Gooch & Housego
ENABLING PHOTONIC TECHNOLOGIES

FREQUENCY SHIFTERS

Acousto-Optic Modulators

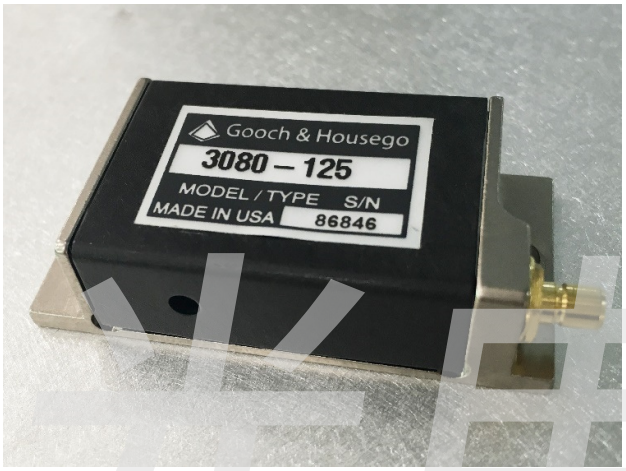
3080-125 | 3100-125 | 3200-125 | 3270-125 | 3315-125 | 3350-125

Gooch & Housego frequency shifters are tailored for use in applications requiring Doppler shifting of laser wavelengths.

Like other acousto-optic devices, an acousto-optic frequency shifter (AOFS) Doppler-shifts the frequency of input light by an amount equal to the RF driver frequency, but is optimized specifically for this purpose. Applications such as interference-based optical techniques require a high extinction ratio between the diffracted and undiffracted beam. This can be achieved with a high-quality optical finish to minimize scatter.

We offer standard products with frequency shifts of 40-350 MHz, many of which can be operated in double pass configurations. In addition we can design for custom frequency shifts where required. Frequency shifters are fabricated using high-quality TeO_2, grown and polished in-house, for lowest insertion loss and excellent power handling. Other acousto-optic materials are available and may be more appropriate for some applications.

TeO_2 based frequency shifters are highly efficient acousto-optic devices, requiring very low driver power to achieve the desired frequency shift. Our designs consume minimal power (generally <100 mW power draw), often allowing us to package the driver with the AOFS for a more compact and power-efficient solution.



Key Features

- Solid State Design
- Wide frequency bandwidth
- Good Temperature Stability
- Repeatable Performance
- Variety of Offerings

Key Benefits

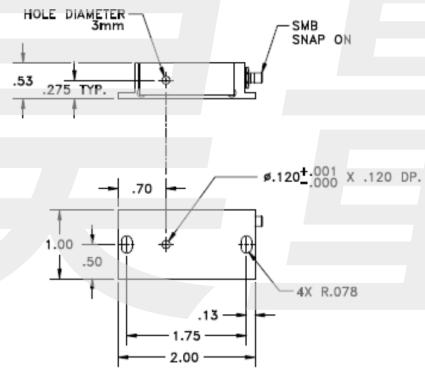
- Proven Reliability
- Consistent Performance
- Technical Support
- Test Documentation
- One Year Limited Warranty

Applications

- Laser Cooling
- Interferometry
- Laser Doppler Velocimetry/Vibrometry
- Optical Heterodyne Detection

UV Deflector Specifications	3080-125	3100-125	3200-125	3270-125	3315-125	3350-125
Optical Performance						
AO Medium	TeO2	TeO2	TeO2	TeO2	TeO2	TeO2
Acoustic Velocity	4.2 mm/µs	4.2 mm/µs	4.2 mm/µs	4.2 mm/µs	4.2 mm/µs	4.2 mm/µs
Wavelength	400-850 nm	400-850 nm	400-850 nm	400-850 nm	400-850 nm	400-850 nm
Insertion Loss	4 % Max	4 % Max	4 % Max	4 % Max	4 % Max	4 % Max
Center Frequency	80 MHz	100 MHz	200 MHz	270 MHz	315 MHz	350 MHz
RF Bandwidth	25 MHz	25 MHz	50 MHz	50 MHz	50 MHz	50 MHz
RF Power	.65 - 1.0 W	.4 - 1.1 W	.4 - 1.1 W	.4 - 1.1 W	.5 - 1.5 W	.5 - 1.5 W
Active Aperture	2.5 x 2 mm	2.5 x 1.5 mm	2.5 x 1.5 mm	2.5 x 1.5 mm	2.5 x 1.5 mm	2.5 x 1.5 mm
Diffraction Efficiency	90 %	85 %	85 %	85 %	85%	85%
Anti-Reflection Coating	MIL-C-48497	MIL-C-48497	MIL-C-48497	MIL-C-48497	MIL-C-48497	MIL-C-48497
Beam Diameter	1.5 mm	1 mm	1 mm	1 mm	1 mm	1 mm

Outline Drawing 3080-125



Outline Drawing 3100, 3200, 3270, 3315, 3350