Chameleon Thin Film Channel Selector | CTF-CS

Applications

- Channel Selector for Test and Measurement
- Optical Performance Monitoring
- Tunable Filter for Dynamic Networks
- Tunable Narrow-band Source Development

Channel Selector

Micron Optics' Chameleon Thin Film Channel Selector allows network operators to select and isolate any DWDM channel in the C-band or L-band for bit-error-rate testing, protocol-layer analysis and dynamic network development.

Optical Performance Monitoring

Insertion loss is an industry-leading 2 dB. The CTF's wide dynamic range, short response time and high measurement sensitivity enable very fast and accurate power measurements and accurate channel counts with high OSNR.

Features

- Tunable over entire C or L-bands
- Flat-topped bandpass
- Low Polarization Dependent Loss (PDL)
- Fast tuning
- Low insertion loss
- Self-calibrated (external wavelength reference not required)

Description

The Micron Optics Chameleon Thin Film Channel Selector incorporates a Chameleon Thin Film Tunable Filter (CTF-TF) and the associated electronics driver to enable agile tuning and selection of arbitrary wavelengths. The CTF Channel Selector tunes a thin-film filter while maintaining flat-top bandpass and steep adjacent channel rejection. A designated wavelength or range of wavelengths may be selected using a graphical user interface or through an analog input. The user may automatically or

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CTF-CS | Chameleon Thin Film Channel Selector

Figure 1

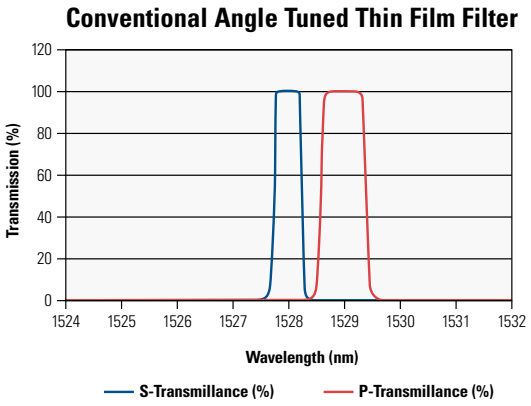
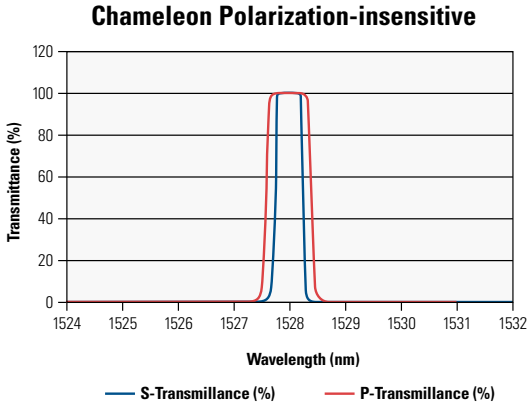


Figure 2



manually step through a wavelength range by selecting a scan increment. The CTF Channel Selector is internally calibrated and does not need an external wavelength reference. The selected wavelength is displayed and only differs from the input wavelength when the filter is tuning.

For ease of testing and laboratory use, Micron Optics supplies:

- Visual Basic Interface (source code included) which allows direct input/output of wavelength values
- PCMCIA card and cable for laptop computer

The Micron Optics Chameleon Thin Film Tunable Filter is a break-through technology that exhibits polarization-insensitive angle tuning properties across the S-, C- or L-band. Conventional angle-tuned thin film filters use expensive and complex diversity optics to overcome the divergence of S- and P-polarization bandpasses. Micron Optics has designed thin film filters whose S- and P-polarization bandpasses track one another across the band.

Conventional designs, materials and manufacturing processes are used, resulting in rugged, reliable, and inexpensive filters. The CTF-TF is also highly customizable and adaptable to a wide range of products, from ASE noise suppression to tunable add/drops. Micron Optics Chameleon Thin Film Tunable Filters can be custom engineered to meet a wide range of specifications and uses.

Future versions of the Micron Optics Chameleon Thin Film Tunable Filter, due to be released second quarter of 2004, will be in component form with accompanying controller boards. These new Chameleon filter versions will be suited for use as OEM components within Channel Add/Drop Multiplexers, Channel Selectors, Optical Performance Monitors, and other critical telecommunications modules and test instruments.

