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

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Report description:

The Image Sensors Market size is estimated at USD 30.65 billion in 2025, and is expected to reach USD 45.54 billion by 2030, at a CAGR of 8.24% during the forecast period (2025-2030).

The image sensors are used primarily in many imaging devices and digital cameras to enhance the image's quality of picturization and storage with its applications in industrial, media, medical, and consumer applications. ?Hence, the wide application area of image sensors drives their demand across various end-user verticals.

Key Highlights
- The integration of video surveillance in the automotive and transportation industry is one of the significant trends observed across various regions. For instance, to enhance security for the Canadian Public Transportation System, with the country having millions of daily traffic, the government has deployed a unified surveillance System with integrated cameras. This is further expected to surge the demand for image sensors.
- In recent years, the smartphone has become the primary camera device in consumer electronics, dominating still cameras and DSLRs. Due to the growing demand for smartphones, the image sensors market is expected to record a high growth rate during the forecast period. Manufacturers worldwide have been striving to improve major parameters, such as resolution, performance, and pixel size, which are also driving innovations in the image sensors market. For example, Samsung has recently introduced its latest 200-megapixel (MP) image sensor for its flagship series of smartphones. Samsung's new ISOCELL HP2 image sensors feature improved pixel technology and full-well capacity for high-quality mobile images.
- The growing popularity of innovative consumer electronic devices, such as smartwatches, AR/VR headsets, etc., is driving the demand for image sensors. For instance, according to the Consumer Technology Association (CTA), the sales revenue of wearables in the United States is anticipated to reach USD 13.8 million in 2023.

- Also, the companies are recognized for their product innovation in the studied market, which is encouraging them to launch new image sensors with innovative features. For instance, in January 2023, ams OSRAM extended its Mira family of high-sensitivity, global shutter CMOS image sensors with the introduction of the 2.3mm x 2.8mm, 0.5Mpixel Mira050, a highly sensitive sensor that enables engineering designers to save power and space in wearable and mobile devices. Its sensitivity to both visible and near-infrared (NIR) light makes Mira050 suitable for applications such as eye tracking, contextual awareness in AR/VR/MR headsets, gesture tracking, 3D depth sensing for face recognition in smart door locks, and object detection in robots.
- However, with the miniaturization trend prevailing in the sensor and electronic device industry, the design and manufacturing complexity in the studied market continues to grow significantly, which continues to challenge the studied market's growth. Additionally, the high cost of quality image sensors also continues to remain a major pain point for users, especially in the lower and mid-range device/equipment segment.
- The impact of macroeconomic factors is also a challenging factor for the studied market's growth as the economic condition of consumers largely impacts their buying capability of consumer electronic products. For instance, owing to the recent economic slowdown, the consumer electronics industry in the United States has also been witnessing a slowdown, with consumer technology retail revenue taking a dip to reach USD 485 billion in 2023, compared to USD 505 billion in 2022.

Image Sensors Market Trends

CMOS Image Sensor to Witnesses a Significant Growth

- CMOS image sensor technology, with several vendors marking their presence, is sustaining its vigorous shift into low-cost camera designs. Although often compared to CCD (charge-coupled device) sensors with superior image quality in a similar price range, CMOS sensors are establishing a strong foothold at the low-cost end of the consumer device market by offering more functions on-chip for simplified camera design.?
- Consumer electronics, security, automotive, and surveillance are all growing markets for image sensors utilizing CMOS technology. Over the years, the rise of the consumer electronics sector has been spurred by the growing popularity of smartphones with built-in cameras. Hence, the growing adoption of smartphones is aiding this growth. For instance, according to Ericsson, global smartphone subscriptions are anticipated to reach 7,740 million by 2028,
- The expansion of the automotive applications of CMOS image sensors is spurred by the advancements in driver safety with the help of ADAS and the innovation of self-driving automobiles. With government and automotive industry regulatory authorities mandating the adoption of ADAS and other automotive security solutions, the demand for CMOS image sensors is anticipated to grow in the automotive domain during the forecast period.
- Furthermore, the capacity of CMOS image sensors to work in different lighting conditions, including darkness, dim light, and low light, has also raised the use of CMOS image sensors for security applications, bolstering the CMOS image sensor market for security and surveillance. Hence, the growing penetration of smart security and surveillance solutions will continue to drive the studied market's growth during the forecast period.

Asia-Pacific to Witness Significant Market Growth

- Over the years, the demand for image sensors has gained significant traction in the Asia Pacific region, owing to the remarkable growth of the automotive and consumer electronics industry. Due to the continued uptake of image sensors for automotive applications and applications in smartphones and other consumer electronic devices, the Asia Pacific image sensors market is anticipated to expand significantly over the projected period.
- China is also showing significant growth in image sensor production owing to the emergence of several image sensor

manufacturers in the country who are majorly focusing on inventing new products to strengthen their market positions. For instance, in April 2023, Gpixel introduced the GL3516 16K resolution line scan CMOS image sensor with 3.5 um pixels, producing an image diagonal of 57.3 mm and a line rate of 120 kHz. With features that make it perfect for industrial inspection applications requiring high-speed scanning and 16K resolution, such as lithium battery testing, flat panel inspection, PCB inspection, label inspection, and railway inspection, the GL3516 is pin and footprint compatible with Gpixel's current GL7008 8K line scan sensor.
- Moreover, India is one of the largest and fastest-growing economies in the region; the growing purchasing power and the rising penetration of digital technologies are expected to drive the market for electronic goods in the country. Furthermore, the country is also seeing growth in smart cities due to government initiatives.
- Over the past few decades, the industrial sector in India has also witnessed remarkable growth, especially in countries such as China, Japan, etc. With trends such as "Industry 4.0," which governs a higher adoption of advanced solutions such as automation and robotics, the demand for image sensors is also growing. For instance, according to IFR, recently, China overtook the United States in terms of the adoption of industrial robots.

Image Sensors Industry Competitive Landscape

The Image Sensors Market is fragmented in nature due to the presence of several local and global players, which also makes the competitive rivalry intense. Levels of market penetration are not massive for any of the prevailing players in the market. Due to the high market growth rate, it is a significant investment opportunity; therefore, new entrants are entering the market.? Key players are Canon Inc.?, Samsung Electronics Co. Ltd.?, Omnivision Technologies Inc., Sk Hynix, etc.

- March 2023 - Panasonic Holdings Corporation announced the development of an Organic Photoconductive Film (OPF) CMOS Image Sensor Technology that can achieve excellent color reproducibility under various light source irradiation. According to the company, the new technology separates the OPF part that performs photoelectric conversion from the circuit part. Allowing it to reduce color crosstalk and obtain excellent spectral characteristics.
- January 2023 - Teledyne e2v, a part of Teledyne Technologies, released its Hydra3D+, a new Time-of-Flight (ToF) CMOS image sensor that incorporates 832 x 600-pixel resolution, making it tailored for versatile 3D detection and measurement. Furthermore, its ability to effectively handle a wide range of reflectivity and manage lighting power makes it ideal for mid/long-range distances and outdoor applications such as surveillance, automated guided vehicles, ITS, and building construction.

Additional Benefits:

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

Table of Contents:

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