

# 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.

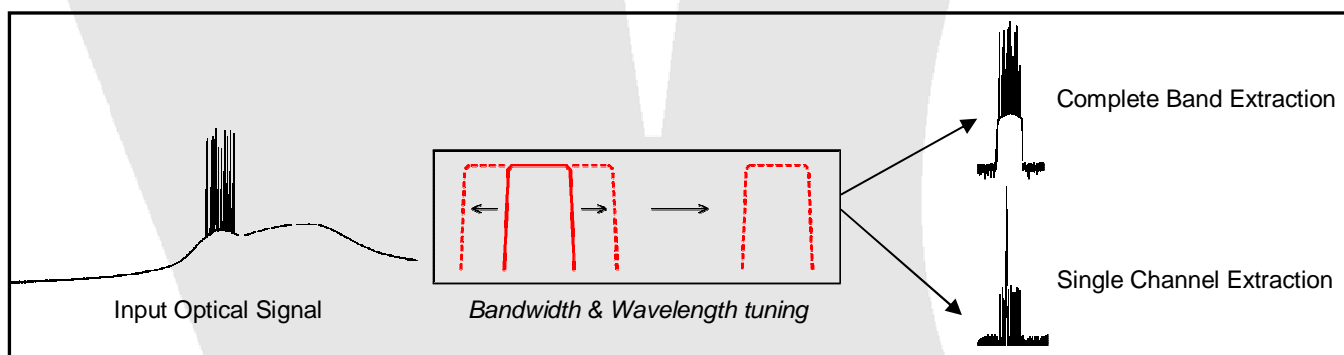


Fig.1 WSM-160 main application

## 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.

## 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.

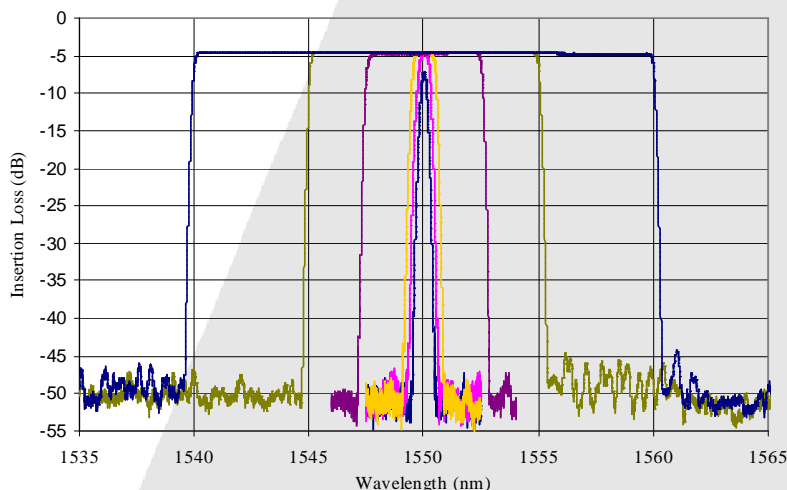


Fig. 2 Filter Shape for various FWHM from 0,25 to 20nm

All information and specifications are subject to change without notice

**Yenista**  
**OPTICS**

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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)
<b>Filter Shape Specifications</b>	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.)
<b>Interface</b>	Optical connector	FC-UPC on SMF fiber
	Manual actuators for Wavelength and FWHM tuning	High resolution micrometer
<b>General Specifications</b>	Dimensions (W x H x D)	224 x 133 x 185 mm <sup>3</sup>
	Weight	2.2 kg

\*1: At 20°C

\*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

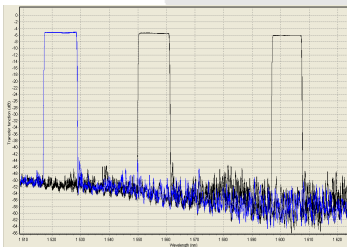


Fig. 3 FWHM=10 nm  
@ 1520/1555/1600 nm

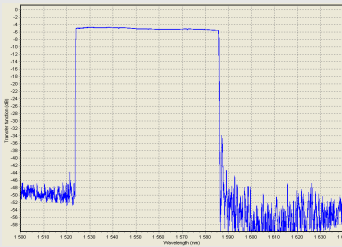


Fig. 4 FWHM=60 nm  
@ 1555 nm

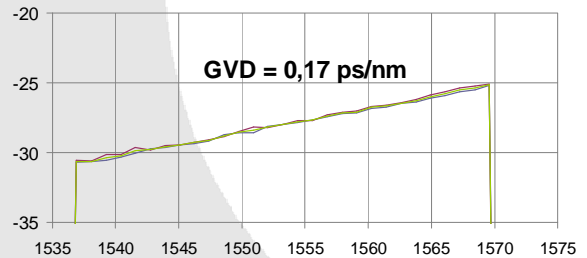


Fig. 5 Group Delay in ps (typical)  
@ 1552 nm, FWHM=33 nm



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](mailto:sales@yenista.com)

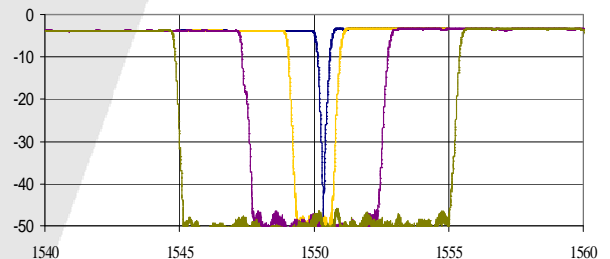


Fig. 8 Notch Filter Shape

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