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M-Series

A new frontier in network performance

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M-Series: **A new frontier in network performance**

A new frontier in network performance

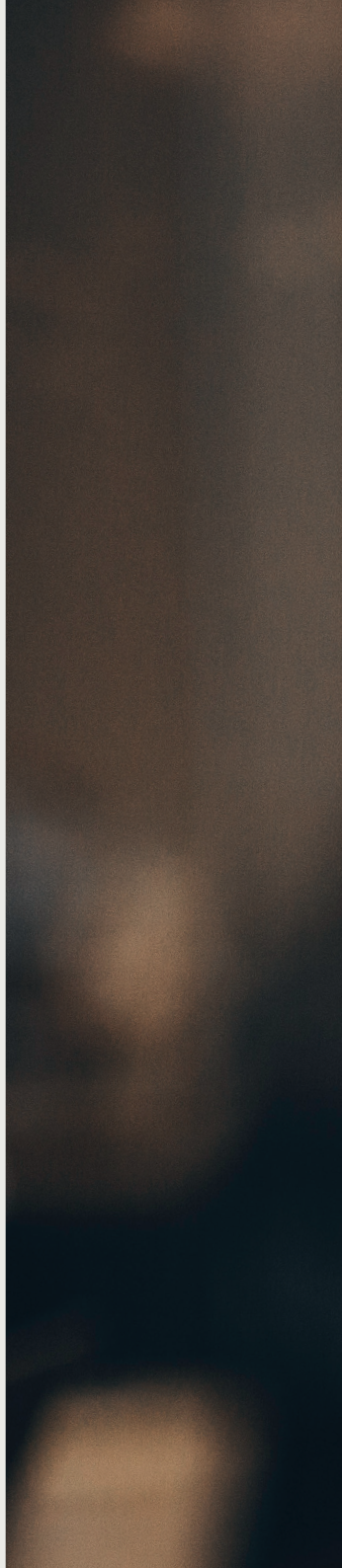
There are a number of reasons why organizations look to change their optical fiber networks. Some struggle with overloaded systems—with new services, applications and security requirements that strain existing infrastructure. Others want to move from operator leasing or managed services for their dark fiber. Seeking to escape from costly contracts that don't allow for readily addressing changing system needs. Some want to update their networks, getting the most out of their dark fiber. Moving away from needlessly complex—and expensive to maintain—legacy approaches.

Smartoptics M-Series marks a revolution in fiber optic networking solutions. The M-Series is a unique 1U multiplexer platform that works with transponders and muxponders. And combines the simplicity of the embedded WDM approach with the features of a traditional telco-based DWDM platform. A passive multiplexer with integrated channel monitoring, amplification and signal conditioning.

M-Series easily handles all of today's data protocols up to 100Gbps in a simple plug and forget approach. LEDs act as a setup guide for easy deployment including channel recognition. Corporate data centers, enterprises, and campus networks can now synchronously connect all of their storage and data traffic together with minimal signal latency.

Easier. Longer distance. Lower cost.

M-Series can be used as a flexible DWDM multiplexer for any ITU standardized DWDM transponder, muxponder or embedded transceiver direct from a switch / router. Traditional telecom-based transponder systems were the go-to transmission solution, offering system management and amplification for longer distances. M-Series offers built-in channel monitoring, amplification and signal conditioning that removes the need for complicated systems to design, install and maintain. The result is the most compact solution available on the market.



M-Series in short

The world's first intelligent distance extending multiplexer

- Intelligent passive DWDM multiplexer
- Integrated OSC (optical surveillance channel) and OCM (optical channel monitor)
- Can be equipped with VOAs (variable optical attenuator), DCMs (dispersion compensation module) and EDFAs (erbium doped fiber amplifier) for distance extension applications
- Handles any combination of transponders, muxponders or embedded transceivers straight from the switch/router
- LEDs for simple setup and channel recognition
- Handles any combination of traffic from 100Mbps to 100Gbps
- Fully featured automated Smart OS adjusts all power levels to optimum values
- No complex user setup
- Redundant hot pluggable power supply units (PSUs)
- Field serviceable network management board without traffic interruption

