

A solid red circle.

# FS M6200 Series Data Sheet

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## **| Product Overview**

M6200 series platform supports 7/15/18x slots for OEO/EDFA/DCM/MUX/DEMUX/OLP/R&B Filter modules in a compact 2/5RU form factor. It supports flexible 1G/10G/40G/100G interface speeds. With a variety of optical layer boards, the M6200 series can meet multiple service transmission demands and achieve efficient and stable transmission. It is suitable for DWDM dual-fiber/DWDM single-fiber/optical cable monitoring systems to provide cost-effective and flexible WDM solutions.

The M6200 series can support WEB management that enables service configuration and performance monitoring. It can support unified management of network nodes via an easy-to-use system on browser and performance monitoring, alerts and optical power monitoring in real time, which can help you manage your network and devices more simply and conveniently.

## **| Features and Benefits**

- Flexible 1G/10G/40G/100G Interface Speeds
- Redundant Hot-pluggable 2x Main Control Cards, 2x AC/DC Power Supplies and 6/2x Fans
- Unified Management of Network Nodes via Easy-to-use System on Browser
- Provide Detailed Management Operation Records and Network Element Alarm Logs
- Support Performance Monitoring, Alerts and Optical Power Monitoring in Real Time
- Integrate Compact Modules into 2U Rack Mount Platform, Low Consumption, Low Costs
- Various Optical Layer and Electrical Layer Boards for Access and Aggregation Networks

## Product Details

### Product configurations



- 1 6 8 For M6200 Series Modules    7 8 For Hot-swappable NMU Main Control Card  
 9 For Hot-swappable Cooling Fan

**Figure 1.**

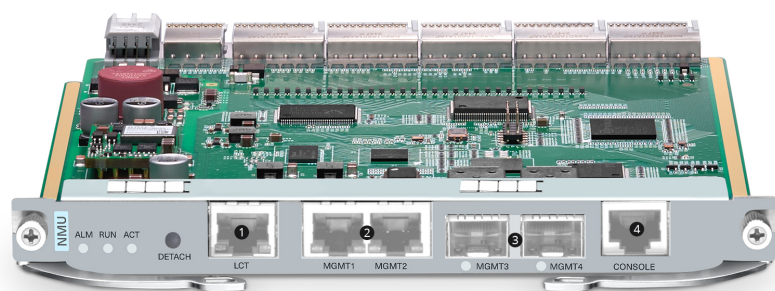
M6200-CH2U, 7 Slots 2U Managed Chassis Unloaded Platform, Redundant AC/DC PSUs, Support WEB/SNMP Management



- 1 2 For Hot-swappable NMU Main Control Card    3 16 For M6200 Series Modules  
 17 18 For 1+1 Redundant Power Supplies    19 For Hot-swappable Cooling Fan

**Figure 2.**

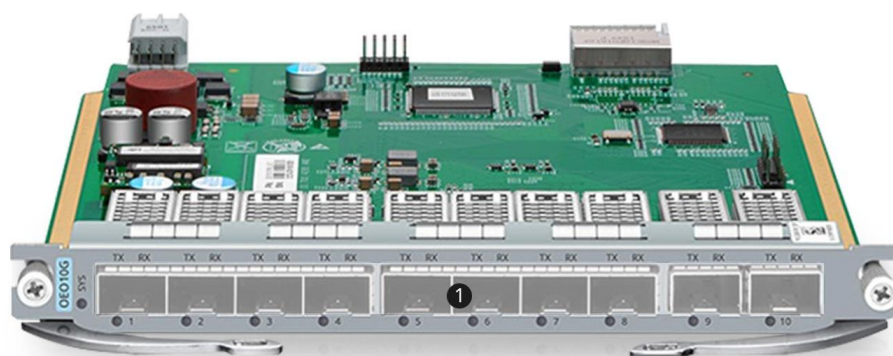
M6200-CH5U, 15/18 Slots 5U Managed Chassis Unloaded Platform, Redundant AC/DC PSUs, Support WEB/SNMP Management



① LCT Port      ② 2x RJ45 ETH Port      ③ 2x SFP Port      ④ Console

**Figure 3.**

M6200-NMU, Network Management Unit for M6200 Managed Chassis, 2 x 100Base-X SFP Ports, 2 x 10/100Base-T RJ45 Ports

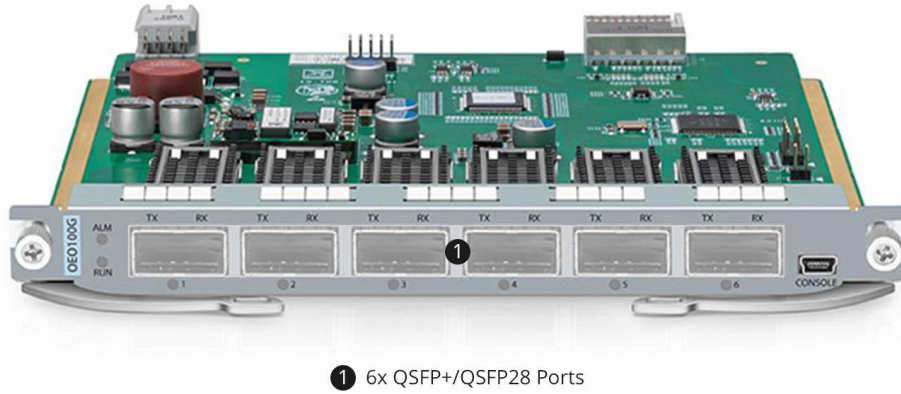


① 10× 100M/1G/10G SFP+ Ports

**Figure 4.**

M6200-OEO10G, 5 Channels WDM Transponder (Converter), 10 SFP/SFP+ Slots





**Figure 5.**

M6200-OEO100G, 3 Channels 40G & 100G WDM Transponder, QSFP28 to QSFP28, QSFP+ to QSFP+



**Figure 6.**

M6200-25PA, 20-30dB Gain DWDM EDFA Pre-Amplifier, 16dBm Output for M6200 Managed Chassis



