



# Price List for Energy-Saving Low-Power Optical Modules for Data Center Interconnection

## Article Overview

Energy-saving optical modules for data centers range from \$35 for short-reach QSFP28 modules to \$8.5W 800G LPO modules priced competitively, offering substantial power and cost savings.

## QSFP28 and SFP/SFP+ Modules

- o QSFP28 Modules (100G): OEM list prices can reach several thousand dollars per module, but compatible third-party options are available from \$35 for short-reach SR models up to \$280-\$780 for LR4/CWDM4 modules depending on reach and vendor support .
- o Low-Power SFP/SFP+ Modules (10G): Typical power consumption ranges from 0.8-1.5 W, with low-power variants reducing consumption by 20-35%, e.g., a 1.2 W module can drop to 0.84 W, translating to measurable OPEX savings in large deployments .

## LPO (Linear Pluggable Optics) Modules

- o 400G/800G LPO Modules: Designed for AI/ML and high-density data centers, LPO modules eliminate onboard DSPs, reducing per-port power by up to 50% compared to traditional DSP-based optics .
- o Power Consumption: Typical 400G/800G LPO modules consume 3-5 W per port, while high-end 800G LPO modules like FS's 800G DR8 operate at 8.5 W, roughly 50% lower than DSP-based equivalents .
- o Cost Considerations: While exact pricing varies by vendor and volume, LPO modules are positioned as cost-efficient alternatives to traditional high-speed optics, offering both energy and thermal management benefits .

## Practical Implications for Data Centers

- o Energy Savings: Deploying low-power or LPO modules can significantly reduce electricity costs and cooling requirements, especially in hyperscale or AI-focused facilities.
- o Operational Efficiency: Lower power draw allows for denser rack deployments and improved PUE (Power Usage Effectiveness).
- o Vendor Options: Multiple third-party suppliers provide modules compatible with standard switch platforms, often at substantially lower prices than OEM-branded modules .

## Summary Price Ranges (2026 Benchmarks)

| Module Type                 | Typical Power | Price Range                                       |
|-----------------------------|---------------|---------------------------------------------------|
| QSFP28 SR1-1.5 W            | 1.5 W         | \$35-\$100                                        |
| QSFP28 LR4/CWDM41-2 W       | 2 W           | \$280-\$780                                       |
| SFP/SFP+ Low-Power0.8-1.2 W | 1.2 W         | \$50-\$150                                        |
| 400G LPO3-5 W               | 3-5 W         | Vendor-dependent, competitive with DSP optics     |
| 800G LPO DR88.5 W           | 8.5 W         | Premium AI/HPC pricing, lower than DSP-based 800G |



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By selecting energy-efficient optical modules, data centers can achieve substantial OPEX reductions, improve sustainability, and maintain high-speed interconnect performance without major architectural changes .

In this paper we present the future requirements of data centers such as the need for higher bandwidth and the need

Huawei offers a comprehensive portfolio of pluggable StarryLink optical modules for data center networks, with various models

LPO transceivers cut power use, lower latency, and boost reliability in data centers, making them ideal for high-speed,

This guide explores the most widely used and performance-optimized transceiver modules in modern data centers, categorized by

Optical interconnects, which use light to transmit data between components in computing systems, are becoming

Reduce power consumption of optical transceivers with efficient modules, smart cooling, and intelligent management

Exploring optical interconnects for AI data centers: LPO for low-power, short-distance links, NPO for high-density,

Ekinops optical transport solutions for data center interconnection optimize cost and performance to deploy as much capacity as

Co-Packaged Optics (CPO) is emerging as a critical technological path for optical interconnects in AI data centers.

Others use third-party optics for access, aggregation, data center interconnect, lab, storage, backup, and general

Analog Devices optical power solutions, including thermoelectric cooler (TEC) controllers, load switches, POL, regulators, and power

The ultimate goal for all-optical connectivity with an ultra-high F5G bandwidth is to increase transmission



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rates. Optical modules --

Looking for reliable data center optical modules? Discover top-rated, high-performance options from trusted suppliers.

See practical price ranges for 1G-100G optical transceivers, DAC/AOC options, and why cost varies by speed, reach and technology

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics

See practical price ranges for 1G-100G optical transceivers, DAC/AOC options, and why cost varies by speed, reach and technology

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