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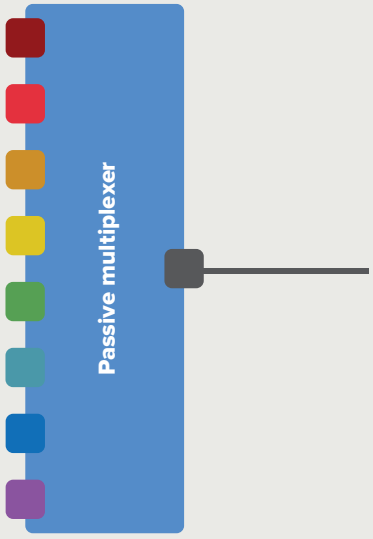
M-Series: **DWDM networking revolutionized**

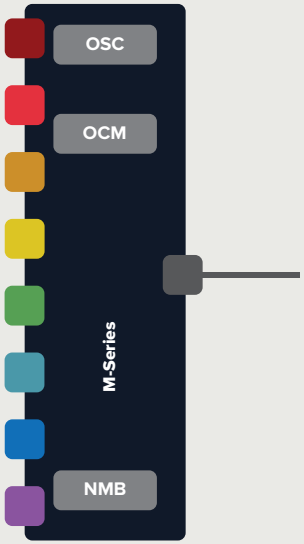
Passive DWDM networking with no channel monitoring or distance extension

Passive multiplexers provide simple and cost effective multiplexing of traffic channels over dark fiber, but they cannot monitor channels. So if the input and output power levels are incorrect or there is a loss of signal the user is not alerted.



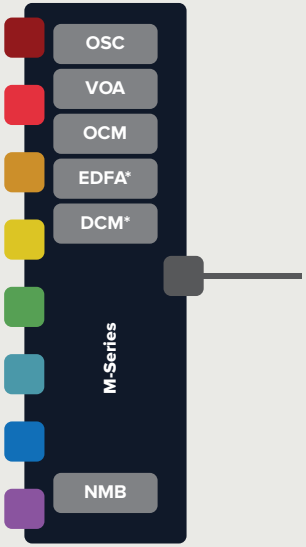
Passive DWDM networking with channel monitoring

In its first mode, M-Series is a DWDM multiplexer with integrated OSC (optical surveillance Channel) and OCM (optical channel monitoring). The OSC builds a dedicated communication channel between network nodes enabling topology discovery and fiber analysis. The OCM monitors the channels and ensures the traffic is present and at the correct levels. Link distances are dependent on the power of the transceiver and conditions of the fiber.alerted.



Passive DWDM networking with channel monitoring and distance extension

M-Series can be configured with integrated VOA (variable optical attenuator), Rx and Tx DCM (dispersion compensation modules) and Rx and Tx EDFAs (erbium doped fiber amplifiers) to extend distances between sites up to 100 kilometers. All in a 1U form factor.



Integrated automated features include:
OSC - Optical Surveillance Channel
VOA - Variable Optical Attenuator
OCM - Optical Channel Monitor
EDFA - Erbium Doped Fiber Amplifier
DCM - Dispersion Compensation Module
NMB - Network Management Board

