DWDM-40-1U

DWDM MUX DEMUX

40ch, Dual Fiber, 1310nm/MON/EXP, LC/UPC, 1U Rack



Overview

The 40 channel DWDM mux/demux is what you reach for when the duct is full but the traffic is not: forty wavelengths on one fiber pair, C21 to C60 on the standard 100 GHz ITU grid, so any fixed or tunable DWDM optic can light them. As a passive DWDM module, it carries no power feed, no firmware and no cooling — nothing to fail.

Inside, the filter is AAWG — arrayed waveguide grating — and forty channels is where that technology earns its place: a single grating separates all forty wavelengths in one pass, so insertion loss stays flat across the band. Channel insertion loss holds at ≤ 3.5 dB and link loss at ≤ 7.0 dB, leaving budget for unamplified metro and regional spans.

Three auxiliary ports let this 40ch DWDM mux/demux fit a network that already exists rather than a greenfield site: a 1310 nm window for legacy grey optics, a monitor tap for link supervision without interrupting traffic, and an expansion port that cascades a second unit when forty channels stop being enough.

Features

- 40-channel DWDM, C21–C60 — the complete C band on one grid
- AAWG with Gaussian passband: the whole band from a single chip
- 1310 nm bypass for legacy grey optics
- Per-channel loss ≤3.5 dB; a multiplexer + demultiplexer pair at ≤7.0 dB
- Monitor port on the trunk; duplex LC/UPC; 19-inch 1U chassis

Applications

- Data-centre interconnect: up to forty channels at 100G, 250G or 1T each
- Long-haul and regional transport behind an existing EDFA line system
- Cloud and HPC fabrics needing deterministic capacity between halls
- Submarine landing stations and core PoPs where fiber is scarce

Technical Specifications

Parameter	Specification
Channel Count	40 (C21–C60)
Wavelength Range	1529.55 – 1560.61 nm
Channel Spacing	100 GHz (≈0.8 nm), ITU-T G.694.1
Channel Passband	±0.11 nm, Gaussian
Filter Technology	AAWG — arrayed waveguide grating
Insertion Loss, channel ports	≤ 3.5 dB
Link Loss	≤ 7.0 dB
1310 nm Pass Band	1260 – 1360 nm
Insertion Loss, 1310 nm port	≤ 0.8 dB
Insertion Loss, MON port 1	≤ 26 dB (1 % tap)
Center Wavelength Accuracy	±0.05 nm
Return Loss	≥ 40 dB
Directivity	≥ 40 dB
Channel Isolation	Adjacent ≥25 dB / non-adjacent ≥29 dB
Polarization Dependent Loss	≤ 0.3 dB
Polarization Mode Dispersion	≤ 0.1 ps
Operating Temperature	−5 to +65 °C
Storage Temperature	−40 to +85 °C
Connector	LC/UPC duplex (other types on request)
Dimensions (H × W × D)	44 × 440 × 230 mm (482 mm with mounting ears)
Net Weight	3.5 kg

Note: Specified with connectors.

Port functions

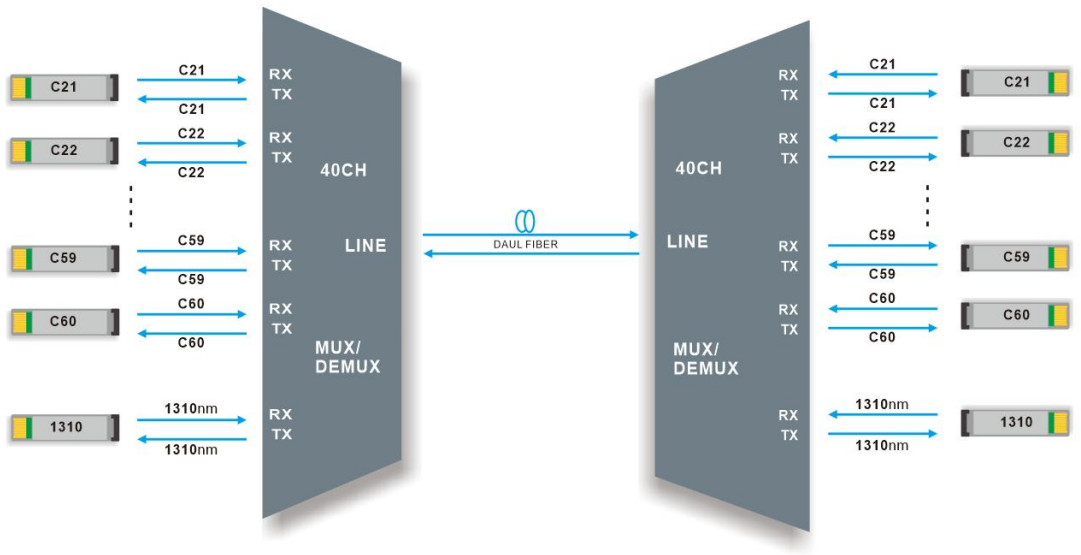
Port	Function
LINE	Trunk port. All 16 DWDM channels, bidirectional, over the paired fiber.
1310	1G LX/SX, 10G LR, 40G LR4/ER4, 100G LR4/ER4/ZR4.
MON	Power monitoring and fault finding, zero traffic interruption.

