

# Optical module z-block



## Overview

The Z-Block is a core optical component used in wavelength division multiplexing/demultiplexing (WDM) systems. Structurally, it is typically composed of several integrated optical elements, including collimating lenses, rhomboid prisms, and specially designed optical mirrors. These components are integrated circuits and reference designs help you create a smaller and faster optical module design used in high-bandwidth data communication applications. Whether you are creating a 100-Gbps or 400-Gbps, small form-factor pluggable (SFP) module, SFP+ transceiver, XFP module, CFP, X2/XENPAK module. Speed up the assembly of mux/demux components for high-speed optical transceivers with these monolithic Z-blocks that enable a more rapid alignment process. Its innovative hermetic sealing technology ensures stable performance even in extreme.



## Article Content

Nov 03, 2025

CWDM Z-Block specification|FutureOptics

Future Optics' CWDM Z-BLOCK mux/ demux is a highly integrated optical sub-assembly device based on thin film filter technology and optical path Zig-Zag design, acting as an optical engine to combine

Nov 10, 2025

Z-block achieves very low IL, enabling efficient wavelength mux and ...

Future Optics Z-block subassemblies achieve very low insertion loss, enabling efficient wavelength multiplexing and demultiplexing in high-speed optical transceivers such as 100G, 400G, 800G in data

Mar 30, 2026

Optical module design resources | TI

View the TI Optical module block diagram, product recommendations, reference designs and start designing.

Aug 22, 2025

OFC 2023 Preview: Integrated Z-block Subassemblies for 400G

08 February 2023 OFC 2023 Preview: Integrated Z-block Subassemblies for 400G Transceivers Optical engine is the key components of high-speed optical transceiver modules. Responding to the growing

Jun 25, 2026

Coupling multiple optical channels using a Z-block

Coupling multiple optical channels using a Z-block Abstract Aspects described herein include an optical apparatus comprising a plurality of light-carrying media, a wavelength division multiplexing (WDM)

May 18, 2026

Where co-packaged optics (CPO) technology stands in

Co-packaged optics (CPO) technology, a key enabler for next-generation data center architectures, promises unprecedented bandwidth density

Oct 07, 2025

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right module for your fiber network.

Jun 16, 2026

Broadcom Sian3 and Sian2M: 200G/lane optical

Analyzing Broadcom's Sian3 and Sian2M 200G/lane DSP technologies. Sian3 (3nm/SMF) and Sian2M (5nm/MMF) support 800G and 1.6T

Sep 10, 2025

Transceiver Wavelength Division Multiplexer (WDM) Passive Optical

Future Optics' WDM Z-BLOCK mux / demux is a very compact TFF optical sub-assembly device acting as an optical engine to combine or to separate channels for high-speed transceivers in

Sep 27, 2025

Optics SWDM, CWDM, LWDM Z-BLOCK

SWDM, CWDM, LWDM Z-BLOCK Optical Filter Subassemblies for Datacom Transceivers optical communication networks. The very high parallelism pitch tolerance of the Z-blocks enable a rapid

Dec 02, 2025

Inside the Optics: Understanding Z-Block and TFF Prism

The Z-Block is a core optical component used in wavelength division multiplexing/demultiplexing (WDM) systems. Structurally, it is typically composed of several

Mar 20, 2026

HYC integrated Z-block subassemblies for 400G transceivers

As the optical module industry gradually begins to enter the era of 800G and silicon photonics, the demand for high-speed optical engines will increase. Based on this platform, HYC can design and

Feb 02, 2026

400G RX Integrated Optical Assemblies Z-Block

We're one of the leading 400g rx integrated optical assemblies z-block manufacturers and suppliers in China. Source here the best customized 400g rx integrated

Dec 25, 2025

Suzhou Dowell Optics Co., Ltd.

Dowell Optical produces Z-Blocks, the core assemblies used in high-speed optical modules of data center, including CWDM Z-Block, MWDM Z-Block, LanWDM Z-Block, and customized according to

Sep 25, 2025

CWDM4 Z-BLOCK mux demux sub-assembly wih low IL

Future Optics'' z-block is a passive optical subassembly (POSA) based on our free-space-optics wavelength division multiplexing (WDM) platform to deliver optical

Dec 23, 2025

OptiWorks\_Product Sheet\_Z-Block CWDM\_EN

Integrated directly into mul -wavelength high speed TOSA/ROSA and transceivers. 1. Customers can have choices of 0.9, 1.0, 1.1,or 2.0mm pitch.

Jul 15, 2025

LWDM8 Z-BLOCK mux demux sub-assembly wih low IL and high

Future Optics'' 8 CH LWDM Mux Demux Z-Block is a LWDM Block to act as a Mux Demux optical sub-assembly for Tosa or Rosa module, working at O-band from 1273.55 to 1309.14 nm, which is

Jan 17, 2026

Z-BLOCK CWDM

Optiworks'' Z-block CWDM is based on free space TFF technology design with low insertion loss. It has extraordinary optical performance and high reliability.

Apr 20, 2026

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

Jun 23, 2026

Z-BLOCK LAN-WDM®-Ultra Compact WDM®-Products

Optiworks'' Z-block LAN WDM is a mini version device with only glass and filters, and there is no fiber and collimator, which has granted and published patent. It is

Apr 12, 2026

Z-Block High-Speed Optical Module for Data Centers

Precision-engineered SFP+ optical module with 100Gbps bandwidth, low 0.8dB insertion loss, and intelligent diagnostics. Reduces maintenance costs by 65% in data centers.

Feb 16, 2026

#### Cisco 400G Digital Coherent Optics QSFP-DD Optical Modules

Cisco offers a comprehensive range of pluggable optical modules in the Cisco® pluggables portfolio. The wide variety of modules gives you flexible and cost-effective options for all types of interfaces.

Feb 09, 2026

#### OptiWorks\_Product Sheet\_Z-Block CWDM\_EN

Optical Fiber Communications Ultra Compact WDM Z-Block CWDM ... Notes: 1. Customers can have choices of 0.9, 1.0, 1.1, or 2.0mm pitch.

Oct 25, 2025

#### SWDM, CWDM, LWDM Z-BLOCKS | Coherent

Speed up the assembly of mux/demux components for high-speed optical transceivers with these monolithic Z-blocks that enable a more rapid alignment

Aug 29, 2025

#### 400G RX Integrated Optical Subassembly, Z-Block

Based on the Z-block technology platform, the assembly and coupling of high-speed optical transceiver modules are greatly simplified. It can be CWDM or LAN-WDM,

Aug 15, 2025

#### Z-BLOCK LAN-WDM

Optiworks' Z-block LAN WDM is based on free space TFF technology design which could offer extraordinary optical performance and high reliability.

Jan 15, 2026

#### Global AI Optical Transceiver Market to Reach US\$26 Billion in 2026 ...

TrendForce's latest research indicates that the global market for AI-focused optical transceivers has entered a phase of rapid growth, with market size projected to expand from

Sep 29, 2025

#### LightCounting :: Scale-up networks in AI Clusters is a

A surge in AI development created a new wave in demand for optical connectivity in 2023-2025 and it will sustain the market's growth through 2030. The Figure below

## Contact Us

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

Website: <https://moletenare-ew.co.za>

Email: [info@moletenare-ew.co.za](mailto:info@moletenare-ew.co.za)

Phone: +86 138 1658 3346

Address: Ningbo, China

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