

AOモジュレータ セレクションガイド




Modulators

AO Modulators for use External to a Laser Cavity

The Gooch & Housego's Acousto-Optic Modulators, companion drivers, and Bragg mount assemblies make up laboratory turnkey systems for performing basic experiments in intensity control, beam deflection, and frequency shifting. These products, also serve both OEM applications and individual users.

Spectral Range (nm)	Modulator Specification page. by Model	Image	Diffraction Eff. (%) @ nm Input Polarization (Referenced to base)	Active Aperture (mm)	Rise Time (nsec) @ mm dia.	Deflection Angle (mrad)	Optical Power Density/(cm ²) Ave /Pk	Interaction Material
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These Acousto-Optic Modulators are made from Crystal Quartz, Fused Silica, or KrF Grade Fused Silica. These AO Modulators are for use with high power Argon Ion lasers (up to 20 watts), Frequency doubled or tripled YAG, Ti:Sapphire, and DPSS. The useful spectral range for these materials are from 244nm to 1064nm.

244 to 260	35110-2-244-BR		>70 @ 488 Linear Perpendicular	2	20 @ .1	4.5 @ 244	50KW/50MW	KrF Grade Fused Silica Compressional
Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
300 to 400	I-M110-3C10BB-3-GH27		>85 @ 355 Linear Perpendicular	3	113 @ 1	6.8 @ 355	50KW/500MW	Crystal Quartz Compressional
Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
300 to 700	35210-BR	Image not available	>70 @ 488 Linear Perpendicular	0.13	20 @ .1	17 @ 488	50KW/50MW	Fused Silica Compressional
Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
300 to 700	35210-BR / 71004	Image not available	>70 @ 488 Linear Perpendicular	0.13	20 @ .1	17 @ 488	50KW/50MW	Fused Silica Compressional
Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
400 to 540	I-M110-2C10B6-3-GH26		>85% @ 532 Linear Perpendicular	2	113 @ 1	10.2 @ 532	50KW/500MW	Crystal Quartz Compressional




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This Acousto-Optic Modulator is made from flint glass. This AO material has a lower figure of merit than TeO₂, but its cost is significantly less. This Modulator is use in applications with bandwidths of less than 1 MHz and moderate power, light density. it is an inexpensive alternative to other materials.


Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
440 to 850	24080-1		>65 @ 633 Random	1	57 @ .30	14.4 @ 633	127W	SF6 Compressional


These High Speed Acousto-Optic Modulators are ideal for use in high speed shuttering applications or optical pulse generation. These Modulators use high efficiency, antireflection coated, TeO₂ or GaP crystals. An option available include AR coated, input / output coupling optics mounted in an integral precision alignment assembly,









Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
440 to 850	17440		>60 @ 633 Linear Perpendicular >50 @ 633 Random	0.09	4 @ .019	65 @ 633	35KW/50MW	TeO ₂ Compressional

Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
	17440-FOA		>60 @ 633 Linear Perpendicular >50 @ 633 Random	0.09	4 @ .019	65 @ 633	35KW/50MW	TeO ₂ Compressional







Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
440 to 850	17440-FOA / 71003	Image not available	>60 @ 633 Linear Perpendicular >50 @ 633 Random	0.09	4 @ .019	65 @ 633	35KW/50MW	TeO ₂ Compressional



Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
440 to 850	15260		>70 @ 633 Linear Perpendicular >70 @ 633 Random	0.2	20 @ .055	39 @ 633	35KW/50MW	TeO ₂ Compressional


Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
440 to 850	15260-FOA		>70 @ 633 Linear Perpendicular >70 @ 633 Random	0.2	20 @ .055	39 @ 633	35KW/50MW	TeO ₂ Compressional

Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
440 to 850	15260-FOA / 71002		>70 @ 633 Linear Perpendicular >70 @ 633 Random	0.2	20 @ .055	39 @ 633	35KW/50MW	TeO2 Compressional
440 to 850	15210		>70 @ 633 Linear Perpendicular >70 @ 633 Random	0.2	20 @ .055 10 @ .055	31 @ 633	35KW/50MW	TeO2 Compressional
440 to 850	15210-FOA		>70 @ 633 Linear Perpendicular >70 @ 633 Random	0.2	20 @ .055 10 @ .055	31 @ 633	35KW/50MW	TeO2 Compressional
440 to 850	15210-FOA / 71002		>70 @ 633 Linear Perpendicular >70 @ 633 Random	0.2	20 @ .055 10 @ .055	31 @ 633	35KW/50MW	TeO2 Compressional
700 to 1064	17389-.93		>70 @ 800 Linear Perpendicular >60 @ 800 Random	0.07	7 @ .035	73 @ 800	35KW/50MW	TeO2 Compressional
700 to 1064	17389-.93-FOA		>70 @ 800 Linear Perpendicular >60 @ 800 Random	0.07	7 @ .035	73 @ 800	35KW/50MW	TeO2 Compressional
700 to 1064	17389-.93-FOA / 71009		>70 @ 800 Linear Perpendicular >60 @ 800 Random	0.07	7 @ .035	73 @ 800	35KW/50MW	TeO2 Compressional
1064	17389-1.06-LTD-GaP		>56 @ 1064 Linear Parallel	0.15	4 @ .040	62 @ 1064	47KW/50MW	GaP Compressional

These Acousto-Optic Modulators are made from TeO2 modulator crystals. Because of its high figure of merit, the required drive power is low, usually less than a watt, and can still accept high power light density in the visible and near-IR range.

Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
440 to 850	23080-1		>85 @ 633 Linear Perpendicular or Random	1	40 @ .25	11.9 @ 633	35KW/50MW	TeO2 Compressional
440 to 850	23080-2-LTD		>85 @ 633 Linear Perpendicular or Random	2	300 @ 2	11.9 @ 633	35KW/50MW	TeO2 Compressional
440 to 850	23080-3-LTD		>85 @ 633 Linear Perpendicular or Random	3	450 @ 3	11.9 @ 633	35KW/50MW	TeO2 Compressional
440 to 850	23110-.5		>85 @ 633 Linear Perpendicular or Random	0.5	40 @ .25	16.3 @ 633	35KW/50MW	TeO2 Compressional
700 to 1000	23080-1-.85-LTD		>70 @ 850 Linear Perpendicular >60 @ 850 Random	1	40 @ .25	16 @ 850	35KW/50MW	TeO2 Compressional
700 to 1000	23080-2-.85-LTD		>70 @ 850 linear Perpendicular >60 @ 850 Random	2	300 @ 2.0	16 @ 850	35KW/50MW	TeO2 Compressional
700 to 1000	23080-3-.85-LTD		>70 @ 850 Linear Perpendicular > 60 @ 850 Random	3	450 @ 3.0	16 @ 850	35KW/50MW	TeO2 Compressional

Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
1064	23080-1-1.06-LTD		>75 @ 1064 Linear Perpendicular >70 @ 1064 Random	1	40 @ .25	20 @ 1064	35KW/50MW	TeO2 Compressional
1064	23080-2-1.06-LTD		>75 @ 1064 linear Perpendicular >70 @ 1060 Random	2	300 @ 2.0	20 @ 1064	35KW/50MW	TeO2 Compressional
1064	23080-3-1.06-LTD		>70 @ 1064 Linear Perpendicular > 65 @ 1064 Random	3	450 @ 3.0	20 @ 1064	35KW/50MW	TeO2 Compressional
1300	23080-1-1.3-LTD		>75 @ 1300 Linear Perpendicular >70 @ 1550 Random	1	40 @ .25	25 @ 1300	35KW/50MW	TeO2 Compressional
1300	23080-2-1.3-LTD		>75 @ 1300 Linear Perpendicular >70 @ 1550 Random	2	300 @ .25	25 @ 1300	35KW/50MW	TeO2 Compressional
1300	23080-3-1.3-LTD		>75 @ 1300 Linear Perpendicular >70 @ 1550 Random	3	450 @ .25	25 @ 1300	35KW/50MW	TeO2 Compressional
1550	23080-1-1.55-LTD		>60 @ 1550 Linear Perpendicular >55 @ 1550 Random	1	40 @ .25	29 @ 1550	35KW/50MW	TeO2 Compressional
1550	23080-2-1.55-LTD		>65 @ 1550 Linear Perpendicular >60 @ 1550 Random	2	300 @ 2	29 @ 1550	35KW/50MW	TeO2 Compressional


Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
1550	23080-3-1.55-LTD		>50 @ 1550 Linear Perpendicular >45 @ 1550 Random	3	450 @ 3	29 @ 1550	35KW/50MW	TeO2 Compressional


These Acousto-Optic Modulators are made from AMTIR (GeSeAs). These AO Modulators are for use at 1.3 or 1.55 mm wavelength and comes with or without FO fiber input coupling. These Modulators can be used in digital switching, analog modulation, or frequency shifting applications.

Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
1064 to 2100	26035-2-1.55-LTD	Image not available	>85 @ 1064 Random >85 @ 1550 Random >55 @ 2100 Random	2	520 @ 2.0	14.8 @ 1064 20.6 @ 1550 29.3 @ 2100	50KW	Chalcogenide Glass Compressional

Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
1064 to 2100	26055-1-1.55-LTD		>85 @ 1064 Random >85 @ 1550 Random >55 @ 2100 Random	1	260 @ 1.0	23.3 @ 1064 32.4 @ 1550 46.0 @ 2100	50KW	Chalcogenide Glass Compressional

These Acousto-Optic Modulators are made from Germanium. These devices are for use in the spectral range of 2.5 to 15mm. These Modulators are AR coated for 10.6 microns as standard or can custom AR coated for the "customer specified" wavelength.

Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
2800 to	37027-3		>85 @ 10600 Linear	3	350 @ 3.0	52 @ 10600	500W	Ge Compressional

Range (nm)			Efficiency /Polarization	Aperture (mm)	Rise Time (ns)	Angle (mrad)	Optical Power (cm ²)	Material /Mode
2800 to	37027-5		>85 @ 10600 Linear	5	600 @ 5.0	52 @ 10600	500W	Ge

Custom and OEM AO Devices and Drivers are available and Gooch & Housego will work with you to meet your needs.

Use the "Request Information Form" on the pull down menu on the main web page to submit your requirements for AO Devices and Drivers.