

# FINISAR®

## Features

- ▶ Dual (two WSS integrated in a module) and Quad (four WSS integrated in a module) WSS
- ▶ Configurations: 2x1xN WSS, 4x1xN WSS and Colorless/Directionless 2xNxM WSS
- ▶ Alternate common port
- ▶ Flexgrid® Dynamic Channel Width Control (fully ITU flexible grid G.694.1 compliant)
  - 6.25 GHz Width Resolution (default, 3.125GHz optional)
  - No constraints on the spectrum allocated to a super-channel
  - Hitless channel widening, narrowing and migration with 6.25 GHz resolution
- ▶ Flexgrid® Dynamic Attenuation Control
  - 6.25 GHz Resolution
  - 0-20 dB Range
  - Hitless channel and intra-channel power equalization
- ▶ LCoS Switching Technology
- ▶ Frequency range: 4.8 THz (default) - wider frequency range up to 10THz (C+L-band) can be supported

## Applications

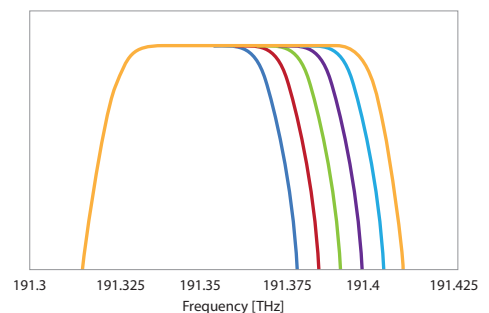
- ▶ Broadcast & Select ROAD Architectures
- ▶ Route & Select ROADM Architectures
- ▶ ROADM Node on a blade - multiple degrees on a single blade
- ▶ Multi-fiber DWDM network - multiple fiber pairs per direction
- ▶ Colorless Directionless Add/Drop
- ▶ 1+ Tb/s Transport ready
- ▶ Dynamic Gain Equalization
- ▶ Multi-carrier Superchannels
- ▶ Alien Wavelength Routing
- ▶ Flexgrid and Fixed grid ITU 50GHz and 100GHz

## Dual Wavelength Selective Switch (WSS)

The application of Reconfigurable Optical Add/Drop Multiplexers (ROADM) in DWDM optical networks has expanded in recent years to support increasingly more directions as well as increased flexibility in the add/drop structure. Flexgrid® technology is now essential in the efficient use of optical bandwidth for extremely high data rates and advanced modulation formats employed by next generation DWDM transmitters/receivers, including 400Gb/s and 1 Tbit/s signals. These higher data rates require that channel spacing is flexible and can be increased real-time to allow the network to adapt to new transmission formats. Deployment of colorless directionless (CD) ROADMs and colorless, directionless, contentionless (CDC) is facilitated by the introduction of route & select (R&S) ROADM architectures, which, unlike broadcast & select (B&S) ROADMs that require only one WSS per direction, are based on two WSS per direction.

By integrating two WSS, each featuring superior optical performance, in a single module the dual WSS modules by Finisar are optimized for this new generation of R&S ROADMs. Dual WSS modules can also be used as CD 2xNxM Add/Drop modules and the platform can be scaled up to four WSS integrated in a single module without sacrificing optical performance to create the new generation of Quad WSS products.

Enabled by Finisar Liquid Crystal on Silicon (LCoS) technology, Finisar WSS products support Flexgrid® technology, which provides dynamic control of the channel width. Furthermore, once deployed, channel plans are configurable 'on-the-fly', meaning that channel bandwidths can be adjusted to most efficiently carry future demand as it arises. Furthermore, Flexgrid® offers full backwards compatibility with both the standard 100 GHz and 50 GHz ITU grids. Flexgrid® also enables the equalization of the power within a single channel, especially important for multicarrier optical signals.



Example of Flexgrid channel reconfiguration

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