Acousto-optic Modulators in Free Space

Overview

Acousto optic modulators (AOM) are commonly used to adjust laser intensity (amplitude modulation, AM) outside the laser cavity. This can be simple ON/OFF modulation for fast switching, or variable modulation for laser intensity. The modulation mode is determined by the type of RF driver, which can be digital (on/off) or analog (sinusoidal, square wave, linear, random, etc). Generally, the RF driver of AOM operates at a fixed frequency.

Product Introduction

The key parameter of AOM is the rise/fall time, which defines the achievable "speed" or amplitude modulation bandwidth of the modulation. The rise/fall time is proportional to the beam diameter within the modulator. Therefore, in order to obtain a fast rise time, it is necessary to control the diameter of the incident laser beam.

AOM can be used as a shutter (to cycle switch according to the set frequency) or as a variable attenuator (to dynamically control the intensity of transmitted laser beam).

Acousto-optic Modulators in Free Space

Goptica has developed a series of free-space (up to 24 channels in a single channel) and fiber-coupled (PM fiber and non-PM fiber) AOM with a frequency range of up to 300 MHz and a rise time as low as 6 ns, wavelength cover from UV to far infrared(266, 343, 355, 532, 800, 1045, 1030, 1064, 1553, 9300, 10600 etc).

AOM selects AO materials with excellent quality (Fused quartz, Quartz crystal, Ge crystal, etc.), which can be designed into shear and longitudinal wave mode according to needs. High quality optical polishing, anti-reflective coatings with low reflection and high damage threshold, reliable welding techniques, and novel acoustic management and optical mechanical design techniques enable excellent thermal management, maintaining excellent beam quality and high transmittance.

Application

Intensity modulation, laser radar, laser switch, chopper, laser precsion machining.

格物光学
GOPTICA

Acousto-optic Modulators in Free Space

Product parameters

Product Code	Working wavelength (nm)	Active Aperture (mm)	Operating Frequency (MHz)	Loss Modulation	Optical Material	Heat dissipation method
M0006-QL110-030-532	532	3	110	>85%	Crystalline quartz	Conduction-cooled
M0009-QL170-060-355	355	6	170	>85%	Crystalline quartz	Water cooling
M0010-TL080-020-450-900	900	2	80	>85%	Tellurium dioxide	Conduction-cooled
M0011-QL110-060-343	343	6	110	>85%	Crystalline quartz	Water cooling
M0012-QL200-035-266	266	3.5	200	>85%	Crystalline quartz	Conduction-cooled
M0015-QL100-030-780	780	3	100	>85%	Crystalline quartz	Conduction-cooled
M0016-QL100-010-800	800	1	100	>85%	Crystalline quartz	Conduction-cooled
M0017-TL250-003-780-950	950	0.3	250	>70%	Tellurium dioxide	Conduction-cooled
M0020-QL170-050-405	405	5	170	>85%	Crystalline quartz	Water cooling
M0021-QL100-075-355	355	7.5	100	>85%	Crystalline quartz	Water cooling
M0022-GL041-080-9600	9600	8	40.68	>85%	Germanium	Water cooling
M0023-QL200-035-780	780	3.5	200	>85%	Crystalline quartz	Conduction-cooled
M0024-QL200-030-850	850	3	200	>85%	Crystalline quartz	Conduction-cooled
M0025-TL040-020-532	532	2	40	>85%	Tellurium dioxide	Conduction-cooled
M0026-QL068-030-780	780	3	68	>85%	Crystalline quartz	Conduction-cooled
M0027-QL200-060-266	266	6	200	>85%	Crystalline quartz	Water cooling
M0028-QL200-035-266	266	3.5	200	>85%	Crystalline quartz	Conduction-cooled
M0029-QL110-030-319	319	3	110	>85%	Crystalline quartz	Conduction-cooled
M0030-QL110-030-375	375	3	110	>85%	Crystalline quartz	Conduction-cooled
M0031-QL110-035-532	532	3.5	110	>85%	Crystalline quartz	Water cooling
M0032-GL041-080-10600	10600	8	40.68	>85%	Germanium	Water cooling

格物光学
GOPTICA

Acousto-optic Modulators in Free Space

Product Code	Working wavelength (nm)	Active Aperture (mm)	Operating Frequency (MHz)	Loss Modulation	Optical Material	Heat dissipation method
M0033-GL080-025-2940	2940	2.5	80	>85%	Germanium	Water cooling
M0034-TL080-015-2940	2940	1.5	80	>80%	Tellurium dioxide	Conduction-cooled
M0035-GL041-080-9300	9300	8	40.68	>85%	Germanium	Water cooling
M0036-TL080-010-1030	1030	1	80	>70%	Tellurium dioxide	Conduction-cooled
M0037-TL200-001-1030	1030	0.1	200	>70%	Tellurium dioxide	Conduction-cooled
M0038-TL100-020-450	450	2	100	>70%	Tellurium dioxide	Conduction-cooled
M0039-QL080-040-1030	1030	4	80	>85%	Crystalline quartz	Water cooling
M0040-QL200-015-355	355	1.5	200	>85%	Crystalline quartz	Conduction-cooled
M0041-TL080-030-1064	1064	3	80	>75%	Tellurium dioxide	Conduction-cooled
M0042-QL200-020-532	532	2	200	>85%	Crystalline quartz	Conduction-cooled
M0043-QL080-015-633	633	1.5	80	>85%	Crystalline quartz	Conduction-cooled
M0044-QL110-030-488	488	3	110	>85%	Crystalline quartz	Conduction-cooled
M0051-QL125-010-780	780	1	125	>70%	Crystalline quartz	Conduction-cooled
M0053-GL041-080-9600	9600	8	40.68	>85%	Germanium	Water cooling
M0055-GL040-080-10600	10600	8	40	>85%	Germanium	Water cooling
M0056-TL300-000-885	855	0.03	300	>60%	Tellurium dioxide	Conduction-cooled
M0057-TL150-003-1550	1550	0.3	150	>80%	Tellurium dioxide	Conduction-cooled
M0058-QL080-020-800	800	2	80	>85%	Crystalline quartz	Conduction-cooled
M0059-TL080-020-1300	1300	2	80	>85%	Tellurium dioxide	Conduction-cooled
M0060-QL080-020-1500	1500	2	80	>85%	Crystalline quartz	Conduction-cooled
M0061-QL110-060-532	532	6	110	>85%	Crystalline quartz	Water cooling
M0062-QL110-040-355	355	4	110	>90%	Crystalline quartz	Conduction-cooled

格物光学
GOPTICA

Acousto-optic Modulators in Free Space

Product Code	Working wavelength (nm)	Active Aperture (mm)	Operating Frequency (MHz)	Loss Modulation	Optical Material	Heat dissipation method
M0063-QL080-040-800	800	4	80	>85%	Crystalline quartz	Conduction-cooled
M0065-TL120-020-360	360	2	120	>85%	Tellurium dioxide	Conduction-cooled
M0066-TL120-020-473	473	2	120	>85%	Tellurium dioxide	Conduction-cooled

上海格物光学仪器有限公司
中国 · 上海
www. goptica.com
联系电话：+86 150 0085 3620
邮箱：sales@goptica.com
地址：上海市杨浦区国康路46号2楼