

# Automated Optical Inspection Market with COVID-19 Impact Analysis by Type (2D AOI, 3D AOI), Technology (Inline AOI, Offline AOI), Industry, Application (Fabrication Phase, Assembly Phase), Elements of AOI, and Region - Global Forecast to 2026

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## Abstracts

The automated optical inspection market was valued at USD 598 million in 2020 and is projected to reach USD 1,660 million by 2026. It is expected to grow at a CAGR of 20.8% during the forecast period. Advantages of AOI over other inspection methods, upsurge in the demand for consumer electronics amidst pandemic, rising need for miniature, high-speed PCBs, demand for higher productivity by electronics manufacturing services (EMS) companies, and growing demand for electronics in automotive sector are contributing to the growth of the automated optical inspection market. Advent of SMART technology, newer applications of AOI systems apart from PCB inspection, and growing demand for AOI systems for inspection of IC substrates act as a growth opportunity for the market players.

“Based on the type, 3D AOI systems to account a larger share during 2021–2026.”

The 3D AOI system market is expected to be dominant and faster during the forecast period. Large-scale manufacturing units primarily make use of 3D AOI systems. 3D AOI systems have high operational costs and use complex programming codes for functioning but are more efficient and sensitive at detecting defects and faults than 2D AOI systems. 3D AOI systems can detect faults in PCB substrates as well as in the ball grid array (BGA), which makes them superior to 2D AOI systems. Further, the ability to quickly inspect defects in tall components, significant reduction in false call rates, and ability to provide volumetric data of components under inspection make 3D AOI systems an ideal choice for electronic manufacturing service (EMS) providers in the coming

years.

“Inline AOI systems to grow at a higher CAGR during the forecast period.”

The inline AOI system is expected to be a larger and faster-growing market during the forecast period. Inline AOI systems offer a higher rate of PCB inspection, which is ideal for electronics manufacturing companies involved in high-volume production. Hence, most large manufacturing companies install multiple inline AOI systems in their production lines to speed up the inspection process. Several key manufacturers are making innovations and developments in inline AOI systems. For instance, in March 2021, Viscom developed the new Heavy Flex handling solution. The Heavy Flex handling options are available for Viscom's S3016 ultra AOI system for optical inline 3D inspection. Also, in June 2020, GOEPEL launched two new AOI systems. The 3D XE series of AOI platforms is characterized by low acquisition costs whilst still delivering full 3D inspection functionality. The series consists of the standalone system Basic Line · 3D XE and the inline system Advanced Line · 3D XE.

“Consumer Electronics industry accounted for the largest share of the automated optical inspection market during the forecast period”

The consumer electronics segment is expected to hold the largest share of the AOI system market during the forecast period. The miniaturization of electronic gadgets has further increased the complexity of internal circuits and components. To efficiently inspect complex PCBs of small and compact consumer electronic devices, manufacturers are increasingly using advanced AOI systems to offer high-quality products to customers. The trend of having one device with multiple functionalities has made modern-day electronic devices such as smartphones, laptops, and wearables more complex in architecture. The increased complexity of these devices requires highly advanced AOI systems for inspection. Further, with the rise in the adoption of 3D inspection technology, AOI systems are going to play a vital role in maintaining the high-quality standards of these complex consumer electronic devices.

In-depth interviews have been conducted with chief executive officers (CEOs), marketing directors, other innovation and technology directors, and executives from various key organizations operating in the automated optical inspection marketplace.

By Company Type: Tier 1 - 50%, Tier 2 – 30%, and Tier 3 - 20%

By Designation: C-Level Executives - 45%, Managers - 35%, and Others – 20%

By Region: North America - 30%, Europe - 25%, APAC - 35%, and RoW - 10%

Koh Young (South Korea), Test Research, Inc. (TRI) (Taiwan), Omron (Japan), Camtek (Israel), Viscom (Germany), Saki Corporation (Japan), Nordson (US), KLA (US), Cyberoptics (US), and Goepel Electronics (Germany) are the key players in the automated optical inspection market. These top players have strong portfolios of products and services and presence in both mature and emerging markets.

The study includes an in-depth competitive analysis of these key players in the automated optical inspection market, with their company profiles, recent developments, and key market strategies.

### Research Coverage

The report defines, describes, and forecasts the automated optical inspection market based on application, type, technology, industry, and geography. It provides detailed information regarding factors such as drivers, restraints, opportunities, and challenges influencing the growth of the automated optical inspection market. It also analyzes competitive developments such as product launches, acquisitions, expansions, contracts, partnerships, and developments carried out by the key players to grow in the market.

### Key Benefits of Buying the Report

The report will help market leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall automated optical inspection market and the subsegments. 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 market and provides them with information on key market drivers, restraints, challenges, and opportunities.

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\*Details on Business Overview, Products/Solutions/Services Offered, Recent Developments, and MnM View (Key strengths/Right to Win, Strategic Choices Made, and Weaknesses and Competitive Threats) might not be captured in case of unlisted companies.

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