+357 96 030922
info@marketpublishers.com

Global Fab Automation Market Size Study & Forecast, by Automation Type (AMHS, Material Handling Systems, Robotics, Process Control Systems, Inspection & Metrology Systems), By Component (Hardware, Software, Services), By Fab Type (Wafer Fabrication (Front-End), Assembly & Packaging (Back-End), Testing), By Application (Wafer Processing, Wafer Transport & Storage, Inspection & Metrology, Assembly & Packaging), and Regional Forecasts 2025-2035

https://marketpublishers.com/r/G3B85B3655C7EN.html
Date: March 2026
Pages: 285
Price: US$ 3,750.00 (Single User License)
ID: G3B85B3655C7EN

Abstracts

The Global Fab Automation Market is valued at approximately USD 24.82 billion in 2025, supported by historical benchmarks from 2023 and 2025, and is projected to expand at a steady CAGR of 7.13% during the forecast period from 2025 to 2035. Fab automation refers to the deployment of advanced automation technologies across semiconductor fabrication facilities in order to orchestrate complex manufacturing processes with extreme precision, consistency, and speed. These systems are engineered to streamline wafer handling, optimize process control, reduce human intervention, and elevate yield rates in an industry where nanometer-level accuracy dictates commercial success. The market's momentum is being carried forward by surging semiconductor demand, shrinking device geometries, and the strategic race among foundries to scale up production while driving down defect rates.

As semiconductor manufacturing complexity continues to ratchet up, fabs are increasingly doubling down on end-to-end automation to keep pace with performance

+357 96 030922
info@marketpublishers.com

expectations and cost pressures. Capital-intensive investments in new fabrication plants, particularly for advanced logic and memory nodes, are pulling in sophisticated automation stacks that can be seamlessly integrated into highly controlled cleanroom environments. At the same time, the industry is witnessing a pronounced shift toward smart fabs, where AI-driven analytics, real-time inspection, and closed-loop process controls are being layered onto traditional automation frameworks. While high upfront costs and long deployment cycles remain persistent barriers, the long-term gains in throughput, yield optimization, and operational resilience continue to tip the scales in favor of automation adoption throughout the 2025–2035 horizon.

The detailed segments and sub-segments included in the report are:

By Automation Type:

Automated Material Handling Systems (AMHS)

Material Handling Systems

Robotics

Process Control Systems

Inspection & Metrology Systems

By Component:

Hardware

Software

Services

By Fab Type:

Wafer Fabrication (Front-End)

Assembly & Packaging (Back-End)

+357 96 030922
info@marketpublishers.com

Testing

By Application:

Wafer Processing

Wafer Transport & Storage

Inspection & Metrology

Assembly & Packaging

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Spain

Italy

Rest of Europe

+357 96 030922
info@marketpublishers.com

Asia Pacific

- China
- India
- Japan
- Australia
- South Korea
- Rest of Asia Pacific

Latin America

- Brazil
- Mexico

Middle East & Africa

- UAE
- Saudi Arabia
- South Africa
- Rest of Middle East & Africa

From a fab-type perspective, wafer fabrication (front-end) is expected to dominate the Global Fab Automation Market over the forecast period. Front-end fabs represent the most capital-intensive and technically demanding stage of semiconductor manufacturing, where even marginal efficiency gains can translate into substantial financial returns. As leading-edge nodes continue to migrate toward sub-5nm geometries, manufacturers are leaning heavily into automation systems that can uphold

+357 96 030922
info@marketpublishers.com

ultra-tight tolerances, manage complex workflows, and minimize contamination risks, thereby cementing front-end automation as the cornerstone of market dominance.

In terms of revenue contribution, automated material handling systems (AMHS) currently lead the market, accounting for a significant share of global revenues. These systems form the circulatory backbone of modern fabs, autonomously transporting wafers between process tools while synchronizing production schedules and reducing cycle times. While robotics, inspection, and process control systems are rapidly gaining sophistication and adoption, AMHS continues to anchor automation investments due to its direct impact on throughput efficiency and fab-wide orchestration.

The key regions considered for the Global Fab Automation Market include Asia Pacific, North America, Europe, Latin America, and the Middle East & Africa. Asia Pacific dominated the market in 2025, underpinned by its concentration of semiconductor manufacturing hubs in countries such as Taiwan, South Korea, China, and Japan. North America follows closely, driven by renewed investments in domestic semiconductor manufacturing and government-backed incentive programs. Europe is steadily advancing, supported by strategic initiatives aimed at strengthening regional chip sovereignty, while emerging fabs in the Middle East are beginning to carve out niche opportunities over the forecast period.

Major market players included in this report are:

Applied Materials, Inc.

ASML Holding N.V.

Tokyo Electron Limited

KLA Corporation

Lam Research Corporation

Hitachi High-Tech Corporation

SCREEN Holdings Co., Ltd.

Brooks Automation, Inc.

+357 96 030922
info@marketpublishers.com

Daifuku Co., Ltd.

Murata Machinery, Ltd.

Advantest Corporation

Teradyne, Inc.

Siemens AG

Schneider Electric SE

Rockwell Automation, Inc.

Global Fab Automation Market Report Scope:

Historical Data – 2023, 2025

Base Year for Estimation – 2025

Forecast period - 2025-2035

Report Coverage - Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Regional Scope - North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope - Free report customization (equivalent to up to 8 analysts' working hours) with purchase. Addition or alteration to country, regional & segment scope*

The objective of the study is to define the market size of different segments and countries in recent years and to forecast their values for the coming years, with 2025 serving as the base year for estimation. The report is structured to weave together quantitative market sizing with qualitative strategic insights, shedding light on critical growth drivers, structural challenges, and emerging opportunities across micro-markets.

+357 96 030922
info@marketpublishers.com

It further delivers a detailed competitive analysis, profiling product portfolios, technology roadmaps, and strategic initiatives adopted by key players shaping the future of fab automation.

Key Takeaways:

- Market estimates and forecasts for a 10-year period from 2025 to 2035.
- Annualized revenue analysis across regions and market segments.
- In-depth geographical insights with country-level breakdowns.
- Comprehensive competitive landscape assessment of leading players.
- Strategic evaluation of business approaches and future growth pathways.
- Integrated demand-side and supply-side analysis of the market.

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

CHAPTER 5. GLOBAL FAB AUTOMATION MARKET SIZE & FORECASTS BY AUTOMATION TYPE 2025-2035

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

CHAPTER 9. GLOBAL FAB AUTOMATION MARKET SIZE & FORECASTS BY REGION 2025–2035

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

CHAPTER 10. COMPETITIVE INTELLIGENCE

+357 96 030922
info@marketpublishers.com

List Of Tables

LIST OF TABLES

+357 96 030922
info@marketpublishers.com

List Of Figures

LIST OF FIGURES

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Global Fab Automation Market Size Study & Forecast, by Automation Type (AMHS, Material Handling Systems, Robotics, Process Control Systems, Inspection & Metrology Systems), By Component (Hardware, Software, Services), By Fab Type (Wafer Fabrication (Front-End), Assembly & Packaging (Back-End), Testing), By Application (Wafer Processing, Wafer Transport & Storage, Inspection & Metrology, Assembly & Packaging), and Regional Forecasts 2025-2035

Product link: https://marketpublishers.com/r/G3B85B3655C7EN.html

Price: US$ 3,750.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/G3B85B3655C7EN.html