+357 96 030922
info@marketpublishers.com

Global EUV Mask Defect Inspection Equipment Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

https://marketpublishers.com/r/G7ABE3500525EN.html
Date: January 2026
Pages: 70
Price: US$ 3,480.00 (Single User License)
ID: G7ABE3500525EN

Abstracts

According to our (Global Info Research) latest study, the global EUV Mask Defect Inspection Equipment market size was valued at US$ 1952 million in 2025 and is forecast to a readjusted size of US$ 4334 million by 2032 with a CAGR of 12.2% during review period.

Mask, also known as Photomask or Reticle, is a graphic master used in the lithography process commonly used in microelectronics processing technology. As a carrier of graphic information, Mask transfers the graphic to the base material through the exposure process, thereby realizing the transfer of the graphic.

Mask defect detection is a key link in the semiconductor lithography process, which aims to check the Mask and identify and repair the defects on it. As a critical component in the lithography process, Mask is responsible for accurately transferring the circuit pattern to the wafer, and its quality is directly related to the accuracy of the wafer pattern and the performance of the final device. There are various types of defects, including particle contamination, pattern breakage, bridging problems, and defects in the mask material itself.

EUV Mask defect detection equipment is a special equipment that plays an important role in the high-end semiconductor process technology. Given the high precision required by EUV lithography technology, even the smallest defect on the Mask may significantly affect the quality of the circuit pattern on the wafer, and thus adversely affect the performance and yield of the chip. Therefore, the use of special detection equipment to strictly inspect the EUV Mask is an indispensable key link to ensure the quality of semiconductor manufacturing.

+357 96 030922
info@marketpublishers.com

At present, optical detection is the mainstream in semiconductor detection technology. The types of semiconductor optical detection include pattern, non-pattern and mask detection. Among them, pattern defect detection is divided into bright field and dark field detection. Both are analyzed through optical signals. The difference is that the bright field is a vertically reflected light signal, while the dark field is a scattered light signal.

In the semiconductor lithography process, corresponding light sources need to be used for different masks. Different mask applications vary greatly, and can be generally divided into binary masks, phase-shift masks and EUV masks. EUV Mask is a new type of mask designed specifically for EUV (extreme ultraviolet) lithography technology. Given the extremely short wavelength of EUV and its easy absorption by a variety of materials, traditional refractive elements such as lenses cannot be used. Instead, according to the Bragg law, the reflection of the light beam is achieved through a multi-layer (ML) structure (unlike EUV, DUV uses transmitted light). This type of mask is widely used in 7nm, 5nm, 3nm and 2nm (TSMC plans to mass produce in 2025) high-end manufacturing processes.

At present, mask detection technology is mainly optical detection and SEM detection. Among them, the optical inspection companies are mainly Lasertec and KLA, while SEM inspection is Advantest. From the perspective of downstream applications, as long as the mask uses Pellicle, EUV Mask inspection equipment is required (in other words, as long as there is an EUV lithography machine, EUV inspection equipment must be used), but at present, not all EUV Masks of downstream terminal manufacturers will be used with Pellicle.

In DUV lithography or optical Mask technology, Pellicle plays a key role. The Mask inspection tool operates at an exposure wavelength of 193nm, and inspection is performed through this layer of film. For the wafer fab, this is a direct and efficient process. However, in extreme ultraviolet (EUV) lithography technology, the manufacturing process of the Mask needs to be carried out in a dedicated Mask workshop. At this point, the inspection of the Mask becomes more complicated because it requires a high-resolution system. In the wafer fab environment, the ideal situation is to use a layer of Pellicle to protect the Mask from particle contamination, while allowing the inspection system to work through this layer of Pellicle. If there are no defects, you can proceed; if defects are detected, you need to remove the pellicle and send the Mask to the Mask workshop for cleaning.

