

EUV Lithography Market Forecasts to 2034 – Global Analysis By Equipment Type (EUV Exposure Systems (Scanners), EUV Light Source Systems, EUV Optical Systems, EUV Mask Inspection Systems, EUV Metrology & Inspection Systems, and Other Equipment), Resolution Node, Application, End User, and By Geography

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Abstracts

According to Statistics MRC, the Global EUV Lithography Market is accounted for \$14.3 billion in 2026 and is expected to reach \$36.3 billion by 2034 growing at a CAGR of 12.3% during the forecast period. Extreme Ultraviolet (EUV) lithography is an advanced semiconductor manufacturing technology that uses extreme ultraviolet light at 13.5 nm wavelength to pattern integrated circuits with nanometer-scale features. This technology enables the production of chips at advanced resolution nodes including 7 nm, 5 nm, 3 nm, 2 nm, and below 2 nm, supporting applications across logic devices, memory devices, foundry manufacturing, advanced packaging, and research and development. EUV lithography is essential for continued Moore's Law scaling, enabling higher transistor density, improved performance, and reduced power consumption in semiconductors. Growing demand for advanced chips in artificial intelligence, high-performance computing, smartphones, and data centers, combined with increasing semiconductor complexity, are key drivers of market expansion across all regions.

Market Dynamics:

Driver:

Growing demand for advanced chips in AI, HPC, and consumer electronics

The exponential growth in demand for high-performance semiconductors in artificial intelligence, high-performance computing, and advanced consumer electronics is a primary driver for the EUV lithography market. AI accelerators, GPU, CPU, and mobile processors require the smallest geometries and highest transistor densities achievable through EUV lithography. The increasing complexity of chip designs demands multi-patterning EUV approaches for advanced nodes. As AI workloads intensify and computing requirements escalate, semiconductor manufacturers are investing heavily in EUV capacity expansion. The race toward smaller nodes continues to push EUV adoption, driving sustained market growth.

Restraint:

High equipment costs and operational complexity

The significant capital investment required for EUV lithography systems and the operational complexity of managing EUV production lines represent a major restraint for the market. EUV scanners cost hundreds of millions of dollars each, with substantial facility and infrastructure requirements. Operating EUV systems requires significant power consumption and maintenance. Achieving stable production yields at advanced nodes demands extensive process development. Only the largest semiconductor manufacturers can justify investment in EUV technology. These cost and complexity barriers limit market participation and may slow capacity expansion, affecting overall market growth.

Opportunity:

Development of next-generation EUV technologies

Continuous innovation in EUV light sources, optics, and photoresist materials presents significant opportunities for the EUV lithography market. Higher power EUV sources enable increased throughput and productivity. Advanced optics improve resolution and overlay accuracy. Novel photoresist materials enable finer patterning with improved sensitivity and line-edge roughness. High-NA EUV technology extends resolution to sub-2nm nodes. Development of new photoresists supports patterning advanced nodes and improves manufacturing efficiency. As EUV technology continues advancing, next-generation EUV solutions capture growing market share, enabling continued semiconductor scaling and expanding the addressable market.

Threat:

Geopolitical tensions and technology export restrictions

Escalating geopolitical tensions and technology export restrictions pose significant threats to the EUV lithography market. EUV technology is subject to strict export controls due to its strategic importance in semiconductor manufacturing. Restrictions on EUV equipment sales to certain countries reduce addressable markets and limit capacity expansion. Supply chain dependencies on specialized components create vulnerability. Technology decoupling may lead to parallel development efforts that do not fully compensate for lost market opportunities. These geopolitical pressures create uncertainty and may slow global EUV market growth.

Covid-19 Impact:

The COVID-19 pandemic had a significant impact on the EUV lithography market. Initial disruptions included supply chain interruptions, manufacturing slowdowns, and reduced investment. However, the pandemic accelerated demand for semiconductors powering remote work, cloud computing, and digital services. Semiconductor shortages highlighted the strategic importance of advanced manufacturing capacity, accelerating investment in EUV tools. Data center and AI infrastructure demand continued growing. Post-pandemic, semiconductor manufacturers have increased capital expenditure, with EUV tools central to capacity expansion plans. The crisis reinforced the strategic importance of EUV technology for economic competitiveness and national security.

