

# Customized Dual Fiber Compact CWDM Mux Demux

Data Center & Cloud Computing Infrastructure Solutions



## Overview

Compact coarse wavelength division multiplexers (CCWDM Mux) is the low insertion loss version of CWDM Mux. Compared with traditional CWDM technology, CCWDM technology adopts free-space optics platform which can significantly improve optical performance.

Main advantages of CCWDM Mux are high wavelength accuracy and stability, low insertion loss, high isolation and low PDL(polarization dependent loss).

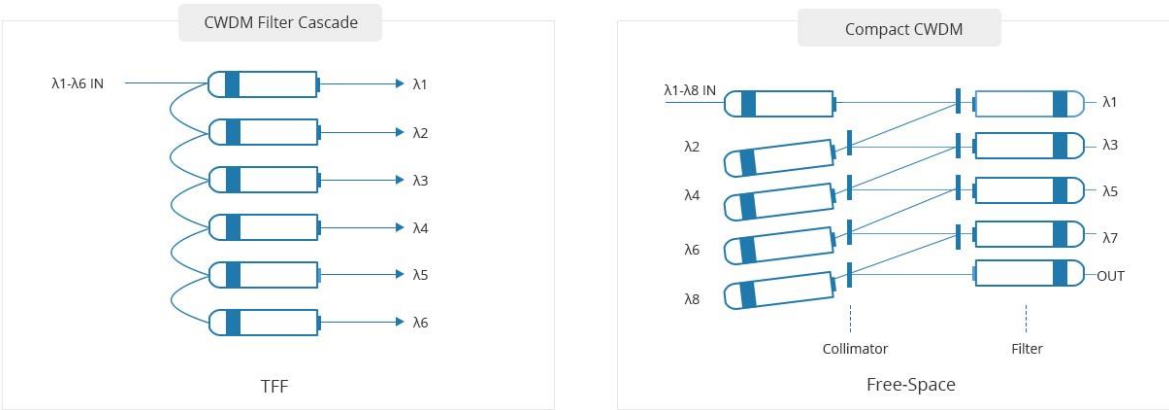
## Applications

- CWDM Systems
- Telecom networks
- Metro Area Networks
- Broadband Networks
- PON Networks
- CATV Links

# Highlight

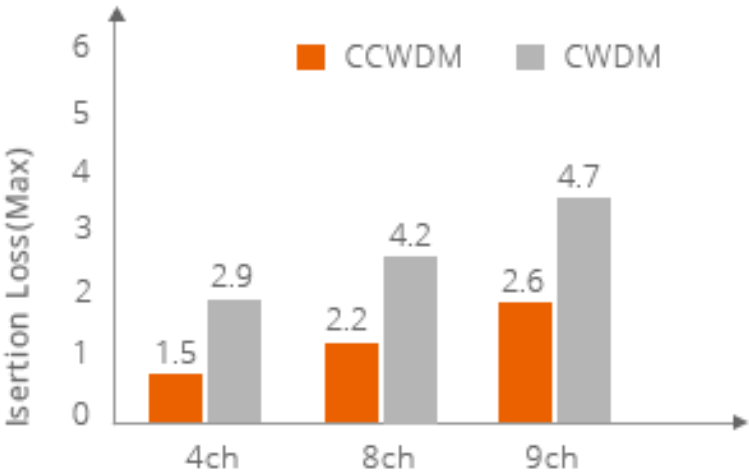
## 1. Unique Free-Space Technology

The CCWDM Mux adopts Free-Space technology, which uses light propagating in free space to wirelessly transmit data. Inside the device, adjacent signal channels are cascaded by parallel beam instead of the fiber.



## 2. Extreme Low Insertion Loss

The insertion loss of CCWDM Mux is about half of the conventional CWDM Mux. This reduces the overall loss of the whole link, and leaves more choices for the design of the solution.



Technical Specification

Parameters	Dual Fiber CCWDM MUX DEMUX			
Number of Channels	4ch	8ch	16ch	18ch
Operating Wavelength	1260~1620nm			
Channel Spacing	20nm			
Channel Passband	±6.5nm			
Channel Insertion Loss	≤ 1.3dB	≤ 1.8dB	≤ 2.6dB	≤ 2.6dB
Adjacent Channel Isolation	≥30dB			
Non-adjacent Channel Isolation	≥40dB			
Technology	Free Space			
Channel Ripple	≤ 0.5dB			
Polarization Dependent Loss	≤ 0.3dB			
Return Loss	≥ 45dB			
Directivity	≥ 50dB			
Polarization Mode Dispersion	≤ 0.1ps			
Power Handling	≤ 500mW			
Operating Temperature	-40 ~ +85° C			
Storage Temperature	-40 ~ +85° C			
Fiber Type	G657A1			

Notes:

- 1. Specified with connectors and adapters.

