DATACOM

DM936

DWDM SOLUTION

DATASHEET

134.4910.09 – March/2026

DM936

DWDM SOLUTION

DWDM SOLUTION TO EXPAND OPTICAL LINK CAPACITY WITH AMPLIFICATION AND CHROMATIC COMPENSATION OPTION

Datacom's DWDM solution enables the expansion of installed optical link capacity, significantly optimizing the use of metropolitan fiber optics, generating a higher return on investment of the optical cabling infrastructure.

The solution consists of different models of passive multiplexers, containing from 8 to 32 channels, with the option of a single or dual fiber uplinks. The solution also contains 10GE SFP+ DWDM modules with different channels in order to complement the solution for organizing the transmission link. As a complement, the portfolio also contains EDFA amplification and chromatic dispersion compensation (DCM) solutions, thus allowing the creation of optical links of up to 320Gbps in capacity and 80km range and with up to 80Gbps and 110km range.

The DWDM product portfolio is presented as equipment with 1U height for installation in standard 19 inch racks, either through an adapter panel or through mounting brackets fixed in the equipment itself.

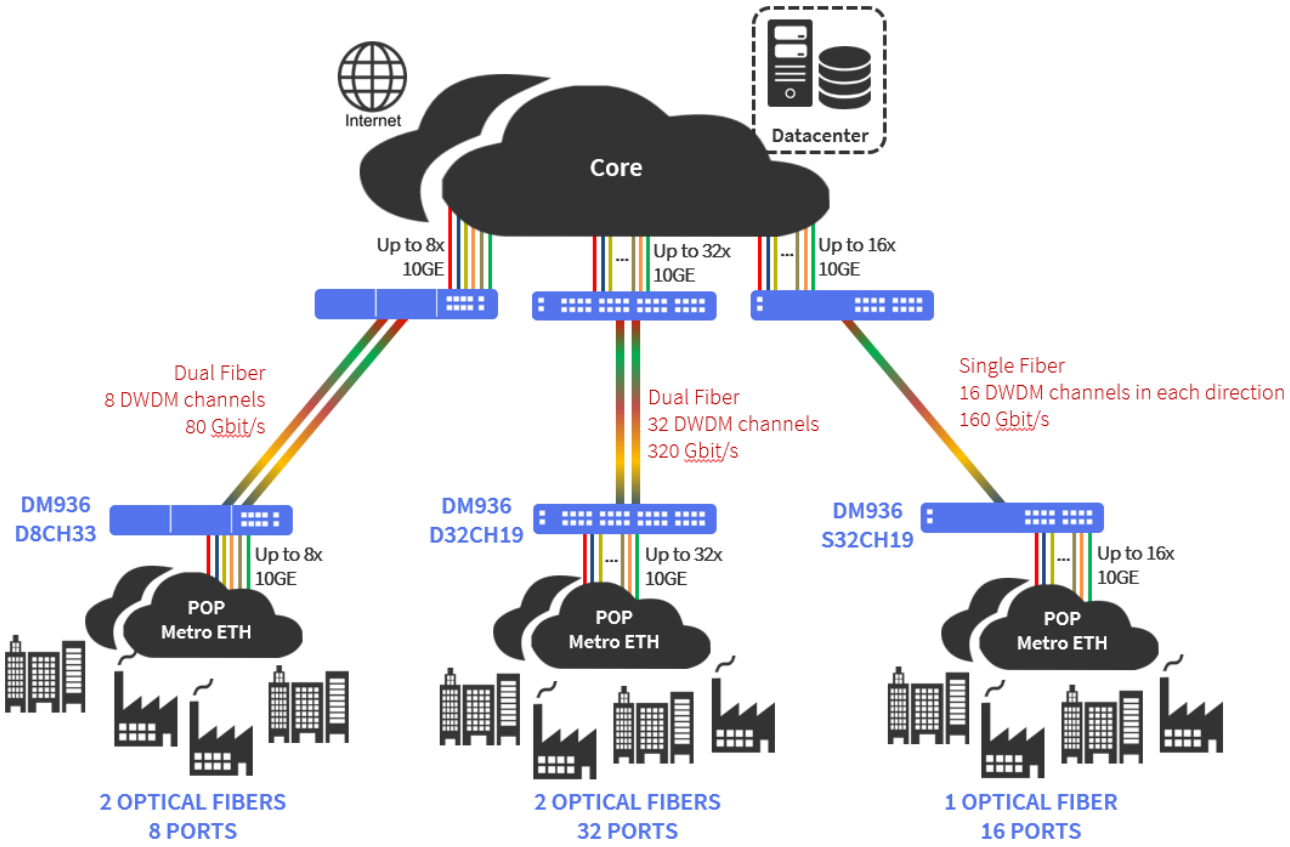
- Passive DWDM Mux/Demux to expand link capacity
- Enables capacity expansion up to 480Gbit/s per fiber pair
- Bidirectional solution that allows a capacity of up to 160Gbit/s on a single fiber
- 10GE SFP+ modules available on different DWDM channels, compatible with Mux/Demux
- EDFA amplification and DCM module option for link extension up to 110km

APPLICATION

HIGH CAPACITY POINT-TO-POINT LINKS FOR DATA TRANSMISSION BETWEEN POPS

Through the DM936 product line, it is possible to transmit up to 48 10Gbit/s channels on a single pair of fibers, expanding the transmission capacity of the communications network on an already installed fiber base. The solution consists of colored 10GE SFP+ optical modules on channels CH19 to CH50 of the ITU-T grid, which can be used on any switch[1] or routers[1] interfaces and then connected to the DM936 multiplexers/demultiplexers, capable of aggregating up to 48 links on a single fiber pair for data transmission.

