With the XTM-50 both center wavelength and bandwidth can be independently adjusted. It is manually controlled and versions are available covering all the key telecom wavelengths from 1260 nm to 1650 nm and bandwidths from 32 pm (4 GHz) to 5 nm.

KEY FEATURES

- Adjustable bandwidth flat-top filter
- Ultra-sharp filter edges
- High isolation
- Up to 200 nm wavelength tunability
- High accuracy and repeatability
- Narrowest filter—highest selectivity
KEY FEATURES

Adjustable bandwidth flat-top filter
The bandwidth of the XTM-50 filters can be adjusted independently of the center wavelength. The filter has a flat-top profile with minimal ripple, less than 0.2 dB. Models are available with full width at half maximum (FWHM) bandwidths from 32 pm (4 GHz) up to 5 nm (625 GHz).

Ultra-sharp filter edges
The XTM-50 uses EXFO patented quadruple pass technology. This creates extremely sharp filter edges with slopes of up to 800 dB/nm. Single or groups of narrowly spaced DWDM channels or coherent super-channels can be selected with ease.

High isolation
EXFO quadruple pass technology achieves higher out-of-band isolation than conventional double-pass filters.

Excellent wavelength coverage
Center wavelength of the XTM-50 standard model can be adjusted over a 200 nm range, covering the S, C and L telecom bands. The XTM-50 O-band covers 100 nm.

High accuracy and repeatability
High resolution translation stages are used for both wavelength and bandwidth control. This ensures the XTM-50 can be set accurately and repeatedly over time.

Narrowest filter—highest selectivity
The XTM-50 is the most selective filter on the market. Models are available with filter bandwidths from 32 pm (4 GHz) up to 5 nm (625 GHz).

APPLICATION

DWDM channel selection
Low dispersion, steep edges and high isolation mean that DWDM channels, or even coherent superchannels with spacing down to 10 GHz, can be separated with ease.

Variable OSNR source
A variable OSNR source typically consists of an ASE source combined with a variable attenuator. Adding the XTM-50 to such a syste enables consistent noise loading for all DWDM wavelengths.

R&D of modulation formats
The XTM-50 is perfect for the filtering and analysis of sub-bands of complex modulations formats.
### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Optical characteristics</th>
<th>XTM-50 standard</th>
<th>XTM-50 ultrafine</th>
<th>XTM-50 O-band</th>
<th>XTM-50 wide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength range (nm)</td>
<td>1450 to 1650</td>
<td>1480 to 1620</td>
<td>1260 to 1360</td>
<td>1525 to 1610</td>
</tr>
<tr>
<td>Wavelength resolution (pm) [b]</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Bandwidth (FWHM) Minimum</td>
<td>50 pm (6.25GHz)</td>
<td>32 pm (4 GHz)</td>
<td>50 pm (8 GHz)</td>
<td>50 pm (6.25 GHz)</td>
</tr>
<tr>
<td>Bandwidth (FWHM) Maximum</td>
<td>950 pm (120 GHz)</td>
<td>650 pm (80 GHz)</td>
<td>900 pm (160 GHz)</td>
<td>5000 pm (625 GHz)</td>
</tr>
<tr>
<td>Bandwidth resolution</td>
<td>1 pm</td>
<td>1 pm</td>
<td>1 pm</td>
<td>0.3 % of FWHM typical</td>
</tr>
<tr>
<td>Filter edge gradient</td>
<td>500 dB/nm typical [c]</td>
<td>800 dB/nm typical</td>
<td>500 dB/nm typical [c]</td>
<td>500 dB/nm typical [d]</td>
</tr>
<tr>
<td>Insertion loss</td>
<td>5 dB (4.5 dB typical) [e, f]</td>
<td>5 dB (4.0 dB typical) [f, g]</td>
<td>5 dB (4.5 dB typical) [h, i]</td>
<td>5 dB (4.5 dB typical) [h, i]</td>
</tr>
<tr>
<td>Flatness (dB)</td>
<td>0.2 [k]</td>
<td>0.2 [l]</td>
<td>0.3 [k, m]</td>
<td>0.2 [n]</td>
</tr>
<tr>
<td>Polarization dependent loss (dB)</td>
<td>±0.2 [e]</td>
<td>±0.2 [g]</td>
<td>±0.2 [h]</td>
<td>±0.2 [i]</td>
</tr>
<tr>
<td>Out-of-band suppression (crosstalk) [e]</td>
<td>40 dB (60 dB typical)</td>
<td>40 dB (50 dB typical)</td>
<td>40 dB (60 dB typical)</td>
<td>40 dB (45 dB typical)</td>
</tr>
</tbody>
</table>

