performance.



Liquid Cooling

Efficiently manages heat to ensure stable performance and extend battery life even under heavy-duty operation.



Technical Specifications

Pack Model	C230-V2	C304-V2	C173-V2	G230-V2	G304-V2
Dimension (mm/inch)	1082 x 630 x 240 / 42.60 x 24.80 x 9.45			940 x 630 x 240 / 37.01 x 24.80 x 9.45	
Rated Capacity (Ah)	230	304	173	230	304
Rated Voltage (V)	153.6	115.2	201.6	124.8	96
Voltage Range (V)	120~175.2	90~131.4	157.5~229.9	97.5~142.35	75~109.5
Rated Energy (kWh)	35.32	35.02	34.87	28.7	29.18
Cooling Method	Liquid Cooling				

Electrical Performance Parameters

Working Temperature Range	-20°C < T ≤ 60°C				
Max. Continuous Charge Rate	1C				
Pulse Discharge Rate	3C@30s				
Pulse Regeneration Rate	2C@30s				
Max. System Voltage	1000V				
Max. System Series Connection	5S	7S	4S	7S	8S
Max. System Parallel Connection	3P				

Reliability Performance Parameters

Vibration Standard	GB 31467.3-2015 (6× Duration), GB 38031-2020 Damp Heat Cycling, Combined Vibration + Mechanical Shock + Environmental Stress Tests under Charge-Discharge				
Ingress Protection	IP68, IPX9K, IPXXB				
Mechanical Shock	GB 38031-2025 (2 Cycles)				

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

Charge Fast. Power Long

ROYPOW batteries support fast charge to increase the uptime and complete the construction tasks on schedule. A single full charge extends up to 8 hours of use for the best productivity. Operators can recharge the equipment during breaks or overnight to get well-prepared for another shift of hard work.



1~1.5 Hour DC Fast Charging Station

6~8 Hours* Continuous Use

*Actual battery duration time varies depending on different working conditions and the type of job.

Multiple Charging Ways

More Versatility and Flexibility



DC Fast Charging



Tow Charging



Mobile Container DC Charging

Customized Power Solutions

Suitable for mine trucks, bulldozers, road rollers, excavators, wheel loaders, cement mixers, etc.