Channel Frequencies and Wavelengths

Ch.	λ (nm)	f (THz)	Ch.	λ (nm)	f (THz)	Ch.	λ (nm)	f (THz)	Ch.	λ (nm)	f (THz)
C21	1560.61	192.1	C22	1559.79	192.2	C23	1558.98	192.3	C24	1558.17	192.4
C25	1557.36	192.5	C26	1556.55	192.6	C27	1555.75	192.7	C28	1554.94	192.8
C29	1554.13	192.9	C30	1553.33	193.0	C31	1552.52	193.1	C32	1551.72	193.2
C33	1550.92	193.3	C34	1550.12	193.4	C35	1549.32	193.5	C36	1548.51	193.6
C37	1547.72	193.7	C38	1546.92	193.8	C39	1546.12	193.9	C40	1545.32	194.0
C41	1544.53	194.1	C42	1543.73	194.2	C43	1542.94	194.3	C44	1542.14	194.4
C45	1541.35	194.5	C46	1540.56	194.6	C47	1539.77	194.7	C48	1538.98	194.8
C49	1538.19	194.9	C50	1537.40	195.0	C51	1536.61	195.1	C52	1535.82	195.2
C53	1535.04	195.3	C54	1534.25	195.4	C55	1533.47	195.5	C56	1532.68	195.6
C57	1531.90	195.7	C58	1531.12	195.8	C59	1530.33	195.9	C60	1529.55	196.0

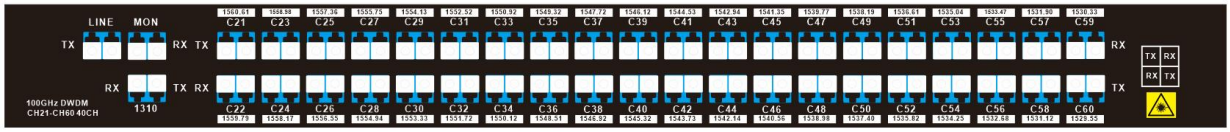
Center wavelengths are the ITU-T G.694.1 100 GHz reference values at f = 190.0 + 0.1 × n THz. C21–C60 is the standard build and covers the full C band; other windows to order. No expansion port is fitted, because the band is already fully occupied.

Line Link



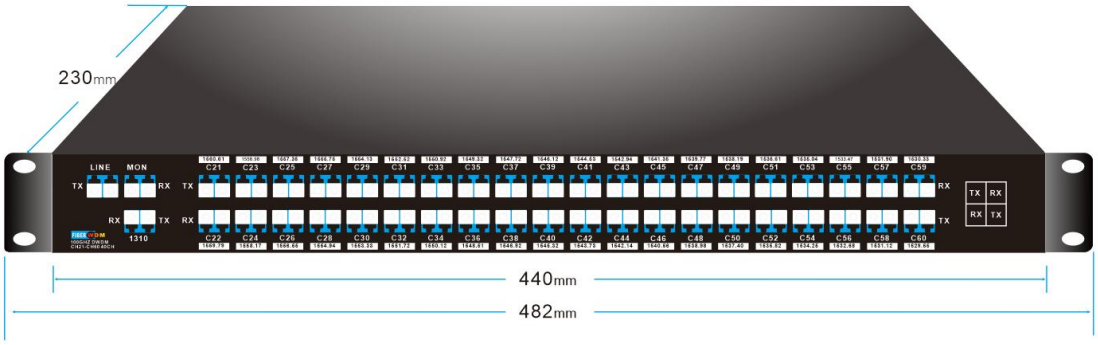
40CH DWDM MUX DEMUX Dual fiber transmission

Front Panel Layout



40CH DWDM MUX DEMUX Dual Fiber

Package Dimensions



19” Inch 1U Rack

Order Information

Product No.	Description
DWDM-40-1U-C2160	DWDM MUX DEMUX, 40CH (C21-C60), with 1310 nm and monitor ports, AAWG, dual fiber, LC/UPC, 1U 19-inch rack

Customized channel plans, connector types and port configurations are available on request.

For further information, please visit our website https://www.aoatech.com

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