# Chameleon Thin Film Tunable Filter | CTF-TF


## 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 Tunable Filters allow 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 Chameleon Thin Film Tunable Filter (CTF-TF) is an optical component capable of tuning and dropping a designated wavelength in the C or L-Band. Unlike other tunable filter technologies, Micron Optics Chameleon Thin Film Tunable Filters exhibit flat-topped bandpasses, allowing the selection of a channel without distorting the signal or degrading the bit error rate.

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# CTF-TF | Chameleon Thin Film Tunable Filter

*Figure 1*

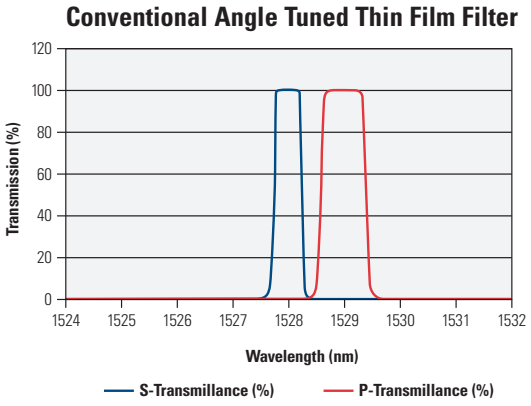
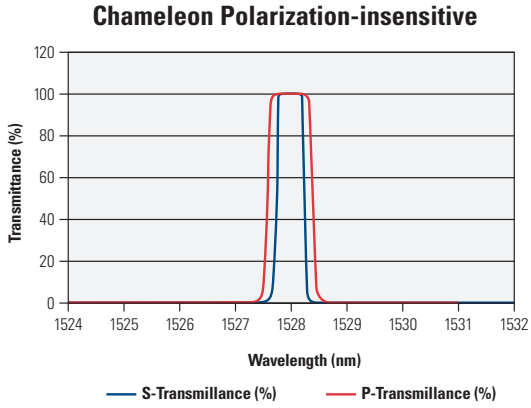



*Figure 2*




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.

Engineering demo version available for 3-port device.

## Part Number

CTF-TF λλλλ-bbb

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

**Channel Spacing**
- 50 GHz
- 100 GHz
- 200 GHz

## Options

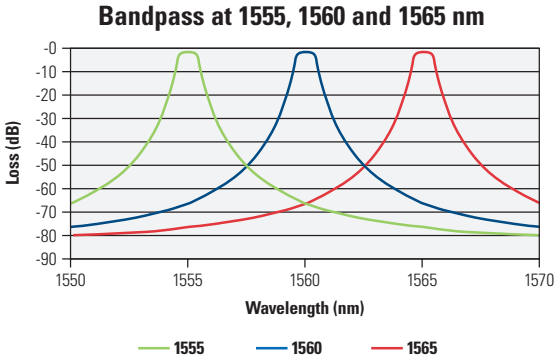
060 FC/SPC Connectors

061 FC/APC Connectors

062 SC/SPC Connectors

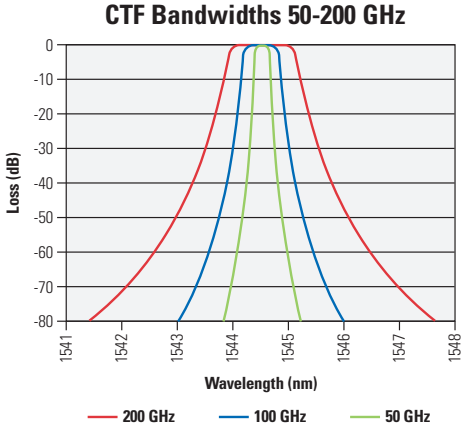
063 SC/APC Connectors

*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*




C components

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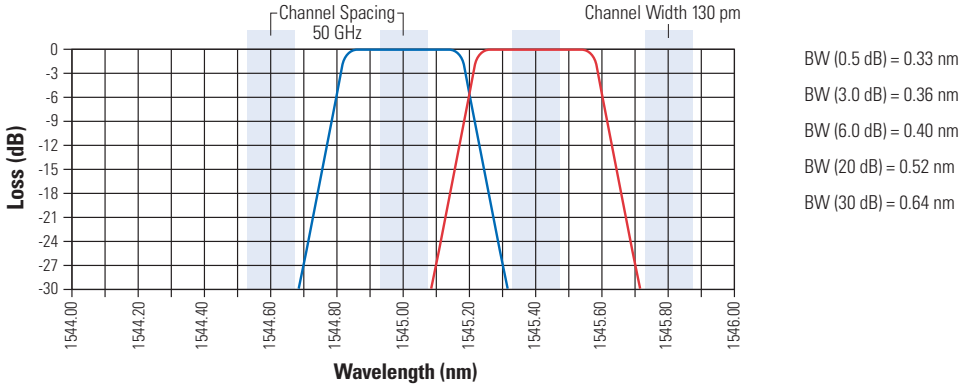
C components

*Figure 5*

**Bandwidth of 50 GHz CTF-TF**




## Specifications

| | 50 GHz | 100 GHz | 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 | 900 ps/nm$^2$ | 200 ps/nm$^2$ | 400 ps/nm$^2$ |
| **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** | | | |
| Power Consumption (when tuning) | Depends on actuator type/speed | | |
| **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 |
| **Mechanical** | | | |
| Dimensions | 58.1 x 47.2 x 13.5 mm | 58.1 x 47.2 x 13.5 mm | 58.1 x 47.2 x 13.5 mm |
| Weight | 56 g | 56 g | 56 g |
| Pigtail Jacket - loose | 900 um buffer tubing | 900 um buffer tubing | 900 um buffer tubing |
| Pigtail Length | > 1 m | > 1 m | > 1 m |
| Connector | See options | See options | See options |

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