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C components

Part Number

CTF-CS λλλλ-bbb

Wavelength Band
- 1550 - C Band
- 1580 - L Band

Channel Spacing
- 50 GHz
- 100 GHz
- 200 GHz

Options

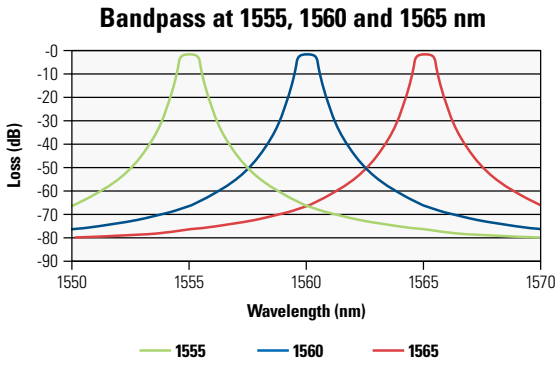
060 FC/SPC Connectors

061 FC/APC Connectors

062 SC/SPC Connectors

063 SC/APC Connectors

Figure 3



The bandpass shape does not change as the Chameleon Thin Tunable Filter is tuned from 1520 to 1570 as Figure 3 shows.

Figure 4

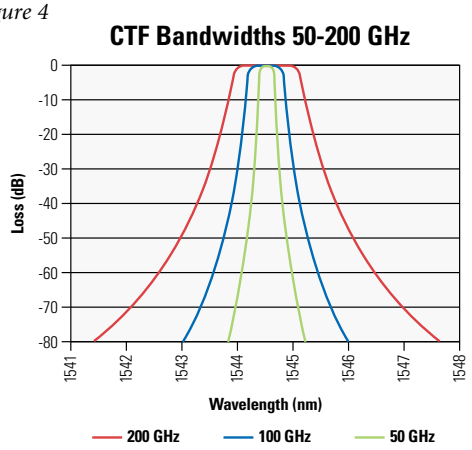
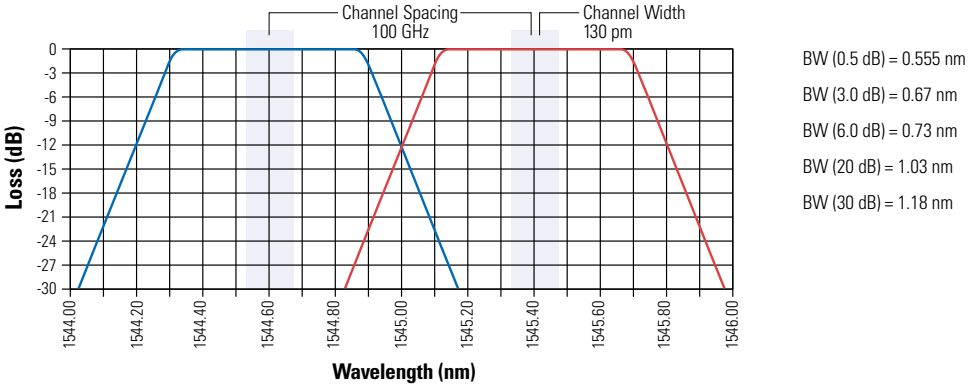


Figure 5



BW (0.5 dB) = 0.555 nm

BW (3.0 dB) = 0.67 nm

BW (6.0 dB) = 0.73 nm

BW (20 dB) = 1.03 nm

BW (30 dB) = 1.18 nm

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Specifications	(PRELIMINARY) 50 GHz	100 GHz	(PRELIMINARY) 200 GHz
Optical			
Operating Wavelength Range			
C-Band	1520 - 1570 nm	1520 - 1570 nm	1520 - 1570 nm
L-Band	1570 - 1620 nm	1570 - 1620 nm	1570 - 1620 nm
Bandwidth (0.5, 3, 20 dB)	(0.33, 0.36, 0.52)nm	(0.55, 0.67, 1.03) nm	(1.0, 1.2, 1.8)nm
Tuning Speed (50 nm) change	< 100 msec	< 100 msec	< 100 msec
Scanning Speed	<- 50 Hz	<- 50 Hz	<- 50 Hz
Total Device Insertion Loss	< 3 dB	< 2.5 dB	< 2 dB
Chromatic Dispersion (wavelength offset 0.1nm)	110 ps/nm	15 ps/nm	5 ps/nm
Dropped Channel			
Adjacent Channel Isolation (10Gb/s)	> 25 dB	> 25 dB	> 25 dB
Polarization Dependent Loss	< 0.4 dB	< 0.3 dB	< 0.2 dB
Return Loss	> 45 dB	> 45 dB	> 45 dB
Electrical			
Supply Voltage		110 VAC or + 24 VDC	
Power Consumption		< 2.5 W	
Mechanical			
Dimensions		180 x 184 x 60 mm	
Connector	See options	See options	See options
Environmental			
Operating Temperature	-5 to 70 C	-5 to 70 C	-5 to 70 C
Storage Temperature	-40 to 85 C	-40 to 85 C	-40 to 85 C
Computer Control			
Visual Basic Graphical User Interface Software		Included	
PCMCIA Cord and Cable		Included	
Compatible Software	Windows® 98, Windows® 2000, Windows® XP, Windows® NT		
Wavelength Calibration Table		Included	
Options			
Laptop		Factory configured	

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