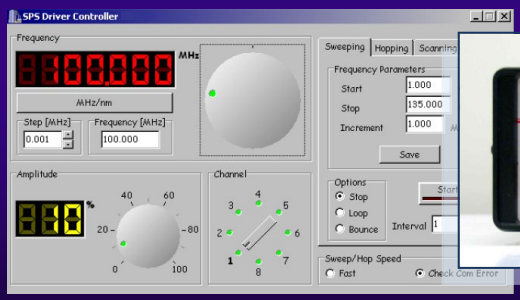
brimrose

ROBUST . RELIABLE . ACCURATE

Fiber-coupled
Dynamic Tunable Bandpass Filter



AOTF - Our Legacy!

KEY FEATURES

- Compact Size
- No O-rings
- Low Insertion Loss
- Low Power Consumption
- Narrow Bandwidths
- Excellent Tuning Resolution
- Hermetically Sealed
- Broad Tuning Range
- SM, SM/PM, MM Fiber Coupling Options
- Custom Configurations Available
- **Ideal for Real-Time NIR**

APPLICATIONS

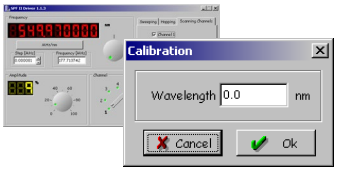
- Dense WDM Transmission Systems
- Laboratory Test and Measurement Systems
  – tuning the center wavelength of broadband sources (white light sources or LEDs)
- Other OEM Applications

Dynamic Tunable Bandpass Filters

The Dynamic Tunable Bandpass Filter adjusts the center wavelength of a narrow band of light over a 100 - 200nm range. It offers very high resolution of ~1.5nm and either single or simultaneous multiple wavelength selection. It is able to precisely and rapidly adjust the wavelength and intensity of the diffracted/filtered light by varying the frequency (see graph) and RF power.

Brimrose offers both free-space and fiber-coupled configurations. AOTFs are used widely in numerous optical systems and applications, especially in industrial or process control near-infrared (NIR) spectroscopy applications.

SPS/SPF II Model AOTF Controller System



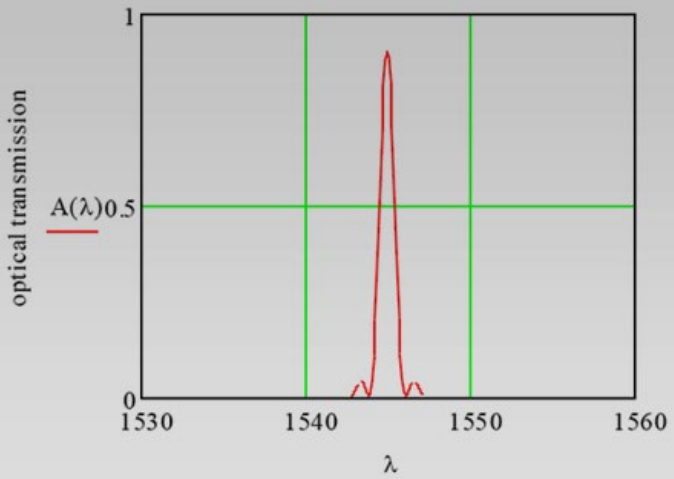
Brimrose offers **AOTF RF drivers** compatible with our AOTF devices. Our AOTF drivers include SPF II drivers, which can control up to four RF output channels, and SPS drivers, which can control up to eight RF output channels. Changing the RF level will vary the intensity of the light being diffracted/filtered.

Brimrose Corporation of America

19 Loveton Cir. Hunt Valley Loveton Center . Sparks, MD. 21152

Phone: +1 410 472-7070 . Fax: +1 410 472-7960 . E-Mail: office@brimrose.com . Web: **www.brimrose.com**

Fiber-coupled Dynamic Tunable Filters Specification



The Brimrose dynamic tunable bandpass filters are commonly used to dynamically select among different wavelength channels at the receiver end of dense WDM transmission systems.

Other applications include tuning the center wavelength of broadband sources (such as white light sources or LEDs) in laboratory test and measurement systems.

A typical band-pass shape of the selected light by AOTF filter is shown in the diagram at left.

Mode #	Wavelength Range (nm)	Spectral Resolution (nm)	RF Frequency (MHz)	Insertion Loss (dB)
TEAF-0.40-0.60-2FP	400 - 600	1 - 5	59 - 100	3 - 5
TEAF-0.45-0.7-S-2FP	450 - 700	3 - 9	100 - 180	3 - 5
TEAF-0.9-1.2-UH-2FP	900 - 1200	1	130 - 160	4 - 5
TEAF-1.2-1.7-UH/EH-2FP	1200 - 1700	1.0 - 2.5	80 - 120	~ 5
TEAF-1.5-1.65-UH/EH-2FP	1500 - 1650	1.5 - 2.5	80 - 100	~ 5
TEAF-1.1-2.1-S-2FP	1100 - 2100	4.0 - 15.0	50 - 100	5 - 7

Brimrose offers the fiber coupling options for our all-standard, Fiber-coupled, Acousto-Optic Tunable Filters.

Fiber Type:

- Single-Mode (SM) fiber
- Single-Mode Polarization Maintaining (SM/PM) fiber
- Multimode (MM) fiber

Other fiber types are available on request.

Fiber Connectors: FC, SC, LC, SMA, etc.

Other fiber connectors are available on request.

Options: S – Standard Resolution
H – High Resolution
EH – Extra-high Resolution
UH – Ultra-high Resolution

Other wavelengths are available upon request.

For more information, please check the Brimrose website or contact us at office@brimrose.com.

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SPS/SPF Model AO Controller Specification

The SP Model AO Controllers are high performance RF frequency synthesizers incorporated into a self-contained case with AC power supply. A modular cable with a DB9 connector interface allows frequency control via the Personal Computer USB port (Serial RS232 optional). Using simple commands with any terminal (modem) program (such as ProComm) allows the user to set any frequency from the computer keyboard. In addition, included with the unit is a frequency control program that can be used with any IBM PC computer.

Driver Model #	VFI-XX-YY-SPS-A-C3	VFI-XX-YY-SPF-A-C3
Frequency Range	Matching the AOTF requirements.	
Frequency Step Size	4 Hz	10 Hz
Frequency Stability	0.010% absolute (100 PPM); +15°C to +75°C	0.015%; +15°C to +75°C
Frequency Switching Speed	15 ms typ. (from f_{min} to f_{max})	8 ns
Minimum Duration of Each Step	N/A	32 ns for sweeping mode 1 ms for hopping mode (for <300 hops) 15 ms for hopping mode (>300 hops)
Power Output	Optimized for maximum performance of the AOTF device.	
Power Control	N/A	12 bit attenuator with 25 dB range (min.)
Modulation	None (TTL or Analog Optional)	
Enclosure	The unit will be packaged in a 190 mm (7.5 inch) wide by 90 mm (3.5 inch) high by 220 mm (8.75 inch) deep instrument case. The rear panel heat sink increases the depth to 270 mm (10.5 inches) maximum. The size is exclusive of connectors. A detachable AC line cord and RF cable are provided.	
Environmental	Nominal Laboratory conditions: The maximum ambient temperature is +35° C. The unit is not sealed against moisture or condensing humidity.	
Output Impedance	50 ohms	
Output Connectors	SMA jack on front panel	

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