

# Single Channel Coarse Wavelength Division Multiplexer



DATASHEET

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## Features

- High Channel Isolation
- Low Insertion Loss
- Highly Stable & Reliable
- Epoxy-Free Optical Path
- Low Profile Packaging

## Applications

- Line Monitoring
- WDM Network
- Telecommunication
- Cellular Application
- Fiber Optical Amplifier
- Access Network

Agiltron's Wavelength Division Multiplexer (WDM) is based on thin film filter technology. This proven technology offers wide channel bandwidth, flexible channel configuration, low insertion loss, and high isolation. The CWDM series devices are used to add or drop a particular wavelength and are ideal for telecommunications and networking. Agiltron's CWDM devices are Bellcore GR -1221 qualification tested and are epoxy-free in the optical path.

## Specifications

| Parameter                              | Min          | Typical | Max  | Unit  |
|--|--------------|---------|------|-------|
| Operating Wavelength                   | 1470         |         | 1610 | nm    |
| Center Wavelength Accuracy             |              | ± 0.5   |      | nm    |
| Channel Spacing                        |              | 20      |      | GHz   |
| Channel Passband (@-0.5dB bandwidth)   |              | ≥ 13    |      | nm    |
| Pass Channel Insertion Loss            |              | ≤ 0.6   |      | dB    |
| Reflection Channel Insertion Loss      |              | ≤ 0.4   |      | dB    |
| Channel Ripple                         |              | ≤ 0.3   |      | dB    |
| Isolation (Demux)                      | Adjacent     | ≥ 30    |      | dB    |
|  | Non-adjacent | ≥ 40    |      | dB    |
| Insertion Loss Temperature Sensitivity |              | ≤ 0.003 |      | dB/°C |
| Wavelength Temperature Shifting        |              | ≤ 0.002 |      | nm/°C |
| Polarization Dependent Loss            |              | ≤ 0.1   |      | dB    |
| Polarization Mode Dispersion           |              | ≤ 0.1   |      | ps    |
| Directivity                            |              | ≥ 50    |      | dB    |
| Return Loss                            |              | ≥ 45    |      | dB    |
| Power Handling                         |              | 300     |      | mW    |
| Operating Temperature                  | -40          | 300     | 85   | °C    |
| Storage Temperature                    | -40          |         | 85   | °C    |

**Note:** The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

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### Mechanical Dimensions

\*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

### Ordering Information (Part Number)

| Prefix | Ch. Spacing   | Number of channels | Configuration        | ITU Channel                                  | Fiber Cover                                       | Fiber Length                                     | Connector <sup>[1]</sup>  |
|--------|---------------|--------------------|----------------------|--|---|--|---|
| CWDM-  | CWDM Grid = C | 1 Channel = 01     | Mux = M<br>Demux = D | 1510nm = 510<br>1551nm = 551<br>1571nm = 571 | Bare Fiber = 1<br>900um Jacket = 2<br>Special = 0 | 0.25m = 1<br>0.5m = 2<br>1.0m = 3<br>Special = 0 | None = 1<br>FC/PC = 2<br>FC/APC = 3<br>SC/PC = 4<br>SC/APC = 5<br>ST/PC = 6<br>LC/PC = 7<br>Special = 0 |

### Application Notes

**[1]. The connector cannot be installed directly onto bare fiber, as it is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer can remove this protective tube after testing.**

The optical power handling of a standard connector is less than 0.5 W for SM28 fiber and decreases further with smaller core fibers.

#### Fiber Cleanliness

Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

#### Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.