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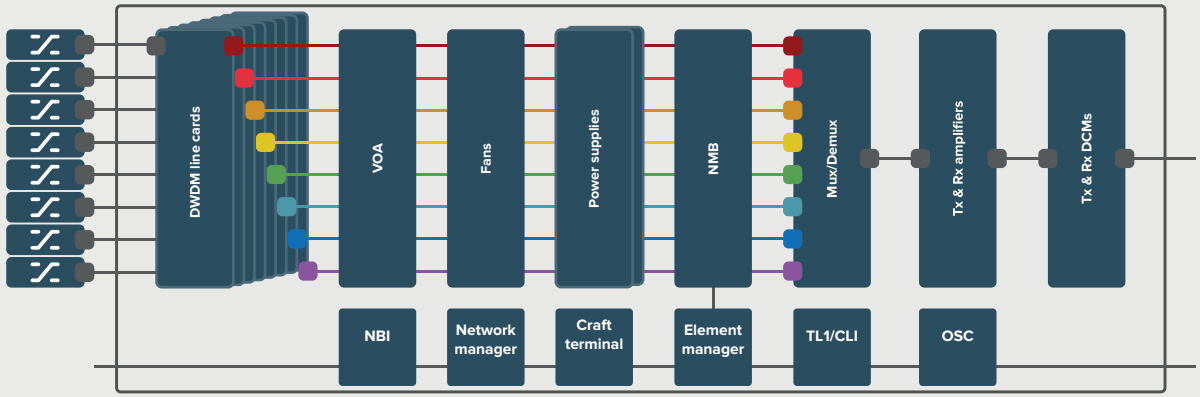
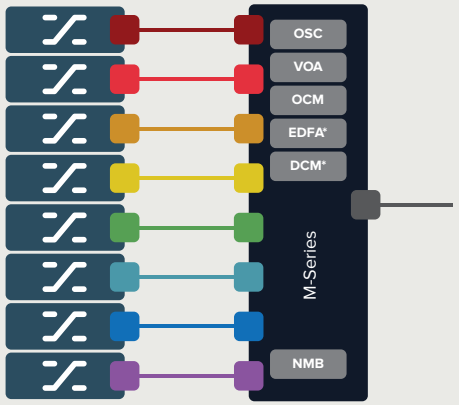
A side-by-side comparison of traditional DWDM and Smartoptics M-Series





Traditional DWDM platforms

- Complex and expensive
- Inflexible networking
- Vertical chassis systems
- Optimized for telecom market
- Symmetrical networking limits embedded DWDM
- Use of third-party DWDM systems limits proprietary switch functions

M-Series open line networking DWDM platform

- Simple and flexible
- Cost effective networking, lower TCO
- Intelligent DWDM multiplexer
- optimized for Datacom market
- Ideal for open networking solutions and extends embedded approach
- No special configuration in data switches

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Embedded 16G Fibre Channel
Modular 100G
Transponders & Muxponders
M-Series
Open line networking
Inline amplification with OADM
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The Power of M-Series

User friendly

Same plug and play experience as a passive multiplexer. M-Series requires few components and little pre-requisite optical networking skills. No complicated installation or configurations required.

Open Line networking

Any combination of embedded DWDM transceivers, transponders or muxponders with no restrictions.

Best of both worlds

Distance extension and channel monitoring of a telco DWDM system in a passive multiplexer format.

Reduced footprint

Small 1U footprint. Important in locations where space is at a premium and extra rack space may not be available.

Green data center

Low power consumption and small footprint results in the ultimate green data solution.

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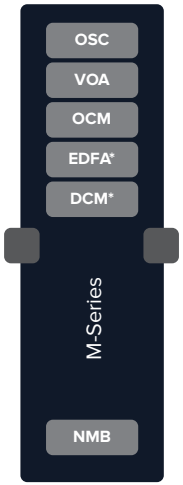
M-Series: **Product portfolio**

M-1601-xxxyyy-C0000C1
16ch intelligent passive multiplexer
OCM, OSC, NMB
Traffic present and signal levels
Topology discovery
Fiber analysis and link loss calculation



M-4000
Inline amplification module
Auto provisioning
Minimal latency
Up to 100km per span

M-1601-xxxyyy-DzzzzC1
Intelligent distance extending multiplexer
16ch DWDM with upgrade to further 16
All traffic up to 100Gbps
Tx/Rx EDFA & DCM

