

Bandwidth-Variable Tunable Filter

Wavelength-Tunable and Bandwidth-Variable Optical Filter

BVF-200

BVF-200 is the latest line of advance tunable optical filters based on our flexible optical filter tuning technologies. The filter center wavelength is completely tunable over the entire C-band, and the filter bandwidth is independently tunable from 0.1nm to 13nm. The filter response of the BVF-200 is an ideal flat-top profile with a very sharp roll-off at the filter edges.

The BVF-200 offers a low insertion loss of typically <math><3.5\text{dB}</math>, and a low polarization sensitivity. More importantly, the BVF-200 also exhibits an extremely low chromatic dispersion within its passband, making it an ideal and flexible tunable filter for various demanding applications requiring full tunability in optical filtering.



Key Features

- Bandwidth variable from 0.1nm to 13nm
- Center wavelength tuning range over 40nm
- Ideal flat-top filter response with sharp roll-off
- Side-mode suppression of typically 50dB
- Negligible chromatic dispersion of typically 0.4ps/nm
- Low insertion loss, low polarization sensitivity

Applications

- WDM, CWDM channel filtering
- Optical signal selection/rejection
- Dispersion free spectral filtering
- Applications requiring variable passband
- Adaptive filtering of optical signals

Typical Characteristics

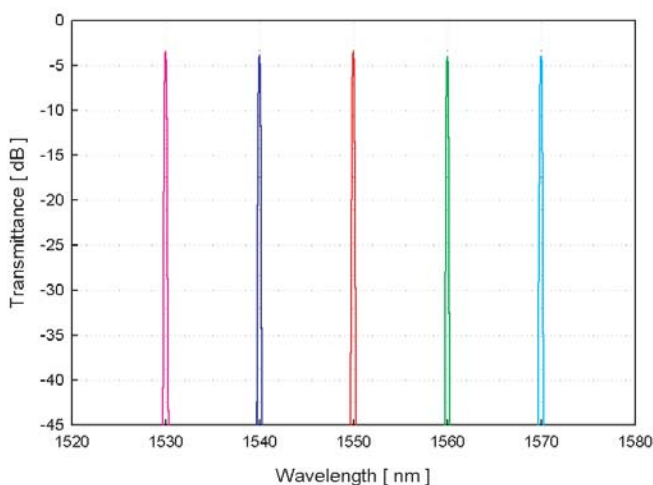


Fig. 1 Filter set at 0.2nm bandwidth tuning across 40nm range.

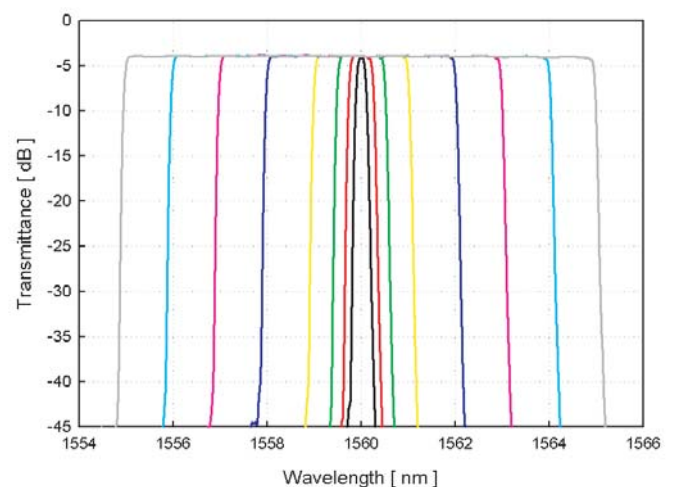


Fig. 2 Bandwidth tuned from 0.1nm to 13nm.

Specifications

Parameter	Specification			Unit
	Min.	Typ.	Max.	
Center Wavelength Tunability	1530		1570	nm
Wavelength Tuning Range	40			nm
Bandwidth Tunability, 3dB	0.1		13.0	nm
Bandwidth Tunability, 20dB	0.4		13.5	nm
Insertion Loss, Bandwidth@-3dB >0.5nm		3.5	5.0	dB
	Bandwidth@-3dB >0.2nm	3.5	5.0	dB
	Bandwidth@-3dB >0.1nm	5.0	7.0	dB
Return Loss	40			dB
Out-band Suppression (OBS)	40	50		dB
In-band Dispersion (GVD) ¹	-1	0.4	+1	ps/nm
Polarization Dependent Loss		0.25		dB
Polarization Mode Dispersion		0.30		ps
Optical Connector	FC or SC, SPC or APC			
Dimensions (W x H x D)	236 x 88 x 405			mm
Weight	6.5			kg

Note: The above specifications are subjected to change without prior notice. Please contact Alnair Labs for more details and latest updates.
1. Group Velocity Dispersion. Wavelength region within the 1dB bandwidth of the filter.

