Single Channel Coarse Wavelength Division Multiplexer

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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

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

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)

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

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber 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 may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

Application Notes

Fiber Core Alignment
Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

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.

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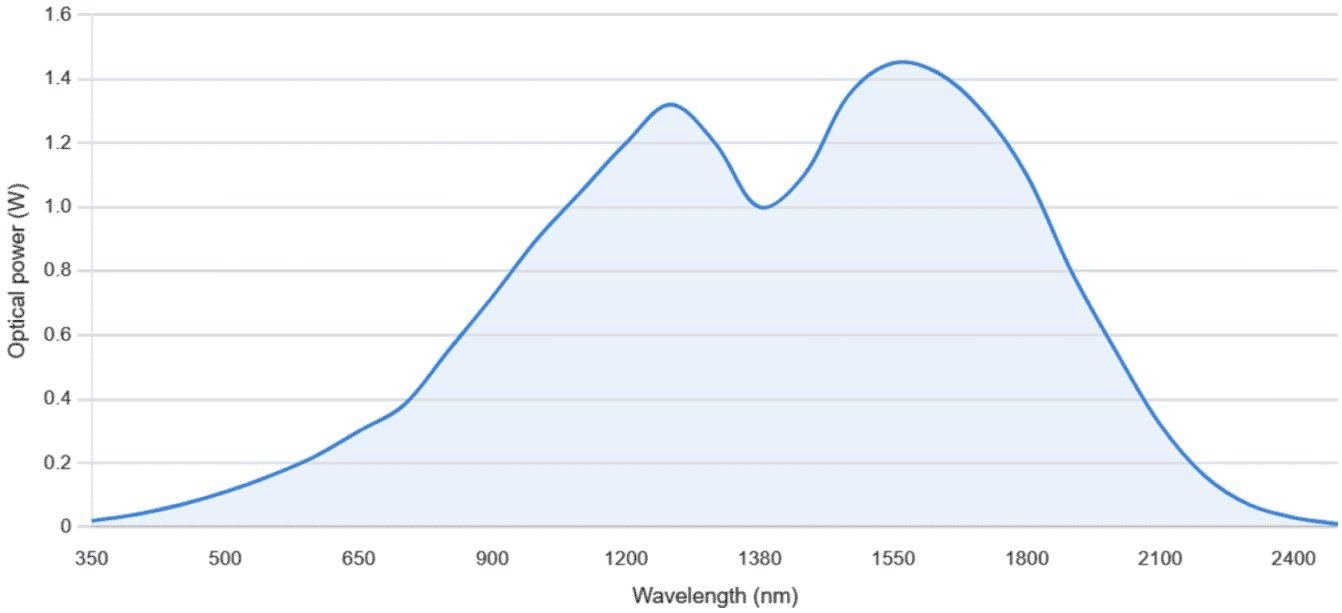
Regular Single Mode / Polarization Maintaining Fiber Optical Power Handing vs Wavelength



Single mode fiber optical power is limited by nonlinear effects in addition to absorption that increase loss and generate heat. The curve shows the approximate safe CW power envelope for standard single-mode fiber. Actual limits depend on fiber design, core size, length, and laser characteristics. Specialty fibers can significantly increase the power limit.

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P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

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