WSM-160 Flat-Top Tunable Filter Wavelength and Bandwidth Selection

YENISTA proposes a manual version of the high performance WSA-160 flat-top tunable filter. This instrument re-uses the WSA-160 optical scheme providing a large wavelength tuning range of 125 nm as well as a bandwidth tunable from 0.25 nm to more than 60 nm.
This will be the ideal tool for optical laboratories that are looking for a low-cost solution without any compromise on optical specifications.
Manual tuning of wavelength and bandwidth are done through two high resolution micrometer actuators.

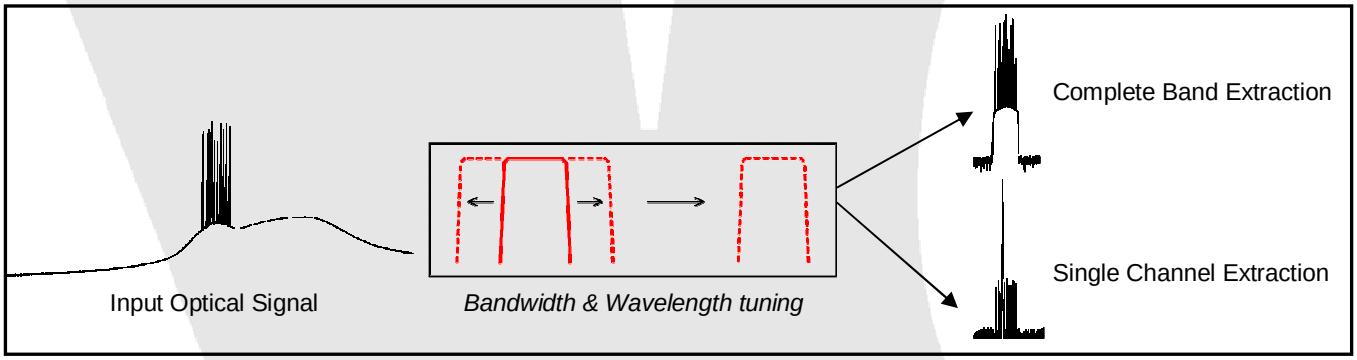

Fig.1 WSM-160 main application

Applications

One Single Manual Filter for all applications, a must-have for optical laboratories :

- Noise filtering with >40dB rejection ratio.
- Channel Extraction from DWDM signal, down to 50GHz spacing.
- Channel extraction from CWDM signal.
- Complete band extraction (up to 80nm).
- Amplification band studies.
- Emulation of cascaded OADM/OXC.
- Optical Pulse shaping.
- Modulation studies.

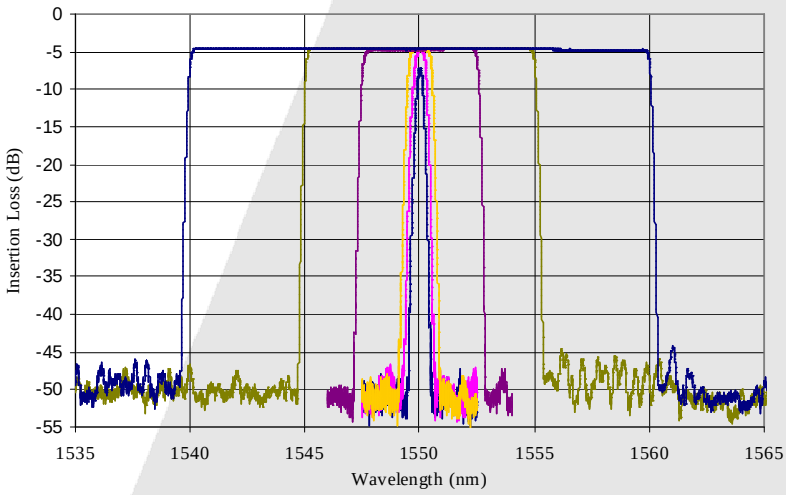

Fig. 2 Filter Shape for various FWHM from 0,25 to 20nm

Key Parameters

▪Clean Channel Extraction : Low Loss, High Rejection Ratio, Flat-top and Low Dispersion.
WSM-160's optical filtering cavity based on diffraction gratings prevents any corruption of the data. The relatively sharp edges ensures a clean cut between the signal and the adjacent channels or noise, while the flat top shape ensures data integrity.
WSM-160 also has negligible chromatic and polarization mode dispersion parameters.