Line Type

In the dual fiber transmission, one fiber only transmits the optical signal in one direction, and the reverse optical signal is transmitted by another fiber. The same wavelength can be reused in two directions. The wavelength of transceivers should be the same in both sides.

Special Service

1. Monitor Port

Monitor port is used to monitor or test the power signal, usually at a 1% ratio, 2%, 3%, 5%, etc, also available. By connecting with measurement or monitoring equipment, such as power meters, spectrum analyzer, or FMT AIU/OPD card, the signal can be inspected without interrupting the existing network.

2. Expansion Port

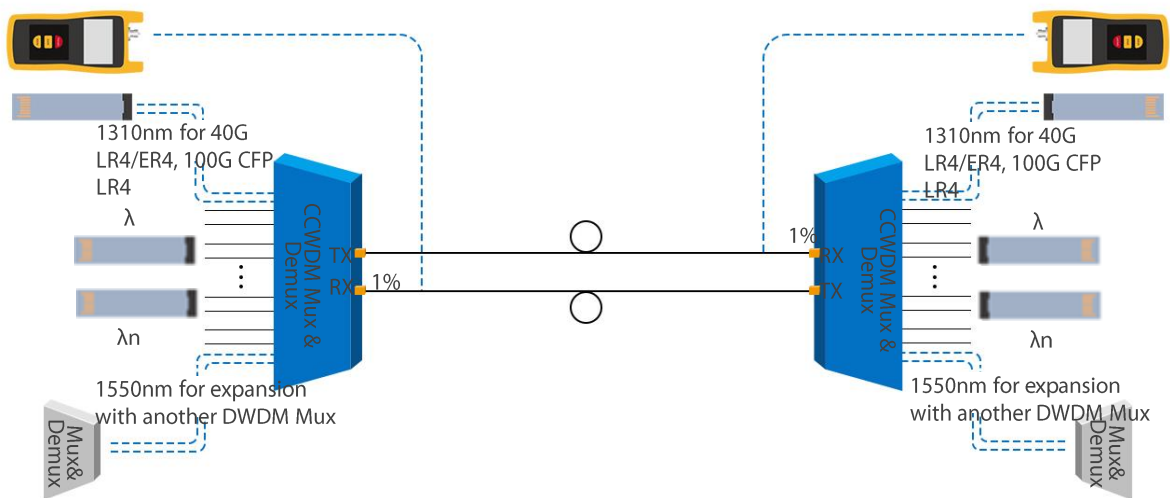
Expansion port makes it possible to increase the network capacity by connecting it to the line port of another DWDM MUX/DEMUX supporting different wavelengths, without the need of installing or leasing additional fibers.

3. 1310nm and 1550nm Ports

These two extra ports allow existing legacy 1310nm and 1550nm traffic to be added such as conventional SFP, SFP+ or other data rate conventional transceiver. And with the 1550nm port, it can be also used to cascade with another DWDM Mux for expansion.

PS:

If 1310nm port is added, the following CWDM wavelengths can't be added: 1270nm, 1290nm, 1310nm, 1330nm, 1350nm and 1370nm;  
If 1550nm port is added, the following CWDM wavelengths can't be added: 1510nm, 1530nm, 1550nm, 1570nm, 1590nm and 1610nm.



## Housing and Enclosure

FS provides 3 different package options for dual fiber CCWDM Mux Demux, including FMU plug-in module, ABS pigtailed module and 1U 19" rack mount, as well as the matched chassis.

FMU 2-slot 1U Rack

261.2mm  
44mm  
481.8mm  
212mm  
255mm  
44mm  
FMU Plug-in module

CCWDM MUX DEMUX Optional Housing

261.2mm  
44mm  
481.8mm  
1U 19" Rack Mount

ABS Pigtailed module  
0.9mm/2.0mm/3.0mm cable diameter  
can be customized.

## Ordering Information

ID	Description	FS P/N
<a href="#">#73959</a>	Compact CWDM Mux Demux, 2.6dB Max IL, Dual Fiber	CCWDM-DF
<a href="#">#73960</a>	Compact CWDM Mux Demux, 2.2dB Max IL, Single Fiber, Side-B	CCWDM-SFB
<a href="#">#73961</a>	Compact CWDM MuxDemux, 2.2dB Max IL, Single Fiber, Side-A	CCWDM-SFA

## High Quality CWDM Transceivers to Build a Passive CWDM System

FS.COM offers CWDM transceiver modules in SFP, SFP+, SFP28, 3G-SDI SFP and XFP formats. Every optics is tested in real switches and fully compatible with Cisco, Juniper, Arista, Brocade, Dell, Extreme, etc.

Transmission distances range from 10-80km, transmission data rate range from 1G-25G speeds, without the use of optical amplifiers.



CWDM-SFP

CWDM-10G SFP+

CWDM-25G SFP28

CWDM-3G-SDI-SFP

CWDM-XFP



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