**Figure 7.**

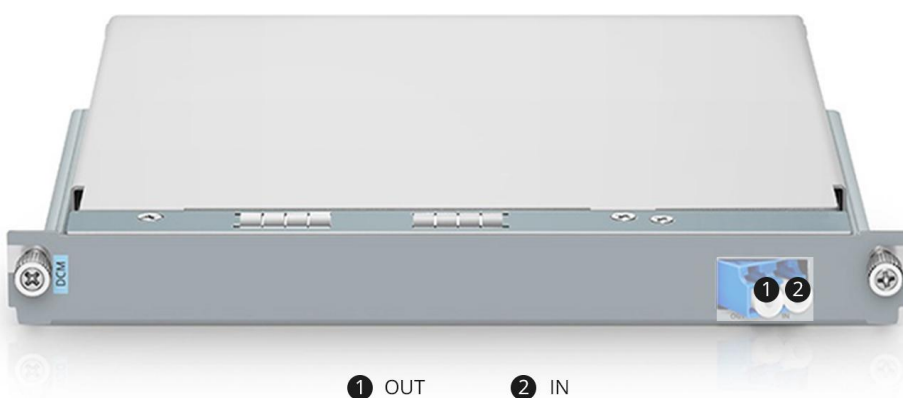
M6200-20BA, 11-21dB Gain DWDM EDFA Booster Amplifier, 20dBm Output for M6200 Managed Chassis



- ① VOA
- ② OUT&IN
- ③ OSC
- ④ MON

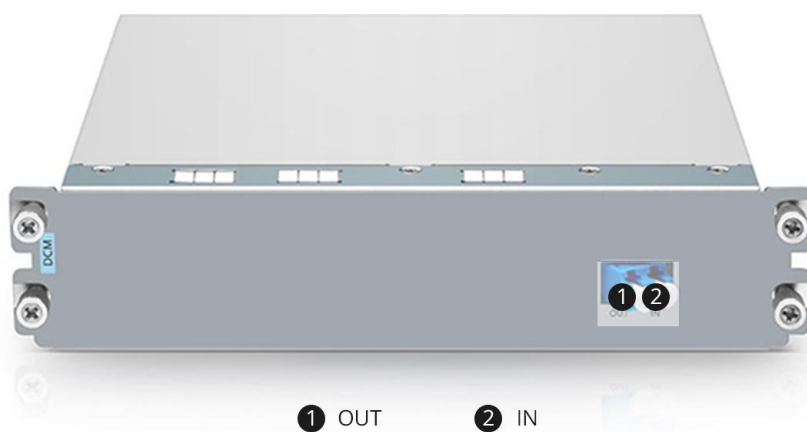
**Figure 8.**

M6200-20LA, 20-30dB Gain DWDM EDFA In-line Amplifier, 20dBm Output for M6200 Managed Chassis



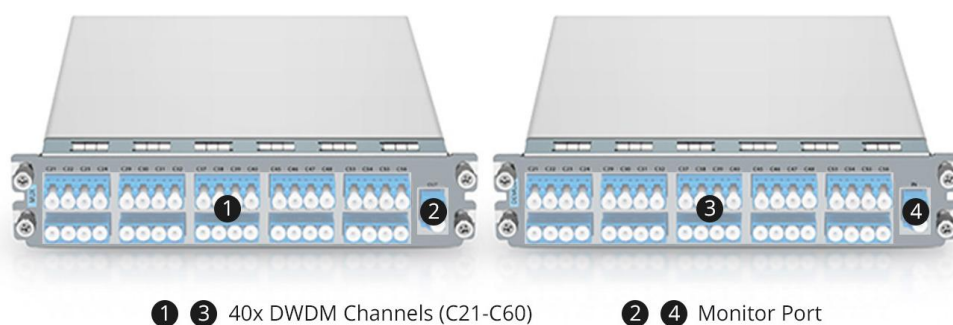
**Figure 9.**

M6200-DCM40, 40KM DCF-based Passive Dispersion Compensation Module, 1-Slot, LC/UPC



**Figure 10.**

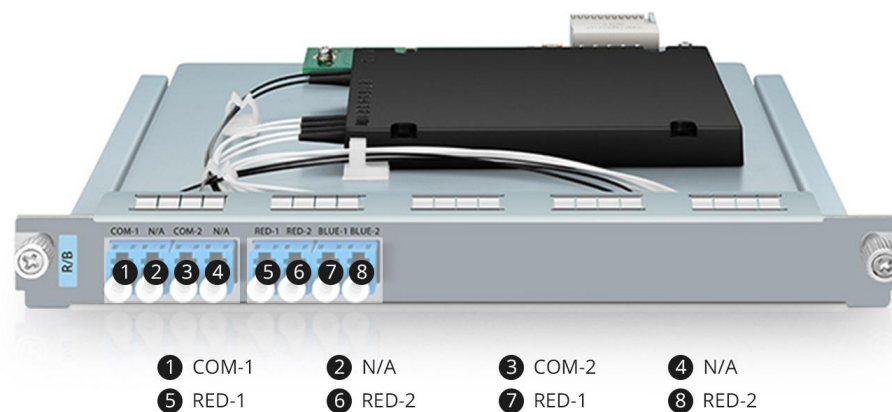
M6200-DCM80, 80KM DCF-based Passive Dispersion Compensation Module

**Figure 11.**

M6200-D2160M, 40 Channels 100GHz C21-C60 Active, Dual Fiber DWDM Mux and Demux with Monitor Port, Pluggable Module, LC/UPC

**Figure 12.**

M6200-OLP2, 1 + 1 Optical Line Protection Switch (OLP)