▪125 nm Wavelength Range to adapt to any set-up.
WSM-160 operates from 1510 to 1635 nm in one single instrument.

▪Variable Bandwidth: continuous adjustment from 0,25 nm up to record 60 nm (80nm typ.)!
The smallest bandwidth perfectly suits 50 GHz network requirement and the highest bandwidth open new doors in amplification studies or complete band extraction.
The continuous adjustment of the bandwidth ensures a perfect match with any modulation rate and format.

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Filter Specifications *1

	Optimized Wavelength range	1510-1635 nm
	Optimized Central Wavelength Tuning Range	>125 nm
	Insertion loss *2	< 6 dB (<5 dB typ.)
	Insertion Loss Uniformity *2	0,25dB typ.
	Polarization dependent loss *2	<0.5 dB (0,25 dB typ.)
	Return Loss	45 dB
	Maximum Input Power (CW)	0.5 W (+27 dBm)
Filter Shape Specifications	FWHM (-3dB bandwidth)	From 0.25 to 60 nm (80nm typ.)
	-20dB bandwidth	0.7 nm for FWHM=0,25 10.5 nm for FWHM=10nm 60.6 nm for FWHM=60nm
	Flatness *2, 3	0.3 dB typ.
	Out-band suppression (Crosstalk) *2, 4	> 40 dB (45 dB typ.)
Interface	Optical connector	FC-UPC on SMF fiber
	Manual actuators for Wavelength and FWHM tuning	High resolution micrometer
General Specifications	Dimensions (W x H x D)	224 x 133 x 185 mm³
	Weight	2.2 kg

*1: At 20℃
*2: For FWHM >0,5 nm ; in C band.
*3: On a centered bandwidth BW = FWHM-400 pm, and for 0.5 nm<FWHM<10 nm
*4: Measured 1 nm away from the –3 dB points.

Other Characteristics

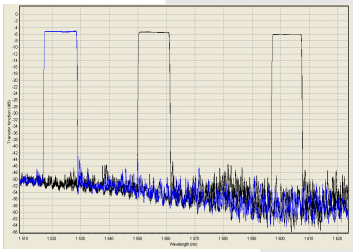

Fig. 3 FWHM=10 nm @ 1520/1555/1600 nm

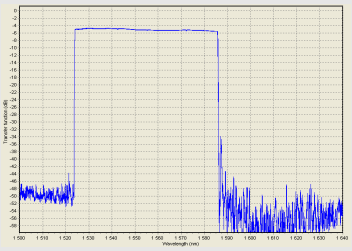

Fig. 4 FWHM=60 nm @ 1555 nm

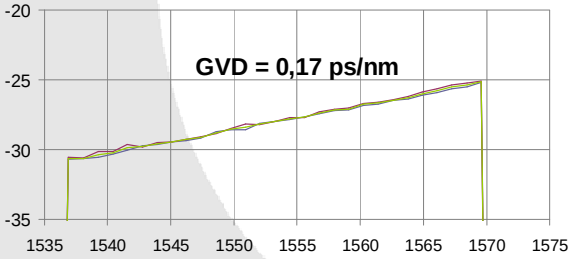

Fig. 5 Group Delay in ps (typical) @ 1552 nm, FWHM=33 nm

Fig. 6 Repeatable tuning through manual high resolution micrometer actuator.

Fig. 7 Easy access to optical connectors to ensure low-loss over time

Contact Information

Customized version are available: band-stop version (Notch Filter type), other wavelength range...etc.
We are happy to discuss your optical filter requirements, please contact YENISTA OPTICS at sales@yenista.com

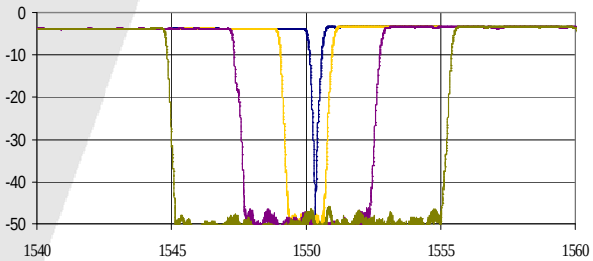

Fig. 8 Notch Filter Shape

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