United States Photonics - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2026 - 2031)

Market Report | 2026-02-09 | 125 pages | Mordor Intelligence

AVAILABLE LICENSES:

- Single User License $4750.00
- Team License (1-7 Users) $5250.00
- Site License $6500.00
- Corporate License $8750.00

Report description:

United States Photonics Market Analysis

The United States photonics market is expected to grow from USD 159.69 billion in 2025 to USD 167.12 billion in 2026 and is forecast to reach USD 209.84 billion by 2031 at 4.65% CAGR over 2026-2031. Surging artificial-intelligence workloads inside hyperscale facilities, a renewed federal push for on-shore manufacturing, and directed-energy programs together shape a demand profile that is broader than prior telecom-centric cycles. Silicon photonics platforms gain momentum because they can be produced on existing CMOS lines, while compound-semiconductor plants benefit from CHIPS Act grants that offset high capital costs. At the same time, healthcare adoption of minimally invasive imaging and photobiomodulation therapies secures a durable second growth engine. Supply security for rare-earths and III-V materials remains a swing factor as germanium and gallium export curbs inflate input costs and trigger domestic substitution efforts.

United States Photonics Market Trends and Insights

AI-driven datacenter optical-I/O boom

A record 60% jump in optical-transceiver shipments in 2024 reflected hyperscale operators' shift from 400 G to 800 G links, and trials for 1.6 T modules are underway. Silicon photonics captured 35% of those volumes because integrated electro-optical dies reduce power per bit and simplify co-packaged optics. Intel and Ayar Labs demonstrated roadmaps toward 3.2 T per package by 2026, ensuring a multi-year pull for integrated photonic circuits. Department of Energy exascale programs reinforce the trend as

supercomputers pivot to optical interconnects for energy-efficient scaling.

CHIPS Act domestic manufacturing incentives

The CHIPS and Science Act reserved USD 280 million for photonics projects in 2024, with Coherent receiving USD 112 million to expand indium-phosphide and silicon-carbide capacity and GlobalFoundries gaining USD 75 million for silicon photonics. AIM Photonics' multi-project wafer service lowers entry costs for start-ups by sharing mask sets and fab time, catalyzing a richer domestic supplier base. These incentives shorten lead times, support trusted-supplier mandates, and mitigate exposure to overseas supply disruptions.

Cap-intensive photonic-fab infrastructure

Clean-room requirements of Class 10 for passive and Class 1 for active devices elevate construction outlays well above traditional semiconductor lines. AIM Photonics estimates USD 100-500 million for a full-capacity photonic fab, while metrology tools can cost 2-3 electronic counterparts. Limited domestic fab count forms a capacity bottleneck when demand surges for indium-phosphide or silicon-nitride platforms.

Other drivers and restraints analyzed in the detailed report include:

Defense laser and directed-energy funding upswingMinimally invasive biomedical imaging adoptionRare-earth and III-V supply-chain risks

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Medical Technology captured a 5.83% CAGR outlook, reflecting regulatory approvals that anchor procurement budgets once clinical efficacy is proven. Data Communication still represents the largest slice at 28.35% of the United States photonics market share, propelled by hyperscale traffic migration to 800 G optics. Surveying and Detection gains incremental traction from autonomous-vehicle LiDAR and smart-infrastructure monitoring, while Production Technology leverages high-power lasers for additive manufacturing lines.

Momentum in image-guided surgery and photodynamic therapy sustains a demand profile resilient to macro-economic swings. Lighting and display sub-segments mature, yet horticultural and UV-sterilization niches provide targeted growth. Emerging areas, quantum computing, environmental sensing, and space platforms, create option value for suppliers positioned to spin off proven technologies into new verticals.

Integrated Photonic Circuits are slated for a 6.05% CAGR as customers gravitate toward chip-scale modules that embed sources, modulators, and detectors on a single die. Lasers and Sources hold a 24.05% share, but steady commoditization presses suppliers to bundle control electronics and software. Detectors and Sensors benefit from rising automotive ADAS and point-of-care diagnostics, underscoring sensitivity advances in avalanche photodiodes and single-photon counters.

Optical Fibers and Waveguides maintain baseline demand from rural broadband rollouts, whereas modulators experience a lift from dynamic wavelength switching in cloud backbones. Passive optics suppliers reposition toward harsh-environment spacecraft and subsea systems where pricing power is stronger. Customers increasingly favor vendors offering full subsystems over discrete parts, consolidating the vendor list.

The United States Photonics Market Report is Segmented by Application (Surveying and Detection, Production Technology, and More), Component Type (Lasers and Sources, Detectors and Sensors, and More), End-User Industry (Telecom and Datacenters, Industrial Manufacturing, and More), and Technology (Silicon Photonics, Optical Fiber Photonics, and More). The Market Forecasts are Provided in Terms of Value (USD).

List of Companies Covered in this Report:

Intel Corporation Lumentum Holdings Inc. Infinera Corporation Molex LLC (Koch Industries) Hamamatsu Photonics K.K. IPG Photonics Corporation Coherent Corp. Vescent Photonics Inc. Photonic Systems Inc. Thorlabs Inc. NEC Corporation ams OSRAM AG TRUMPF SE + Co. KG Polatis Ltd. (Huber+Suhner AG) Nokia Corporation Rockley Photonics Holdings Ltd. Lumibird SA Acacia Communications Inc. (Cisco) GlobalFoundries Inc. Analog Photonics LLC

Additional Benefits:

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

Table of Contents:

United States Photonics - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2026 - 2031)

Market Report | 2026-02-09 | 125 pages | Mordor Intelligence

To place an Order with Scotts International:

- - Print this form
- - Complete the relevant blank fields and sign
- - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	$4750.00
	Team License (1-7 Users)	$5250.00
	Site License	$6500.00
	Corporate License	$8750.00
	VAT	
	Total	

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*		Phone*	
First Name*		Last Name*	
Job title*			
Company Name*		EU Vat / Tax ID / NIP number*	
Address*		City*	
Zip Code*		Country*	
		Date	2026-02-27
		Signature