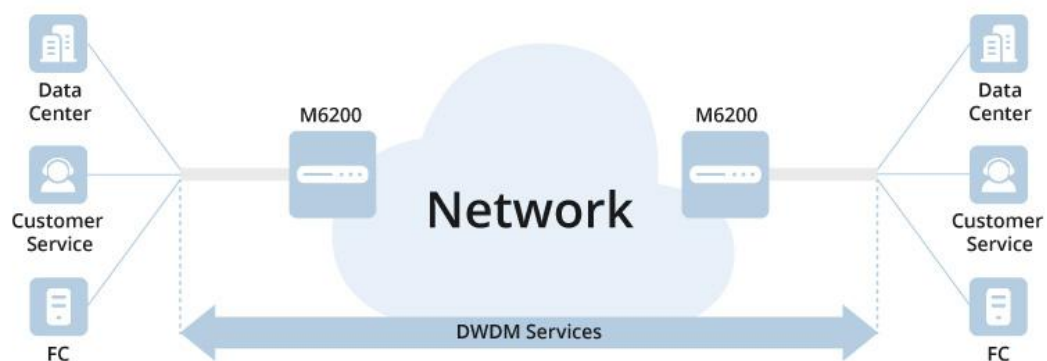
**Figure 13.**

M6200-RB, 1 x 2 Single Fiber DWDM Red/Blue Filter



## Application

M6200 series can build a multi-service and multi-rate access platform for customers and can combine CWDM/DWDM WDM technology, ultra-long station distance transmission technology, OLP optical line protection technology, etc., to provide customers with one-stop solutions for optical communications. The platform supports dual power backup and 1+1 protection of network management card, which has high reliability performance. Additionally, you can easily check important data, alarms, reports, and much more through WEB management anytime on-site or remotely.



## Technical Specification

**Table 1. Technical Specification of M6200 Chassis**

| Parameter               | M6200-CH2U                                                                                                     | M6200-CH5U                                                                                                     |
|-------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Physical Specifications |                                                                                                                |                                                                                                                |
| Power Redundancy        | 1+1 Backup Power Supply                                                                                        | 1+1 Backup Power Supply                                                                                        |
| Power Supply            | Dual AC Power, 100~240VAC, Hot-swappable Power Supply<br>Dual DC Power, -36~-72VDC, Hot-swappable Power Supply | Dual AC Power, 100~240VAC, Hot-swappable Power Supply<br>Dual DC Power, -36~-72VDC, Hot-swappable Power Supply |
| Power Consumption       | Max. 300W                                                                                                      | Max. 350W                                                                                                      |
| Cooling Unit            | 1x Fan Module, Hot-swappable (6/2 Fans for AC/DC Chassis )                                                     | 1x Fan Module, Hot-swappable (6 Fans for AC/DC Chassis)                                                        |
| Dimensions (HxWxD)      | 3.46"x17.48"x12.80" (88x444x325mm)                                                                             | 8.74"x17.48"x8.86" (222x444x225mm)                                                                             |
| Weight                  | 8.53kg                                                                                                         | 11.2kg                                                                                                         |
| Port                    |                                                                                                                |                                                                                                                |
| Slot Count              | 7-slot for AC/DC Chassis                                                                                       | 15-slot for AC Chassis<br>18-slot for AC Chassis                                                               |
| Controller Card Slots*  | 2                                                                                                              | 2                                                                                                              |
| Network Interface       | 1x Console Port<br>2x SFP LAN Ports 100Base-X<br>4x RJ45 LAN Ports 10/100Base-T                                | 1x Console Port<br>2x SFP LAN Ports 100Base-X<br>4x RJ45 LAN Ports 10/100Base-T                                |
| Management              |                                                                                                                |                                                                                                                |
| Management Type         | WEB, SNMP v2                                                                                                   | WEB, SNMP v2                                                                                                   |
| Management Software     | M Series NMS Management Software                                                                               |                                                                                                                |
| Environmental           |                                                                                                                |                                                                                                                |
| Operating Temperature   | -10 to 50° C (14 to 122° F)                                                                                    | -10 to 50° C (14 to 122° F)                                                                                    |
| Storage Temperature     | -10 to 70° C (14 to 158° F)                                                                                    | -10 to 70° C (14 to 158° F)                                                                                    |
| Relative Humidity       | 10% to 90%, No Condensing                                                                                      | 10% to 90%, No Condensing                                                                                      |
| Ingress Protection      | Non-waterproof                                                                                                 | Non-waterproof                                                                                                 |

\* Note: The chassis comes with one NMU main control card.

**Table 2. Technical Specification of M6200 NMU**

| Parameter               | M6200-NMU                                                                                                     |  |
|-------------------------|---------------------------------------------------------------------------------------------------------------|--|
| Physical Specifications |                                                                                                               |  |
| Power Redundancy        | 1+1 Backup                                                                                                    |  |
| Power Consumption       | Max. 10W                                                                                                      |  |
| Weight                  | 0.35kg                                                                                                        |  |
| Matching Chassis        | M6200-CH2U<br>M6200-CH5U                                                                                      |  |
| Port                    |                                                                                                               |  |
| Network Interface       | 1x LCT Port<br>1x Console port<br>2x SFP LAN ports 100Base-X<br>2x RJ45 LAN ports 10/100Base-T                |  |
| 2x SFP Ports Speed      | 10/100Mbps                                                                                                    |  |
| 2x RJ45 Ports Speed     | 100Mbps                                                                                                       |  |
| Visual Indicator        |                                                                                                               |  |
| ALM                     | Always ON: There is an alarm on the power supply, the fan or the NMU Module<br>Always OFF: There is no alarm. |  |
| RUN                     | Quick Flash: The module works normally.<br>Always OFF: The module is not normally enabled.                    |  |
| ACT                     | Always ON: The module is the primary module.<br>Always OFF: The module is the secondary module.               |  |
| Management              |                                                                                                               |  |
| Management Type         | WEB, SNMP v2                                                                                                  |  |
| Management Software     | M Series NMS Management Software                                                                              |  |
| Environmental           |                                                                                                               |  |
| Operating Temperature   | 0 to 50° C (32 to 122° F)                                                                                     |  |
| Storage Temperature     | -10 to 70° C (14 to 158° F)                                                                                   |  |

