Bandwidth-Variable Tunable Filter

Electrically-Controllable Wavelength- and Bandwidth-Tunable Optical Filter

CVF-200

Wavelength:	1525 – 1570 nm
Bandwidth:	0.1 – 13 nm
Roll-Off:	> 150 dB/nm

Key Features

- Bandwidth variable from 0.1nm to 13nm
- Center wavelength tunable from 1525nm to 1570nm
- Ideal flat-top response with sharp roll-off >150dB/nm
- Out-of-band suppression of typically 50dB
- Negligible chromatic dispersion of typically 0.4ps/nm
- Low insertion loss, low polarization dependency
- Front-panel control or external control via RS232/USB

The CVF-200 wavelength/bandwidth tunable filter is an electrically-controllable optical bandpass filter. The center wavelength is tunable over 1525nm to 1570nm, and the filter bandwidth is independently tunable from 0.1nm to 13nm. The filter response is an ideal flat-top profile with an extremely sharp roll-off at the filter edges of >150dB/nm, providing a strong out-of-band suppression of typically 50dB.

The CVF-200 has special optical design to offer a negligible chromatic dispersion within the passband regardless of the tuning position. It also has a low insertion loss and PDL. The filter can be controlled manually through the front-panel LCD and tuning knob, as well as externally controlled via RS232 or USB.

Applications

- Factory test and inspection automation
- Narrowband DWDM filtering down to 0.1nm
- Wideband CWDM/OTDM filtering up to 13nm
- Optical signal selection with strong rejection ratio
- Dispersion-free spectral filtering for short pulses
- Adaptive filtering of optical signals

Typical Characteristics

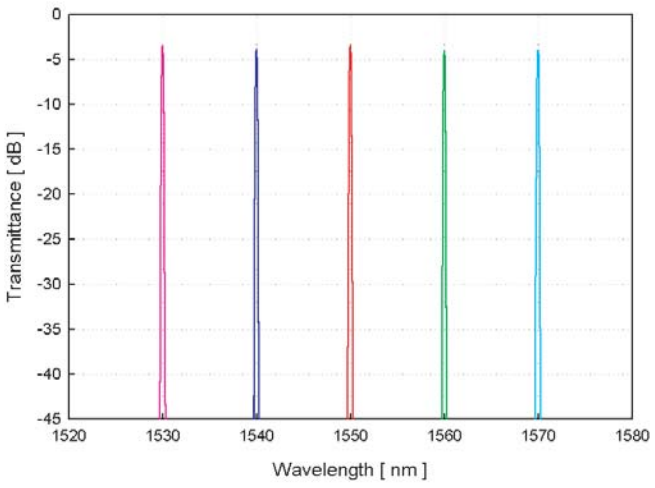

Fig. 1 Filter set at 0.2nm bandwidth tuning across 40nm range.

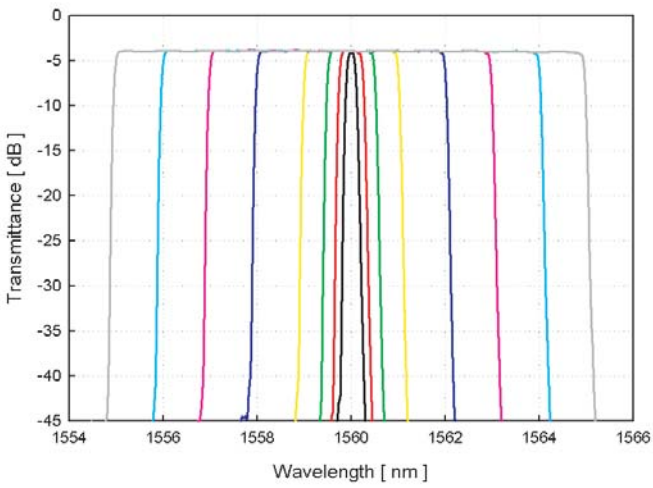

Fig. 2 Bandwidth tuned from 0.1nm to 13nm.

