

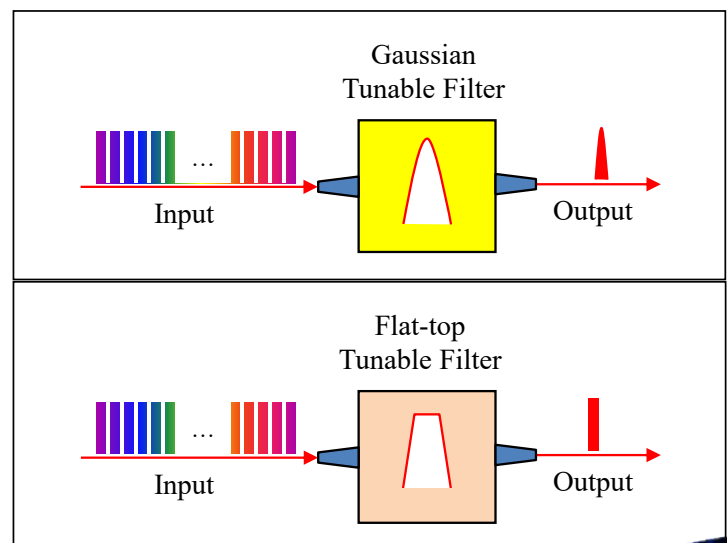
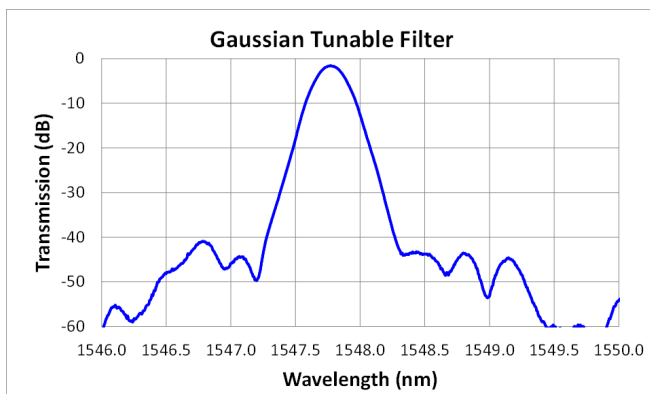
Tunable Optical Filters



GouMax's TOF-400 is the 4-in-1 high-speed tunable optical filter array, which consists of 4 single-channel tunable optical filters. There are 4 input ports and 4 output ports. Each tunable optical filter is an independent single channel module with two fiber ports, the input port receives the light of wideband multiple wavelengths, and only a desired portion of incident signal within passband is allowed to pass through the filter and is directed to the output port. The central wavelength of the selected band can be tuned to any position within the operation wavelength range. Without the moving parts, the voltage-controlled filter has fast tuning speed, and features billions of cycles, and small form factor.

This datasheet describes and defines GouMax's 4-channel tunable optical filter array with Gaussian pass-band profile. TOF-1400 supports wavelength range $\lambda_c \pm 22.5$ nm.

The TOF-400 is used as a wavelength scanning engine for an optical spectrum analyzer (OSA), ASE suppression filter to enhance the laser's signal-noise ratio (SNR), and system diagnosis in the optical communication system.



4-Channel (4-in-1) Tunable Optical Filter Array

Key Features

- High-speed wavelength tuning
- Wide operation wavelength range
- Flat-top/Gaussian filter shapes
- No moving parts
- > 1 billion cycles

Key Applications

- Engine for optical spectrum analyzer
- ASE noise suppression
- Optical channel diagnosis
- Test and measurement instrument
- Channel selection of wavelength locker

TOF-400 Specifications and Key Parameters

Parameter	Unit	Specification	Note
Wavelength Tuning Range	nm	1525 ~ 1570	For all 4 channels
Passband Width @ -1.0 dB	GHz	≥ 15	Typical 16.5 GHz
Passband Width @ -3.0 dB	GHz	≥ 27	Typical 30 GHz
Passband Width @ -20 dB	GHz	≤ 96	
Peak Insertion Loss	dB	< 4.5	Without connectors
Polarization Dependent Loss	dB	< 0.3	At CW
Non-Adjacent Isolation	dB	≥ 25	
Chromatic Dispersion	ps/nm	< ±10	Within CW ±5 GHz
Polarization Mode Dispersion	ps	< 0.1	
Wavelength Tuning Resolution	GHz	< 1.5	
Wavelength Setting Error	GHz	< ±4	
Wavelength Setting Repeatability	GHz	±1	
Wavelength Temperature Dependence	pm/°C	< ±1	
Return Loss	dB	> 40	
Maximum Input Optical Power	mW	300	
Tuning Speed	s	< 0.5	Channel to channel

More information:

- 1) Specification is for a single channel (2-ports).
- 2) Flat-top and Gaussian filter shapes are available.
- 3) Single band version: O/E/S/C/L-band, 850 nm and 1064 nm bands.
- 4) Dual band version: O+E-band, C+L-band.
- 5) Full band: 1250~1650 nm, or customized.
- 6) Single channel unit, and 2-in-1/4-in-1 tunable filter array