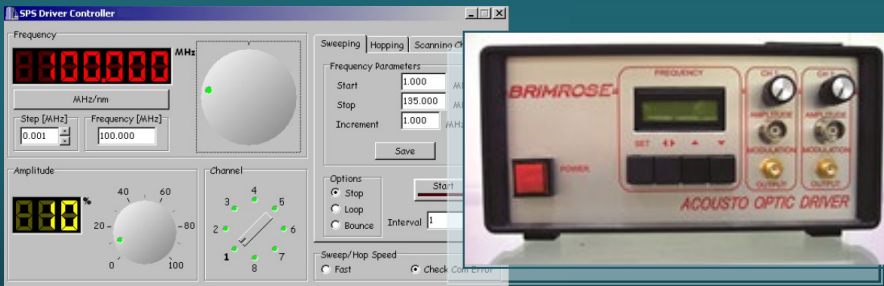
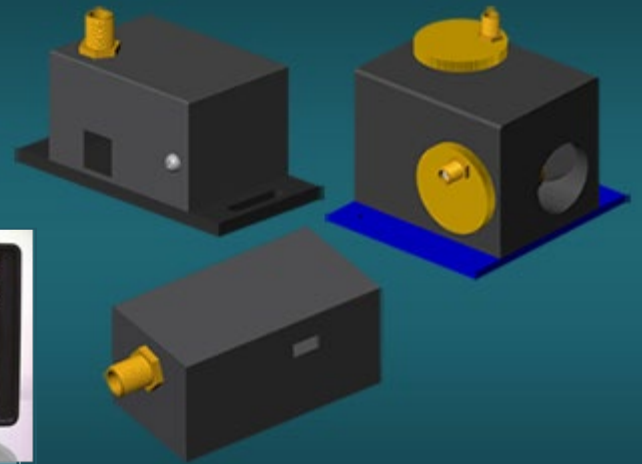


## Acousto-Optic Deflectors



### KEY FEATURES

- 1-D and 2-D Deflection Systems
- Compact Integrated Design
- Wide Spectral Wavelength Range
- Uniform Scan Intensity
- Low Power Consumption
- Linear Polarization
- Fast Switching Speed
- High Resolution and Bandwidth
- High Throughput
- Custom Configurations Available

### REAL-TIME APPLICATIONS

- Photolithography
- Continuous Laser Beam Deflection
- Vector (Random) Scanning
- Signal Processing
- Graphic and Laser Printing
- Optical Inspection and Digital Imaging
- OEM Designs

### Acousto-Optic Deflectors

Brimrose Acousto-Optic Deflectors (AODs) combined with RF drivers are specially designed for high-speed scanning applications such as laser recording, optical scanning, signal processing, etc.



The AOD changes the diffraction angle of an input laser beam and its angular position is linearly proportional to the RF frequency, so that the higher the frequency, the larger the diffracted angle.

Brimrose offers a large variety of variable frequency **RF drivers** compatible with our deflectors. The most commonly used are VCO (Voltage Controlled Oscillator) type and computer-controlled direct digital synthesizers. By altering the RF drive frequency to the AOD, the deflection angle is varied.



**Brimrose Corporation of America**

## Acousto-Optic Deflector Specifications

Model #	Wavelength Range (nm)	Active Aperture (mm)	Time-Bandwidth Product	3dB Bandwidth (MHz)	Deflection Angle (deg.)	Diffraction Efficiency (%)
<b>TED-130-60</b>	380-1600	1.0 x 4.2	60	60	0.44	70
<b>TED-200-100</b>	380-1600	1.0 x 4.2	100	100	0.8	70
<b>TED-320-200</b>	380-1600	0.5 x 9.0	400	200	1.69	60
<b>TED-400-200</b>	380-1600	0.5 x 5.0	200	200	1.69	50
<b>TED10-100-60-.488</b>	488	3.0 x 7.0	600	60	2.5	>75
<b>TED20-100-60-.488</b>	488	3.0 x 14.0	1200	60	2.5	>70
<b>TED10-100-50-.532</b>	532	3.0 x 7.0	500	50	3.0	>70
<b>TED20-100-50-.532</b>	532	3.0 x 14.0	1000	50	3.0	>70
<b>TED10-75-50-.633</b>	633	3.0 x 7.0	500	50	3.0	>75
<b>TED20-75-50-.633</b>	633	3.0 x 14.0	1000	50	3.0	>70
<b>TED10-60-40-.800</b>	800	3.0 x 7.0	400	40	2.0	>70
<b>TED20-60-40-.800</b>	800	3.0 x 14.0	800	40	2.0	>65
<b>TED10-50-30-1.06</b>	1060	3.0 x 7.0	300	30	2.7	>75
<b>TED20-50-30-1.06</b>	1060	3.0 x 14.0	600	30	2.7	>70
<b>GPD-250-100</b>	633	0.75 x 5.0	70	100	0.57	70
<b>GPD2-250-100</b>	633	0.75 x 13.0	200	100	0.57	40
<b>GPD-350-200</b>	633	0.75 x 5.0	140	200	1.15	40
<b>GPD2-350-200</b>	633	0.75 x 13.0	400	200	1.15	35
<b>GPD-650-300</b>	633	0.18 x 5.0	210	300	2.25	40
<b>GPD-800-400-SC</b>	600-1600	0.18 x 4.2	400	400	4.3	30
<b>GPD2-800-400-SC</b>	600-1600	0.18 x 8.4	800	400	4.3	25
<b>GPD-800-500</b>	600-1600	0.076 x 5.0	350	500	2.9	50
<b>GPD-1500-1000</b>	600-1600	0.075 x 6.3	250	1000	5.7	15-20
<b>LND-2500-1000</b>	630/830	0.075 x 3.4	1000	1000	10 @630nm	10-15
<b>IPD-200-50</b>	1000-2100	0.75 x 6.0	50	50	0.65	40
<b>IPD-400-150</b>	1000-2100	0.75 x 6.0	150	150	1.95	35
<b>IPD-600-200</b>	1000-2100	0.18 x 6.0	200	200	2.6	30
<b>2DS-100-45-532 *</b>	532+/-25	10.0 x 10.0	675 x 675	45	2.3	>40

\* 2-Dimensional AO Deflector is also available in the 400nm to 1600nm optical range.

The models shown above represent some examples of our fabrication capabilities. In addition, other wavelengths (UV-IR), frequencies or configurations are available.

## Variable Frequency Driver Specifications

Driver Model #	VFB-XX-YY-V-A-F2	VFE-XX-YY-V-B1-F2/2Ch
<b>Frequency Range</b>	Corresponding to the AO Device Requirements	Matching the 2-D AOD controlled by application of external tuning voltage
<b>Tuning Voltage</b>	0 - 10 V analog (-2 to +20 VDC no damage)	
<b>Frequency Accuracy</b>	1% nominal after 15 minute warm-up, constant temperature	
<b>Scanning Speed</b>	50 micro sec from min to max frequency with step change in tuning voltage	
<b>Output Power</b>	Power is optimized for peak efficiency with supplied AO device.	
<b>Modulation Type</b>	Analog Amplitude or TTL Compatible (optional)	Analog Amplitude; DC-10 MHz independent for each channel
<b>Modulation Input</b>	50 $\Omega$ ; 0-1 V or 330 $\Omega$ ; 0-5 V	50 $\Omega$ ; 0-1 V
<b>Operating Power</b>	90-240 VAC $\pm$ 25% 50-60 Hz	
<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.	

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).