

# **Defect Detection Market with COVID-19 Impact Analysis, by Offering (Hardware (Camera, Optics, and Processor), Software (Traditional and Deep-Learning); and Service), Application (Manufacturing, Packaging), Vertical, and Geography - Global Forecast to 2026**

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## **Abstracts**

The global defect detection market is estimated to grow from USD 3.5 billion in 2021 to USD 5.0 billion by 2026 at a CAGR of 7.5% during 2021–2026. The growth of the defect detection market is driven by factors such as strong focus of manufacturers on automating quality control and quality assurance processes; stringent health and safety measures imposed by governments and standards organizations on global manufacturing firms; and high demand for application-specific integrated circuits (ASICs).

“Hardware segment is estimated to hold the largest share of the market during the forecast period”

The hardware segment of the defect detection market is estimated to register the largest market share in 2026, by offering. Hardware type in defect detection systems include cameras, frame grabbers, optics, and processors. Major factors driving the growth of the market are rapid industrialization in emerging economies, increasing adoption of automated visual inspection systems in manufacturing, and increasing wages in various countries.

“Manufacturing application to register higher CAGR during the forecast period”

The defect detection market for manufacturing is projected to register the higher CAGR during the forecast period, by application. The manufacturing application requires defect

detection of cosmetic defects on all types of surfaces, which are difficult to inspect with conventional rule-based machine vision algorithms and human eye. Industries have realized the importance of quality assurance in manufacturing processes, resulting in the widespread acceptance of defect detection as an integral part of the long-term automation development process. The use of defect detection throughout an automated production process further helps identify complex defects in a short span of time. This, in turn, helps in reducing costs and improving response time and quality. Also, increasing adoption of defect detection system based on deep learning and AI in manufacturing to expedite the inspection of products and to facilitate prompt detection of defects is also driving the market growth.

“Electronics & semiconductors segment is estimated to hold the largest share of the market during the forecast period”

The electronics & semiconductors segment of the defect detection market is estimated to register the largest market share in 2026, by vertical. In the electronics & semiconductors vertical, apart from cosmetic defects such as scratches, dents, shade variations, smeared labels and strands of human hair, functional defects such as bent pins on ports and connectors, untightened screws, missing components, and wrong barcodes also need to be detected to produce fewer defective products and improve quality production. Increasing demand for high-speed assembly inspection where the throughput of components is rapid and growing need to comply with stringent quality standards is driving the growth of the electronics & semiconductors segment. Moreover, the industry is increasingly manufacturing semiconductor wafers with thickness in nanometers; this will increase the demand for defect detection systems in the coming years.

“APAC is projected to become the fastest geographical market between 2021 and 2026”

The market in APAC is expected to grow at the highest CAGR during the forecast period. Countries in APAC, such as China, Japan, India, and South Korea, have some of the largest manufacturing facilities, wherein automation has been accorded the highest priority. Rapid industrialization, presence of well-established semiconductors, food & packaging, and automotive industries are likely to drive the market growth. Also, various government initiatives such as “Make in India” to encourage large and medium-sized enterprises are fueling the market growth in APAC. Manufacturers in this region are exceedingly investing in the R&D and implementation of Industrial Internet of Things (IIoT) and other industrial automation solutions.

### Breakdown of profiles of primary participants:

By Company: Tier 1 = 50%, Tier 2 = 30%, and Tier 3 = 20%

By Designation: C-level Executives = 30%, Directors = 30%, and Others (sales, marketing, and product managers, as well as members of various organizations) = 40%

By Region: North America = 30%, Europe= 25%, APAC=40%, and ROW=5%

### Major players profiled in this report:

The defect detection market is dominated by a few established players such as Microsoft (US), IBM (US), Amazon Web Services (US), OMRON Corporation (Japan), and Cognex Corporation (US).

### Research coverage

This report offers detailed insights into the defect detection market based on offering (hardware, software, services), application (manufacturing, and packaging), vertical (electronics & semiconductors, automotive, metals & machinery, food and packaging, and pharmaceuticals), and region (North America, Europe, Asia Pacific (APAC), and Rest of the World (RoW) which includes the Middle East & Africa (MEA)) and South America. The report also provides a comprehensive review of defect detection market drivers, restraints, opportunities, and challenges in the market. The report also covers qualitative aspects in addition to the quantitative aspects of these markets.

### Key Benefits of Buying the Report

The report will help the leaders/new entrants in this defect detection market with information on the closest approximations of the revenue numbers for the overall market and the sub-segments. This report will help stakeholders understand the competitive landscape and gain more insights to better position their businesses and plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the defect detection market and provides them information on key market drivers, restraints, challenges, and opportunities.

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