**Table 3. Technical Specification of Transponder**

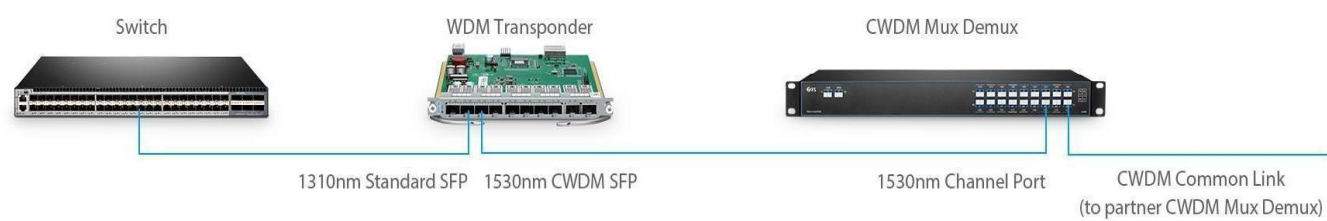
| Parameter                      | M6200-OEO10G                                                                                                                                                                                                                                   | M6200-OEO100G                                                                                                                                                                                                          |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Interface</b>               |                                                                                                                                                                                                                                                |                                                                                                                                                                                                                        |
| Transmission Speed             | 1.25G to 11.1G                                                                                                                                                                                                                                 | 40G/100G                                                                                                                                                                                                               |
| Interface Type                 | SFP/SFP+                                                                                                                                                                                                                                       | QSFP28/QSFP+                                                                                                                                                                                                           |
| Transceiver Slot Number        | 10                                                                                                                                                                                                                                             | 6                                                                                                                                                                                                                      |
| Service Channel Number         | 5                                                                                                                                                                                                                                              | 3                                                                                                                                                                                                                      |
| Client Protocols               | SONET/SDH, Ethernet, FC, STM, OTU                                                                                                                                                                                                              | Ethernet                                                                                                                                                                                                               |
| <b>Visual Indicator</b>        |                                                                                                                                                                                                                                                |                                                                                                                                                                                                                        |
| SYS                            | <p>Slow Flash of Green Light: There is no alarm of the module.</p> <p>Quick Flash of Red Light: The module type does not match.</p> <p>Slow Flash of Red Light: There is an alarm of the module.</p> <p>Always Red: The module is enabled.</p> | /                                                                                                                                                                                                                      |
| ALM                            | /                                                                                                                                                                                                                                              | <p>Always Red: There is an alarm of the Power, Fan and NMU module.</p> <p>Quick Flash of Red Light: The module type does not match.</p> <p>Always OFF: There is no alarm of the module.</p>                            |
| RUN                            | /                                                                                                                                                                                                                                              | <p>Slow Flash of Green Light: The module is normal.</p> <p>Always OFF: The module does not work.</p>                                                                                                                   |
| Port                           | <p>Always Green: There is no LOS alarm of the port.</p> <p>Always Red: There is a LOS alarm of the port.</p> <p>Always OFF: The port is disabled.</p>                                                                                          | <p>Always Green: There is no LOS alarm of the port.</p> <p>Always Red: There is a LOS alarm of the port.</p> <p>Quick Flash of Red Light: The transceiver does not match.</p> <p>Always OFF: The port is disabled.</p> |
| <b>Physical Specifications</b> |                                                                                                                                                                                                                                                |                                                                                                                                                                                                                        |
| Power Consumption              | <15W                                                                                                                                                                                                                                           | <25W                                                                                                                                                                                                                   |
| Latency                        | 1.8μs                                                                                                                                                                                                                                          | 30μs                                                                                                                                                                                                                   |
| Weight                         | 0.365kg                                                                                                                                                                                                                                        | 0.33kg                                                                                                                                                                                                                 |
| Housing                        | Pluggable module<br>(Occupies 1 slot in M6200 series managed chassis)                                                                                                                                                                          | Pluggable module<br>(Occupies 1 slot in M6200 series managed chassis)                                                                                                                                                  |

| Parameter             | M6200-OEO10G                | M6200-OEO100G               |
|-----------------------|-----------------------------|-----------------------------|
| Environmental         |                             |                             |
| Operating Temperature | 0 to 50° C (32 to 122° F)   | 0 to 50° C (32 to 122° F)   |
| Storage Temperature   | -10 to 70° C (14 to 158° F) | -10 to 70° C (14 to 158° F) |

### Transponder

The optical transponder can be deployed in seamless integration of different fiber types by converting incoming optical signal into WDM wavelength, multimode fiber to single-mode fiber, dual fiber to single fiber. It can also be used as a repeater to convert the weak optical signals into the strong optical signal for continuous transmission.

#### Wavelength Conversion





**Table 4. Technical Specification of EDFA**

| Parameter                     | M6200-25PA                                                                                                                   | M6200-20BA                                                   | M6200-20LA                                                   |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| <b>Optical Specifications</b> |                                                                                                                              |                                                              |                                                              |
| Operation Wavelength          | 1529nm-1561nm (C-Band)                                                                                                       | 1529nm-1561nm (C-Band)                                       | 1529nm-1561nm (C-Band)                                       |
| Optical Gain                  | 20-30dB                                                                                                                      | 11-21dB                                                      | 20-30dB                                                      |
| Total Input Power             | -32dBm~-4dBm                                                                                                                 | -25dBm~+7dBm                                                 | -32dBm~0dBm                                                  |
| Saturated Output Power        | ≤16dBm                                                                                                                       | ≤20dBm                                                       | ≤20dBm                                                       |
| Noise Figure                  | <5.5dB                                                                                                                       | <5.5dB                                                       | <5.5dB                                                       |
| Gain Flatness                 | <1.5dB                                                                                                                       | <1.5dB                                                       | <1.5dB                                                       |
| Polarization Dependent Loss   | <0.5dB                                                                                                                       | <0.5dB                                                       | <0.5dB                                                       |
| Gain Reponse Time             | AGC<200ms<br>APC<100ms                                                                                                       | AGC<200ms<br>APC<100ms                                       | AGC<200ms<br>APC<100ms                                       |
| Operation Mode *              | AGC(Automatic Gain Control)/<br>APC(Automatic Power Control)                                                                 | AGC(Automatic Gain Control)/<br>APC(Automatic Power Control) | AGC(Automatic Gain Control)/<br>APC(Automatic Power Control) |
| <b>Port</b>                   |                                                                                                                              |                                                              |                                                              |
| Optical Connector             | LC/UPC                                                                                                                       | LC/UPC                                                       | LC/UPC                                                       |
| Monitoring Port               | OSC/Mon port                                                                                                                 | OSC/Mon port                                                 | OSC/Mon port                                                 |
| VOA Port *                    | SFP VOA module                                                                                                               | SFP VOA module                                               | SFP VOA module                                               |
| <b>Visual Indicator</b>       |                                                                                                                              |                                                              |                                                              |
| ALM                           | Always ON: There is an alarm of the power supply, the fan or the NMU module.<br>Quick Flash: The module type does not match. |                                                              |                                                              |
| RUN                           | Always OFF: The module is not normally enabled.                                                                              |                                                              |                                                              |
| IN                            | Always Red: The is a LOS alarm occurs at the port.                                                                           |                                                              |                                                              |
| OUT                           | Always OFF: The port is not enabled.                                                                                         |                                                              |                                                              |

