

Number of patents for optical modules



Article Overview

Thousands of patents have been filed worldwide for optical modules, reflecting rapid innovation in optical transceivers, silicon photonics, and integrated optical I/O technologies.

Overview of Optical Module Patents

Optical modules, including pluggable transceivers and integrated optical engines, are central to high-bandwidth data communications. Patent activity in this field covers designs, packaging, optical interfaces, electrical-to-optical conversion, and system integration . These patents are filed globally, with major contributions from the U.S., Europe, China, Japan, and South Korea.

Patent Landscape and Trends

- **Silicon Photonics and Co-Packaged Optics (CPO):** Recent patents focus on integrating optical components directly with ASICs or electronic chips to reduce power consumption, improve bandwidth, and minimize latency .
- **On-Board Optics (OBO):** Patents describe placing optical engines around ASIC packages to support speeds up to 1.6 Tbps, with emerging designs targeting 3.2 Tbps and beyond .
- **Applications:** Optical module patents cover data centers, high-speed networking, telecommunication systems, and specialized measurement devices, including medical and automotive applications .

Estimating Patent Numbers...

Article Content

Sep 13, 2025

Optical Module Industry Statistics 2026

The global number of active patents for optical module technologies reached 120,000 in 2023, with 35% filed by Asian

Jan 12, 2026

U.S. Patent for Optical module Patent (Patent # 12,366,714 issued

In optical communication, an optical module is a tool for achieving interconversion between an optical signal and an

Apr 03, 2026

Optical Communication & Networking Equipment Market by 2032

The global optical communication and networking equipment market is segmented according to the patents filed in the China, Japan,

Nov 02, 2025

Top Patenting Powerhouses of 2024

In 2006, IEEE Spectrum ranked patenting powerhouses in our first annual patent survey. The survey, conducted by

Feb 03, 2026

Chinese Optical Modules Own 7 of the Top 10 Seats. So Why Are

Being number one in shipments and number one in excess profit are not the same thing. This article examines how

Jun 05, 2026

US20250110292A1

Currently, optical modules are typically used in single-mode optical fiber environments only or multi-mode optical fiber environments

Oct 20, 2025

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Optical Module patented technology retrieval search results - Eureka ...

This page includes the patent name, patent number, legal status, invention/applicant,
technical efficacy and accompanying drawings

Dec 05, 2025

CPO & Optical I/O Patent Landscape 2026

We have selected and analyzed more than 4,000 patents and patent applications
published worldwide from 2010 to June 2025,

Feb 06, 2026

(PDF) Patent Analysis of the Critical Technology Network of ...

PDF | With the development of 5G, mobile communication, and optical
communication technologies, semiconductor

Jun 03, 2026

US9817198B2

The present disclosure provides an optical module. The optical module of the present
disclosure may include: a base, the base being

Jun 13, 2026

US20250110292A1

An optical module, in which an emitting optical fiber and an optical waveguide
element are included in an emitting optical fiber

May 08, 2026

Optical Modules Market by Type and Application

Optical Modules Market By Type (Optical Receiver Modules, Optical Transceiver
Modules, Optical Transmitter Modules, Optical

Feb 08, 2026

Patent landscape analysis on co-packaged optics and

Photonics-electronics co-integration at package level: IP competition analysis
revealing who may lead

Jul 26, 2025

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Jun 14, 2026

The Lens

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Sep 10, 2025

Optical Module Market Size, Competitors & Forecast to 2032

The Optical Module Market, valued at USD 30.01B in 2026, is projected to reach USD 66.94B by 2032, growing at a 14.1% CAGR.

Dec 24, 2025

The Lens

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Jan 27, 2026

Optical Patents (Class 365/234)

Abstract: A tissue imaging system includes a laser module for outputting a laser pulse, an optical delay module configured to split a

Jul 15, 2026

US20250123456A1

Optical module Abstract An optical module, comprising a circuit board (110), a photoelectric assembly (130) electrically connected to

Sep 11, 2025

Statistics and trends | epo

Access the statistics of the European Patent Office (EPO) in Excel format covering the last 10 years of European patent filings, top

Oct 30, 2025

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Aug 26, 2025

Optical Module Industry Statistics (2026): Expert Analysis

Optical module demand is reshaping faster than most forecasts, with 2026 growth pointing to a clear change in where

Jul 11, 2026

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Jan 03, 2026

Optical Transceiver Market Size, Share, Analysis 2030

The global Optical Transceiver Market size in terms of revenue was estimated to be worth \$13.6 billion in 2024 and is poised to reach

Jun 11, 2026

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Dec 18, 2025

Modular optical device and modules therefor

A modular optical device having a set of optoelectronic modules that enables the device to operate, e.g., as a WDM or multichannel

Mar 29, 2026

Optical Modules Market Size, Growth Trends & Forecast

Optical Modules Market size was valued at USD 3.5 billion in 2025 & is estimated to reach USD 8.2 billion by 2034,

Feb 17, 2026

Optical Module patented technology retrieval search results

This page includes the patent name, patent number, legal status, invention/applicant, technical efficacy and accompanying drawings

Jul 13, 2026

Recent Patents on Silicon Photonics Optical Amplifiers and Lasers

This review paper reports on recent patents regarding integrated optical active devices, namely amplifiers and lasers

Sep 14, 2025

U.S. Patent for Optical module Patent (Patent # 12,366,714 issued

The optical module interface 102 is configured to connect to the optical module 200, so that a bidirectional electrical

Aug 13, 2025

Global Optics Module Market Size, Share, Trends & Forecast 2026-2034

Optics Module Market size was valued at USD 5.12 billion in 2025 & is estimated to reach USD 12.34 billion by 2034,

Contact Us

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