

# Cisco CWDM-SFP10G-1610 Datasheet



Cisco CWDM-SFP10G-1610 CWDM 1610-nm SFP+; 10 Gigabit Ethernet

CWDM-SFP10G-1610

The Cisco CWDM SFP 10 Gigabit Ethernet solution allows enterprise companies and service providers to provide scalable and easy-to-deploy 10 Gigabit Ethernet. The product set enables the flexible design of highly available, multiservice networks.

The Cisco Coarse Wavelength-Division Multiplexing Small Form-Factor Pluggable Plus (Cisco CWDM SFP+) solution is a convenient and cost-effective solution for the adoption of 10 Gigabit Ethernet in campus, data-center, and metropolitan-area access networks.

## Key features and benefits

### Scalability

The Cisco CWDM SFP+ solution enables the transport of up to eight channels of 10 Gigabit Ethernet over Single Mode

Fiber (SMF) strands.

High availability

The Cisco CWDM SFP 10 Gigabit Ethernet solution takes advantage of a multichannel architecture and the inherent protection of ring architectures. The solution enables:

- Use of Layer 2 and Layer 3 redundancy and failover mechanisms at the channel endpoints (Cisco CWDM SFP+) to build highly available links
- Use of two-path link configurations in a ring architecture to provide protection from fiber cuts

Investment protection

The Cisco CWDM SFP+ solution enables enterprises and service providers to increase the bandwidth of an existing 10 Gigabit Ethernet optical infrastructure without adding new fiber strands. The solution can be used in parallel with other Cisco SFP+ devices on the same platform.

Technical specifications

Cisco CWDM 10 Gigabit Ethernet SFPs

A Cisco CWDM SFP 10 Gigabit Ethernet SFP is a hot-swappable input/output device that plugs into an SFP+ port or slot of a Cisco switch or router, linking the port with the fiber-optic network.

## Performance

The CWDM 10 Gigabit Ethernet SFP module supports the following bit rates:

Datarate	FEC
OC-192 9.95328 Gbps $\pm$ 20 ppm	No Forward-Error-Correction (FEC) application (target [BER] = 1E-12)
10 Gigabit Ethernet WAN 9.95328 Gbps $\pm$ 20 ppm	No FEC application (target) BER = 1E-12)
10 Gigabit Ethernet LAN 10.3125 Gbps $\pm$ 100 ppm	No FEC application (target) BER = 1E-12)
OTU-2 10.709 Gbps $\pm$ 20 ppm	FEC application (pre-FEC target BER = 1E-6)
OTU-1e with stuffed bits 11.0491 Gbps $\pm$ 100 ppm	FEC application (pre-FEC target BER = 1E-6)
OTU-2e without stuffed bits 11.0957 Gbps $\pm$ 100 ppm	FEC application (pre-FEC target BER = 1E-6)

## Connectors and cabling

- Equipment: Standard SFP+ interface
- Network: Dual LC/PC connector

Note: Only connections with patch cords with PC or UPC connectors are supported. Patch cords with APC connectors are not supported.

#### Environmental conditions and power requirements

- Operating temperature range: 32 to 158°F (0 to 70°C)
- Storage temperature range: -40 to 185°F (-40 to 85°C)

#### Electrical power interface data

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Supply current	$I_s$		220	300	mA
Surge current	$I_{Surge}$			+30	mA
Input voltage	$V_{max}$	3.1	3.3	3.46	V

#### Optical parameters

- Transmitter center wavelength: 1611nm
- Side-mode suppression ratio: 30dB
- Transmitter optical output power: 0 to 5.0 dBm
- Receiver optical input power: -16.0 to -1.0 dBm
- Receiver optical input wavelength: 1450 to 1620nm
- Transmitter extinction ratio: 8.2dB
- DGD penalty: 1dB

#### Ordering information

- Product Number: CWDM-SFP10G-1610=
- Description: Cisco CWDM 1610-nm SFP+; 10 Gigabit Ethernet
- Color: Red

## Platform support

The Cisco CWDM 10 Gigabit Ethernet SFPs are supported across a variety of Cisco switches, routers, and optical transport devices.

- Cisco WS-C3650-24PD
- Cisco WS-C3850-48XS-S
- Cisco Nexus 9000 N9K-X9564PX
- Cisco WS-C3650-48FQ
- Cisco WS-C3850-48P
- Cisco Nexus 9000 N9K-C9396PX
- Cisco WS-C3850-48XS
- Cisco WS-C3650-48TD
- Cisco Nexus 9000 N9K-X9464PX
- Cisco WS-C3850-24P
- Cisco WS-C3650-48PD
- Cisco WS-C3850-24XS
- Cisco ASR 9000 A9K-24X10GE-SE
- Cisco ASR 9000 ASR-9001
- Cisco Nexus 9000 N9K-C9372PX
- Cisco ASR 9000 A9K-36X10GE-TR
- Cisco WS-C3850-16XS
- Cisco WS-C3850-48XS-E
- Cisco WS-C3850-48F
- Cisco ASR 9000 A9K-MPA-8X10GE
- Cisco WS-C3650-24TD
- Cisco ASR 9000 A9K-36X10GE-SE
- Cisco WS-C3850-48T
- Cisco ASR 9000 A9K-24X10GE-TR

- Cisco WS-C3650-48TQ
- Cisco WS-C3850-32XS
- Cisco WS-C3650-48PQ
- Cisco WS-C3850-48XS-F-E
- Cisco WS-C3850-24T
- Cisco WS-C3850-12XS
- Cisco WS-C3650-48FD
- Cisco ME-3600X-24FS-M (SFP ports)
- Cisco WS-C3850-48XS-F-S
- Cisco Nexus 9000 N9K-C9372PX-E
- Cisco WS-C3850-24S
- Cisco WS-C3850-12S

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