Alnair Laboratories Corporation
www.alnair-labs.com
2F YK Bldg. 2-4-7 Mishuku Setagaya-ku, Tokyo 154-0005 Japan. Tel: +81(3)5431-3530 Fax: +81(3)5431-3531 Email: sales@alnair-labs.com
2009/09/09

Specifications

Parameter	Specification			
	Min.	Typ.	Max.	Unit
Center Wavelength Tunability	1525		1570	nm
Bandwidth@-3dB	0.1		13.0	nm
Bandwidth@-20dB	0.3		13.25	nm
Bandwidth@-30dB	0.4		13.3	nm
Wavelength Accuracy		<±0.05		nm
Wavelength Repeatability[1]		<±0.01		nm
Filter-Edge Roll-Off	150	200		dB/nm
Insertion Loss[2] Bandwidth@-3dB >0.2nm		3.5	5.0	dB
Bandwidth@-3dB 0.1nm		5.0	6.5	dB
Insertion Loss Uniformity		0.5		dB
Return Loss	40	45		dB
Out-Band Suppression (OBS)	40	50		dB
In-Band Dispersion (GVD)[3]	-1	0.4	+1	ps/nm
Polarization Dependent Loss		0.25		dB
Polarization Mode Dispersion		0.3		ps
Maximum Input Power		600		mW
Optical Connector		FC or SC, SPC or APC		
Interface		RS-232 or USB		
Dimensions (W x H x D)		236 x 88 x 405		mm
Weight		7.5		kg

Note: The above specifications are subjected to change without prior notice. Please contact Alnair Labs for more details and latest updates.
1. Ambient temperature at 25 +/-1 degree C. 2. Insertion loss exclusive of input/output connector loss. 3. Group Velocity Dispersion. Wavelength region within the 1dB bandwidth of the filter.

Typical Performance

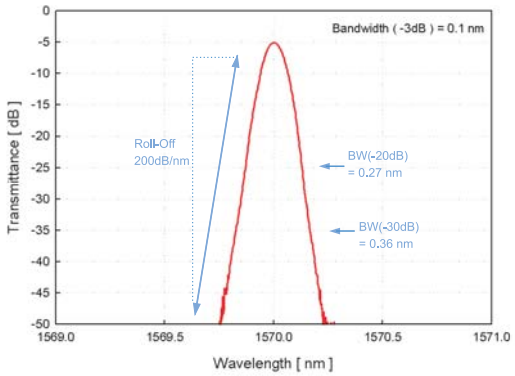

Fig. 3 Spectral shape of the CVF-200 at 0.1nm bandwidth.

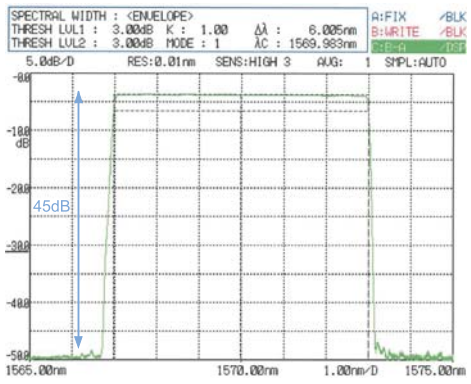

Fig. 4 Spectral shape at 6.0nm bandwidth with >45dB OBS.

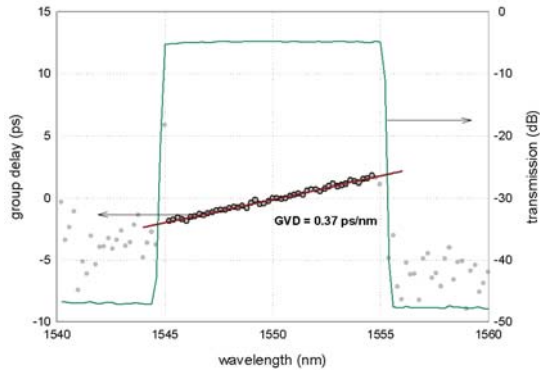

Fig. 5 Filter spectra tuned across C-band at 6nm bandwidth.

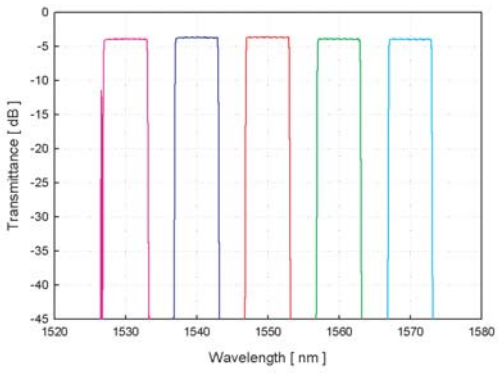

Fig. 6 Filter in-band group delay dispersion at 10nm bandwidth.

Ordering Information

CVF-200 - □□ - □□

Fiber Type | Connector Type

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

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.

Alnair Laboratories Corporation www.alnair-labs.com
2F YK Bldg. 2-4-7 Mishuku Setagaya-ku, Tokyo 154-0005 Japan. Tel: +81(3)5431-3530 Fax: +81(3)5431-3531 Email: sales@alnair-labs.com
2009/09/09