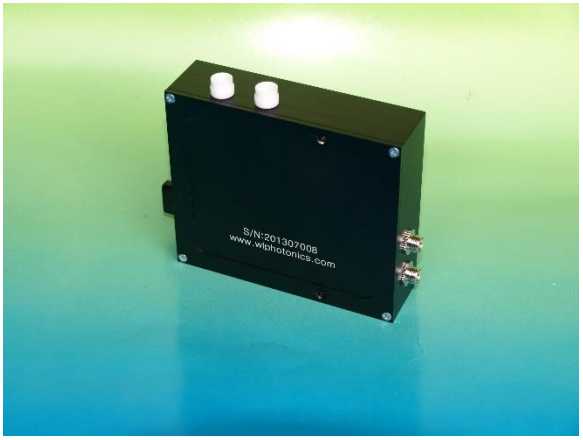
WLTF-BE Electrically Bandpass Tunable Filter

The WLTF-BE is a bandpass tunable filter that allows electrical-tuning of passband edge while blocking the complementary band on the same time over X, O, S, C, & L bands, The filter is built based on WL Photonics' proprietary platform of "Crystal-Bench" with free-space diffraction grating. Electrically tuning of band edge is actuated by a built-in micro motor connected to a PC through a USB interface. The actuation is monitored by a built-in encoder and controlled dynamically in a closed-loop. The control software of the motor is provided.

Unique optics design enables the filter to offer a great variation of operation band options, unprecedented & unsuppressed low insertion loss and polarization dependent loss (PDL) over main wavelength bands from 1000nm to 1700nm. Precise tuning mechanism enables filter to provide high wavelength resolution and excellent wavelength repeatability. Company proprietary compact design and manufacturing process allow the filter to maintain excellent stability. The fast setup enables the filter of being an affordable OEM wavelength-tuning solution for system integrations.



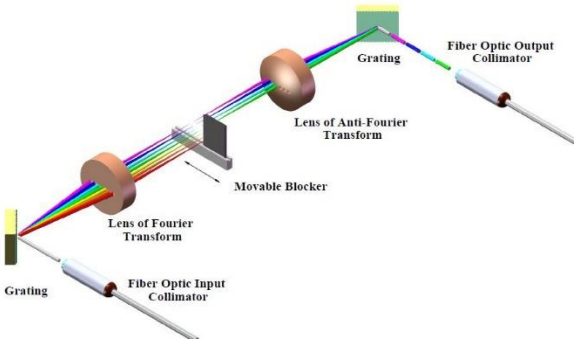
Standard Version (pigtail and receptacle)

Key Features

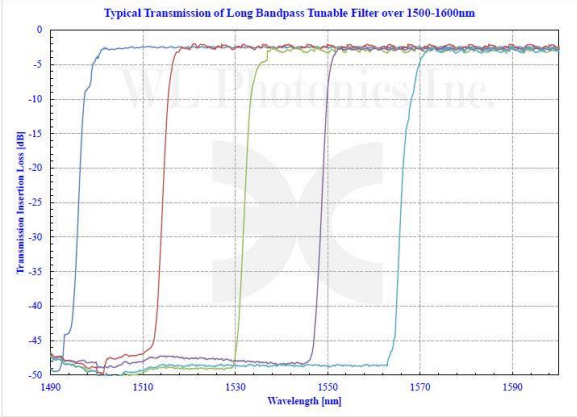
- Wavelength range available over X-, O-, S-, C- and L- bands
- Up to 200nm wavelength tuning range
- Long-pass or short-pass available
- High out-band suppression
- High optical power handling

Applications

- ASE noise suppression
- Wideband WDM channel filtering
- Pulse Shaping
- Signal filtering



Operating Principle and Tuning Mechanism



Typical Transmission of Bandpass Filter

Main Specifications of Bandpass Tunable Filter:

Center Wavelength	1060nm		1310nm		1550nm		1600	
Tuning Range	80nm		100nm		110nm		120nm	
Insertion Loss of Passband	2.0dB typ.	3.0dB max.	2.0dB typ.	3.0dB max.	2.0dB typ.	3.0dB max.	2.0dB typ.	3.0dB max.
Blocking isolation	>40dB		>40dB		>40dB		>40dB	
Edge Wavelength Resolution	0.01nm		0.015nm		0.02nm		0.02nm	
Edge Wavelength Repeatability	±0.01nm		±0.015nm		±0.02nm		±0.02nm	
Max. Tuning Speed	80nm/Sec.		90nm/Sec.		100nm/Sec.		100nm/Sec.	
Polarization-Dependent Loss	0.08dB typ./0.15dB max. over 60nm range and 0.15dB typ./0.30dB max. over 120nm range							
Flatness of passband	0.5dB							
Filter Slope Roll-off	20dB/nm							
Input Optical Power[1]	500mW (CW)							
Return Loss	>45dB (Optional: built-in isolator on input inside)							
Polarization Mode Dispersion	<0.2ps							
Group Delay Variation Within -3dB Bandwidth	<1ps/nm							
Pigtail Fiber Type[2]	HI1060		SMF-28 (or 28e)					
Electric Interface	USB 2.0 (standard version), or I²C, SPI (optional)							
Electric Power Consumption	<0.5W							
Operating Temperature	10 to 50°C							
Storage Temperature	-10 to 75°C							
Dimension	Standard version:30mm (H)x95mm (W)x110mm (L)							
Weight	<0.5kg							
Other	RoHS compliant							
Notes	[1] High power version up to 3.0W (CW) is available on request. [2] Panda PM fiber available on request, which are aligned in the PM slow axes (fast-axis blocking).							

Ordering Information

Part Number: **WLTF-BE-13-A-B/C-D-E/F-G**

A. L is for long-pass band filter and S is for short-pass band filter.
B. Center wavelength in nanometer: 1550 is for 1550nm band, 1310 is for 1310nm band.
C. Fiber type: SM is for single mode fiber and PM is for polarization maintaining fiber.
D. Pigtail cable diameter in millimeter: 0.25 is for 250μm OD buffer fiber, 0.9 is for 900μm OD loose tube and 3.0 is for 3.0mm OD cable (only existing for pigtail version).
E. Pigtail length in meter: 0.5 is for 0.5m long and 1.0 is for 1M long (only existing for pigtail version).
F. Connector type of either pigtail termination or receptacle adapter, such as FC/APC, FC/UPC SC/APC or LU/UPC and 00 is for no connector.

Example 1: **WLTF-BE-13-L-1550-SM-3.0/1.0-FC/APC**

Description: Fiber pigtail polarization-insensitive electrically long-pass band tunable filter @ 1550nm band with 1M long, 3.0mm OD loose cabled SMF-28 single mode fiber pigtails and FC/APC connectors on both ports and USB interface.

Example 2: **WLTF-BE-13-S-1310-SM-FC/APC**

Description: Fiber optic polarization-insensitive electrically short-pass band tunable optical filter @ 1310nm band with receptacle input and output for FC/APC connectors. SMF-28 operating fiber and USB interface.

Address: 80 Aberdeen St., Suite 100, Ottawa, Ontario, Canada, K1S 5R5. P: +1 613-801-1825, F: +1 613 291 9232

Dimensions of WLTF-BE-13 (Standard Version)