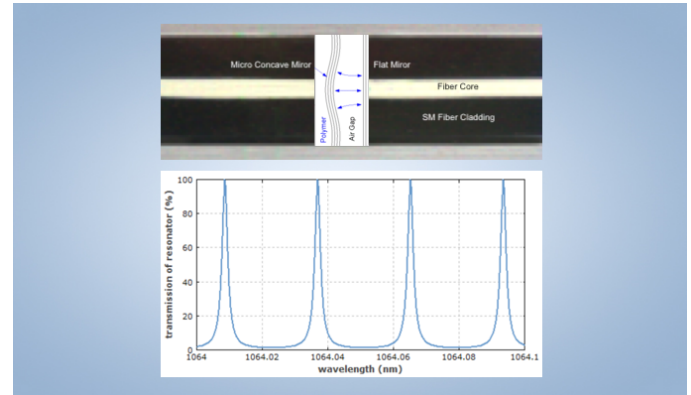


## Description

The TFP50 is an ultra high-speed optical tunable filter consisting of a micro concave polycarbonate lens that forms a Fabry-Perot cavity without guiding optics or optical collimation, yielding a robust and vibration-resistant filter.

The TFP50 is encapsulated in a temperature tuned package and is terminated with single-mode (SM) fiber for easily interfacing to optical instruments or to other optical components.

Widely used in optical test and monitoring instruments, the TFP50 is an enabling technology for fiber swept laser sources and for optical coherence tomography. It is also a practical device for various optical research and development programs.



## Key Features

**Ultra high-speed scan rate.** Because of its simple, innovative, and reliable construction, the TFP50 can be used in continuous scanning mode at up to 40kHz.

**Temperature tuned encapsulation.** The filter packaging is designed to minimize the effects of the external environment, hence facilitating a practical component to be used in commercial grade optical circuits and for numerous research and development applications.

**Wide tuning range.** For applications needing to scan up to 160nm with a single simple to control device.

**Small form factor.** Measuring at 4.6x1.8x1cm, the TFP50 can be easily integrated in most optical circuits for test and measurement applications.

**Simple design.** With no optical collimating elements and no bulk optics for signal guidance, the TFP50 is a simple and reliable tunable Fabry-Perot filter.

**Field Proven.** The TFP50 Ultra High-Speed Fabry-Perot Tunable Filters have been in production for several years and continue to receive excellent customer feedback. The filters are currently designed into products and applications of companies both large and small and are often found in optical laboratories worldwide. With hundreds of devices in the field, the TFP50 are well suited for applications where their specifications meet the requirements of the customers' applications. The filters can be used as a stand alone component, or can be used in tandem with Wavelength Calibration References such as our TWR10 HCN and TWR20 C2H2 Gas Cells, TWR30 Athermal Fabry-Perot Etalons, or our TWR50 family of Athermal Fiber Bragg Gratings.

Parameter	Specifications
Standard Operation Nominal Wavelength / Finesse / FSR	1050nm / 600 / 100nm 1310nm / 900 / 130nm 1550nm / 600 / 120nm
Wavelength Range / Insertion Loss	1050nm / < 4.0dB 1310nm / < 3.5dB 1550nm / < 3.0dB
Side Band Rejection	<23dB
Scan Frequency	0 (DC) to 40kHz
Max Input Power	50mW/nm @ 1050nm 80mW/nm @ 1310nm 100mW/nm @ 1550nm
Capacitance	0.4μF
Tuning Voltage @ DC	13V/FSR @ 1050nm 16V/FSR @ 1310nm 19V/FSR @ 1550nm
Tuning Voltage Range	-20V to +50V
Device Dimensions (LxWxH) 4x #2-56 Mounting Taps	45.7x17.8x10.16mm 13.72x41.91mm Center
Fiber, Termination	SMF28e, 0.5m both ends
Fiber Bend Radius	>17mm
Optical Connectors	Spliced FC/UPC Std. Optional Direct Termination with FC/UPC, FC/APC, LC/APC, SC/APC, ST/APC

## Applications in Communications, Test and Measurement Instruments, and Research

Technica undertakes a rigorous development process before products release. The company is also firmly committed to continuous improvements after release to insure performance to the highest standards, hence, specifications are subject to update without notice.

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