

Photonics Market to Reach \$1.04 Trillion by 2031 Amid Quantum & Silicon Photonics Boom

Global photonics market grows 5.8% CAGR, powered by optical chips, quantum advances, and rising 5G and LiDAR applications.

LOS ANGELES, CA, UNITED STATES, October 27, 2025 /EINPresswire.com/ -- The Global [Photonics Market](#) reached US\$ 666.5 billion in 2022 and is expected to reach US\$ 1,040 billion by 2031, growing at a CAGR of 5.8% during the forecast period 2024–2031.

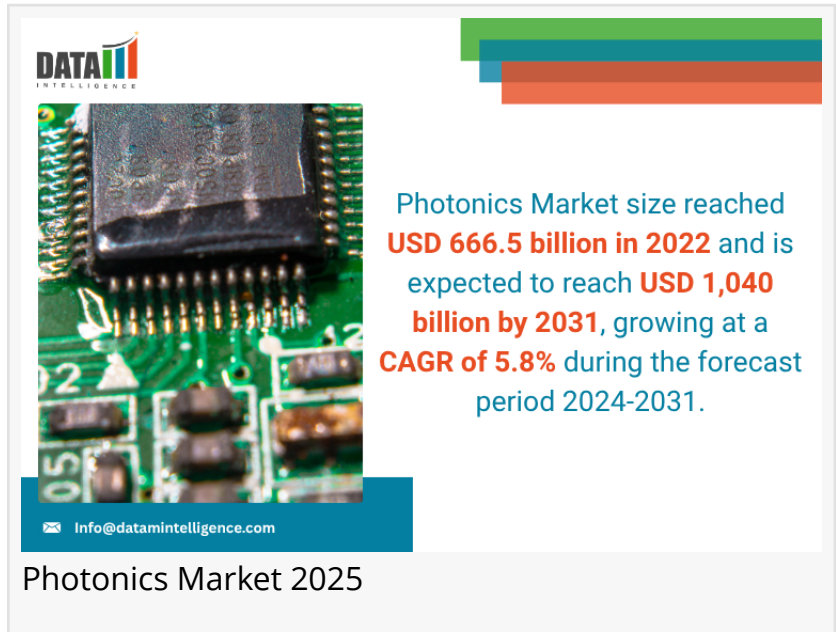
Top Key Players: 3SP Technologies S.A.S, Corning Incorporated,

Hamamatsu Photonics K.K, Hoya Photonics, Inc., II-VI Incorporated, Infinera Corporation, Innolume GmbH, IPG Photonics Corporation, Koninklijke Philips N.V. and TOPTICA Photonics AG.



Photonics is shaping the backbone of next-gen computing, communication, and energy technologies worldwide."

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Latest Industry News:

□ 2025-05-28: AMD acquired silicon-photonics startup Enosemi to accelerate co-packaged optics for next-gen AI interconnects.

□ 2025-03-19: Keysight launched Photonic Designer, a photonic-design-automation (PDA) tool to unify design □ simulation □ manufacturing workflows.

□ 2025-05-27: Santec LIS announced an agreement to acquire MOGLabs (aiming to expand into quantum/advanced photonics and tunable-laser products).

- 2025-05-06: IonQ completed acquisition of ID Quantique, strengthening quantum-networking and photonic cryptography capabilities.
- 2025-04-01: Lightmatter unveiled new photonics technology (optical interposer and a chiplet) targeting faster optical AI interconnects; interposer availability planned for 2025.
- 2025-03-07: Industry reports indicate Samsung is advancing silicon-photonics/optical semiconductor efforts in collaboration with Broadcom, with commercialization work underway.
- 2025-02-26: EU approved Nokia's \$2.3B takeover of Infinera, consolidating optical transport equipment capability.

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Market Segments:

By Application (Production Technology, Measurement, Medical Technology, Communication, Lighting, Information, Display, Photovoltaics, and Others)

By Region (North America, Latin America, Europe, Asia Pacific, Middle East, and Africa)

Market Geographical Share

- Asia-Pacific dominates the global photonics market, accounting for over 45% of total revenue. Countries such as China, Japan, South Korea, and Taiwan lead in semiconductor manufacturing, fiber optics, and consumer electronics production. Substantial government investments in 5G, quantum communication, and solar photovoltaic technologies further reinforce the region's leadership.
- Europe holds a significant share of around 25%, driven by strong R&D activity and industrial demand from Germany, the Netherlands, and France. The region's focus on sustainability and photonic-based sensing solutions for smart manufacturing and healthcare applications is fueling growth.
- North America contributes roughly 20–22% of the market, supported by innovations in optical networks, LiDAR technologies, and laser-based systems. The U.S. remains a hub for photonics integration in defense, aerospace, and high-performance computing sectors.
- Rest of the World (RoW), including the Middle East and Latin America, is gradually adopting photonics technologies for industrial automation, medical diagnostics, and renewable energy projects, though market penetration remains in its early stages.

Market Drivers

- Rising Demand for High-Speed Communication:

Expanding data traffic and cloud infrastructure are driving adoption of photonics-based optical transceivers and fiber-optic components.

- Growth of Renewable Energy Technologies:

Photonics play a crucial role in solar energy generation, LED lighting, and energy-efficient laser manufacturing systems, aligning with global sustainability goals.

- Advancements in Healthcare and Biomedical Imaging:

The use of photonics in minimally invasive surgeries, diagnostics, and biosensing is accelerating

due to precision imaging capabilities.

- Emergence of Quantum and Silicon Photonics:

Increasing R&D in quantum computing and silicon-based photonic chips is transforming data processing speed and efficiency, opening new commercial applications.

- Expansion of Automotive and Defense Applications:

LiDAR systems, laser sensors, and imaging modules powered by photonics are enabling safer autonomous vehicles and improved defense surveillance systems.

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Key players Overview

□ IPG Photonics — world leader in high-power fiber lasers and amplifiers (major materials-processing & manufacturing laser supplier). FY 2024 revenue ≈ ~\$977M (useful proxy for its scale in lasers).

□ Coherent (II-VI after acquisition) — broad portfolio across lasers, optics, materials and components after II-VI's acquisition of Coherent; now operating under the Coherent brand and represents a major integrated supplier across multiple photonics segments.

□ Lumentum — key supplier of optical components, telecom/datacom lasers and modules; fiscal-year revenue in the \$1–1.7B range in recent years (shows large share in active components).

□ Hamamatsu Photonics — specialist in sensors, detectors, photomultiplier tubes and measurement optics (strong in scientific/medical imaging markets). See company financials for scale.

□ Thorlabs — vertically integrated supplier of optics, opto-mechanical components and lab instruments; important in research & test/measurement market.

□ TRUMPF — major player in industrial lasers and machine tools for materials processing (strong in manufacturing/industrial photonics).

□ Corning, ams-OSRAM, Jenoptik, Nikon, Signify (Philips Lighting) — large diversified suppliers across glass/fiber, optoelectronic components, imaging, lighting and displays each important in specific photonics subsegments.

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