#### Interface

| Connector type | SMF or PMF | SMF or PMF | SMF or PMF | SMF |

#### Operating conditions

| Temperature range | 15 °C to 35 °C (59 °F to 95 °F) |
| Maximum optical input power (dBm) | 30 | 30 | 30 | 27 |

#### Size

| Dimensions (W x D x H) | 230 mm x 173 mm x 136 mm (9 in x 6.8 in x 5.35 in) |
| Weight | 2.2 kg (4.4 lbs) |

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**a.** Specifications apply for wavelengths not equal to any water absorption line.

**b.** Typical, related to user dexterity.

**c.** From –3 dB and –40 dB for FWHM < 800 pm.

**d.** Between –3 and –40 dB. Typically 550 dB/nm at FWHM = 50 pm; 450 dB/nm at FWHM = 1 nm; 225 dB/nm at FWHM = 5 nm.

**e.** From 1500 nm to 1600 nm and FWHM > 100 pm.

**f.** At lowest FWHM the insertion loss is < 7 dB typical.

**g.** From 1500 nm to 1600 nm and FWHM > 500 pm.

**h.** For FWHM > 100 pm.

**i.** At lowest FWHM the insertion loss is < 7.0 dB.

**j.** Centered width of FWHM -150 pm. For 150 pm < FWHM < 650 pm.

**k.** Centered width of FWHM -100 pm. For 100 pm < FWHM < 500 pm.

**l.** Centered width of FWHM -100 pm. For 100 pm < FWHM < 500 pm.

**m.** Centered width of FWHM -150 pm. For 150 pm < FWHM < 2000 pm.

**n.** From 1280 nm to 1340 nm.

**o.** Measured 1 nm away from the –3 dB points.
ADVANCED FEATURES AND PERFORMANCE

Easy access to optical connectors for cleaning. Easing maintenance and enabling the lowest losses to be maintained.

ELECTRONIC VERSIONS AVAILABLE

Electronic versions are also available. These provide a touch panel interface as well as USB, Ethernet and RS-232C ports for remote control. The XFA filter has a fixed bandwidth and is designed to minimize costs for production facilities. The XTA-50 is accurately calibrated and has both bandwidth and wavelength control. Optical properties are equivalent to the XTM-50.

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Model</th>
<th>SCL-S = 1450 nm to 1650 nm, bandwidth 50 pm to 950 pm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SCL-U = 1480 nm to 1620 nm, bandwidth 32 pm to 650 pm</td>
</tr>
<tr>
<td></td>
<td>CL-W = 1525 nm to 1610 nm, bandwidth 50 pm to 5000 pm</td>
</tr>
<tr>
<td></td>
<td>O-S = 1260 nm to 1360 nm, bandwidth 50 pm to 900 pm</td>
</tr>
<tr>
<td>Output fiber</td>
<td>00 = SMF28 singlemode fiber</td>
</tr>
<tr>
<td></td>
<td>M = Polarization maintaining fiber a</td>
</tr>
<tr>
<td>Example:</td>
<td>XTM-50-SCL-S-M-58</td>
</tr>
</tbody>
</table>

- FWHM (pm)
  - 100
  - 200
  - 300
  - 400
  - 500
  - 600
  - 700
  - 800

- Insertion loss (dB)
  - -4.0
  - -4.4
  - -4.8
  - -5.2
  - -5.6

- FWHM (nm)
  - 100
  - 200
  - 300
  - 400
  - 500
  - 600
  - 700
  - 800

Figure 3. Expanded view of filter profile (wide)

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