

## **US Photonics - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)**

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### **Report description:**

The US Photonics Market size is estimated at USD 159.69 billion in 2025, and is expected to reach USD 201.01 billion by 2030, at a CAGR of 4.71% during the forecast period (2025-2030).

#### Key Highlights

- Photonics is considered a crucial technology that enables the creation of energy-efficient smart systems across various industries, including healthcare, automotive, communications, manufacturing, and retail. These sectors are adopting photonics to enhance efficiency and drive growth.
- In recent times, investments in various sectors have experienced substantial growth. Photonics, as a fundamental technology across multiple industries, is seeing rapid adoption, with the market expanding into new verticals.
- LiDAR technology has gained prominence in photonics. Originally used for studying atmospheric gas distribution and contaminants, it has now become crucial for autonomous driving. Advances in LiDAR mapping systems and related technologies have expanded its applications across various verticals, including aerospace, defense, automotive, mining, and oil and gas.
- The presence of industry players such as Google, Microsoft, and Facebook is the primary force driving the US market, necessitating optimization of the data transmission process for respective data centers. The country also provides a favorable environment for technological advancements and expansions. Furthermore, the significant funding landscape in the US silicon photonics devices industry has encouraged organizations and start-ups to invest in the expanding photonics market.
- In February 2023, Excelitas TechnologiesO Corp. which is a industrial technology manufacturer concentrated on delivering innovative, market-driven photonic solutions, acquired the Phoseon Technology, Inc, Hillsboro, OR, USA. Phoseon is a key player in the design and manufacturer of LED-based industrial curing and scientific illumination solutions offering the field-proven reliability and enabling significant efficiency gains for a wide range of global customers.
- However, compared to conventional products, the high initial cost of silicon-enabled photonic products and devices hinders

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technology deployment in many fields. While the technology provides higher performance and efficiency, photonics-based devices remain inaccessible to many small- and medium-sized end-users in various verticals due to limited budgets.

## US Photonics Market Trends

### Emergence of Silicon-based Photonics Applications to Drive the Market

- Silicon photonics, an emerging field within photonics, provides a distinct advantage over traditional electrical conductors found in semiconductors. These semiconductors are commonly used in high-speed transmission systems. This technology is expected to push the transmission speed up to 100 Gbps, with companies like IBM, Intel, and Kothura, achieving breakthroughs. Besides, this technology is revolutionizing the semiconductor industry, enabling high-speed data transfer and processing.
- Moreover, silicon-based photonics provides energy-efficient data transmission and processing solutions, making it suitable for applications where power consumption is a concern, such as data centers and high-power computing.
- The growth in internet traffic is not only accelerating the need for next-generation technology to support higher port density and faster speed transitions but is also accompanied by large physical data center sizes and faster connectivity between the data centers. As the data rates and distances to carry high-speed data are increasing, the limitations of traditional copper cable and multimode fiber-based solutions are becoming apparent, and the industry is shifting towards adopting single-mode fiber-optic solutions.
- Silicon-based photonics is expected to play a significant role in the evolution of data centers in the short term for 100G and then 400G and 800G pluggables. It will also be an enabling technology for disaggregating data centers and a possible future CPO approach. The technology is increasingly used for 500 m reach DR-standard connections but is also used with coherent technology in datacom applications. Moreover, the market is also witnessing increasing demand for 400ZR standard technology.
- Additionally, with the rising implementation of silicon photonics in medical applications, many start-ups have started using silicon-integrated optics as a manufacturing platform. According to US Census Bureau, the industry revenue of medical equipment and supplies manufacturing in the United States is expected to reach USD 43.51 billion by 2023. Whereas the national health expenditure in the country is expected to reach USD 7.174 trillion by 2031, which was USD 4.439 trillion in 2022, as stated by CMS.
- Consumer health development continues, with Rockley announcing the shipment of its VitalSpex™ biosensing platform in 2022-23. Such trends are expected to boost the integration of silicon photonics-based biosensors in wearables from prominent brands like Apple or Huawei.

### Data Communication Application Segment is Expected to Hold Significant Market Share

- The increasing adoption of optical solutions in communication technologies, particularly optical broadband, is anticipated to boost demand for this technology in the market. This segment holds a significant market share.
- The increasing adoption of optical networks as part of infrastructure has led telecommunication companies to invest in upgrading their legacy networks. Telephone companies were pioneers in replacing their outdated copper wire systems with optical fiber lines. Telephone companies leverage optical fiber as the backbone architecture and a long-distance connection between the city phone systems.
- The global demand for broadband is on the rise due to the widespread adoption of technology and the increasing consumption of online video content. According to TeleGeography's submarine cable map, submarine cables act as the backbone of the Internet. Moreover, according to the US Naval Institute, of more than 400 fiber optics undersea cables, the United States is connected to the world through approximately 88, including 17 scheduled to be completed between 2022 and 2024.

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- According to Global System for Mobile Communications (GSMA), the 5G penetration in the United States is expected to overtake 4G by 2025. In addition, the government is allocating several funds for the faster deployment of 5G services in the region. In April 2023, the Biden-Harris Administration introduced the Public Wireless Supply Chain Innovation Fund, which invested USD 1.5 billion to create open and interoperable networks. The initial round of funding will assist to ensure that the future of 5G and next-generation wireless technology is built by the United States and its global allies and partners.

## US Photonics Industry Overview

The United States photonics market comprises several global and regional players vying for attention in a contested market space. Market incumbents, such as Finisar Corporation, Intel Corporation, NeoPhotonics Corporation, Infinera Corporation, Hamamatsu Photonics, IPG Photonics Corporation, and Coherent Inc., have a considerable influence on the overall market, with access to well-established distribution networks.

The existence of such a sheer number of significant vendors without compromising on their market shares is sustainable. Brand identity associated with major vendors became a synonym for various product offerings under the scope of the study worldwide. Overall, the intensity of competitive rivalry among the vendors in the market studied is expected to be high and remain the same during the forecast period.

- November 2023, Innolume launched O band Quantum Dot GaAs SOA that has reached 1W of optical power. It can be further leveraged in LiDARs, PONs and FSO.

- In September 2023, the ADLT Lighting Group announced the acquisition of Cree Lighting US, E-conolight, and Cree Lighting Canada, marking a significant milestone in the company's ambitious growth strategy. These acquisitions solidify ADLT Lighting Group's position as a global provider in the lighting industry and reinforce its commitment to innovation and excellence.

### Additional Benefits:

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

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