

Photonic Integrated Circuit Market Report 2025 | Growth, Key Drivers & Future Trends Forecast Through 2029

*The Business Research Company's
Photonic Integrated Circuit Global Market
Report 2025 - Market Size, Trends, And
Global Forecast 2025-2034*

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How Much Is The Photonic Integrated Circuit Market Worth?

In recent times, there has been a significant rise in [the market size of photonic integrated](#)

[circuits](#). The market, which was worth \$12.40 billion in 2024, is estimated to reach \$15.25 billion by 2025, recording a compound annual growth rate (CAGR) of 23.0%. Factors contributing to this increase during the historic period include the escalating demand for small-size electronic and photonic devices, the need for scalable and efficient communication systems, the growing requirement for low-latency data transmission, the rise in popularity of internet of things (IoT) and connected gadgets, and the expanding use of data-intensive applications.

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In the coming years, the photonic integrated circuit market is predicted to experience significant growth, reaching a value of \$34.48 billion by 2029, with a compound annual growth rate (CAGR) of 22.6%. Factors contributing to this anticipated growth in the forecast period include an increased demand for high-bandwidth communication, a surge in the adoption of fiber optic technology, expanded global internet access, escalating use of photonics in the telecommunications sector, and an elevated need for rapid data transfer in enterprise networks. Key trends expected to be seen during the forecast period encompass developments in next-

generation transceivers, the refinement of indium phosphide photodiodes, advancements in silicon photonics platforms, the integration of photonic components with electronic circuits, and progress in coherent optical modules.

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What Are The Factors Driving The Photonic Integrated Circuit Market?

The surge in the need for high-speed internet is poised to stimulate [the expansion of the photonic integrated circuit market](#) in the future. High-speed internet signifies a broadband connection that ensures rapid data transfer, facilitating swift downloads, seamless streaming, and effective online interaction. The need for high-speed internet is escalating as an increasing number of individuals and corporations are becoming dependent on data-heavy online practices like streaming, cloud services, and remote work. Photonic integrated circuits (PICs) enhance high-speed internet by utilizing light over electricity for data transmission, which allows for swifter, more competent, and elevated-capacity communication across networks. For example, in July 2025, according to Canada's federal administration, by 2026, 98% of Canada's population will have access to high-speed internet. This figure is set to eventually rise to 100% by 2030, culminating in total internet penetration throughout the country. Consequently, the rising requirement for high-speed internet is fueling [the growth of the photonic integrated circuit market](#).

Who Are The Major Players In The Photonic Integrated Circuit Market?

Major players in the Photonic Integrated Circuit Global Market Report 2025 include:

- Huawei Technologies Co. Ltd.
- Intel Corporation
- IBM Corporation
- Cisco Systems Inc.
- Fujitsu Limited
- Nokia Corporation
- Ciena Corporation
- Coherent Corp.
- Ansys Inc.
- Lumentum Holdings Inc.

What Are The Main Trends, Positively Impacting The Growth Of Photonic Integrated Circuit Market?

Key players in the photonic integrated circuit market are currently concentrating their efforts on developing state-of-the-art solutions like photonic integrated circuits. These innovative solutions aim to facilitate quicker, more energy-saving data transmission and more sophisticated optical communication systems. Photonic integrated circuits are devices that incorporate multi-faceted photonic functions such as lasers, modulators, and detectors into a single chip. They work towards controlling and dispatching light signals ideal for high-speed optical communication and

sensing applications. To elaborate, Keysight Technologies Inc., a manufacturing company originating in the US, introduced a Photonic Designer in March 2025. This comprehensive tool assembled for the design and simulation of photonic integrated circuits, streamlines the design of photonic circuits by resorting to precise physics-based simulations and integrating real-world data, thus enabling quicker and more dependable design-to-manufacturing workflows. It successfully decreases development time and risk by ensuring design compliance and fine-tuning models for smooth fabrication.

Which Segment Accounted For The Largest Photonic Integrated Circuit Market Share?

The photonic integrated circuit market covered in this report is segmented

- 1) By Component: Lasers, Modulators, Detectors, Multiplexers Or De-Multiplexers, Attenuators, Other Components
- 2) By Integration Type: Hybrid, Monolithic
- 3) By Material: Indium Phosphide (Inp), Silicon-On-Insulator (Soi), Silicon Photonics, Gallium Arsenide (Gaas), Lithium Niobate, Other Materials
- 4) By Application: Optical Communication, Sensing, Biophotonics, Optical Signal Processing, Quantum Computing, Other Applications
- 5) By End Use: Telecommunications, Data Centers, Consumer Electronics, Healthcare And Life Sciences, Defense And Aerospace, Industrial, Automotive, Other End-Users

Subsegments:

- 1) By Lasers: Distributed Feedback (DFB) Lasers, Distributed Bragg Reflector (DBR) Lasers, Fabry-Perot Lasers
- 2) By Modulators: Electro-Optic Modulators, Mach-Zehnder Modulators (MZM), Electro-Absorption Modulators (EAM)
- 3) By Detectors: PIN Photodiodes, Avalanche Photodiodes (APD), Germanium Photodetectors
- 4) By Multiplexers Or De-Multiplexers: Arrayed Waveguide Gratings (AWG), Planar Lightwave Circuits (PLC), Echelle Gratings
- 5) By Attenuators: Variable Optical Attenuators (VOA), Fixed Optical Attenuators, Micro-Electro-Mechanical Systems-Based Attenuators
- 6) By Other Components: Optical Amplifiers (SOA, EDFA), Waveguides, Couplers Or Splitters

View the full photonic integrated circuit market report:

<https://www.thebusinessresearchcompany.com/report/photonic-integrated-circuit-global-market-report>

What Are The Regional Trends In The Photonic Integrated Circuit Market?

In 2024, North America dominated the photonic integrated circuit market while Asia-Pacific is anticipated to register the quickest growth throughout the forecast period. The Photonic Integrated Circuit Global Market Report 2025 includes data for various regions, specifically, Asia-Pacific, Western Europe, Eastern Europe, North America, South America, Middle East, and Africa.

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