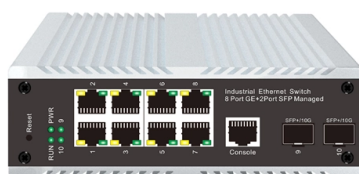


Price List for Intelligent Co-packaged Photonics for Data Center Interconnects



AI Overview

Exact price lists for CPO solutions are not publicly available, but costs are influenced by integration complexity, technology maturity, and production scale, with initial CAPEX higher than traditional pluggable modules.

Cost Drivers

Initial Investment (CAPEX): CPO solutions currently have higher upfront costs due to the complexity of integrating optical engines directly with switch ASICs and the advanced packaging processes required, such as silicon interposers or micro-bump interconnects. Early-stage manufacturing and limited production volumes contribute to higher per-unit costs compared to traditional pluggable optical modules.

Operating Costs (OPEX): Despite higher CAPEX, CPO offers long-term operational savings. By shortening electrical signal paths from centimeters to millimeters, CPO reduces power consumption, latency, and signal loss, which translates into lower energy costs and improved efficiency in AI data centers.

Technology Maturity: As silicon photonics and CPO technologies mature, mass production and miniaturization are expected to reduce the cost per module significantly. Early adopters may face premium pricing, while large-scale deployments (projected between 2028 and 2030) are likely to benefit from economies of scale.

Integration Method: Pricing varies depending on the integration approach:

- 3D Monolithic Integration:** Embeds photonic components within the electronic die, reducing parasitics and simplifying packaging but may use older CMOS nodes, potentially increasing energy consumption and cost.
- 2D Integration:** Places photonic and electronic components side by side on a PCB, which is more cost-effective but introduces parasitic limitations that can affect performance.

Market Trends

The CPO market is rapidly expanding, driven by AI workloads and hyperscale data centers. Sales of lasers and photonic integrated circuits for optical transceiver...

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A practical map of companies and technologies tied to co-packaged optics, silicon photonics, and future AI data center interconnect.

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.sky-connect.co.za>

Email: info@sky-connect.co.za

Phone: +44 20 7946 0958

Address: 1 Cornhill, London EC3V 3ND, United Kingdom

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