Flat-Top Comb Filter

Optoplex provides customized flat-top optical comb filter based on its optical interleaver technology. In contrast with traditional Fabry-Perot cavity-based comb filter, Optoplex's comb filter is capable of transmitting modulated DWDM signals with its passband width available anywhere down to a few GHz. Both the filter channel spacing (FSR) and filter duty cycle (3-dB bandwidth to FSR ratio) can be specified by customers.

Based on Optoplex’s patented technologies of micro-optics and phase modulation through thin-film coating, the flat-top comb filter is a purely passive device characterized by minimal temperature dependence, flat-top passband, high channel isolation, low PDL, and uniform insertion loss. The product is Telcordia GR-1221 qualified.

Key Features and Benefits

- Wide and Flat Passband
- Minimal PDL
- High Isolation
- Minimal Thermal Drift
- Low and Customizable Dispersion
- Dual C- and L-Band Coverage
- Telcordia GR-1221/63 Qualified

Applications

- Noise Suppression in DWDM System
- Reshape Signal Passband
- Optical Ruler in DWDM System
- Passband Reduction of Signals with High Modulation Rate
### Optical Performance Specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Unit</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength Range (C-Band)</td>
<td>WR</td>
<td>nm</td>
<td>1527 ~ 1567</td>
</tr>
<tr>
<td>Free Spectral Range (FSR)</td>
<td>FSR</td>
<td>GHz</td>
<td>100</td>
</tr>
<tr>
<td>Spectrum Valley Position</td>
<td>VP</td>
<td>GHz</td>
<td>Offset 50GHz from ITU Grid</td>
</tr>
<tr>
<td>Channel Center Frequency Error</td>
<td>CFE</td>
<td>GHz</td>
<td>&lt; ± 1.0</td>
</tr>
<tr>
<td>Peak Insertion Loss</td>
<td>IL</td>
<td>dB</td>
<td>&lt; 4.5</td>
</tr>
<tr>
<td>Insertion Loss Uniformity</td>
<td>UNI</td>
<td>dB</td>
<td>&lt; 0.7</td>
</tr>
<tr>
<td>Passband Width @ 1.0 dB</td>
<td>BW₁</td>
<td>GHz</td>
<td>&gt; 2.5</td>
</tr>
<tr>
<td>Passband Width @ 3.0 dB</td>
<td>BW₃</td>
<td>GHz</td>
<td>&gt; 7.0</td>
</tr>
<tr>
<td>Passband Width @ 20 dB</td>
<td>BW₂₀</td>
<td>GHz</td>
<td>&lt; 40</td>
</tr>
<tr>
<td>PDL¹</td>
<td>PDL</td>
<td>dB</td>
<td>&lt; 0.3</td>
</tr>
<tr>
<td>Chromatic Dispersion (within ITU-Grid ±15 GHz)</td>
<td>CD</td>
<td>ps/nm</td>
<td>&lt; ± 90</td>
</tr>
<tr>
<td>Polarization Mode Dispersion (within ITU-Grid ±15 GHz)</td>
<td>PMD</td>
<td>ps</td>
<td>&lt; 0.2</td>
</tr>
<tr>
<td>Return Loss¹</td>
<td></td>
<td>dB</td>
<td>&gt; 40</td>
</tr>
</tbody>
</table>

**Note:**
1. Over the stated spectral and operating temperature ranges and all polarization states

### Ordering Information

**CF -**

- **Band**
  - C = C-Band
  - L = L-Band
  - T = C+L Band

- **Channel Spacing**
  - 0 = 25 GHz
  - 1 = 50 GHz
  - 2 = 100 GHz
  - 3 = 200 GHz
  - A = 12.5 GHz
  - B = 37.5 GHz
  - T = 33.3 or 66.7 GHz

- **Specifcation**
  - C = Custom
  - S = Standard

- **Connector Type**
  - FC = FC/UPC
  - FA = FC/APC
  - LC = LC/UPC
  - SC = SC/UPC
  - MU = MU/UPC
  - XX = No connector

- **Package Type**
  - C = Compact
  - B = Box

- **Sequential Number**
  - Starts from 001