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EUV Lithography Components Market Forecasts to 2034 – Global Analysis By Component Type (EUV Light Source Systems, Collector Mirrors, Projection Optics Mirrors, Mask Blanks and Photomasks, Pellicles, Wafer Stages and Motion Control Systems, Metrology and Inspection Modules, Vacuum Chambers and Contamination Control Systems, Power Supply and Thermal Management Systems, and Control Electronics and Software), Material Type, Technology, Application, End User, and By Geography

https://marketpublishers.com/r/EB6230A9EBBAEN.html
Date: February 2026
Pages: 200
Price: US$ 4,150.00 (Single User License)
ID: EB6230A9EBBAEN

Abstracts

According to Stratistics MRC, the Global EUV Lithography Components Market is accounted for $4.4 billion in 2026 and is expected to reach $8.8 billion by 2034 growing at a CAGR of 8.8% during the forecast period. The EUV lithography components focus on critical subsystems used in extreme ultraviolet semiconductor manufacturing equipment, including light sources, mirrors, optics, vacuum systems, masks, and precision stages. It supports advanced logic and memory fabrication at leading process nodes. Growth is driven by continued demand for smaller and more powerful chips, large capital investments by foundries, expansion of AI and high-performance computing workloads, and limited availability of high-precision component suppliers.

According to ASML public disclosures, EUV systems operate with 13.5-nanometer wavelength and each tool contains over 100,000 precision components.

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Market Dynamics:

Driver:

Demand for advanced logic and memory chips

As artificial intelligence and 5G infrastructure demand chips with higher transistor densities, traditional optical lithography reaches its physical resolution limits. EUV components enable the patterning of sub-7nm features in a single exposure, significantly reducing the need for complex multi-patterning schemes. This efficiency not only improves yield for logic processors but also drives the transition to next-generation architectures, ensuring that component suppliers see consistent demand from leading-edge foundries aiming to maintain Moore's Law.

Restraint:

Extreme technical complexity and astronomically high cost

A single scanner requires integrated components like CO2 lasers and droplet generators that must operate with near-perfect synchronization in a vacuum environment. These systems often cost upwards of $150 million, excluding the massive infrastructure upgrades required for cleanrooms. For many second-tier semiconductor manufacturers, the return on investment remains difficult to justify. This high barrier to entry restricts the customer base to a handful of global giants, potentially stifling broader innovation across the mid-market equipment ecosystem.

Opportunity:

Expansion into high-volume DRAM and NAND production

Memory giants are increasingly integrating EUV layers into their DRAM roadmaps to achieve the bit density required for DDR5 and beyond. As these manufacturers move from pilot lines to full-scale production, the demand for high-reflectivity masks and specialized resist materials is expected to scale exponentially. This transition provides a steady, long-term revenue stream for suppliers, diversifying their portfolios beyond the volatile logic sector and stabilizing the overall supply chain through increased volume.

Threat:

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Geopolitical export controls disrupting supply

Stringent export controls, particularly those targeting advanced lithography tools and their constituent components, threaten to fragment the global market. These regulations can abruptly cut off access to major manufacturing hubs, forcing suppliers to navigate a 'decoupled' supply chain. Such disruptions not only lead to immediate revenue losses but also encourage the emergence of subsidized domestic competitors in restricted regions. This geopolitical friction creates long-term uncertainty, complicating R&D planning and the efficient allocation of manufacturing resources across international borders.

Covid-19 Impact:

The pandemic initially triggered severe supply chain bottlenecks, delaying the delivery of critical optical modules and precision sensors due to global logistics shutdowns. However, the crisis simultaneously accelerated the 'stay-at-home' digital shift, creating an unprecedented surge in demand for laptops, servers, and data center infrastructure. This spike in end-user demand forced chipmakers to pull forward their EUV adoption timelines to increase capacity. While labor shortages hampered on-site installation, the market proved resilient, ultimately emerging with a more robust, diversified procurement strategy.

