The CWDM Mux / Demux module is based on dielectric thin-film technology designed for integration in low cost Metro and Access networks. These include applications such as fiber to the home, business or curb. The module enables 4 or 8 channels to be either combined (added) or separated (dropped). The filters operate with a channel spacing of 20nm corresponding to standard CWDM wavelengths. Santec’s CWDM module has low insertion loss, high channel isolation, flat passband. Additional filters, to enable cascading of devices, or addition of 1310nm or other wavelength, can also be included in the module.

**Features**

- Wide Operation Range: 1290-1350nm, 1470-1610nm
- Low Insertion Loss: (Mux and Demux)
- Wide Pass Band
- High Channel Isolation
- Operating Temperature: -10 to 70°C
- Long Term Reliability
- Telcordia-GR-1221 Qualified

**Applications**

- Optical Add Drop Multiplexer
- Metro/Access Network system
- FTTH & FTTC
- CATV Applications

**Configuration**

![Typical OADM Configuration](image)

**Dimensions**

![4ch Dimensions](image)

- 4ch
  - 120 x 115 ± 0.1
  - 4.0 ± 0.1
  - 4.5 ± 0.5

- 8ch
  - 120 x 115 ± 0.1
  - 4.5 ± 0.5
### Typical Performance

<table>
<thead>
<tr>
<th>Specification</th>
<th>Units</th>
<th>Condition</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength range</td>
<td>nm</td>
<td>20nm channel spacing</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>ºC</td>
<td></td>
<td>-10</td>
<td>70</td>
</tr>
<tr>
<td>Insertion loss (Mux)</td>
<td>dB</td>
<td>@λc±6.5nm</td>
<td>-</td>
<td>1.4</td>
</tr>
<tr>
<td>Link loss (Demux)</td>
<td>dB</td>
<td>@λc±6.5nm</td>
<td>-</td>
<td>2.6</td>
</tr>
<tr>
<td>Insertion loss (Mux and Demux)</td>
<td>dB</td>
<td>@λc±6.5nm</td>
<td>-</td>
<td>2.5</td>
</tr>
<tr>
<td>Flatness</td>
<td>dB</td>
<td>@λc±6.5nm</td>
<td>-</td>
<td>3.7</td>
</tr>
<tr>
<td>Adjacent channel isolation (Demux)</td>
<td>dB</td>
<td>@λc±13.5nm</td>
<td>30</td>
<td>-</td>
</tr>
<tr>
<td>Non-adjacent channel isolation (Demux)</td>
<td>dB</td>
<td>@λc±33.5nm</td>
<td>45</td>
<td>-</td>
</tr>
<tr>
<td>Directivity</td>
<td>dB</td>
<td></td>
<td>-</td>
<td>45 (Mux) / 55 (DeMux)</td>
</tr>
<tr>
<td>PDL</td>
<td>dB</td>
<td>@center wavelength: λc</td>
<td>-</td>
<td>0.2</td>
</tr>
<tr>
<td>Return loss</td>
<td>dB</td>
<td></td>
<td>-</td>
<td>50</td>
</tr>
</tbody>
</table>

*1 All parameters are specified over operating temperature range.
*2 Insertion loss per filter includes Ripple and PDL, without connectors.
*3 Please contact Santec to discuss specific performance requirements.

### Wavelength

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1291nm</td>
<td>1311nm</td>
<td>1331nm</td>
<td>1351nm</td>
</tr>
<tr>
<td>1471nm</td>
<td>1491nm</td>
<td>1511nm</td>
<td>1531nm</td>
</tr>
<tr>
<td>1551nm</td>
<td>1571nm</td>
<td>1591nm</td>
<td>1611nm</td>
</tr>
</tbody>
</table>

### Ordering Code

**Metro-X-15-A-B-C-D/E**

A=Channel

3=3ch, 4=4ch, 7=7ch, 8=8ch

B=Type

M=Mux, D=DeMux

1=Standard, 2=Upgradable, 5=Low Loss

C=Fiber Length

10=1.0m, 20=2.0m

D=Connector

00=No Connector, FS=FC-SPC, FA=FC-APC, SS=SC-SPC, SA=SC-APC

MU=MU-SPC, MJ=MUJ-SPC, LC=LC-SPC

E=Center Wavelength

(ex) 1571nm → 1571

www.santec.com  E-Mail : sales@santec.com

July 27, 2005