\* Note:

1. The operation mode of EDFA can be switched between AGC and APC via NMS management software.
2. SFP VOA module is an optional product, which is not included in DWDM EDFA. Customers can buy it on demand.

| Parameter               | M6200-25PA                                                            | M6200-20BA                                                            | M6200-20LA                                                            |
|-------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|
| Physical Specifications |                                                                       |                                                                       |                                                                       |
| Power Consumption       | ≤15W                                                                  | ≤15W                                                                  | ≤15W                                                                  |
| Weight                  | 0.405kg                                                               | 0.39kg                                                                | 0.41kg                                                                |
| Housing                 | Pluggable module<br>(Occupies 1-slot in M6200 series managed chassis) | Pluggable module<br>(Occupies 1-slot in M6200 series managed chassis) | Pluggable module<br>(Occupies 1-slot in M6200 series managed chassis) |
| Environmental           |                                                                       |                                                                       |                                                                       |
| Operating Temperature   | -10 to 50° C (14 to 122° F)                                           | -10 to 50° C (14 to 122° F)                                           | -10 to 50° C (14 to 122° F)                                           |
| Storage Temperature     | -20 to 80° C (-4 to 176° F)                                           | -20 to 80° C (-4 to 176° F)                                           | -20 to 80° C (-4 to 176° F)                                           |

## EDFA

(1) Pre-Amplifier (PA) EDFA is typically applied in the front of receiver for improving sensitivity of the receiver and increasing the optical power level of DWDM wavelength in the DWDM long-haul transmission link.



(2) Booster Amplifier (BA) EDFA is designed to boost the power of multiple wavelength signals after multiplexing. It's usually placed at the beginning of the DWDM transmission link.



(3) In-Line Amplifier (LA) EDFA is designed to amplify all optical signals and compensate the insertion loss of optical devices or attenuation loss of optical fiber lines in DWDM system. It is usually placed at the middle end of DWDM transmission link.

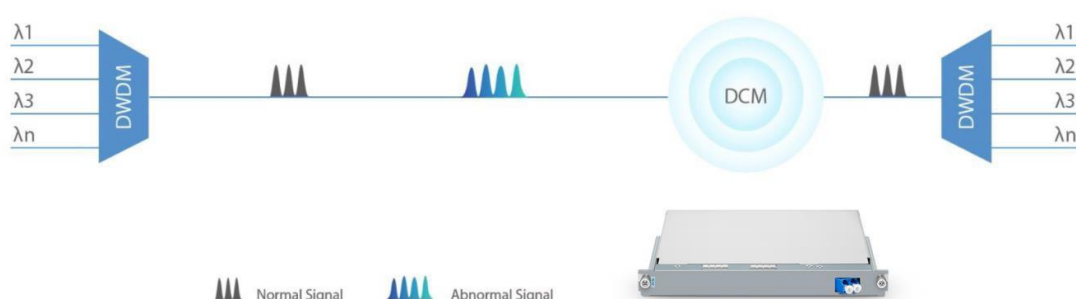


**Table 5. Technical Specification of DCM**

| Parameter                            | M6200-DCM40                                                           | M6200-DCM80                                                            |
|--------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>Optical Specifications</b>        |                                                                       |                                                                        |
| Compensated Length                   | 40km                                                                  | 80km                                                                   |
| Wavelength                           | 1525nm~1565nm                                                         | 1525nm~1565nm                                                          |
| Dispersion Compensator @1545nm       | $-670 \pm 20$ ps/nm                                                   | $-1340 \pm 20$ ps/nm                                                   |
| Insertion Loss                       | $\leq 4.0$ dB                                                         | $\leq 7.2$ dB                                                          |
| Relative Dispersion Slop @1545nm     | $0.0036 \pm 20\%$ nm <sup>-1</sup>                                    | $0.0036 \pm 20\%$ nm <sup>-1</sup>                                     |
| Brillouin Scattering Threshold       | $\geq 6$ dBm                                                          | $\geq 6$ dBm                                                           |
| Nonlinear System ( $n^2 / A_{eff}$ ) | $\leq 1.4 \times 10^{-9}$ W <sup>-1</sup>                             | $\leq 1.4 \times 10^{-9}$ W <sup>-1</sup>                              |
| Effective Area ( $A_{eff}$ )         | $\geq 20$ $\mu$ m <sup>2</sup>                                        | $\geq 20$ $\mu$ m <sup>2</sup>                                         |
| Polarization Dependent Loss          | $\leq 0.1$ dB                                                         | $\leq 0.1$ dB                                                          |
| Polarization Mode Dispersion         | $\leq 0.3$ ps                                                         | $\leq 0.5$ ps                                                          |
| <b>Port</b>                          |                                                                       |                                                                        |
| Connector Type                       | LC/UPC                                                                | LC/UPC                                                                 |
| <b>Physical Specifications</b>       |                                                                       |                                                                        |
| Weight                               | 0.92kg                                                                | 1.15kg                                                                 |
| Housing                              | Pluggable module<br>(Occupies 1 slot in M6200 series managed chassis) | Pluggable module<br>(Occupies 2 slots in M6200 series managed chassis) |
| <b>Environmental</b>                 |                                                                       |                                                                        |
| Operating Temperature                | -5 to 70° C (23 to 158° F)                                            | -5 to 70° C (23 to 158° F)                                             |
| Storage Temperature                  | -40 to 85° C (-40 to 185° F)                                          | -40 to 85° C (-40 to 185° F)                                           |
| Relative Humidity                    | <85%                                                                  | <85%                                                                   |

## Dispersion Compensation Module

DCM is needed to fix the form of optical signals that are deformed by chromatic dispersion in long-haul transmission. It can effectively neutralize the fiber dispersion before the signal reaches the receiver, which provides a simple, reliable, and cost-effective long-haul transport solution, making signals go further without regeneration.