The system allows the creation of point-to-point links of up to 48 channels per pair of fibers, or up to 16 channels on a single fiber, according to the application example shown below.



Solution Details

The following table presents the items that are part of the DWDM solution, their application characteristics and capabilities. To optimize the investment by distributing it over time, it is possible to install the link initially with only a few wavelengths, expanding the capacity by installing additional SFP + optical modules according to the application's demand.

Model	Description	Quantity of Ports and DWDM Channels	Traffic Capacity (10 Gbps ports)	Typical range without amplification	Amplifiable	Typical range with Amplification	Typical Range with Amplification and DCM
D8CH33	8-port dual fiber DWDM Mux/Demux	8 Ports 8 Channels DW33 to DW40	80Gbps	65km	Yes	80km	110km
S16CH19	16-port single fiber DWDM Mux/Demux	16 Ports 32 Channels DW19 to DW50	160Gbps	55km	No	-	-
D32CH19	32-port dual fiber DWDM Mux/Demux	32 Ports 32 Channels DW19 to DW50	320Gbps	55km	Yes	80km	110km
D48CH14	48-port dual fiber DWDM Mux/Demux	48 ports. 48 Channels DW14 to DW61	480Gbps	55km	Yes	80km	110km

Note: typical ranges, dimensioned considering losses of 0.2875dBm per kilometer of optical fiber.

Technical Specification

Optical Modules

SFP+ optical modules, DWDM standard, fixed channel according to ITU-T G.694.1, available in 32 channels. These modules can be used with Datacom equipment as well as with third party products[1].

	SFP+ 10GE Modules			
RX Sensibility	-24 dBm			
RX Overload	-7 dBm			
Tx Power (min/max)	-1 dBm / 3 dBm			
ITU-T G.694.1 channels (Wavelength in nm)	CH19 (1562,23) CH20 (1561,42) CH21 (1560,61) CH22 (1559,79) CH23 (1558,98) CH24 (1558,17) CH25 (1557,36) CH26 (1556,55)	CH27 (1555,75) CH28 (1554,94) CH29 (1554,13) CH30 (1553,33) CH31 (1552,32) CH32 (1551,72) CH33 (1550,92) CH34 (1550,12)	CH35 (1549,32) CH36 (1548,51) CH37 (1547,72) CH38 (1546,92) CH39 (1546,12) CH40 (1545,32) CH41 (1544,53) CH42 (1543,73)	CH43 (1542,94) CH44 (1542,14) CH45 (1541,35) CH46 (1540,56) CH47 (1539,77) CH48 (1538,98) CH49 (1538,19) CH50 (1537,40)
Digital Diagnostics (DD) support	Yes			
Operational Temperature [2]	-5°C to 70°C			
Operational Relative Humidity [2]	10% to 90%, non-condensing			
Storage Temperature	-20°C to 70°C			
Storage Relative Humidity	10% to 90%, non-condensing			
Optical Connector	LC			

DM936 - MUX/DEMUX

Passive DWDM Multiplexer / Demultiplexer modules according to ITU-T G.694.1 standard, in 8, 16 or 32 channel models, for one or two fibers. The products can be installed in standard 19 ”racks using an adapter panel for the 8-channel model and directly with mounting brackets for the 16 and 32 channel models, occupying only 1U of height in all cases.

	D8CH33	S16CH19	D32CH19	D48CH14
DWDM Channels	8	32	32	48
Number of Ports	8	16	32	48
Uplink	Dual Fiber	Single Fiber	Dual Fiber	
Insertion Loss	3,8dB max (total MUX+DEMUX)	7dB max (total MUX+DEMUX)		12dB max (total MUX+DEMUX)
ITU-T G.694.1 Channels	CH33 to CH40	CH19 to CH50		CH14 to CH61
Grid	100GHz			
Spectral Width @-3dB	>0,30nm	>0,43 nm	>0,43 nm	>0,6 nm
Adjacent Channel Isolation	>30dB	>30dB	>30dB	>25dB
Non-Adjacent Channel Isolation	>34dB	>40dB	>40dB	>30dB
Operational Temperature	-5°C to 70°C			
Operational Relative Humidity	10% to 90%, non-condensing			
Storage Temperature	-40°C to 85°C			
Storage Relative Humidity	10% to 90%, non-condensing			
Optical Connector	LC/UPC			
Optical Fiber	G.652			
Dimensions (H x W x D) in mm	29 x 129 x 170	44 x 482 x 370		
19” Rack Mount	Requires MA-26 adapter	Ready for 19" rack mount		

DM936 EDFA – Amplifier Module

EDFA (Erbium Doped Fiber Amplifier) optical amplifier module for extending the reach of DWDM optical links. SNMP management support. 1U high for installation in 19” racks. Allows up to 80km ranges for 32 channel MUX/DEMUX and together with the chromatic compensation solution (DCM) allows the installation of DWDM links of up to 110km with the 8 channels MUX/DEMUX.

