

Global Optical Quantum Computing Core Market 2026 by Company, Regions, Type and Application, Forecast to 2032

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Abstracts

According to our (Global Info Research) latest study, the global Optical Quantum Computing Core market size was valued at US\$ 746 million in 2025 and is forecast to a readjusted size of US\$ 2593 million by 2032 with a CAGR of 19.5% during review period.

The core of optical quantum computing lies in using photons as the carriers of qubits and leveraging quantum interference and quantum entanglement to programmably manipulate optical field states. Specifically, its computational nature is not a simple "switch" logic flip, but rather the generation of deterministic quantum states through a highly coherent single-photon source. In a low-loss integrated optical path, beam splitting, phase modulation, and nonlinear or measurement-induced mechanisms are used to achieve the interferometric evolution of multi-photon states in Hilbert space, ultimately completing the measurement readout through high-efficiency single-photon detection. The true technological core of optical quantum computing lies in three key aspects: high-quality single-photon sources, ultra-low-loss scalable photonic circuits, and high-fidelity entanglement and interference control capabilities. These factors collectively determine the system's scalability, computational accuracy, and commercial viability.

The Optical Quantum Computing Core market report provides a detailed analysis of global market size, regional and country-level market size, segmentation market growth, market share, competitive Landscape, sales analysis, impact of domestic and global market players, value chain optimization, trade regulations, recent developments, opportunities analysis, strategic market growth analysis, product launches, area marketplace expanding, and technological innovations.

Market segmentation

Optical Quantum Computing Core market is split by Type and by Application. For the period 2026-2032, the growth among segments provide accurate calculations and forecasts for revenue by Type and by Application. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type,

Continuous-Variable Photonic Quantum Computing

Discrete-Variable / Single-Photon Quantum Computing

Market segment by Position In the Value Chain

Photonic Quantum Computer System Providers

Photonic Quantum Chip / Processor Developers

Market segment by Application Focus

Universal Quantum Computing

Quantum Communication & Security

Research & Industrial Prototyping

Market segment by Application

Photonic Quantum Computing

Photonic Quantum Simulation

Quantum Cloud Platform

Market segment by players, this report covers

Xanadu

PsiQuantum

TuringQ Co.,Ltd.

Hefei Guizhen Chip Technology Co., Ltd.

Beijing QBoson Quantum Technology Co.,Ltd.

QuiX Quantum

Quandela

Photonic

CHIPX

Market segment by regions, regional analysis covers

North America

Europe

Asia-Pacific (China, Japan, South Korea, Rest of Asia)

South America

Middle East & Africa

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