

Metrology Software - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Metrology Software Market size is estimated at USD 1.58 billion in 2025, and is expected to reach USD 2.61 billion by 2030, at a CAGR of 10.54% during the forecast period (2025-2030).

Key Highlights

- Metrology solutions are witnessing a shift from merely a tool that gathers or collects data to one capable of data analysis and processing. Measurements are conducted in the production process rather than in measuring rooms, fostering the demand for metrology used in a modularized method in plants and production lines and impacting the demand for standard measuring instruments.
- The use of metrology software to inspect manufactured products is one of the critical factors expected to drive the growth of the global metrology software market in the next five years. Advanced nanotechnology, smart materials, flexible electronics, and green manufacturing are the principal factors driving demand for metrology solutions in electronic manufacturing.
- Due to the ongoing digitalization trend across all sectors, the metrology field has noticed the need to change digitally. As the world shifts toward digital transformation, the industry also embraces the transformation, allowing the metrology software market to grow more during the forecast period.
- Metrology software connects the dots among CAD, ERP, MRP, and PLM. Metrology is one of the first challenges when working down the design/build process. Post-CAD measurement data is often necessary to collect missing feature data, create geometry for complex surface profiles, and support manufacturing, engineering, toolmaking, assembly guidance, and quality verification.
- Metrology solutions are expected to become indispensable to electronic manufacturing quality inspection activities. In the rapidly-growing electronic manufacturing industry, end users aim to undertake projects involving new product designs and development. Metrology Software is a suite of applications, scripts, and programs tailored for precise operations on automated measurement machines. This software not only acquires and evaluates measurement data but also streamlines the entire process

with a user-friendly interface. In addition, it includes management tools for reporting and ensuring regulatory compliance.

- Statistical process control for semiconductor manufacturing enables the company to maximize yield and quality by simply sampling a small number of wafers out of thousands processed daily. Thus, revenue growth in metrology/inspection systems lags behind the increase in overall equipment.
- Post COVID-19, there has been a significant impact on the technology sector. Disruptions of an electronic supply-value chain and raw material supply have adversely impacted the technology industry. However, the pandemic compelled industries to find safer and more innovative ways to operate smoothly and effectively. Metrology software plays a pivotal role in the manufacturing process by generating digital 2D and 3D models, aiding product designers and engineers in establishing precise measurements and tolerances for prototyping which is driving the market.

Metrology Software Market Trends

Aerospace Sector to Witness Significant Growth

- Since the dawn of flying, technology has advanced at a breakneck pace, and planes are now vastly more sophisticated. The use of metrology in aerospace has been critical to this progress. Metrology's importance is expected to rise only in the following decades, thus driving the metrology software market. As per data by the International Air Transport Association (IATA), Europe has the maximum air passenger market share with a 30.7% contribution, followed by North America with a 28.9% contribution in air passenger traffic.
- Aircraft that are lighter, more efficient, and safer are made with composite materials, essential to the continued development of aerospace production. Composite materials are light, incredibly robust, and long-lasting. They may also be molded into more intricate shapes than metals like steel and aluminum, which has major benefits, which are companies profit from fewer fasteners and joints, resulting in fewer weak places, and since there are fewer components, assembly time is also minimized.
- To construct lighter, more efficient planes, the usage of composite parts is critical in the future of aerospace manufacturing. While composite-part airplanes have reduced operational costs, their production costs are often higher. Composites are more expensive than steel and aluminum because they are lighter, stronger, and more durable, and metrology-assisted assembly is crucial for keeping the production process cost-effective. As composite parts grow increasingly common, metrology's significance as a value-added component is becoming more widely recognized.
- The disadvantage of composite materials is that they are more expensive than their metallic counterparts. However, metrology comes into play here, supporting the assembly process in developing more cost-effective production procedures. The crucial significance of metrology in aircraft is expected to only grow as the usage of composite materials develops among the significant commercial plane builders.
- Despite its numerous advantages, composite is tough to work with material requiring precise assembly with very tight tolerances. Using metrology in manufacturing helps avoid costly mistakes and scrap or rework material. Also, with the aerospace industry demanding 100% inspection from their Tier-1 suppliers, companies must deliver accuracy, repeatability, and dependability for the most challenging measurement tasks.
- As per the Boeing's forecast, there will be a demand for 2.3 million new aviation personnel over the next 20 years to support the growing commercial fleet and to support the long-term growth in air travel, with the expectation of doubling the global commercial airplane fleet by 2042.

Asia-Pacific to Witness Major Growth

- Due to the presence of various automotive giants and aerospace establishments in the region and their increasing interest in

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high-accuracy metrology solutions, Asia-Pacific is expected to have the highest growth of metrology software solutions. China is a global manufacturing hub. Since the precision and complexity of manufacturing processes have been increasing rapidly, the metrology software market is expected to boost this area, as China currently has several national and international manufacturing facilities.

- With support from Huawei and China Mobile, Haier has successfully applied innovative manufacturing solutions combining 5G and mobile edge computing in its smart factories. These solutions integrate 5G edge computing with artificial intelligence and machine vision in manufacturing environments. These apply to various manufacturing scenarios where they can perform various functions. The metrology software solutions can save manufacturing costs by rapidly performing QC checks with over 99% accuracy, at least 10% more accurate than without the function. Such instances are expected to drive the market's growth in the region.
- Companies have had various partnerships and collaborations in Japan to enhance their measurement and inspection solutions further and improve their presence and customer base. Various companies have been seeking an effective technology that can help to fully automate and enhance better cost-effective visual inspection and measurement solutions that significantly improve quality control and reduce manufacturing costs.
- For instance, in February 2023, Hexagon's Manufacturing Intelligence division unveiled the Nexus 'digital reality platform.' This platform is tailored to equip users with tools for metrology reporting, materials measurement, and Design for Additive Manufacturing (DfAM). One of its key features, the Metrology Reporting app, acts as a bridge, seamlessly connecting Hexagon and third-party metrology data sources within Nexus' secure cloud environment. This integration empowers companies to swiftly access and analyze quality control data from their equipment, pinpointing trends and proactively addressing tolerance issues.

Metrology Software Industry Overview

The metrology software market is moderately competitive, with many players. The key players in the market are adopting strategies such as partnerships, innovations, and acquisitions to enhance their product offerings and gain sustainable competitive advantage.

For instance, Creaform, a business unit of AMETEK specializing in portable 3D measurement solutions and engineering services, introduced the HandySCAN BLACK Elite Limited to its HandySCAN 3D BLACK series in February 2023. The HandySCAN BLACK Elite Limited, tailored for dimensional metrology professionals in industrial and manufacturing sectors, excels in quality control and product development, especially for applications demanding heightened accuracy.

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Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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