

# 4 Channel DWDM Fiber Mux Demux

---

## Variants

Mux (A) Demux (B)

## Details

### 4 Channel DWDM Fiber Mux Demux – Single Fiber (8 Wavelengths)

#### Product Overview

The 4 Channel DWDM Fiber Mux Demux is a single-fiber, bi-directional DWDM solution designed to transmit 4 independent services using 8 DWDM wavelengths over one optical fiber. It operates on C25–C28 and C53–C56 wavelengths, following ITU-T G.694.1 (100 GHz grid) standards, maximizing utilization of the C-band spectrum.

This solution is ideal for ISP backbone, data centers, cloud networks, broadcasting, finance, and government networks, where fiber resources are limited and high capacity is required.

## Key Features

- 4 Channels over Single Fiber (Bi-Directional)
- 8 DWDM Wavelengths (C25–C28 / C53–C56)
- ITU-T G.694.1 100 GHz Grid Compliant
- Thin Film Filter (TFF) Technology
- Low Insertion Loss ? 2.4 dB
- High Channel Isolation (up to 45 dB)
- Expansion (EXP) Port for Future Capacity Upgrade
- Supports Custom DWDM Wavelength Design

## Working Principle (Single Fiber BIDI)

**MUX Side (Side-A)**  
Combines C25–C28 and C53–C56 wavelengths  
Sends multiple services into one single fiber

**DEMUX Side (Side-B)**  
Separates the same wavelengths at receiving end  
Ensures stable point-to-point transmission

## Expansion Port (EXP)

Allows cascading with another DWDM Mux/Demux

Increases bandwidth without adding new fiber

## Supported Wavelengths

C25 – 1557.36 nm

C26 – 1556.55 nm

C27 – 1555.75 nm

C28 – 1554.94 nm

C53 – 1535.04 nm

C54 – 1534.25 nm

C55 – 1533.47 nm

C56 – 1532.68 nm

## Optical Specifications

Channel Spacing: 100 GHz (0.8 nm)

Channel Passband:  $\pm 0.11$  nm

Insertion Loss:  $\leq 2.4$  dB

Return Loss:  $\geq 45$  dB

Directivity:  $\geq 45$  dB

Polarization Dependent Loss:  $\leq 0.3$  dB

Polarization Mode Dispersion:  $\leq 0.1$  ps

Channel Isolation:

Adjacent  $\geq 30$  dB

Non-Adjacent  $\geq 45$  dB

Center Wavelength Accuracy:  $\pm 0.05$  nm

## Mechanical & Environmental Specifications

Operating Temperature:  $-20$  °C to  $+70$  °C

Storage Temperature:  $-40$  °C to  $+85$  °C

Dimensions (HxWxD):  $44 \times 440 \times 230$  mm

Net Weight: Approx. 3.5 kg

Mounting Type: 19-inch 1U Rack Mount

Slot Support:  $4 \times$  LGX Plug-in Modules

## Connector & Interface

Fiber Type: Single Mode OS2

Connector Type: LC-UPC (LC-APC optional)

Line Port: Single Fiber BIDI

EXP Port: Available for expansion

## **Application Areas**

ISP & Telecom Backbone  
Data Centers & IDC  
Broadcasting & TV Networks  
Cloud & Massive Data Transmission  
Banking & Financial Networks  
Government & Enterprise Networks

---