The 7 nm segment is expected to be the largest during the forecast period

The 7 nm segment is expected to account for the largest market share during the forecast period, driven by the widespread adoption of 7 nm technology across multiple applications and the established manufacturing infrastructure supporting this node. The 7 nm node represents the first node where EUV was adopted for high-volume manufacturing, with extensive installed capacity. The segment benefits from broad applicability across logic, memory, and foundry applications. Established process development and yield improvement support consistent production. As semiconductor manufacturers expand capacity for 7 nm and derivative nodes, this segment maintains the largest resolution node share.

The Advanced Packaging segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the Advanced Packaging segment is predicted to witness the highest growth rate, fueled by the growing adoption of advanced packaging technologies including 3D integration, chiplets, and heterogeneous integration that require EUV lithography for fine-pitch patterning. Advanced packaging enables continued performance scaling beyond traditional node scaling, with EUV enabling finer interconnects and higher-density integration. The segment benefits from growing adoption of chiplet architectures and system-in-package solutions. Foundries and OSAT providers are investing in EUV capabilities for advanced packaging. As advanced packaging becomes central to semiconductor performance, this application delivers the fastest segment growth.

Region with largest share:

During the forecast period, the Asia-Pacific region is expected to hold the largest market share, supported by concentrated semiconductor manufacturing, extensive EUV tool deployment, and the presence of leading foundries and memory manufacturers. Taiwan, South Korea, and Japan host the world's most advanced semiconductor production facilities with extensive EUV deployment. The region accounts for the majority of global semiconductor manufacturing and EUV tool purchases. Government support for domestic semiconductor production is accelerating EUV capacity expansion. With concentrated manufacturing and continuous technology investment, Asia Pacific maintains its dominant market position.

Region with highest CAGR:

Over the forecast period, the Asia-Pacific region is anticipated to exhibit the highest CAGR, driven by continued capacity expansion, technology upgrades, and increasing investment in advanced semiconductor manufacturing across China, South Korea, Japan, and Taiwan. The region's semiconductor industry continues expanding with new fabrication facilities and technology nodes. Government programs promoting domestic chip production are accelerating EUV investment. Growing domestic demand and export markets drive capacity expansion. As semiconductor production scales and technology advances, Asia Pacific delivers the fastest EUV lithography market growth globally.

Key players in the market

Some of the key players in EUV Lithography Market include ASML Holding N.V., Carl

Zeiss SMT GmbH, Cymer LLC, TRUMPF Group, Ushio Inc., KLA Corporation, Lam Research Corporation, Applied Materials, Inc., Tokyo Electron Limited, Canon Inc., Nikon Corporation, Intel Corporation, Taiwan Semiconductor Manufacturing Company (TSMC), Samsung Electronics Co., Ltd., and SK hynix Inc.

Key Developments:

In July 2026, Intel initiated the deployment of ASML's High-NA EUV lithography systems to manufacture key layers of its flagship Panther Lake mobile processors.

In May 2026, ASML announced that the first commercial semiconductor products manufactured using its next-generation High-NA EUV lithography machines were expected to reach the market within months.

In April 2026, SK hynix outlined plans to install 20 Low-NA EUV scanners over a two-year period to scale up production of high-bandwidth memory (HBM3e and HBM4) for AI data center infrastructure.

In December 2025, TSMC completed the initial site installation and pilot calibration phases for its first research-and-development High-NA EUV tool received from ASML.

Equipment Types Covered:

EUV Exposure Systems (Scanners)

EUV Light Source Systems

EUV Optical Systems

EUV Mask Inspection Systems

EUV Metrology and Inspection Systems

Other Equipment

Resolution Nodes Covered:

7 nm

5 nm

3 nm

2 nm

Below 2 nm

Applications Covered:

Logic Devices

Memory Devices

Foundry Manufacturing

Advanced Packaging

Research and Development

End Users Covered:

Integrated Device Manufacturers (IDMs)

Pure-Play Foundries

Memory Manufacturers

Research Institutes and Universities

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free

EUV Lithography Market Forecasts to 2034 – Global Analysis By Equipment Type (EUV Exposure Systems (Scanners),...

customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

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