Photonic Sensor Market: Global Industry Analysis, Trends, Market Size, and Forecasts up to 2030

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Report description:

The report on the global photonic sensor market provides qualitative and quantitative analysis for the period from 2021-2030. The global photonic sensor market was valued at USD 38.78 billion in 2022 and is expected to reach USD 79.74 billion in 2030, with a CAGR of 8.29% during the forecast period 2023-2030. The study on photonic sensor market covers the analysis of the leading geographies such as North America, Europe, Asia Pacific, and RoW for the period of 2021-2030.
A photonic sensor is a sensor that uses light to detect and measure environmental changes or identify a specific target. In the manufacturing sector, photonic sensors enable accuracy and real-time measurements, ensuring quality control, process improvement, and fault identification. Thus, the demand for the photonic sensor market is driven by the increasing adoption of automation in various industries, such as manufacturing, automotive, and aerospace. Moreover, telecommunications firms and internet service providers are consistently growing their fiber optic networks to meet the growing demand for higher internet speeds and more data capacity. Thus, as there is an expansion of the fiber optic network market, the demand for the photonic sensor market increases.
The global photonic sensor market is bifurcated By Product Type and Application. By Application, the segment is further bifurcated into (Security and Surveillance, Opto-Electronic Systems, Naval Gun Weapons Systems, and Others). Nowadays, globally, governments and security organizations have been spending money to upgrade their security systems. Also, IoT device integration has been driven by the idea of "smart cities" for several applications including security and surveillance. Additionally, UAVs and drones with photonic sensors are frequently used for surveillance and reconnaissance operations. These sensors can record high-definition photos and movies, allowing military personnel to monitor crucial areas or acquire important intelligence on enemy positions.
The global photonic sensor market is segmented into Asia Pacific, North America, Europe, the Middle East & Africa, and South America. North America is predicted to be the fastest-growing region within the global market share. Strong government initiatives for advanced technological development and the growing automotive and aerospace sector are anticipated boost the demand for the photonic sensor market as autonomous vehicles heavily rely on Light Detection and Ranging (LiDAR) sensors, a type of photonic sensor, including Fiber Bragg Gratings (FBGs) incorporated in composite materials, are utilized for SHM in aircraft constructions. The rapid growth of the photonic sensor market in North America is mostly due to the rising importance of

automation and the extensive integration of photonic sensors in several applications. Recently, the newly financed American Institute for Manufacturing Integrated Photonics (AIM Photonics) served as the focus of a USD 610 million public-private initiative to improve the USA's capacity for photonics manufacturing.

Report Findings
1) Drivers
- The increasing adoption of automation in various industries, such as manufacturing, automotive, and aerospace, has driven the demand for photonic sensor market.
- Expansion of fiber optic networks has led to an increased demand for photonic sensor.
2) Restraints
- High initial costs can hamper the market growth.
3) Opportunities
- An increase in technological advancement for improved security solutions creates an opportunity for the photonic market to expand.

Research Methodology
A) Primary Research
Our primary research involves extensive interviews and analysis of the opinions provided by the primary respondents. The primary research starts with identifying and approaching the primary respondents, the primary respondents are approached include
1. Key Opinion Leaders associated with Infinium Global Research
2. Internal and External subject matter experts
3. Professionals and participants from the industry
Our primary research respondents typically include
1. Executives working with leading companies in the market under review
2. Product/brand/marketing managers
3. CXO level executives
4. Regional/zonal/ country managers
5. Vice President level executives.
B) Secondary Research
Secondary research involves extensive exploring through the secondary sources of information available in both the public domain and paid sources. At Infinium Global Research, each research study is based on over 500 hours of secondary research accompanied by primary research. The information obtained through the secondary sources is validated through the crosscheck on various data sources.
The secondary sources of the data typically include
1. Company reports and publications
2. Government/institutional publications
3. Trade and associations journals
4. Databases such as WTO, OECD, World Bank, and among others.
5. Websites and publications by research agencies

Segment Covered
The global photonic sensor market is segmented on the basis of product type, technology, and application.

The Global Photonic Sensor Market by Product Type
- Fiber Optic Sensors
- Image Sensors

- Biophotonic Sensors
- Other

The Global Photonic Sensor Market by Technology
- Spectroscopic Technology
- LiDar Technology

The Global Photonic Sensor Market by Application
- Security and Surveillance
- Opto Electronic Systems
- Naval Gun Weapons System
- Other

Company Profiles
The companies covered in the report include
- Honeywell International Inc.
- Banner Engineering Corp.
- BaySpec, Inc.
- OMRON Corporation
- SICK, Inc.
- FISO Technologies Inc.
- Semiconductor Components Industries, LLC
- First Sensor AG
- Hamamatsu Photonics K.K.
- FUJIFILM Holdings Corporation

What does this Report Deliver?
1. Comprehensive analysis of the global as well as regional markets of the photonic sensor market.
2. Complete coverage of all the segments in the photonic sensor market to analyze the trends, developments in the global market and forecast of market size up to 2030.
3. Comprehensive analysis of the companies operating in the global photonic sensor market. The company profile includes analysis of product portfolio, revenue, SWOT analysis and latest developments of the company.
4. IGR- Growth Matrix presents an analysis of the product segments and geographies that market players should focus to invest, consolidate, expand and/or diversify.

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