



## Features

- Simplifies testing of DWDM and EDFA systems
- Reduces final functional testing setup and maintenance time
- Replaces banks of expensive DFB lasers and associated equipment
- Produces stable and uniform transmission peaks that mimic various DWDM channel plans
- Useful for testing modulation schemes within optical add-drop muxes
- Useful for demonstration of DWDM system performance

## Applications

- **Channel cross-talk, isolation, and attenuation tests.** The WDME comb signal can be used as input for testing the critical parameters of an EDFA. The WDME signal can also be utilized to test DWDM-Demux components and systems without having to buy, maintain, and multiplex multiple expensive DFB lasers.
- **Test high dynamic range systems.** The two FSR-matched and Finesse-matched filters can be connected in series to maximize contrast between the peak and valley of the comb signal (see Fig. 1). As much as 52 dB of contrast can be achieved.
- **Test the effects encroaching adjacent channels in a WDM system.** System robustness tests can be performed by offsetting one filter comb from the other and by combining the filter outputs through a coupler (see Fig. 2).

## Description

The WDME is a versatile, sliced spectrum source that can replace banks of expensive DFB lasers and associated equipment. The WDME is used in designing, testing, manufacturing and maintaining DWDM and EDFA systems.

The output is a stable, accurately spaced comb signal that can be adjusted and modified to suit the application, with an internal amplified spontaneous emission (ASE) source as an input. User-friendly front panel controls allow the operator to easily shift the comb up or down by up to 100GHz.

The WDME provides maximum flexibility and minimum setup time by combining two FSR-matched, independently-controlled Fabry-Perot interferometer filters. These filters closely follow the theoretical Airy Function, which allows for noiseless-profile amplification through external Erbium-Doped Fiber Amplifiers (EDFAs). The filter inputs and outputs can be accessed via the front panel, and can be connected alone, in series, or in parallel to provide a wide array of test configurations.

This single instrument can replace bulky, complex, and difficult-to-operate multiple-laser systems for a fraction of the cost.

**Specifications**

**Optical**

Operating Wavelength Range	1500-1600 nm
FSR (comb spacing)	50 or 100 GHz
Built-in ASE Source for Self-Contained Operation	-5 dBm/0.05 nm, 8 dB flatness 1530-1565 nm
Finesse	40 (+/- 20% tolerance)
FSR Adjustment	0.05% of FSR (via front panel)
Comb Shift Adjustment	~ 100 GHz (via front panel)
Bandwidth (FWHM) of Individual Orders	FSR/F (for single filter) 0.66xFSR/F (two filters in series)
Contrast Ratio (peak to valley transmission)	26 dB (peak-to-valley transmission) double these values for the 2-filter cascade (see Figure 2)

**Electrical**

Line Voltage and Frequency	120-240 V AC; 50-60 Hz
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**Mechanical**

Dimensions	370 x 343 x 90 mm
Operating Temperature	0° - 70° C

Figure 1

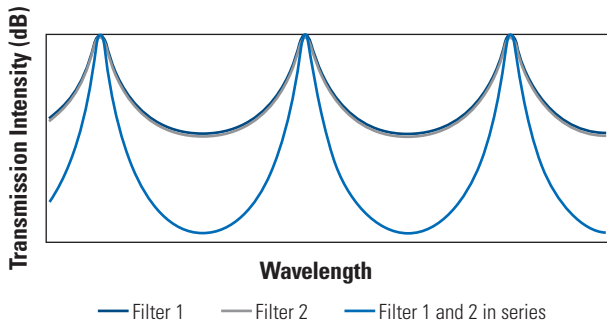


Figure 1 - Single vs serial filter configuration

Figure 2

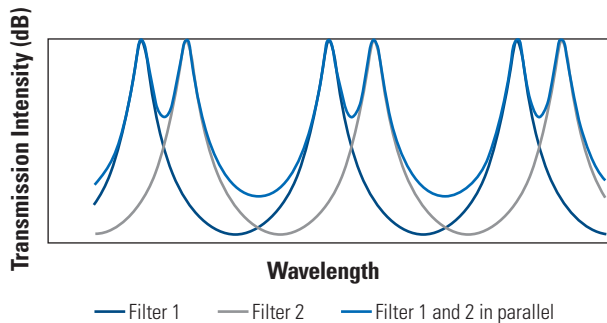


Figure 2 - Parallel output configuration