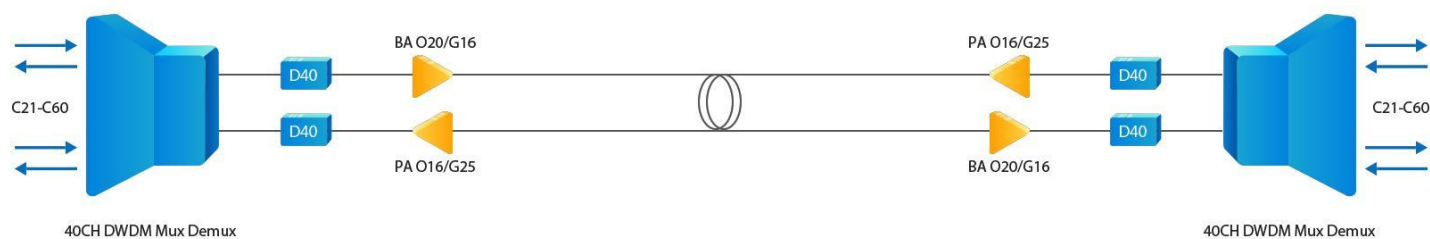


**Table 6. Technical Specification of MUX&DEMUX**

| Parameter                      | M6200-D2160M                                                           |
|--------------------------------|------------------------------------------------------------------------|
| <b>Optical Specifications</b>  |                                                                        |
| ITU Channel                    | 40 channels C21-C60                                                    |
| Operating Wavelength           | 1520-1570nm                                                            |
| Channel Spacing                | 100GHz (0.8nm)                                                         |
| Channel Passband               | $\pm 0.11\text{nm}$                                                    |
| Link Loss (A)                  | $\leq 10.0\text{dB}$                                                   |
| Insertion Loss (B)             | $\leq 6.0\text{dB}$ , 5.5dB Typical                                    |
| Insertion Loss (1% Mon)        | $\leq 26\text{dB}$                                                     |
| Filter Technology              | AAWG (Gaussian)                                                        |
| Non-adjacent Channel Isolation | Non-adjacent $\geq 30\text{dB}$                                        |
| Adjacent Channel Isolation     | $\geq 25\text{dB}$                                                     |
| Return Loss                    | $\geq 40\text{dB}$                                                     |
| Directivity                    | $\geq 50\text{dB}$                                                     |
| Polarization Dependent Loss    | $\leq 0.5\text{dB}$                                                    |
| Polarization Mode Dispersion   | $\leq 0.5\text{ps}$                                                    |
| <b>Physical Specifications</b> |                                                                        |
| Weight                         | 0.895kg                                                                |
| Housing                        | Pluggable module<br>(Occupies 4 slots in M6200 series managed chassis) |
| <b>Environmental</b>           |                                                                        |
| Operating Temperature          | -10 to 50° C (14 to 122° F)                                            |
| Storage Temperature            | -20 to 85° C (-4 to 185° F)                                            |

## MUX&DEMUX

The 40ch DWDM Mux Demux adopts high quality AAWG Gaussian technology, which can achieve a long distance transmission in a point-to-point network by using EDFA and DCM.





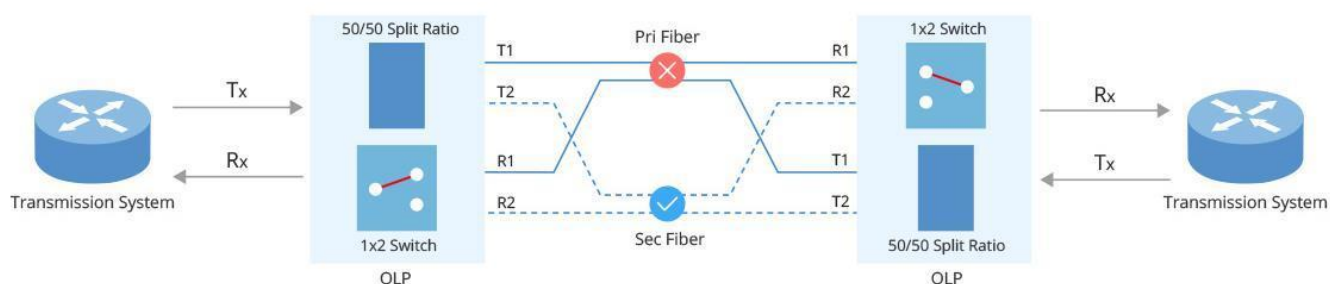
**Table 7. Technical Specification of OLP**

| Parameter                     | M6200-OLP2                                                                                                                               |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Optical Specifications</b> |                                                                                                                                          |
| Operating Wavelength          | 1310±50nm/1550±50nm                                                                                                                      |
| Monitoring Power Range        | +25~-50dBm                                                                                                                               |
| Insertion Loss                | Tx<3.8dB, Rx<1.2dB                                                                                                                       |
| Switching Speed               | ≤25ms                                                                                                                                    |
| Monitoring Power Accuracy     | ±0.5dBm                                                                                                                                  |
| Monitoring Power Resolution   | ±0.01dB                                                                                                                                  |
| Return Loss                   | ≥45dB                                                                                                                                    |
| Polarization Dependent Loss   | ≤0.1dB                                                                                                                                   |
| Wavelength Dependent Loss     | ≤0.25dB                                                                                                                                  |
| <b>Port</b>                   |                                                                                                                                          |
| Connector Type                | LC/UPC                                                                                                                                   |
| <b>Visual Indicator</b>       |                                                                                                                                          |
| ALM                           | Always ON: There is an alarm of the sub-module.<br>Quick Flash: The module type does not match.<br>Always OFF: The alarm does not exist. |
| RUN                           | Slow Flash: The module works normally.<br>Always OFF: The module is not normally enabled.                                                |
| A/F                           | Always ON: The module is in automatic mode.<br>Always OFF: The module is in manual mode.                                                 |
| P/S                           | Always ON: The line is in primary channel state.<br>Always OFF: The line is in secondary channel state.                                  |
| TX/R1/R2                      | Always ON: The line power is normal.<br>Always OFF: The line power is lower than the threshold.                                          |

