

Microscope Market Report and Forecast 2025-2034

Market Report | 2025-08-11 | 156 pages | EMR Inc.

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Report description:

The global microscope market reached approximately USD 1.46 Billion in 2024. The market is projected to grow at a CAGR of 3.10% between 2025 and 2034, reaching a value of around USD 1.98 Billion by 2034.

Microscope Market Growth Rate

A microscope is referred to as an instrument that is used to examine objects that are small and are invisible to the naked human eye. It allows the observer a close view of minute structures for analysis and examination by interacting with the sample images to scan the surface using a probe. Microscopes can provide both dynamic and static images.

Increasing research, technological advancements, and innovations are driving the microscope market growth. The evolving innovations to enable microscopes to clearly and accurately visualise specimens in three dimensions are expected to propel the market growth. The development of advanced components such as lasers and detectors with a new dimension of information and lifetime-based imaging as well as the development of advanced microscopes that can cover a wider range of visible light while correlating fluorescent light with other data is further invigorating the market growth. Moreover, increasing interest towards brain study to comprehend the functional map of brain activity residing near the cortex is increasing the demand for advanced and microscopic 3D imaging, therefore fuelling the microscope market development.

Key Trends and Developments

Increased demand in life sciences; increasing automation of microscopes; development of machine learning algorithms; and development of super-resolution microscopy are the major trends impacting the microscope market expansion

March 6th, 2024

The Korea Research Institute of Standards and Science (KRISS) developed a new hybrid nano-microscope that enables the

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simultaneous measurement of optical and electrical properties.

December 4th, 2023

Zeiss Microscopy, known for producing visible, electron, X-ray, and ion microscope systems, expanded its structured illumination microscopy (SIM) lineup with the addition of two super-resolution microscopes.

November 27th, 2023

Shimadzu launched the AIRsight FTIR Raman microscope which is the first and only of its kind in the world, capable of seamlessly conducting both FTIR (Fourier-transform infrared) and Raman spectroscopy.

September 8th, 2023

Nikon Corporation announced its new smart imaging system, "ECLIPSE Ji," which leverages artificial intelligence (AI) to automate the capture and analysis of cellular images.

Increased demand in life sciences

The growing research activities in life sciences, particularly in areas such as cell biology and neuroscience are driving the demand for advanced microscopes.

Increasing automation of microscopes

The automation of microscopes has the potential to ease morphology, which is a time-consuming and meticulous work of identifying changes in cells in life sciences.

Development of machine learning algorithms

ML algorithms can predict key events in the progression of viral infection as well as reduce time spent on capturing and analysing cells in the microscopy market.

Development of super-resolution microscopy

Super-resolution microscopy techniques, which surpass the diffraction limit of light are gaining traction in research applications.

Microscope Market Trends

The automation of microscopes refers to the integration of automated systems and software into microscopy, which can significantly streamline the process of morphology in life sciences. Morphology involves the detailed examination and identification of changes in the structure and form of cells, which is crucial for understanding various biological processes and diseases. □This can aid in accurately assessing various diseases, including the assessment of oral cancer tumour margin at the time of surgery.

Key players in microscope market are developing groundbreaking microscopes that can streamline and enhance the analysis of materials. Shimadzu, a renowned manufacturer of analytical instrumentation, introduced the AIRsight FTIR Raman microscope in November 2023, a pioneering device that marks a significant advancement in the field of microscopy and spectroscopy. The

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AIRsight FTIR Raman microscope is designed to switch effortlessly between FTIR and Raman modes, saving time and reducing the potential for errors.

Microscope Industry Segmentation

"Microscope Market Report and Forecast 2025-2034" offers a detailed analysis of the market based on the following segments:

Market Breakup by Type

- Scanning Electron Microscope
- Transmission Electron Microscope
- Focused Ion Beam

Market Breakup by End Use

- Semiconductor and Microelectronics
- Healthcare
- General Manufacturing
- Food Processing
- Construction
- Others

Market Breakup by Region

- North America
- Europe
- Asia Pacific
- Latin America
- Middle East and Africa

Microscope Market Share

Scanning electron microscope (SEM) maintains its dominance in the market due to its widespread usage in the fields of material science and biology, among others

Scanning Electron Microscope (SEM) holds the highest share in the microscope market. They are widely used in various fields, including materials science, biology, forensics, and semiconductor manufacturing, due to their ability to produce high-resolution images of the surface topography and composition of samples. SEMs are particularly valued for their depth of field and ability to provide detailed 3D images, making them essential tools for surface analysis and characterisation.

Transmission Electron Microscope (TEM) is anticipated to gain substantial growth in the market in the forecast period as they are used for examining the internal structure of samples at very high resolutions, down to the atomic level.

The food processing sector accounts for a major share owing to the usage of microscopes for the identification of toxins and other harmful substances in food products

The food processing sector occupies a substantial share of the market. The robust growth of the food and beverage sector is

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aiding the growth of this segment. Microscopes are widely used in food analysis to determine undesirable substances, such as heavy metals, mycotoxins, and prohibited substances. Hence, the increasing regulations and the introduction of various stringent government policies to ensure food safety are propelling the market growth. Moreover, the rising demand to increase the shelf life of food and beverage products is increasing the focus on microstructures of food to analyse the texture, quality, flavour, and properties of a product. This is also increasing the use of microscopes in the food sector, which is augmenting the market growth.

The healthcare sector is anticipated to gain robust growth in the microscope market in the coming years. This is due to the extensive use of microscopes in various medical and research applications, including pathology, microbiology, histology, and biomedical research.

Microscope Market Analysis by Region

North America is contributing significantly to the market growth for microscopes owing to the increasing availability of the latest microscopic technology. The presence of various research institutes and surging incentives in research and development activities is also increasing the use of microscopes in the academic sector, therefore fuelling the market growth. Moreover, rapid technological advancements in the region are leading to the development of the advanced microscope, which is further bolstering the market expansion.

Apart from this, the Asia Pacific region is witnessing robust growth due to rapid industrialisation. This is increasing the deployment of microscopes in various major industries, including food and construction. In addition, increasing advancements in life sciences in countries such as China, Japan, India, and South Korea, are increasing the demand for microscopes, therefore providing further impetus to the market growth.

Competitive Landscape

The market players in microscope market are introducing novel technologies to stay ahead of the competition, further increasing their collaboration efforts to meet the evolving regulatory landscape

Angstrom Advanced Inc.

Angstrom Advanced Inc. specialises in the design and manufacturing of scientific instruments and analytical equipment and its product range includes spectrometers, gas generators, and advanced analytical instruments, among others.

Tescan Orsay Holding, a.s.

Tescan Orsay Holding, a.s. is a leading global supplier of scientific instruments and solutions, particularly in the field of electron microscopy and focused ion beam technologies.

Thermo Fisher Scientific Inc.

Thermo Fisher Scientific Inc. is a global leader in serving science, with a broad portfolio of products and services for research, analysis, discovery, and diagnostics.

Hitachi High-Technologies Corporation.

Hitachi High-Technologies Corporation. is a global company that provides a wide range of products and services in the fields of electronic device systems, life sciences, and information systems.

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Other major players in the market include Olympus Corporation, Leica Microsystems GmbH, and Carl Zeiss AG, among others.

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