

400G optical modules are now in mass production



Overview

The development and mass production of 400G modules are advancing satisfactorily. With 400G modules now the baseline, 800G adoption is surging—especially across AI and hyperscaler environments—while 1. This article unpacks the technologies powering this leap (silicon photonics, advanced modulation, and co-packaged optics), compares deployment. Building upon its first-to-market 400G EML and PD debuted at OFC 2025, Broadcom is launching the Taurus BCM83640, the industry's first 400G/lane optical DSP optimized for 1. 6T transceiver applications, at OFC 2026. The Taurus platform of DSPs will enable the next-generation 3. 2T optical transceiver. To address these demands, operators are increasingly adopting 400G optical modules—compact, pluggable transceivers capable of delivering up to 400 Gbps per port. This shift is driven by multiple forces: hyperscale data centers require greater east-west bandwidth to support massive internal data. BOSTON (January 7, 2025) – Total shipments of leading-edge datacom optical modules are projected to tally over \$9 billion for 2024, according to the latest Optical Components Report from research firm Signal AI. □□ What Is a 400G Optical Module?

A 400G optical module performs photoelectric conversion: With a 400 Gbps transmission rate, these modules. 400G Optical Module by Application (Data Communication, Telecom, Other), by Types (Less Than 1 km, 1 km, 2 km, 10 km, Others), by North America (United States, Canada, Mexico), by South America (Brazil, Argentina, Rest of South America), by Europe (United Kingdom, Germany, France, Italy, Spain).

Article Content

What is the 400G Optical Module?

Nowadays, the progress of 400G optical module development and mass production is relatively satisfactory. In the current market background, the

Optical Modules for AI Computing: Naddod's

Discover the increasing demand for optical modules in AI computing and the role they play in supporting high-speed data transmission. Learn about

Coherent Optics at 400G, 800G, and Beyond

The divergence of coherent pluggable and embedded optics trajectories and the convergence of IP and optical in IPoDWDM architectures create new opportunities, along with many questions. Heavy

Marvell and Hisense Broadband Announce Production Availability of 400G ...

The demand for OpenZR+ coherent pluggables is on the rise to support the rapid market adoption of IP-over-DWDM (IPoDWDM) used to eliminate separate full-function optical transport

How 400G Optical Modules Are Shaping Next-Gen

Discover key factors driving the rapid adoption of 400G optical transceivers, including AI, 5G, coherent optics, and market trends shaping next

Latest Modules Drive Market Toward 400G

The latest optical modules and semiconductor components are game-changers for 100G and will accelerate 400G adoption.

High-Speed PCB Solutions for 400G and 800G Optical Modules

This guide explains the key PCB technologies, materials, manufacturing processes, and cost considerations for 400G and 800G optical modules in 2026.

Acacia offers range of 400G modules

Acacia's 400G pluggable module family is sampling today and is expected to begin volume production in the second half of 2020. Acacia Communications Inc.

Introduction to 400G Optical Modules · KAD

A clear, engineer-friendly overview of 400G optical modules, including standards, packaging formats, functions, and market outlook for next-generation

400G Optical Module: Growth Opportunities and Competitive

The 400G Optical Module market is projected to reach \$14.8B by 2025, growing at 11.5% CAGR. Demand from data centers and telecom drives this expansion. Access market growth analysis.

Optical Modules Evolution and Innovation From 400G to

Optical modules, which serve as the building blocks for optical communication systems, are at the forefront of this evolution. This article will

400G vs 800G Optical Modules: Differences, Use Cases, and

They convert electrical signals into light and back, enabling servers and switches to communicate over fiber. Choosing between 400G and 800G optical modules depends on your

Making long-haul large-capacity 400G optical network a reality

In this Review, we describe the key technologies necessary for long-haul large-capacity 400G optical transmission.

Optical Modules Evolution and Innovation From 400G to 1.6T

Explore the evolution of optical modules in speed and form factors from 400G to 1.6T, stressing key enhancement technologies, and paths to achieving high-speed optical modules.

GIGALIGHT Mass-Produces 400G Silicon Photonics

Starting from 400G optical modules, silicon photonics can already form a very good complementary relationship with EML platform products.

400G vs 800G Optical Module: Which is Right for Your Network?

A deep technical comparison of 400G vs 800G optical module technology. Understand the key differences, benefits, and applications to optimize your next-generation data center network.

The Evolution of Optical Modules: 400G → 800G → 1.6T - A Strategic ...

Discover the evolution from 400G to 800G and 1.6T optical modules. Learn key technologies, CPO vs pluggable, and upgrade strategies for future-ready data centers.

Broadcom's 400G/lane Optical Solutions Pave the Path Toward 200T ...

Building upon its first-to-market 400G EML and PD debuted at OFC 2025, Broadcom is launching the Taurus BCM83640, the industry's first 400G/lane optical DSP optimized for 1.6T transceiver

Igniting the Future of Data Centers with 400G Optical

Discover how 400G optical modules are revolutionizing data center networking, providing increased bandwidth, efficiency, and scalability. Learn

Optical Module Evolution: From 400G to 3.2T

This article provides a strategic and technology-focused roadmap for the evolution of optical modules from 400G to 800G, 1.6T, and ultimately 3.2T, helping data center operators make

400G QSFP-DD Optical Transceiver Overview Beginner's Benefits

What is the market value of 400G optical modules? As is well known, 100G technology products have matured, and 400G is currently a hot topic of discussion, and the industry is paying

Overview of 400G Optical Modules

The development and mass production of 400G modules are advancing satisfactorily. In today's market, hyperscale data centers have an

Why 400G and 800G Optical Modules Are Critical for AI

This is where 400G and 800G optical transceivers step in—delivering high-speed, low-latency, and energy-efficient interconnects for the next

400G Optical Module Market Outlook and Switch

400G QSFP-DD SR8 More than 10 companies, including Arista Networks, DELL, EdgeCore, Mellanox, and FiberMall, presented 400G optical

400G Optical Transceivers | OEM Compatibility

In short: 400G = 400 gigabits per second per port, in a compact module that you can add, remove, and upgrade without powering down

Over 20 Million 400G & 800G Datacom Optical Module

Unit shipments of 400G and 800G modules have grown nearly fourfold over the past 12 months and are expected to surpass 20 million for 2024. “Optical

The Evolving Landscape of AI Optical Modules 400G

These modules include the 800G OSFP SR8, 400G OSFP SR4, 800G OSFP DR8, 400G OSFP DR4, and 400G QSFP-DD DR4. NADDOD's AI

The Evolution of Optical Modules: 400G → 800G → 1.6T - A Strategic ...

Why Optical Modules Matter Now Exponential Demand Growth: Shipments of 400G and 800G modules exceeded 20 million units in 2024, generating nearly \$9 billion in revenue. The optical

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