Lab Automation Market is Expexted to Reach USD 4,936 Million by 2035 | Fact.MR Report

Analysis of Lab Automation Market Covering 30+ Countries Including Analysis of US, Canada, UK, Germany, France, Nordics, GCC countries

ROCKVILLE, MD, UNITED STATES, July 2, 2025 /EINPresswire.com/ -- The global lab automation market, valued at USD 2,274 million in 2024, is projected to expand at a compound annual growth rate (CAGR) of 7.3%, reaching USD 4,936 million by 2035, according to a comprehensive report by Fact.MR. This robust growth is driven by transformative advancements in robotics, artificial intelligence (AI), and machine learning, which are revolutionizing laboratory functions by enhancing precision, throughput, and efficiency across pharmaceutical, biotechnology, and clinical diagnostics sectors.

Lab Automation Market

Fact**.MR**

Research Report: 2025

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Transforming Laboratory Operations with Cutting-Edge Automation

Lab automation encompasses advanced systems and software designed to streamline laboratory processes, including sample handling, data analysis, and high-throughput screening. By integrating robotics, AI, and machine learning, these systems reduce human error, accelerate research timelines, and enable laboratories to handle increasing workloads with greater accuracy. The technology is critical in applications such as drug discovery, clinical diagnostics, genomics, and proteomics, where precision and scalability are paramount.

From 2020 to 2024, the lab automation market grew at a CAGR of 6.9%, reflecting steady adoption driven by the need for efficiency in research and diagnostics. The forecast period from 2025 to 2035 is expected to create an absolute opportunity of USD 2,662 million, fueled by rising demand for high-throughput screening, increasing R&D investments, and the growing

prevalence of chronic diseases necessitating advanced diagnostic solutions.

Key Drivers of Market Growth

Technological Advancements in Robotics and AI

The integration of robotics, AI, and machine learning is a primary driver of the lab automation market. Automated systems, such as robotic liquid handlers and AI-driven data analytics platforms, enhance precision in tasks like pipetting, sample preparation, and assay analysis. For instance, in March 2024, Thermo Fisher Scientific launched the iCAP PRO inductively coupled plasma optical emission spectrometry system, improving workflow efficiency in drug discovery. These advancements enable laboratories to process large volumes of samples with minimal manual intervention, boosting throughput and reducing costs.

Rising Demand in Pharmaceutical and Biotechnology Sectors

The pharmaceutical and biotechnology industries are major contributors to market growth, accounting for a significant share of lab automation adoption. The drug discovery segment, valued at USD 900 million in 2025, is projected to grow at a CAGR of 7.8%, driven by the need for high-throughput screening and automated compound testing. Automation streamlines processes like target identification and lead optimization, accelerating the development of novel therapeutics. The increasing prevalence of chronic diseases, such as cancer and diabetes, further drives demand for automated diagnostic solutions.

Clinical Diagnostics and Personalized Medicine

The growing emphasis on personalized medicine and early disease detection is boosting the adoption of lab automation in clinical diagnostics. Automated systems enable rapid and accurate analysis of patient samples, supporting applications like next-generation sequencing (NGS) and molecular diagnostics. The clinical diagnostics segment is expected to create an absolute opportunity of USD 1,200 million by 2035, driven by the need for scalable, high-precision testing in hospitals and diagnostic laboratories.

Regulatory and Cost Pressures

Stringent regulatory requirements for drug development and diagnostics, coupled with rising labor costs, are pushing laboratories to adopt automation to ensure compliance and reduce operational expenses. Automated systems provide consistent, reproducible results, meeting standards set by agencies like the U.S. Food and Drug Administration (FDA) and the European Medicines Agency (EMA).

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Regional Insights: North America Leads, Asia-Pacific Accelerates

North America holds the largest market share, expected to account for 38% of the global lab automation market by 2035. The United States, with its advanced healthcare infrastructure and significant R&D investments, is a key driver, with a projected CAGR of 7.1%. The region's leadership is supported by major players like Thermo Fisher Scientific and Agilent Technologies, which are innovating in automated workflows for drug discovery and diagnostics.

The Asia-Pacific region, particularly China and Japan, is witnessing rapid growth, with a projected CAGR of 7.6%. China's market is driven by increasing government funding for biotechnology research and the expansion of pharmaceutical manufacturing. Emerging markets in India and South Korea are also contributing to growth, fueled by rising healthcare expenditure and demand for advanced diagnostic tools.

Industry Trends and Innovations

The lab automation market is shaped by several key trends:

AI and Machine Learning Integration: AI-driven platforms are enhancing data analysis and predictive modeling, enabling faster identification of drug candidates and disease biomarkers.

Modular and Scalable Systems: Manufacturers are developing modular automation platforms, such as Beckman Coulter's Biomek i-Series, launched in 2023, which allow laboratories to customize workflows based on specific needs.

Lab-on-a-Chip Technology: Miniaturized automated systems are gaining traction in point-of-care diagnostics, offering portable and cost-effective solutions.

Cloud-Based Automation: The adoption of cloud-based laboratory information management systems (LIMS) is improving data accessibility and collaboration, particularly in multi-site research facilities.

Recent industry developments highlight the competitive landscape. In June 2024, Danaher Corporation introduced an automated liquid handling system for genomics research, enhancing throughput for NGS workflows. Similarly, in January 2025, Waters Corporation partnered with a leading biotech firm to develop AI-driven automation for proteomics, underscoring the industry's focus on innovation.

Challenges and Opportunities

The lab automation market faces challenges, including high initial costs for advanced systems, which can be a barrier for smaller laboratories. Integration complexities with existing workflows

and the need for skilled personnel to operate sophisticated equipment also pose hurdles. Additionally, cybersecurity risks associated with cloud-based automation systems are a growing concern.

Future Outlook: A Dynamic and Essential Market

The lab automation market is poised for sustained growth, driven by its critical role in advancing research, diagnostics, and drug development. As technological innovations continue to enhance precision and scalability, and as healthcare demands rise, lab automation will remain a cornerstone of modern laboratory operations. Strategic investments in R&D, partnerships, and regulatory compliance will be key to sustaining this growth trajectory.

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