Tunable FBG Optical Filter

WTF-200

- FBG filter with both band-pass and band-rejection
- Over +/-10nm wavelength tuning (> +/-5nm at 0.1nm BW)
- High-power customization available

### Wavelength-Tuning by FBG Compression

While wavelength-tuning is commonly achieved by stretching the FBG, here we use a proprietary compression technique that enables more than double the tuning range.

#### Principle of Operation

![Principle of Operation Diagram](https://via.placeholder.com/150)

**Input Spectrum**
- Power vs Wavelength

**WTF-200**
- FBG
- Proprietary FBG Compression Technique

**Output Spectrum**
- Power vs Wavelength

**Band-pass**
- BW: 0.1 – 0.6 nm
- λ: ± 10 nm Tunability

**Band-rejection**
- BW: 0.1 – 0.6 nm
- λ: ± 10 nm Tunability

#### Specifications

<table>
<thead>
<tr>
<th></th>
<th>type: T01</th>
<th>type: T02 ~ 03</th>
<th>type: T04 ~ 06</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>min.</td>
<td>typ.</td>
<td>max.</td>
</tr>
<tr>
<td>Wavelength tuning range</td>
<td>10</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>3dB bandwidth1,2</td>
<td>0.08</td>
<td>0.1*</td>
<td>0.16</td>
</tr>
<tr>
<td>Peak insertion loss3</td>
<td>3.5</td>
<td>8</td>
<td>2.5</td>
</tr>
<tr>
<td>Insertion loss variation3</td>
<td>0.2</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td>Out-of-band suppression3</td>
<td>23</td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>Notch depth4 (band-rejection)</td>
<td>3 - 6</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Center wavelength</td>
<td>1030 - 1070 or 1280 - 1330 or 1520 - 1610</td>
<td>nm</td>
<td></td>
</tr>
<tr>
<td>Max. input power</td>
<td>0.5</td>
<td>W</td>
<td></td>
</tr>
<tr>
<td>Optical fiber</td>
<td>SMF or PMF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optical connector</td>
<td>FC or SC, SPC or APC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimension (W x H x D)</td>
<td>120 x 50 x 205</td>
<td>mm</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>1</td>
<td>kg</td>
<td></td>
</tr>
</tbody>
</table>

1. The 3 dB bandwidth (band-pass) may change by up to +/-0.05 nm when wavelength-tuned, with a tendency to broaden when tuned to shorter wavelengths.
2. Insertion loss for FBG at 1550 nm region. Values may increase slightly at other wavelength regions.
3. Specifications for band-pass port only. Values may vary for band-rejection port.
4. Notch depth of band-rejection port is mentioned as a guideline only, for filters based on SMF. This guideline may not apply if the rejection port option is added after manufacturing has begun.

#### Typical Performance (BW = 0.3nm)

- **Power Spectra Diagram**
- **Wavelength Range**
- **Input Spectrum**
- **Output Spectrum**

#### Ordering Information

WTF - 200 - T [ ] [ ] [ ] [ ] [ ]
- Type Number
- Center Wavelength
- Fiber Type
- Port Option
- Connector Type

**Type no.**
- 01 : T01 type
- 02 : T02 type
- 03 : T03 type

**Fiber Type**
- SM : SMF
- PM : PMF

**Port Option**
- S : Standard, Band-Pass only
- R : Band-Pass and Band-Rejection

**Connector Type**
- FS : FC/SPC
- SS : SC/SPC
- FA : FC/APC
- SA : SC/APC

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North American Distributor: Cybel

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