

Core Cost of 800g Optical Module

Article Overview

The core acquisition cost of 800G optical modules ranges from approximately \$700 to \$1,900 per unit, depending on form factor, technology, and vendor.

Price Ranges by Module Type

- o 800G OSFP-DR8: \$1,100-\$1,400 per module for volume orders of 1,000+ units, representing the standard short-reach option for AI and data center deployments (third-party vendors often offer 60-70% of OEM list prices) .
- o 800G QSFP-DD-DR8: \$1,000-\$1,300 per module for large-volume purchases, suitable for intra-rack or short inter-rack links .
- o 800G OSFP-FR4: \$1,500-\$1,900 per module, designed for longer reach and more complex optics .
- o 800G LPO (Linear Pluggable Optics): \$700-\$900 per module, lower cost due to absence of DSP and reduced power consumption .

Factors Affecting Cost

- o Vendor Tier: OEM modules (Cisco, Arista) command a 30-50% premium over third-party compatible modules .
- o Volume Discounts: Orders >1,000 units may receive 10-20% discounts; orders >5,000 units can achieve 20-30% off .
- o Technology Choice: Silicon Photonics (SiPh) modules are increasingly cost-effective compared to traditional EML designs, especially for DR8 short-reach links, due to integrated modulators and lower power consumption .
- o Power and Cooling: Module power ranges from 8-20W depending on type; higher power modules increase operational costs and may require additional cooling infrastructure .
- o Market Maturity: Early-generation 800G modules can cost 40-60% more than mature products, and supply constraints can temporarily raise prices 20-40% .

Summary

For procurement planning, expect a baseline core cost of \$700-\$1,900 per 800G module, with the lower end representing LPO or third-party DR8 modules and the higher end representing FR4 or OEM modules. Volume, technology, and deployment requirements significantly influence the final price, and operational costs such as power and cooling should also be considered in total cost of ownership calculations .

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Understanding the cost structure of optical module chips is essential for developers, investors, and network operators,

Overview Arista's Optical Modules and Cable portfolio offer a wide variety of high-density and low-power 800G (dual 400G), 400G,

Complete guide to 800G optical module costs and TCO optimization for AI data centers. Includes pricing analysis,

Server-TOR: Copper cables dominate, but with a data rate increase, the transmission distance reduces. A new rack layout is

An 800G-DR8 module might cost significantly more than two 400G-DR4 modules today, but the math changes when

400G vs 800G vs 1.6T: Quick Comparison 400G, 800G, and 1.6T optical modules differ primarily in bandwidth, power

The trend is clear: coherent technology is moving from the network's core directly into the pluggable optics inside

Silicon Photonics transceivers explained in depth. Learn how SiPh compares to traditional optics for 400G and 800G

TREND: Optical interconnects tend to penetrate the rack and computing systems. Metro/DCI (10km - 80km) DC building Spine-Core

It is compliant with IEEE 802.3 800GBASE-VR8 and OSFP MSA module requirements with integrated heat sink.

Developments in three distinct areas are needed for 800G deployment: optical modules and direct attach copper (DAC) cables,

Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

With the continuous growth of network demand, optical modules with different rates have

The 800G optical module market was valued at \$4.8 billion in 2025 and is projected to reach \$28.6 billion by 2034,

The module will be demonstrated in 800G ZR mode transmitting over 9000 ps/nm of dispersion, equivalent to

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The 800G QSFP-DD and OSFP coherent optics expand Cisco Routed Optical Networking applications to include 800G links. The

Web: <https://morwarreconst.co.za>

