

## Fiber-coupled Acousto-Optic Modulators



### KEY FEATURES

- Compact Size
- Rugged Design
- Low Insertion Loss
- Fast Switching Speed
- Hermetically Sealed
- Low RF Drive Power
- Stable Performance
- Custom Configurations Available

### APPLICATIONS

- TTL/Digital Amplitude Modulation
- Analog Amplitude Modulation
- Fast Attenuator
- Gain Tilt Control
- EDFA Power Control
- Loop-back Switch
- Telecommunications
- Fiber Sensing
- Pulse Picking, Q-Switching
- Spectroscopy
- Fiber Lasers
- OEM Designs

### Fiber-coupled Acousto-Optic Modulators

Brimrose all fiber optic, electronically controllable modulators allow the user to vary the output light amplitude, time duration, and periodicity/frequency. Insertion Loss can be as low as 2 dB, Extinction Ratio can be as high as -50 dB, rise times can be down to 5 nsec, periodicity can be up to several hundred MHz. Applications include switching, pulse picking, fast attenuator, etc. Wavelengths can range from near UV to near IR.

A specialized application of modulators is the Programmable Attenuator. Attenuators are a key element in the design of fiber optic transmission systems. Attenuators are used to match the optical power level to the dynamic range of receivers, adjust the input and output levels in EDFAs, equalize the power between different DWDM channels and test the general performance of systems under varying optical power conditions.

Our fiber-coupled AO products are housed in environmentally stable packages, which offer superior resistance to humidity and temperature, and are suitable for laboratory as well as various OEM applications and instrumentation.

Brimrose offers a large variety of **RF drivers** compatible with our AO Modulators. A typical AO RF driver consists of an RF oscillator, amplitude modulation scheme and RF amplifier. Changing the RF power level will vary the intensity of the transmitted light.



**Brimrose Corporation of America**



## Fiber-coupled Acousto-Optic Modulator Specifications

### Typical Specifications

<b>ON/OFF Extinction (dB)</b>	> 50
<b>Back Reflection (dB)</b>	< -50
<b>Insertion Loss (dB)</b>	< 2.5
<b>Wavelengths (nm)</b>	380-2100
<b>Low Electric Power Consumption (dBm)</b>	< 23
<b>Operating Wavelength Range (nm)</b>	± 25

<b>Model #</b>	<b>Wavelength (nm)</b>	<b>Center Frequency (MHz)</b>	<b>Rise Time (ns)</b>	<b>Modulation Bandwidth (MHz)</b>	<b>Fiber Type</b>
<b>TEM-110-10-55-2FP</b>	380-1600	110	55	10	SM or SMPM
<b>TEM-200-25-20-2FP</b>	380-1600	200	20	25	
<b>TEM-250-50-10-2FP</b>	380-1600	250	10	50	
<b>TEM-500-100-5-2FP</b>	380-1600	500	5	100	
<b>IPM-200-25-20-2FP</b>	1000-2100	200	20	25	
<b>IPM-500-100-5-2FP</b>	1000-2100	500	5	100	
<b>AMM-55-8-70-2FP</b>	1000-2500	55	70	8	
<b>AMM-100-20-25-2FP</b>	1000-2500	100	25	20	

The 3-port, fiber-coupled version is available, as well.

**The Fiber-coupled AOM models shown above represent some examples of our fabrication capabilities. In addition, other wavelengths, frequencies or configurations are available.**

For more information, please check the Brimrose website or contact us at [office@brimrose.com](mailto:office@brimrose.com).



## Fixed Frequency Driver Specifications

Driver Model #	FFA-XX-B1-FY	FFA-XX-B2-FY
<b>Frequency (MHz)</b>	XX MHz (compatible with the AO Device)	
<b>Frequency Control</b>	Quartz crystal referenced phase locked loop	
<b>Frequency Accuracy (%)</b>	0.015	
<b>Harmonic Content (dBc)</b>	≤ - 20	
<b>Frequency Stability</b>	0.0015% minimum after 15 minute warm-up	
<b>Output Power</b>	Power is optimized for peak efficiency with supplied AO device.	
<b>Output Protection</b>	Power amplifiers used will tolerate an infinite V.S.W.R. without damage. Rated power is available only when a proper RF load is connected.	
<b>Rise/Fall Time</b>	To match AO Modulator requirements	
<b>Modulation Type</b>	Analog amplitude modulation	TTL compatible
<b>Modulation Rate</b>	To match AO Modulator requirements	
<b>Modulation Input</b>	50 Ω; 0-1 V	330 Ω; 0-5 V
<b>Operating Power</b>	90-240 VAC, 50-60 Hz, 55 watts max.	
<b>Enclosure</b>	The unit will be packaged in a 190 mm (7.5 inch) wide by 100 mm (4 inch) high by 220 mm (8.75 inch) deep instrument case. The rear panel heat sink increases the depth to 240 mm (9.75 inches) maximum. The size is exclusive of connectors. A detachable AC line cord and RF cable are provided.	
<b>Environmental</b>	Nominal Laboratory Conditions: The maximum temperature is +35° C. The unit is not sealed against moisture or condensing humidity.	

OEM packaging is also available.

In addition to the standard product shown, customer configurations are available for specialized applications.

If there are any questions please contact Brimrose at [office@brimrose.com](mailto:office@brimrose.com).