EUV Mask defect detection equipment is mainly used in Mask Shop and Fab. The Fab

+357 96 030922
info@marketpublishers.com

includes the mask production line and the wafer manufacturing production line. For the Fab, there are two main reasons for using EUV Mask defect detection equipment. First, once the pellicle is attached to the Mask, other types of equipment (such as electron beam or DUV equipment) except EUV detection equipment are difficult to achieve high-sensitivity detection effects. This is because the presence of pellicles interferes with the detection capabilities of these devices, making it difficult for them to accurately identify tiny defects. Secondly, EUV detection equipment has higher detection accuracy and can detect defects and particles that traditional DUV Mask detection methods cannot capture. Mask Shop has always had a relatively large share, reaching about 61% in 2023. However, with the acceleration of commercialization of smaller advanced process nodes, it is expected that the share of Fab will reach 42% by 2030.

At present, the EUV Mask defect detection equipment market is mainly monopolized by KLA and Lasertec. EUV Mask defect detection equipment is a high-precision and advanced equipment with a long delivery time. For example, Lasertec's delivery time is two years. In the next few years, the two leading companies will still maintain a monopoly in the EUV Mask defect detection market.

This report is a detailed and comprehensive analysis for global EUV Mask Defect Inspection Equipment market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global EUV Mask Defect Inspection Equipment market size and forecasts, in consumption value ($ Million), sales quantity (Units), and average selling prices (K US$/Unit), 2021-2032

Global EUV Mask Defect Inspection Equipment market size and forecasts by region and country, in consumption value ($ Million), sales quantity (Units), and average selling prices (K US$/Unit), 2021-2032

Global EUV Mask Defect Inspection Equipment market size and forecasts, by Type and by Application, in consumption value ($ Million), sales quantity (Units), and average selling prices (K US$/Unit), 2021-2032

+357 96 030922
info@marketpublishers.com

Global EUV Mask Defect Inspection Equipment market shares of main players, shipments in revenue ($ Million), sales quantity (Units), and ASP (K US$/Unit), 2021-2026

The Primary Objectives in This Report Are:
To determine the size of the total market opportunity of global and key countries
To assess the growth potential for EUV Mask Defect Inspection Equipment
To forecast future growth in each product and end-use market
To assess competitive factors affecting the marketplace

This report profiles key players in the global EUV Mask Defect Inspection Equipment market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Lasertec, KLA-Tencor, Advantest, Applied Materials, NuFlare, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

EUV Mask Defect Inspection Equipment market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

5-7nm Process

3nm and Below Process

Market segment by Application

Mask Shop

+357 96 030922
info@marketpublishers.com

Fab

Major players covered

Lasertec

KLA-Tencor

Advantest

Applied Materials

NuFlare

Market segment by region, regional analysis covers
North America (United States, Canada, and Mexico)
Europe (Germany, France, United Kingdom, Russia, Italy, and Rest of Europe)
Asia-Pacific (China, Japan, Korea, India, Southeast Asia, and Australia)
South America (Brazil, Argentina, Colombia, and Rest of South America)
Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe EUV Mask Defect Inspection Equipment product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of EUV Mask Defect Inspection Equipment, with price, sales quantity, revenue, and global market share of EUV Mask Defect Inspection Equipment from 2021 to 2026.

Chapter 3, the EUV Mask Defect Inspection Equipment competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the EUV Mask Defect Inspection Equipment breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by

+357 96 030922
info@marketpublishers.com

regions, from 2021 to 2032.

Chapter 5 and 6, to segment the sales by Type and by Application, with sales market share and growth rate by Type, by Application, from 2021 to 2032.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value, and market share for key countries in the world, from 2021 to 2026.and EUV Mask Defect Inspection Equipment market forecast, by regions, by Type, and by Application, with sales and revenue, from 2027 to 2032.

Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

Chapter 13, the key raw materials and key suppliers, and industry chain of EUV Mask Defect Inspection Equipment.

Chapter 14 and 15, to describe EUV Mask Defect Inspection Equipment sales channel, distributors, customers, research findings and conclusion.

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

3 COMPETITIVE ENVIRONMENT: EUV MASK DEFECT INSPECTION EQUIPMENT BY MANUFACTURER

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

List Of Figures

LIST OF FIGURES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

LIST OF FIGURES

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Global EUV Mask Defect Inspection Equipment Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

Product link: https://marketpublishers.com/r/G7ABE3500525EN.html

Price: US$ 3,480.00 (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/G7ABE3500525EN.html