



WLTF-BA Manual Bandwidth-Adjustable Tunable Filter

The WLTF-BA is a bandwidth-adjustable optical tunable filter that allows manual-tuning of both the center wavelength of pass band and bandwidth independently over X, O, S, C, & L bands. Its bandwidth can be adjusted from 1.5nm to several tens nm and center wavelength can be tuned over up to 120nm range. The filter is built based on WL Photonics' proprietary platform of "Crystal-Bench" with free-space diffraction grating. Manually center wavelength/bandwidth tuning is done through a precise micrometer driver. Due to the optimized linear dispersion with the filter, the center wavelength and bandwidth of transmission band can be read easily from the micrometer.

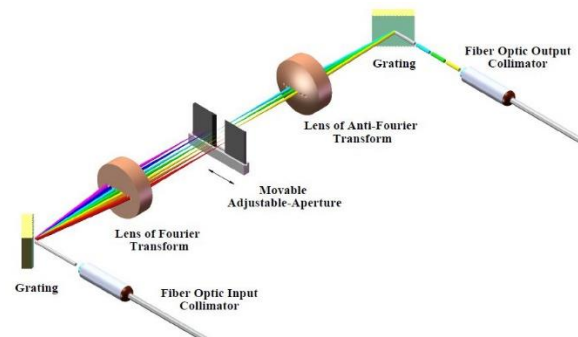
Unique optics design enables the filter to offer a great variation of bandwidth options, unprecedented & unsuppressed low insertion loss and polarization dependent loss (PDL) over main wavelength bands from 1000nm to 1700nm. Precise tuning mechanism enables filter to provide high wavelength resolution and excellent wavelength repeatability. Superior performance and compact footprint enable the filter to be an affordable wavelength-tuning solution for system integrations as well as laboratory purposes.

Key Features

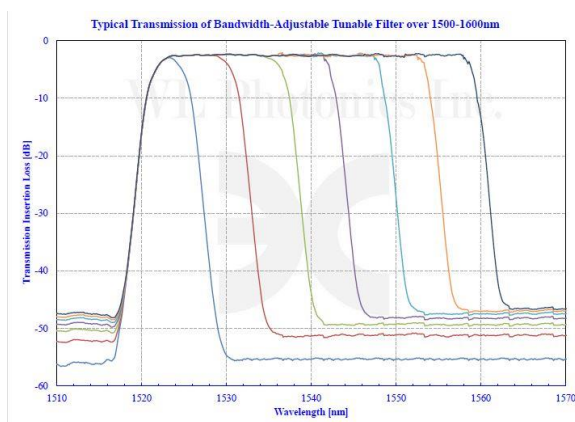
- Wavelength range available over X-, O-, S-, C- and L- bands
- Up to 200nm wavelength tuning range
- 1.5nm to several tens nm bandwidth
- High out-band suppression
- High optical power handling
-

Applications

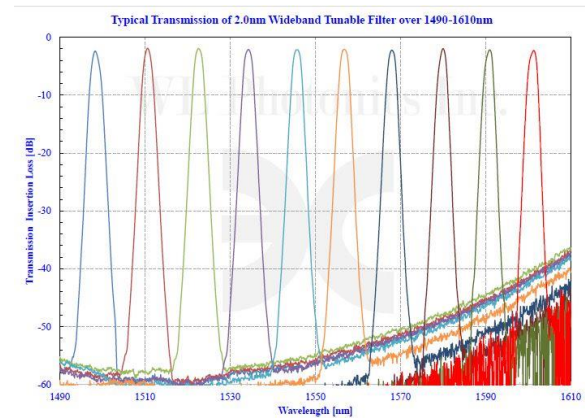
- ASE noise suppression
- Wideband WDM channel filtering
- Pulse Shaping
- Signal filtering



Operating Principle and Tuning Mechanism



Bandwidth Adjustment



Center Wavelength Tuning



Main Specifications of Bandwidth-Adjustable Optical Tunable Filter:

Center Wavelength	1060nm		1310nm		1550nm		1600	
Tuning Range	80nm-BW		100nm-BW		120nm-BW		120nm-BW	
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.
Bandwidth (BW)	0.6nm to 30nm		1.0nm to 35nm		1.5nm to 40nm		1.8nm to 40nm	
Blocking isolation	>40dB		>40dB		>40dB		>40dB	
Wavelength Resolution	0.01nm		0.015nm		0.02nm		0.02nm	
Wavelength Repeatability	±0.01nm		±0.015nm		±0.02nm		±0.02nm	
Polarization-Dependent Loss	0.08dB typ./0.15dB max. over 60nm range and 0.15dB typ./0.30dB max. over 120nm range							
Transmission Shape	Flat top							
Flatness of passband	0.5dB typical							
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)			
Operating Temperature	10 to 50°C							
Storage Temperature	-10 to 75°C							
Dimension	36mm (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-BA-13-A-B-C-D-E/F-G**

- A. Center wavelength in nanometer: **1550** is for 1550nm center wavelength and **1310** is for 1310nm center wavelength.
- B. Tuning wavelength range in nanometer: **80** is for 80nm tuning range and **100** is for 100nm tuning wavelength range.
- C. Fiber type: **SM** for single mode fiber and **PM** 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-BA-13-1550-120-SM-3.0/1.0-FC/APC**