	DM936 - EDFA
Operating Range	1535nm to 1565nm
Input Power Range	-5dBm to 10dBm
Aggregate output power	20dBm
Operational Temperature	0°C to 50°C
Operational Relative Humidity	10% a 90%, non-condensing
Storage Temperature	-10°C to 70°C
Storage Relative Humidity	10% a 90%, non-condensing
Optical Connector	LC/UPC
Optical Fiber Type	G.652
Power Supply	Redundant, 90Vac to 250Vac (50Hz/60Hz)
Power Consumption	40W
Dimensions	1U, 19” Rack, 400mm depth

DM936 DCM40 – Chromatic Dispersion Compensation Module

Passive chromatic dispersion compensation module (DCM), required for implementation of 10GE links over 80km. It can be mounted in 19” racks using the MA-26 adapter, which has the capacity to install up to 3 units of the DM936 D8CH33 or DM936 DCM40 in 1U height.

	DM936 DCM40
Insertion Loss	≤ 3dB
Operational Temperature	-5°C to 70°C
Operational Relative Humidity	10% a 90%, non-condensing
Storage Temperature	-40°C to 85°C
Storage Relative Humidity	10% a 90%, non-condensing
Optical Connector	LC/UPC
Optical Fiber Type	G.652
Dimensions (H x W x D)	29 mm x 129 mm x 159 mm

MA-26 – Adapter Module

Adapter module for installation of up to 3 units of DM936 D8CH33 Mux/Demux or DM936 DCM40, in 19” racks occupying 1U height.

	MA-26
Slots	3
Installation	19” Rack; 1U height
Compatibility with DM936 D8CH33 MUX/DEMUX	Yes
Compatibility with DM936 S16CH19 MUX/DEMUX	No (DM936 S16CH19 is ready for direct installation on 19” Rack)
Compatibility with DM936 D32CH19 MUX/DEMUX	No (DM936 D32CH19 is ready for direct installation on 19” Rack)
Compatibility with DM936 D48CH14 MUX/DEMUX	No (DM936 D48CH14 is ready for direct installation on 19” Rack)
Compatibility with DM936 DCM40	Yes
Compatibility with DM936 EDFA	No (EDFA is ready for direct installation on 19” Rack)
Dimensions (H x W x D)	44 mm x 482 mm x 70 mm

ORDERING INFORMATION

Item	Part No.	Description
DM936 D8CH33	815.4501.xx	Passive DWDM MUX/DEMUX Module with 8 DWDM channels according to ITU-T G.694.1 (CH33 to CH40). Dual fiber uplink. LC/UPC connectors.
DM936 S16CH19	815.4523.xx	Passive DWDM MUX/DEMUX Module with 16 ports distributed in 32 DWDM channels according to ITU-T G.694.1 (CH19 to CH50). Single fiber uplink. LC/UPC connectors.
DM936 D32CH19	815.4524.xx	Passive DWDM MUX/DEMUX Module with 32 DWDM channels according to ITU-T G.694.1 (CH19 to CH50). Dual fiber uplink. LC/UPC connectors.
DM936 D48CH14	815.4542.xx	Passive DWDM MUX/DEMUX Module with 48 DWDM channels according to ITU-T G.694.1 (CH14 to CH61) and flat top filter shape. Dual fiber uplink. LC/UPC connectors.
DM936 EDFA	820.0010.xx	EDFA based amplification module, compatible with DM936 D8CH33.
DM936 DCM40	820.0009.xx	Chromatic dispersion compensation module, compatible with DM936 D8CH33.
MA-26	800.5203.xx	Mechanical adapter for installation of up to 3 units of DM936 D8CH33 or DM936 DCM in 19" racks. (To be ordered separately, does not accompany DM936 units).
MO SFP+ 10GE 80Km DW19 to DW50	377.2119.00 to 377.2150.00	10GE SFP+ DWDM fixed channel optical modules, dual fibers, single mode. Available from channels CH19 to CH50. Highlighted part of the Code indicates the channel number.

(1) Compatibility of optical modules is guaranteed with Datacom products. For modules from other manufacturers, testing may be required to confirm compatibility. If in doubt inquire Datacom´s Technical Support.

(2) The indicated temperature limit is the one measured by the module in Digital Diagnostics. The maximum related ambient temperature depends on the product in which the module is inserted.

.

DATACOM

Rua América, 1000 | 92990-000 | Eldorado do Sul | RS | Brasil
+55 51 3933 3000
sales@datacom.com.br