

# Battery Cyclers Market by Battery (Lithium-ion, Lead Acid, Nickel-based, Solid-State), Application (End-of-Line, Research), Function (Cell, Module, Pack Testing), Industry (Automotive, Consumer Electronics, Energy) and Region - Global Forecast to 2029

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## Abstracts

The global battery cyclers market size is estimated to grow from USD 794 million in 2024 to USD 1,609 million in 2029, by a CAGR of 15.2%. Battery cyclers play a fundamental role in the field of battery technology by serving as essential equipment for testing and characterizing batteries. These sophisticated instruments are designed to simulate real-world conditions and assess battery performance, reliability, and durability across various applications. Battery cyclers work by subjecting batteries to controlled charge and discharge cycles while monitoring key parameters such as voltage, current, and temperature.

'Pack Testing by function segment is projected to grow at the highest CAGR during the forecast period.'

The pack testing function of battery cyclers involves testing battery packs in end-of-line (EOL) production to conduct a comprehensive Pass/Fail check. This testing phase includes assessing various aspects such as mechanism assembly, pressure insulation, Battery Management System (BMS) communication, internal high voltage relay parts, battery balance, and temperature distribution. By performing pack testing, manufacturers can ensure that the assembled battery packs meet quality standards, function correctly, and are safe for use in applications like electric vehicles and energy storage systems. The purpose of pack testing in battery development is to ensure that each pack subsystem, including external hardware, safety mechanisms, and BMS, performs efficiently, guaranteeing the overall functionality, safety, and performance of

battery packs and modules to meet required specifications and standards for reliable operation in various applications.

“Li-ion battery type segment expected to gain the largest market share during the forecast period.”

The rising prominence of Li-ion batteries across diverse sectors, from portable electronics to electric vehicles and grid storage, emphasizes the critical importance of understanding and optimizing their performance. Within this landscape, battery cyclers emerge as indispensable tools explicitly tailored to cater to the demanding needs of Li-ion battery testing. Battery cyclers ensure safety and optimal performance by offering precise control over voltage and advanced current profiling, meticulously adhering to Li-ion batteries' stringent charging and discharging requirements. Thus, battery cyclers emerge as catalysts in unlocking the full potential of Li-ion battery technology, propelling advancements in safety, efficiency, and durability in an era dominated by this revolutionary energy storage solution.

“Automotive & Transportation segment expected to grow with the highest CAGR during the forecast period.”

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“The market in North America is expected to grow at a significant CAGR during the forecast period.”

Battery cyclers play a crucial role in the application of automotive and transportation sectors. These cyclers are utilized for testing and evaluating batteries, especially in the context of electric vehicles (EVs) and hybrid electric vehicles (HEVs). In the automotive industry, battery cyclers are essential for assessing the performance, durability, and reliability of batteries used in electric mobility. They are instrumental in simulating real-

world conditions to ensure that batteries meet the stringent requirements of the automotive sector, such as vibration resistance, temperature range, and longevity.

Breakdown of the profiles of primary participants:

By Company Type: Tier 1 - 40%, Tier 2 - 35%, and Tier 3 - 25%

By Designation: C-level Executives - 48%, Directors - 33%, and Others - 19%

By Region: North America - 30%, Europe - 25%, Asia Pacific - 33%, and RoW - 12%

Major players profiled in this report are as follows: AMETEK.Inc. (US), BioLogic (France), Chroma ATE, Inc. (Taiwan), Arbin Instruments (US), DIGATRON (US), Unico, LLC (US), Bitrode Corp. (US), Greenlight Innovation Corp. (Canada), AVL (Austria), NATIONAL INSTRUMENTS CORP. (US) and others.

## Research Coverage

The battery cyclers market is divided into various applications, which are research and end-of-line. Further, the equipment is categorized by its function, which includes cell testing, module testing, and pack testing. The battery cyclers being used for batteries have been divided by battery types, which include lithium-ion, lead acid, nickel-based batteries, and other emerging technologies. Further, the market has been categorized by industry used, which includes automotive & transportation, consumer electronics, energy & utility, industrial, education & research, and other industries. Furthermore, regions such as North America, Europe, Asia Pacific, and RoW have been covered in the report.

## Key Benefits of Buying the Report:

The report provides insights on the following pointers:

Analysis of critical drivers ( Increased demand for renewable energy, Integration of EIS capabilities to drive the adoption and increasing number of gigafactories worldwide), restraints ( High initial investment and setup costs), opportunities ( emerging EV industry, and evolving battery technologies in the market) and challenges (Availability of alternative testing methods and equipment)

influencing the growth of the battery cyclers market.

**Product Development/Innovation:** Detailed insights on new products, technologies, research & development activities, funding activities, industry partnerships, and new product launches in the battery cyclers market

**Market Development:** Comprehensive information about lucrative markets – the report analyses the battery cyclers market across regions such as North America, Europe, Asia Pacific, and RoW.

**Market Diversification:** Exhaustive information about new products & technologies, untapped geographies, recent developments, and investments in the battery cyclers market

**Competitive Assessment:** In-depth assessment of the market position, growth strategies, and product offerings of leading players like AMETEK.Inc. (US), BioLogic (France), Chroma ATE, Inc. (Taiwan), Arbin Instruments (US), DIGATRON (US) and among others in the battery cyclers market

**Strategies:** The report also helps stakeholders understand the pulse of the battery cyclers market and provides information on key market drivers, restraints, challenges, and opportunities.

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\*Details on Business Overview, Products/Solutions/Services Offered, Recent Developments, and MnM View (Key strengths/Right to Win, Strategic Choices Made, and Weaknesses and Competitive Threats) might not be captured in case of unlisted companies.

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