

Photonic Sensor Market Report by Product Type (Fiber Optic Sensors, Image Sensors, Biophotonic Sensors, and Others), End Use Industry (Aerospace and Defense, Transportation, Manufacturing, Healthcare, Energy and Power, and Others), and Region 2024-2032

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Abstracts

The global photonic sensor market size reached US\$ 21.8 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 72.1 Billion by 2032, exhibiting a growth rate (CAGR) of 13.8% during 2024-2032.

A photonic sensor refers to a device that intercepts light and converts it into an electrical signal. It is commonly used for integrated emission of light detection and transmission through fiber optics and other optical components. It is also used for solar and photovoltaic cells, light-emitting diodes (LEDs), LIDAR, Laser-Induced Fluorescence (LIF), calorimetry, scintillation detection, spectrometry and biological fluorescence detection. In comparison to the traditionally used sensors, these variants are more cost-effective, compact, faster and lightweight. As a result, they find extensive applications in the early-detection and warning systems for biological hazards, structural flaws and security threats across the aerospace and defense, energy and power, healthcare and manufacturing industries.

Rapid industrialization across the globe, especially in the developing economies, along with the growing demand for enhanced safety and security solutions, is one of the key factors creating a positive outlook for the market. Photonic sensors enable self-operated monitoring of industrial processes and can collect accurate data on centralized servers. Furthermore, widespread adoption of wireless sensing technology is providing a thrust

to the market growth. With improvements in the fiber optics technology, photonic sensors are gaining immense traction in the manufacturing of image and illumination sensors, lasers, LED flashes and other electro-optical instruments. Additionally, various technological advancements, such as the development of advanced photonic sensors with higher performance and multi-wavelength light generation capabilities, are also contributing to the growth of the market. Other factors, including the advent of industry 4.0 revolution, along with the increasing deployment of photonic sensors for early-warning, wind measurement and turbine structural health monitoring, are anticipated to drive the market further.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global photonic sensor market report, along with forecasts at the global, regional and country level from 2024-2032. Our report has categorized the market based on product type and end use industry.

Breakup by Product Type:

- Fiber Optic Sensors
- Image Sensors
- Biophotonic Sensors
- Others

Breakup by End Use Industry:

- Aerospace and Defense
- Transportation
- Manufacturing
- Healthcare
- Energy and Power
- Others

Breakup by Region:

- North America
 - United States
 - Canada
- Asia Pacific
- China

Japan
India
South Korea
Australia
Indonesia
Others
Europe
Germany
France
United Kingdom
Italy
Spain
Russia
Others
Latin America
Brazil
Mexico
Others
Middle East and Africa

Competitive Landscape:

The report has also analysed the competitive landscape of the market with some of the key players being A2 Photonic Sensors, Banner Engineering Corp., Baumer Holding AG, BaySpec Inc., Honeywell International Inc., LAP Laser LLC, Mitsubishi Electric Corporation, Omron Corporation, Prime Photonics LC, Samsung Electronics Co. Ltd., Smart Fibres Ltd. (Halliburton Company) and Toshiba Corporation.

Key Questions Answered in This Report

1. What was the size of the global photonic sensor market in 2023?
2. What is the expected growth rate of the global photonic sensor market during 2024-2032?
3. What are the key factors driving the global photonic sensor market?
4. What has been the impact of COVID-19 on the global photonic sensor market?
5. What is the breakup of the global photonic sensor market based on the product type?
6. What is the breakup of the global photonic sensor market based on the end use industry?
7. What are the key regions in the global photonic sensor market?
8. Who are the key players/companies in the global photonic sensor market?

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