The metrology and inspection modules segment is expected to be the largest during the forecast period

The metrology and inspection modules segment is expected to account for the largest market share during the forecast period. As circuit patterns become incredibly minute, the margin for error effectively disappears, making real-time defect detection and wafer alignment more critical than the printing process itself. Advanced inspection tools are required at every stage to ensure that the multi-layer mirrors and masks remain free of sub-nanometer contaminants. This necessity drives continuous investment in high-sensitivity sensors and electron-beam inspection systems, ensuring this segment retains its dominant financial position within the broader EUV component ecosystem.

The memory manufacturers segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the memory manufacturers segment is predicted to witness the highest growth rate. Traditionally, memory production relied on cost-effective Deep

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Ultraviolet (DUV) processes, but the physical scaling limits of DRAM have made EUV adoption inevitable. As Samsung, SK Hynix, and Micron ramp up their EUV-based production lines to meet the needs of AI-driven data centers, the growth curve for this segment is outstripping logic. The transition from multi-patterning DUV to single-patterning EUV in memory fabs represents the most significant shift in capital equipment spending.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share. This dominance is anchored by the presence of the world's leading foundries in Taiwan and South Korea, which serve as the primary destination for almost all EUV scanner shipments. The region’s mature semiconductor infrastructure, combined with massive government-backed 'fab clusters,' creates a centralized hub for component demand. From specialized chemicals to photomask blanks, the supply chain is heavily weighted toward supporting these Asian manufacturing powerhouses, ensuring the region remains the focal point of global lithography investment and operational activity.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR. Beyond its current dominance, the region is seeing aggressive expansion in manufacturing capacity as both established players and emerging entrants invest in new EUV-capable facilities. The rapid industrialization in Southeast Asia and the continued push for self-sufficiency in high-end chipmaking drive this accelerated growth. As local ecosystems for materials and sub-components mature, the region is evolving from a mere consumer of technology to a high-growth hub for the entire EUV lifecycle, outpacing the growth rates of Western markets.

Key players in the market

Some of the key players in EUV Lithography Components Market include ASML Holding N.V., Carl Zeiss AG, Trumpf GmbH + Co. KG, KLA Corporation, Ushio Inc., HOYA Corporation, AGC Inc., Lasertec Corporation, NuFlare Technology Inc., Photronics, Inc., Rigaku Corporation, Energetiq Technology, Inc., SUSS MicroTec SE, Edmund Optics Inc., and TRUMPF Group.

Key Developments:

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In January 2026, ASML announced that its High NA EUV (0.55 NA) systems have reached a milestone in customer readiness, with revenue recognized for two systems and a projected sales growth for 2026 driven by the transition to the EXE:5200 platform for 2nm logic nodes.

In January 2026, Zeiss confirmed a production ramp-up for the next generation of High NA EUV optics, which are critical components for ASML's lithography machines, enabling a 1.7x increase in transistor density over previous generations.

Components Types Covered:

- EUV Light Source Systems
- Collector Mirrors
- Projection Optics Mirrors
- Mask Blanks and Photomasks
- Pellicles
- Wafer Stages and Motion Control Systems
- Metrology and Inspection Modules
- Vacuum Chambers and Contamination Control Systems
- Power Supply and Thermal Management Systems
- Control Electronics and Software

Material Types Covered:

- Multilayer Reflective Coatings
- Ultra-Low Thermal Expansion Glass
- Molybdenum–Silicon Mirror Materials

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Specialty Ceramics

Advanced Polymers and Composites

Precision Metals and Alloys

Technologies Covered:

7 nm and Below

5 nm

3 nm

Sub-3 nm and High-NA EUV Platforms

Applications Covered:

Logic Semiconductor Manufacturing

Advanced Memory Manufacturing

Foundry Services

Research and Development Facilities

End Users Covered:

Integrated Device Manufacturers (IDMs)

Pure-Play Foundries

Memory Manufacturers

Semiconductor Research Institutes

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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

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- 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

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? 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

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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)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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