

Global Integrated Photonic Quantum Computing Core Market Growth (Status and Outlook) 2026-2032

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Abstracts

The global Integrated Photonic Quantum Computing Core market size is predicted to grow from US\$ 709 million in 2025 to US\$ 2620 million in 2032; it is expected to grow at a CAGR of 20.7% from 2026 to 2032.

An integrated photonic quantum computing core refers to a core computing unit that integrates all key quantum functions, such as single-photon generation, quantum state manipulation, interference operations, and measurement readout, onto a single photonic chip. Essentially, it achieves controllable interference and entanglement evolution of multi-photon quantum states within the chip through ultra-low-loss waveguides, programmable phase modulators, and highly consistent beam-splitting networks. Based on the long coherence time and room-temperature operability of photons, this core emphasizes large-scale scalability and semiconductor process compatibility, serving as a crucial technological hub for the transition of optical quantum computing from experimental optical platforms to engineering, large-scale deployment, and industrialization.

This report presents a comprehensive overview, market shares, and growth opportunities of Integrated Photonic Quantum Computing Core market by product type, application, key players and key regions and countries.

Segmentation by Type:

Continuous-Variable Photonic Quantum Computing

Discrete-Variable / Single-Photon Quantum Computing

Segmentation by Position In the Value Chain:

Photonic Quantum Computer System Providers

Photonic Quantum Chip / Processor Developers

Segmentation by Application Focus:

Universal Quantum Computing

Quantum Communication & Security

Research & Industrial Prototyping

Segmentation by Application:

Photonic Quantum Computing

Photonic Quantum Simulation

Quantum Cloud Platform

This report also splits the market by region:

United States

China

Europe

Other regions

Japan

South Korea

Southeast Asia

Rest of world

The report also presents the market competition landscape and a corresponding detailed analysis of the major players in the market. The key players covered in this report:

Xanadu

PsiQuantum

TuringQ Co.,Ltd.

Hefei Guizhen Chip Technology Co., Ltd.

Beijing QBoson Quantum Technology Co.,Ltd.

QuiX Quantum

Quandela

Photonic

CHIPX

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