| Parameter                      | M6200-OLP2                                                            |
|--------------------------------|-----------------------------------------------------------------------|
| <b>Physical Specifications</b> |                                                                       |
| Maximum Optical Power Load     | 5W                                                                    |
| Housing                        | Pluggable module<br>(Occupies 1-slot in M6200 series managed chassis) |
| Weight                         | 0.44kg                                                                |
| <b>Environmental</b>           |                                                                       |
| Operating Temperature          | -10 to 50° C (14 to 122° F)                                           |
| Storage Temperature            | -20 to 80° C (-4 to 176° F)                                           |

## Optical Line Protection

1+1 Optical Line Protection Switch (OLP) is designed to protect transmission network from link failures, using an optical splitter to bridge the optical signal to working fiber and protection fiber.



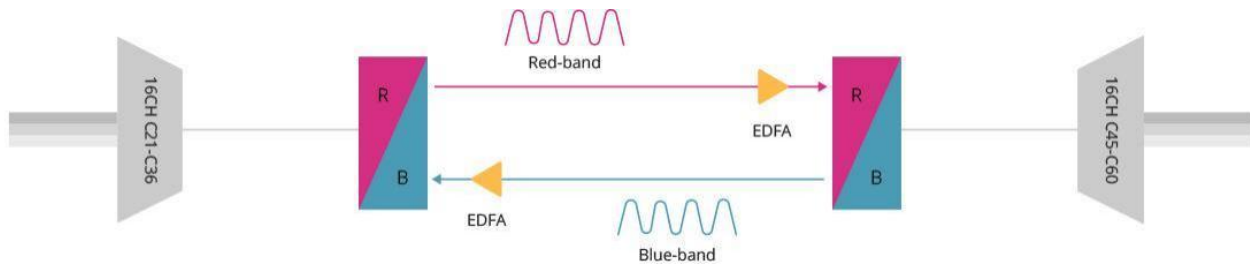
**Table 8. Technical Specification of R&B**

| Parameter                           | M6200-RB                                                              |
|-------------------------------------|-----------------------------------------------------------------------|
| <b>Optical Specifications</b>       |                                                                       |
| Operating Wavelength                | C-Band                                                                |
| Pass Band Wavelength (Red)          | CH45-CH60 (1529.35~1541.55nm)                                         |
| Reflection Band Wavelength (Blue)   | CH21-CH36 (1548.31~1560.81nm)                                         |
| Pass Channel Insertion Loss *       | ≤0.8dB                                                                |
| Reflection Channel Insertion Loss * | ≤0.6dB                                                                |
| Channel Ripple                      | ≤0.3dB                                                                |
| Adjacent Channel Isolation          | ≥30dB                                                                 |
| Non-adjacent Channel Isolation      | ≥12dB                                                                 |
| Polarization Dependent Loss         | ≤0.1dB                                                                |
| Polarization Mode Dispersion        | ≤0.1ps/nm                                                             |
| Return Loss                         | ≥50dB                                                                 |
| Directivity                         | ≥55dB                                                                 |
| <b>Port</b>                         |                                                                       |
| Connector Type                      | LC/UPC                                                                |
| <b>Physical Specifications</b>      |                                                                       |
| Power Handling                      | ≤300mW                                                                |
| Housing                             | Pluggable module<br>(Occupies 1-slot in M6200 series managed chassis) |
| Weight                              | 0.433kg                                                               |
| <b>Environmental</b>                |                                                                       |
| Operating Temperature               | -5 to 70° C (23 to 158° F)                                            |
| Storage Temperature                 | -40 to 85° C (-40 to 185° F)                                          |

\* Note: The insertion loss is specified with connectors.

## Red/Blue Filter

M6200 series 1x2 Red/Blue DWDM Splitter can combine the Red transmit channels and the Blue receive channels onto a single fiber, and makes it possible to utilize single fiber strand for both transmitting and receiving, thus significantly maximizing investment and decreasing costs.



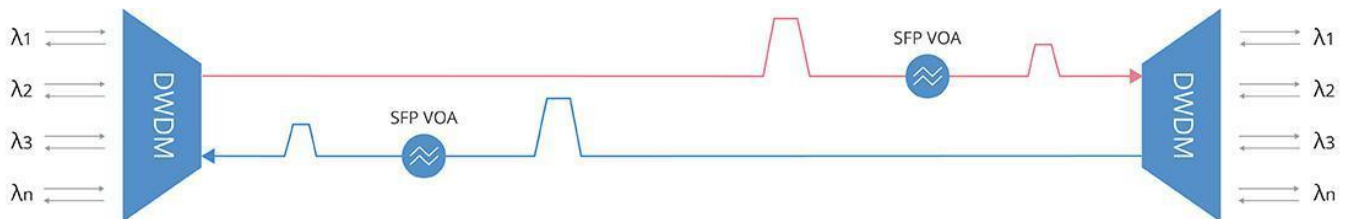
**Table 9. Technical Specification of VOA**

| Parameter                      | M6200-SFPVOA                             |
|--------------------------------|------------------------------------------|
| <b>Optical Specifications</b>  |                                          |
| Wavelength Range               | 1525~1570nm                              |
| Insertion Loss @ with PD *     | ≤ 2.5dB                                  |
| Attenuation Dynamic Range      | 0~20dB                                   |
| Wavelength Dependent Loss      | 0~10dB: 0.6dB<br>10~20dB: 1.5dB          |
| Polarization Dependent Loss    | 0~10dB: 0.3dB<br>10~20dB: 0.5dB          |
| Attenuation Accuracy           | 0~10dB: ±1.5dB<br>10~20dB: ±2dB          |
| Power Monitor Accuracy         | ±1dB                                     |
| Attenuation Response Time      | ≤300ms                                   |
| Return Loss                    | 40dB                                     |
| <b>Port</b>                    |                                          |
| Connector Type                 | LC/UPC                                   |
| <b>Physical Specifications</b> |                                          |
| Housing                        | SFP<br>(Use with M6200 Series DWDM EDFA) |
| Weight                         | 0.02kg                                   |
| <b>Environmental</b>           |                                          |
| Operating Temperature          | -5 to 70° C (23 to 158° F)               |
| Storage Temperature            | -40 to 85° C (-40 to 185° F)             |

