

3D Machine Vision Market Size, Share & Trends Analysis Report By Offering, By Application (Quality Assurance, Positioning & Guidance, Measurement, Identification), By Product, By End-use, And Segment Forecasts, 2020 - 2027

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Abstracts

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3D Machine Vision Market Growth & Trends

The global 3D machine vision market size is expected to reach USD 3.46 billion by 2027, according to a new report by Grand View Research, Inc. The market is expected to witness a CAGR of 14.7% over the forecast period. The ability of 3D machine vision systems to process a large amount of information in a fraction of seconds is a major factor driving the market growth. The quick processing ability of 3D machine vision systems is paving the way for manufacturers to achieve new milestones in manufacturing products with negligible defects. Moreover, the increasing adoption of robots across industrial sectors is leading toward the application of vision-guided robotic systems. Industrial verticals, such as automotive, pharmaceutical, packaging, and food and beverage, are prominent sectors where robotic systems are used, eventually fueling the demand for machine vision systems.

The 3D machine vision technology encompasses various components in order to capture images of products to analyze them depending on different parameters of quality and safety. The technology is a combination of software and hardware that provides operational control to devices to execute functions such as capturing and processing of images and measuring various characteristics required for decision making. Major components of the system comprise lighting, lens, image sensors, vision processing, and communication devices. 3D Machine vision systems assist in resolving

complicated industrial tasks with reliability.

Industrial machine vision systems are usually more robust and demand high reliability, stability, and accuracy as compared to those used in institutional or educational applications. They cost lesser than systems used in military, aerospace, defense, and government applications. These factors are expected to lead to greater adaptability of the technology in industrial sectors. In addition, the robotic vision systems used across the industries are also leading to the increasing adoption of the technology, thereby strengthening the overall market.

The Asia Pacific region held the largest market share in 2019, which can be attributed to ample opportunities offered on account of large manufacturing practices carried out in the region. Countries such as China, Japan, South Korea, and India are considered to be potential markets for upcoming technologies, including machine vision. The region's huge industrial expansion has been contributing to the prosperity and development of various innovations and the adoption of different technologies significantly.

3D Machine Vision Market Report Highlights

The identification application segment is anticipated to exhibit the fastest growth rate over the forecast period followed by positioning and guidance applications

The PC-based product segment accounted for the largest market share in 2019 and is estimated to continue to dominate the market over the forecast period

The industry is expected to witness substantial growth in the Asia Pacific region over the next decade. This growth is witnessed in the wake of ample opportunities offered due to the presence of large manufacturing hubs in prominent countries (across the food and packaging, automotive, pharmaceutical, industrial, and consumer electronic sectors) such as China and Japan

The food and beverage industry is expected to witness the highest CAGR over the forecast period

The prominent companies in the industry include Basler AG (Germany), Cognex Corporation (U.S.), Keyence Corporation (Japan), National Instruments Corporation (U.S.)

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