E-Beam Wafer Inspection System Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

Market Report | 2023-10-15 | 147 pages | IMARC Group

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Report description:

Market Overview:

The global e-beam wafer inspection system market size reached US$ 631.3 Million in 2022. Looking forward, IMARC Group expects the market to reach US$ 1,921.1 Million by 2028, exhibiting a growth rate (CAGR) of 21.44% during 2023-2028.

E-beam wafer inspection system refers to a semiconductor fabrication tool based on electron beam scanning of integrated circuit (IC) components or wafers. It is used for detecting any defects in the wafers before final packaging and is ideal for scanning small sections of a die to identify specific hard-to-detect systematic and random defects. The inspection system scans the wafer and determines coordinates of the defects by comparing it to the image of the adjacent dies. This technique is commonly used while manufacturing compact gadgets, smartphones, laptops and tablets. It is also used for lithographic qualification, wafer dispositioning and reticle quality optimization.

Significant growth in the electronics industry, along with rapid industrialization, is one of the key factors creating a positive outlook for the market. Semiconductor wafers are widely used for manufacturing specialized devices and consumer electronics, thereby increasing the demand for efficient inspection systems. Furthermore, the electrification and automation in automobiles is also driving the market growth. Numerous kinds of wafers are used in automobile components, such as airbag controls, global positioning systems (GPS), anti-lock braking systems (ABS), navigation and display systems and power down and window controls. They are also used for improving automated driving and collision detection technologies, which, in turn, have increased the demand for wafer inspection systems. Moreover, various technological advancements, such as the development of multi-beam e-beam inspection systems that are more efficient and minimize the overall time required for mass production, are projected to drive the market further.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global e-beam wafer inspection system market report, along with forecasts at the global, regional and country level from 2023-2028. Our report has categorized the market based on resolution, application and end use.

Breakup by Resolution:

Less than 1 nm
1 nm to 10 nm
More than 10 nm

Breakup by Application:

Defect Imaging
Lithographic Qualification
Bare Wafer OQC/IQC
Wafer Dispositioning
Reticle Quality Inspection
Inspector Recipe Optimization

Breakup by End Use:

Communication Devices
Consumer Electronic Equipments
Automotive Parts
Others

Breakup by Region:

North America
United States
Canada
Asia Pacific
China
Japan
India
South Korea
Australia
Indonesia
Others
Europe
Germany
France
United Kingdom
Italy
Spain
Russia

Others
Latin America
Brazil
Mexico
Others
Middle East and Africa

Competitive Landscape:
The report has also analysed the competitive landscape of the market with some of the key players being Aerotech Inc., Applied Materials Inc., ASML Holding N.V., Hitachi Ltd., KLA-Tener Corporation, Lam Research Corporation, Nanotronics Imaging Inc., NXP Semiconductors N.V. (Qualcomm Incorporated), Renesas Electronics Corporation, Synopsys Inc., Taiwan Semiconductor and Teledyne Technologies.

Key Questions Answered in This Report:

How has the global e-beam wafer inspection system market performed so far and how will it perform in the coming years?
What has been the impact of COVID-19 on the global e-beam wafer inspection system market?
What are the key regional markets?
What is the breakup of the market based on the resolution?
What is the breakup of the market based on the application?
What is the breakup of the market based on the end use?
What are the various stages in the value chain of the industry?
What are the key driving factors and challenges in the industry?
What is the structure of the global e-beam wafer inspection system market and who are the key players?
What is the degree of competition in the industry?

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