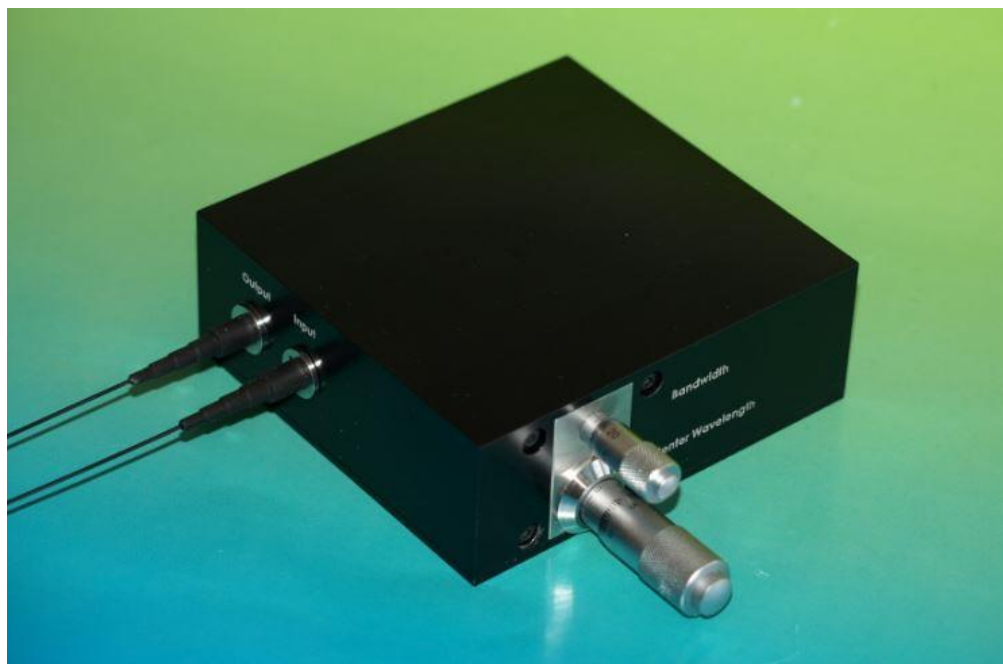
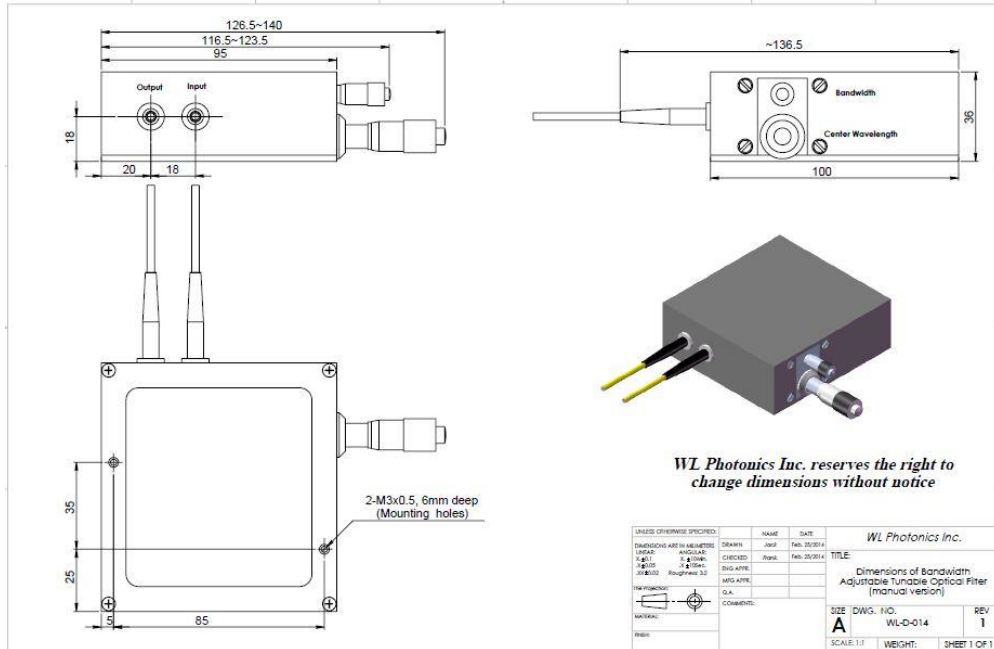
Description: Fiber pigtail polarization-insensitive manually Bandwidth tunable optical filter over 120nm tuning range @ 1550nm center wavelength with 1M long, 3.0mm OD loose cabled SMF-28 single mode fiber pigtails and FC/APC connectors on both ports.

Example 2: **WLTF-BA-13-1310-60-SM-FC/APC**



Description: Fiber optic polarization-insensitive manually bandwidth-adjustable tunable optical filter over 60nm tuning range @ 1310nm center wavelength with receptacle input and output for FC/APC connectors. SMF-28 operating fiber.

Dimensions of WLTF-BA-13 (Standard Version)



Standard Version (pigtail and receptacle)