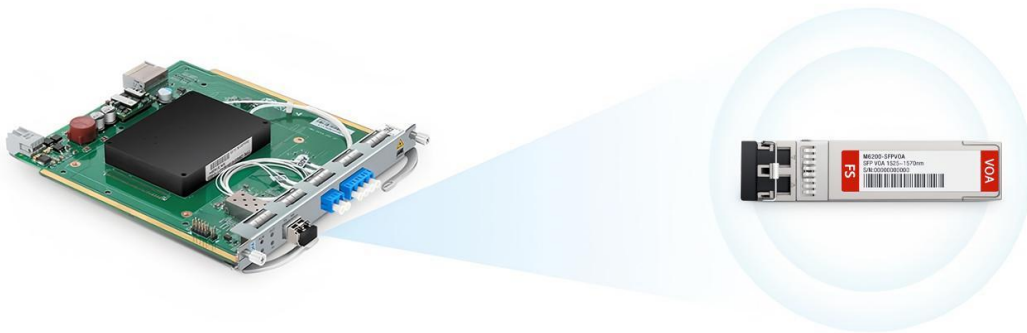
\* Note: "With PD" means the SFP VOA module can monitor the input optical power.

## Variable Optical Attenuator

M6200 series Variable Optical Attenuator module is designed to use with M6200 series EDFA for the situation where optical power is required strict control in the network, which can achieve remote online attenuation adjustment by M6200 series NMS network management software.



M6200 series Variable Optical Attenuator module is used on the VOA port of M6200 series DWDM EDFA.



## Ordering Information

| FS P/N                        | Product Description                                                                                                        |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Chassis</b>                |                                                                                                                            |
| <a href="#">M6200-CH2U</a>    | M6200-CH2U, 7 Slots 2U Managed Chassis Unloaded Platform, Redundant AC PSUs, Support WEB/SNMP Management                   |
| <a href="#">M6200-CH2U</a>    | M6200-CH2U, 7 Slots 2U Managed Chassis Unloaded Platform, Redundant DC PSUs, Support WEB/SNMP Management                   |
| <a href="#">M6200-CH2U</a>    | Customized M6200-CH2U, 7 Slots 2U Managed Chassis Platform, Redundant AC/DC PSUs, Support WEB/SNMP Management              |
| <a href="#">M6200-CH5U</a>    | M6200-CH5U, 15 Slots 5U Managed Chassis Unloaded Platform, Redundant AC PSUs, Support WEB/SNMP Management                  |
| <a href="#">M6200-CH5U</a>    | M6200-CH5U, 18 Slots 5U Managed Chassis Unloaded Platform, Redundant DC PSUs, Support WEB/SNMP Management                  |
| <b>Transponder</b>            |                                                                                                                            |
| <a href="#">M6200-OEO10G</a>  | M6200-OEO10G, 5 Channels WDM Transponder (Converter), 10 SFP/SFP+ Slots                                                    |
| <a href="#">M6200-OEO100G</a> | M6200-OEO100G, 3 Channels 40G & 100G WDM Transponder, QSFP28 to QSFP28, QSFP+ to QSFP+                                     |
| <b>EDFA</b>                   |                                                                                                                            |
| <a href="#">M6200-25PA</a>    | M6200-25PA, 20-30dB Gain DWDM EDFA Pre-Amplifier, 16dBm Output for M6200 Managed Chassis                                   |
| <a href="#">M6200-20BA</a>    | M6200-20BA, 11-21dB Gain DWDM EDFA Booster Amplifier, 20dBm Output for M6200 Managed Chassis                               |
| <a href="#">M6200-20LA</a>    | M6200-20LA, 20-30dB Gain DWDM EDFA In-line Amplifier, 20dBm Output for M6200 Managed Chassis                               |
| <b>DCM</b>                    |                                                                                                                            |
| <a href="#">M6200-DCM40</a>   | M6200-DCM40, 40KM DCF-based Passive Dispersion Compensation Module, 1-Slot, LC/UPC                                         |
| <a href="#">M6200-DCM80</a>   | M6200-DCM80, 80KM DCF-based Passive Dispersion Compensation Module                                                         |
| <b>MUX&amp;DEMUX</b>          |                                                                                                                            |
| <a href="#">M6200-D2160M</a>  | M6200-D2160M, 40 Channels 100GHz C21-C60 Active, Dual Fiber DWDM Mux and Demux with Monitor Port, Pluggable Module, LC/UPC |
| <b>OLP</b>                    |                                                                                                                            |
| <a href="#">M6200-OLP2</a>    | M6200-OLP2, 1 + 1 Optical Line Protection Switch (OLP)                                                                     |

## Ordering Information

| FS P/N                       | Product Description                                                                                                   |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>Accessories</b>           |                                                                                                                       |
| <a href="#">M6200-RB</a>     | M6200-RB, 1 x 2 Single Fiber DWDM Red/Blue Filter                                                                     |
| <a href="#">M6200-SFPVOA</a> | M6200-SFPVOA, SFP Variable Optical Attenuator Module                                                                  |
| <a href="#">M6200-NMU</a>    | M6200-NMU, Network Management Unit for M6200 2U Managed Chassis, 2 x 100Base-X SFP Ports, 4 x 10/100Base-T RJ45 Ports |
| <a href="#">M-CFP2-DCO</a>   | C21 1560.61nm 100G/200G Tunable Coherent CFP2-DCO Transceiver, up to 1000km                                           |





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