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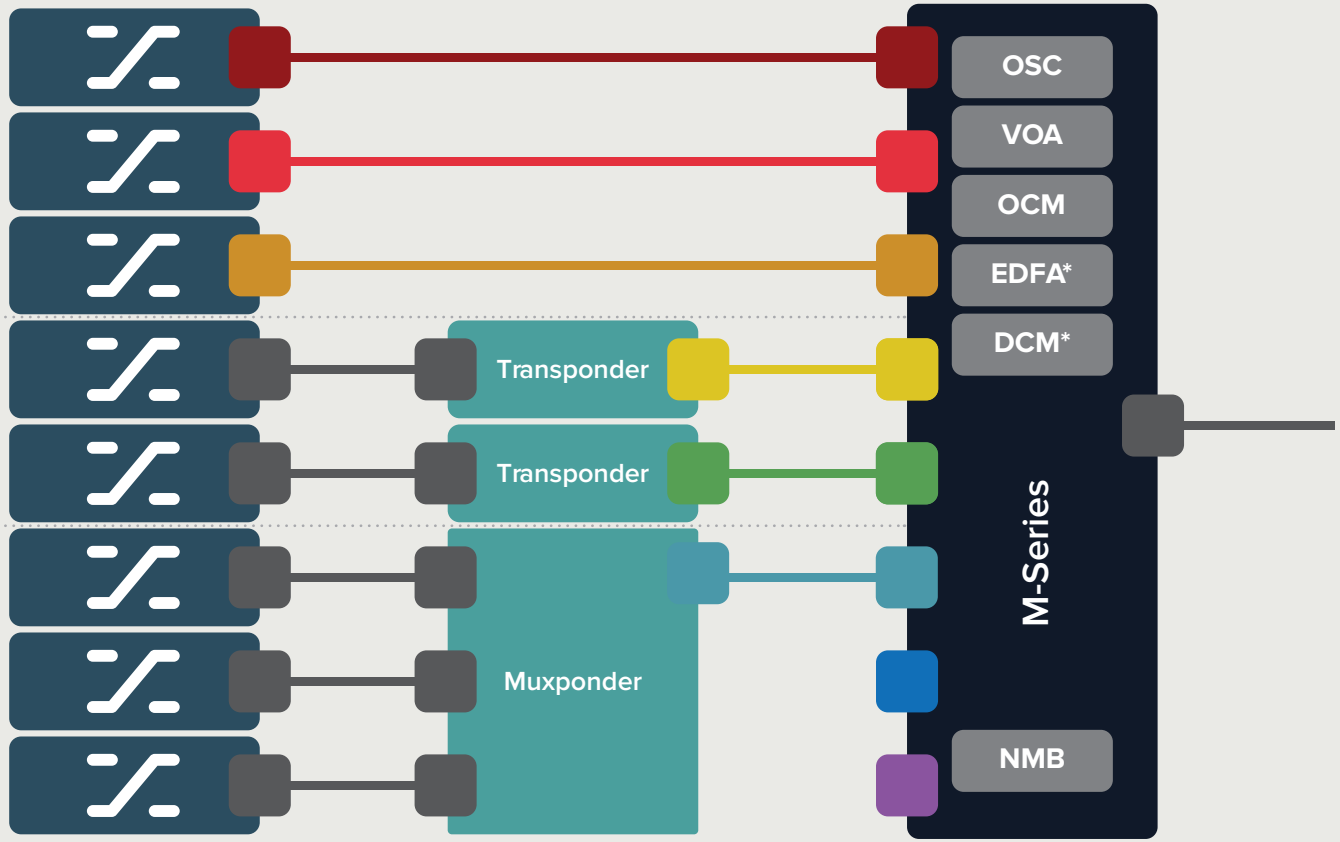
Powerful and flexible networking

Any combination of embedded DWDM interfaces, transponders and muxponders

Embedded DWDM
Natvie embedded
10/100G DWDM
SAN Connectivity
Lower latency

Transponders
White box switches
QSFP28 SR4 distance extension
Vendors without DWDM **support**

Muxonders
Improved wavelength utilization
Native 40G support



Want to know more?

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Smartoptics offers optical transmission solutions making networks more powerful. Expanding bandwidth without the upfront investment or hassle of traditional WDM. Our products allow corporate data centers, governments, hosting solution providers and ISPs to build simple, straightforward and cost effective solutions to fulfill their ongoing and future network capacity needs. Headquartered in Oslo, Norway, Smartoptics is an international provider with thousands of installations all around the world. Our award-winning approach has helped companies from every industry sector stay ahead of expanding network demands.

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Expanding your network horizons