Typical Optical Performance

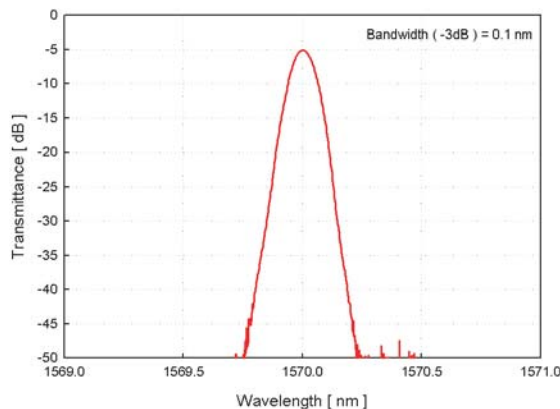


Fig. 3 Spectral shape of the BVF-200 at 0.1nm bandwidth.

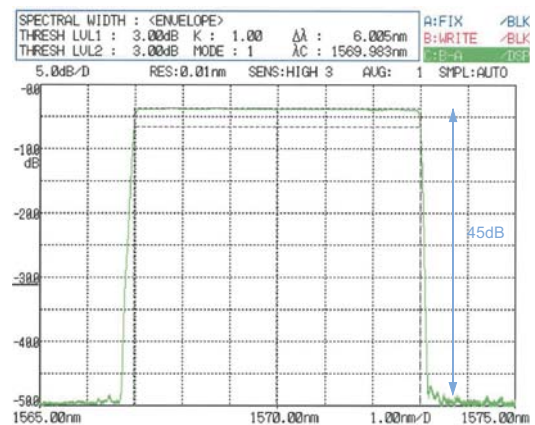


Fig. 4 Spectral shape at 6.0nm bandwidth with >45dB OBS.

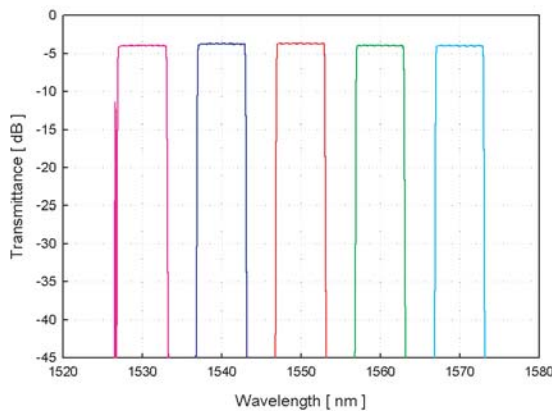


Fig. 5 Filter spectra tuned across C-band at 6nm bandwidth.

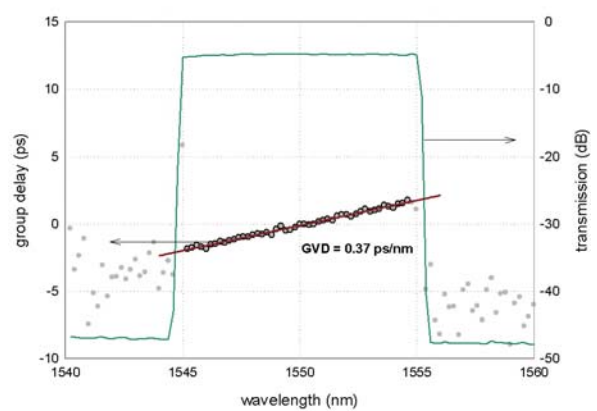
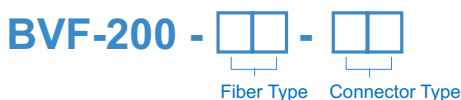


Fig. 6 Filter in-band group delay dispersion at 10nm bandwidth.

Ordering Information



Fiber Type Code
SM: Standard Single Mode
PM: Polarization Maintaining

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

* Customized filters are also available. Please contact Alnair Labs for specific requirements.