

Asia Pacific Optical Sensors - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Asia Pacific Optical Sensors Market is expected to register a CAGR of 12.6% during the forecast period.

Key Highlights

- Optical sensors are important electronic components that convert optical signal signals (incident light) into electronic signals. Optical sensors have very few commercial applications as stand-alone components. However, when integrated as a system with several measuring devices and electrical components, optical sensors gain a high market value due to the wide range of applications that exist across numerous end-user industries.
- Advancements in self-driving cars and Advanced Driver Assistance Systems have increased demand for these sensors in recent years. Because optical sensing solutions are considered a superior technology for measuring distances, positions, and displacements, they are increasingly used in self-driving automotive applications. Continuous development of light sources for optical sensors is also expected to play a crucial role on the road to automated, self-driving vehicles.
- Optical sensors developed based on molecularly imprinted nanomaterials (MIP) at the nanoscale outperform their conventional-sized counterparts. They are distinguished by their faster response time and ease of integration with other functionalities. In addition, the use of fiber-optic current and voltage sensors in electricity transmission, which offers significant advantages over traditional current and voltage measurement technologies, is expected to drive the market under consideration.
- Japan and India are the other two countries with a large number of electronics and semiconductor manufacturers as well as end-users. These two countries also reported more COVID-19 infected cases and are still fighting the virus's spread. Though the countries have relaxed the lockdown rules and allowed manufacturing plants to operate, the decrease in demand and supply has significantly impacted the optical sensors market players in both countries.
- However, several kinds of research are being conducted to utilize optical sensors for detecting the COVID-19 virus. In line with this, in April 2022, a nanotechnology research group from the University of Georgia announced the development of

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nanotechnology-based optical sensors for rapid coronavirus detection. Such developments in optical sensors and their increasing applications in the medical industry are expected to bolster market growth.

APAC Optical Sensors Market Trends

Growing consumer electronics demand will boost the market growth

- The growing number of optical sensor applications in consumer electronics and medical devices is expected to drive demand for medical-grade and miniaturized optical sensors.
- Consumer electronics devices, such as laptops, tablets, and smartphones, are increasingly being outfitted with optical sensors for a variety of applications, including gesture recognition, device security, and advanced biometrics. Furthermore, the growing demand for on-screen facial recognition systems in smartphones will drive optical sensor adoption in the Asia Pacific region.
- Companies are increasingly focusing on technology and innovation in pixel resolution, count, and size to improve image and data quality. It is expected that the combination of better fabrication techniques and new physical effects will open up new opportunities in micro-engineered and nano-engineered optical sensors.
- Customers in Asia-Pacific are increasingly interested in health and fitness, which has resulted in the use of optical sensors for wearable applications such as tracking physical activity, health, and wellness. In wearable form factors, these sensors enable continuous heart rate detection and oxygen saturation measurements.
- In June 2021, Samsung and Google announced the testing of a wearable platform ahead of the release of the next Galaxy Watch. The collaboration was initially announced as a "unified platform," allowing developers to create a single app for both Google's Wear OS and Tizen, Samsung's open-source operating system for its own smartwatches.
- Smartphones have taken the world by storm. The boom in Asia Pacific markets has been enormous and is a huge market for every company that makes smartphones. The growth of this industry in countries like India and China is huge, with intense competition from companies like Apple, Samsung, and HTC and between home-grown companies in the two countries like Xiaomi, Oppo, Micromax, Karbonn, etc. There is a huge demand in both the low-cost smartphone segment and the high-end segment.
- For instance, Xiaomi sub-brand Redmi announced the launch of its first smartwatch in India in May 2021. Also during the same time, the company introduced the Redmi Note 10S in a virtual event. Redmi currently sells the fitness band Redmi Smart Band Black in India for Rs 1,399. Xiaomi, on the other hand, sells the Mi Watch Revolve Chrome smartwatch in silver for Rs 8,999, alongside various Mi fitness smart bands.

Automotive segment to hold a significant share

- Automobile manufacturers strive to meet the demand for high-profile vehicles and electric vehicles (EVs) and low fuel consumption by building lighter-weight cars and favoring aluminum over iron. As the use of mixed production lines containing aluminum and iron grows, so is the demand for the same sensing distance proximity sensors with sufficiently long sensing ranges.
- In 2021, China produced not only the most passenger cars in the Asia-Pacific region but also the most passenger cars worldwide. It is also expected that Chinese manufacturers such as BYD Auto Co. Ltd. will overtake American manufacturers such as Tesla in the electric car segment.
- Furthermore, Rockwell released the new Allen-Bradley 856T Control Tower Stack Light system as part of smart devices in April 2021. These innovations in industrial automation and smart devices reflect the company's desire for innovation and leverage of its products under sensors, including proximity sensors required for intelligent and smart devices.
- However, many self-driving vehicle manufacturers in Asia, such as Cruise, use over 20 optical sensor-based modules to enable hands-free driving in their vehicles. However, most cars are still in the early stages of development and may require several years

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of R&D and regulatory approvals before reaching the consumer market. As these manufacturers move toward commercial production of these self-driving vehicles, demand for optical sensor modules from the automotive industry is expected to rise significantly in Asia.

APAC Optical Sensors Industry Overview

The Asia Pacific Optical Sensors Market is fragmented, with several major players. These major players, including Rockwell Automation Inc., Atmel Corporation, STMicroelectronics NV, SICK AG, and many others, are focusing on expanding their customer base in foreign countries. These companies leverage strategic collaborative initiatives to increase their market share and profitability. Companies in the market are also acquiring start-ups working on optical sensor market technologies to strengthen their product capabilities.

- June 2022 - Metalenz, the first company to commercialize meta-optics, and STMicroelectronics, a global semiconductor leader serving customers across the spectrum of electronics applications, announced that ST's recently released VL53L8 direct Time-of-Flight (dToF) sensor would be the highly anticipated market debut of the meta-optics devices developed through their collaboration, which was announced in June 2021.

Additional Benefits:

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

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