

# *Bandwidth-Variable Tunable Filter*

## Wavelength-Tunable and Bandwidth-Variable Optical Filter

# BVF-100

### Key Features

- Bandwidth variable from 0.2nm to 10nm
- Center wavelength tuning range over 40nm
- Ideal flat-top filter response with sharp roll-off
- Side-mode suppression of >40dB
- Negligible chromatic dispersion within passband
- Low insertion loss, low polarization sensitivity



BVF-100 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 0.2nm to 10nm. The filter response of the BVF-100 is an ideal flat-top profile with a very sharp roll-off at the filter edges.

The BVF-100 offers a low insertion loss of typically <4dB, and a low polarization sensitivity. More importantly, the BVF-100 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.

### Applications

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

### Typical Characteristics

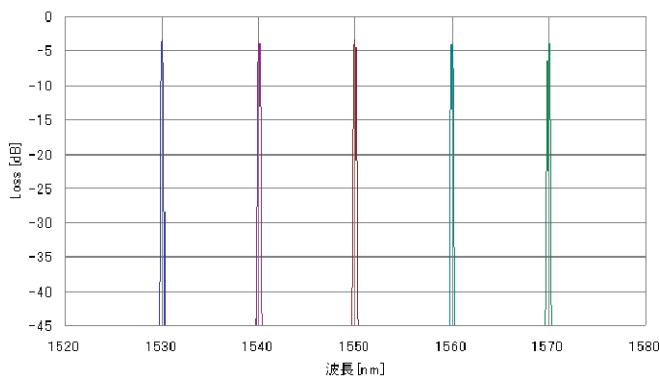


Fig. 1 Filter set at 0.2nm bandwidth tuning across 40nm range.

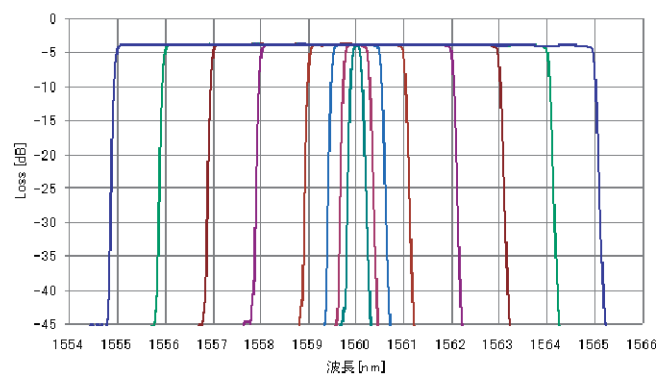


Fig. 2 Bandwidth tuned from 0.2nm to 10nm.

### Specifications

Parameter	Specification			
	Min.	Typ.	Max.	Unit
Center Wavelength Tunability	1530		1570	nm
Wavelength Tuning Range	40			nm
Bandwidth Tunability, 3dB	0.2		10.0	nm
Bandwidth Tunability, 20dB	0.5		10.5	nm
Insertion Loss		4.0	5.0	dB
Insertion Loss Variation <sup>1</sup>		0.3	0.5	dB
Return Loss	32			dB
Out-band Suppression (OBS)	40	45		dB
In-band GVD <sup>2</sup>	-3	0.4	+3	ps/nm
Polarization Dependent Loss		0.25	0.50	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. Measured as the insertion loss of the filter peak across the full band, with filter bandwidth set at 0.2nm; 2. Group Delay Dispersion. In-band defined as wavelength region within the 1dB bandwidth of the filter.

### Typical Optical Performance

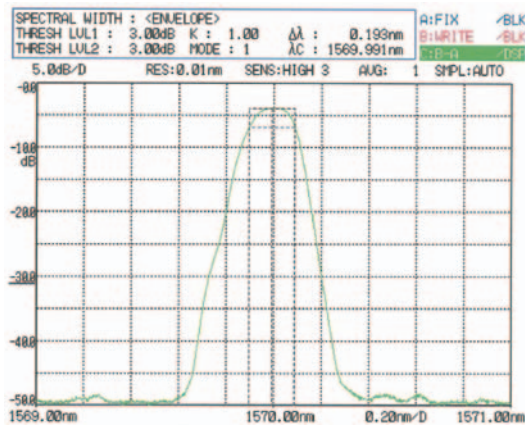


Fig. 3 Spectral shape of the BVF-100 at 0.19nm bandwidth.

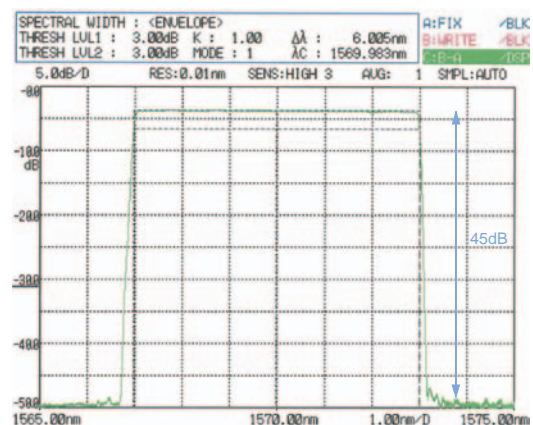


Fig. 4 Spectral shape at 6.0nm bandwidth with 45dB OBS.

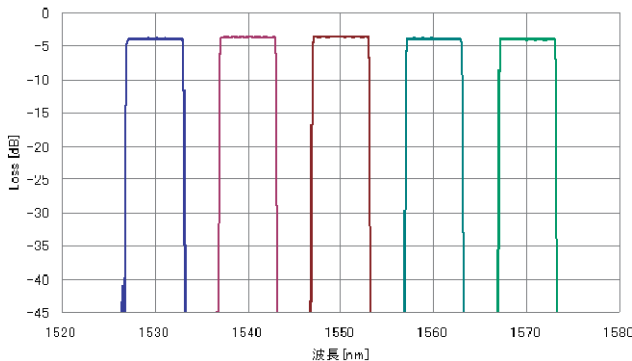


Fig. 5 Filter spectra tuned across C-band at 6nm bandwidth.

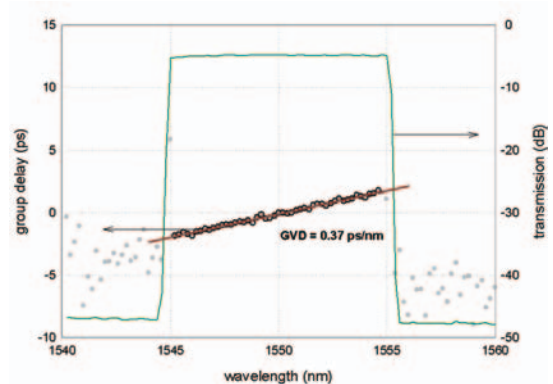
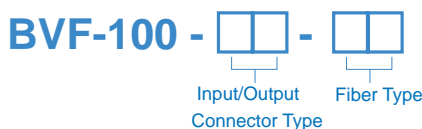


Fig. 6 Filter in-band group delay dispersion at 6nm bandwidth.

### Ordering Information



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

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

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