

Acoustic-optical light control module



Overview

An acousto-optic modulator (AOM), also called a Bragg cell or an acousto-optic deflector (AOD), uses the acousto-optic effect to diffract and shift the frequency of light using sound waves (usually at radio-frequency). A light beam is diffracted into several orders. By vibrating the material with a pure sinusoid and tilting the AOM so the light is reflected from the flat sound waves into. Modulators allow the intensity of light to be controlled and modulated at rates that far exceed mechanical shutters. Our Germanium Acousto-Optic Modulators (I-M0 Series) deliver exceptional performance in. L3Harris is leveraging more than 40 years' experience in developing acousto-optic (AO) devices and technologies to design illumination modules that control the quantum states of trapped ions with extreme precision. As a key component in laser systems and optical communications AOMs serve as high-speed switches and frequency shifters. We've seen these. Pick pulses for amplification or to apply side-bands for heterodyne-sensing applications with one of these connectorized modulators as a laser intensity modulator.



Article Content

Hot

Acousto-optic Modulators – AOM, Bragg cells, diffraction

What Are Acousto-optic Modulators? An acousto-optic modulator (AOM) is a device which can be used for controlling the transmitted power of a laser beam with an

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Acousto-optic modulators

Acousto-optic modulation is based on the acousto-optic effect (also called Brillouin scattering), where light is scattered by periodic refractive index changes in a

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Acousto Optic Modulator (AOM) Basics and Working

Most acousto-optic devices operate in this Bragg regime. Acousto Optic Modulator Working Operation The following steps describe acousto optic modulator (AOM)

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A Guide to Acousto-Optic Modulators

1 Introduction Acousto-optic modulators (AOMs) are useful devices which allow the frequency, intensity and direction of a laser beam to be modulated. Within these devices incoming light Bragg diffracts o

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Acousto-Optic Modulators (AOM)

Acousto-optic modulators (AOM) exhibit versatile functionality across multiple industries due to their precise control over light characteristics. We've

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What is an Acoustic Optic Modulator AOM and How

The AOM consists of a Bragg cell What is an Acoustic-Optic Modulator (AOM), and how does it function? An AOM uses the acousto-optic effect to change and alter

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Acousto-optical Illumination Modules | L3Harris® Fast.

L3Harris is leveraging more than 40 years' experience in developing acousto-optic (AO) devices and technologies to design illumination modules that control the

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Graphical Programming Tutorial for Arduino - Acousto

This project effectively simulates the acoustooptic light control in our daily life. In the daytime, when the corridor is not dim in the sunshine, even if the

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What is an Acoustic Optic Modulator AOM and How

An AOM uses the acousto-optic effect to change and alter light frequency using sound waves, and is used across a range of applications including lasers for Q

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Mastering Acousto-Optic Modulators

Acousto-Optic Modulators (AOMs) are devices that manipulate light by utilizing the interaction between acoustic waves and optical waves in various materials. This phenomenon is

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Acousto-Optic Modulator

An acousto-optic modulator (AOM) is a device which can be used for controlling the power, frequency or spatial direction of a laser beam with an electrical drive signal.

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Acousto-Optic Double Control Automatic Alarm and

Abstract: In this paper, the design and construction of the acousto-optic double control automatic alarm and lighting circuit. Through analyzing the existing

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INTRODUCTION TO AO MODULATORS AND DEFLECTORS

- INTRODUCTION TO ACOUSTO-OPTIC MODULATORS AND DEFLECTORS: Acousto-optic components are typically used internal or external to laser equipment for the electronic control of the

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Roles of Acousto-optic Modulators and Passive Optical

How Acoustic Optical Modulators Modulate Optical Signals Acousto-optic modulators (AOMs) are active optical components that play a crucial role in

May 16, 2026 Hot

Design of an Intelligent Acousto-optic Dual Control Lamp

1. Introduction Acoustic and optical dual control lamp is a lighting device integrating acoustic and optical technology. It is energy-saving, environmentally friendly, safe and reliable. At present, the sound

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Integrated Acousto-Optic Device Modules and Applications

Continuing progress in the fabrication and performance of other components including optical waveguides, waveguide lenses, diode laser sources and photodetector arrays, and their integration

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Acousto-Optic Modulators (AOM) | SIMTRUM Photonics

Its nanosecond-level delay and pulse width control ensure the accuracy and stability of every pulse selection event. With its output power capability of up to 10W, it

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Acousto-Optic Modulator Driver - 80MHz

The AOMD is a high-performance acoustic modulator driver designed to optimize optical output response to an electrical control signal, featuring four working

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Acousto-Optic Modulator (AOM): Altering Light With Sound

Acousto-Optic Modulator (AOM) uses a sound wave to modulate an incoming beam of light to optimize optical systems and devices.

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Acousto-Optic Modulators | Coherent

Learn about the vertically integrated capabilities for material growth, fabrication, coating, and assembly, and rigorous QA at Coherent. Discover how these ensure

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Design of an Intelligent Acousto-optic Dual Control Lamp

Abstract At present, acousto-optic dual control lamp are widely used in public places such as schools, companies, and residential buildings. However, once the initial delay is fixed, it is difficult to adjust

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AOM Acousto-Optic Modulator

Controlling Laser Light by Acousto-optic Modulator, also Called Bragg Cell AOM
Package A significant part of APE's products work with specially configured

Sep 08, 2025 Hot

Acousto Optic Modulator

Acousto Optic Modulator to directly control the timing, intensity, and temporal shape of a laser output down to a few nanoseconds. Free space AOM Modulator.

Jul 27, 2025 Hot

Course 4, Module 7: Electro-Optic and Acousto-Optic Devices

Light-Beam Deflectors Light-beam deflectors, sometimes called scanners, form an important class of accessory that is required for applications such as display optical processing and optical data

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G& H Products | Acousto-Optic Modulators AOMs

Acousto-optic modulators allow the intensity of light to be controlled and modulated at rates that far exceed mechanical shutters. We also offer a range of germanium

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G& H Products | Acousto-Optic Modulators AOMs

Modulators allow the intensity of light to be controlled and modulated at rates that far exceed mechanical shutters. Our acousto-optic modulators are optimized for low

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Acoustic Optical Modulators vs. Pulse Width Modulators

Central to this capability are modulators, devices that shape and control laser output. Two commonly used modulators are acoustic optical

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Acousto-optic Modulators | Efficiency, Speed & Precision

Understanding Acousto-Optic Modulators: Efficiency, Speed, and Precision Acousto-optic modulators (AOMs) stand at the forefront of optical

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A comprehensive survey on optical modulation techniques for

The operational principles of AOM, rooted in the acousto-optic effect, provide a complementary approach to light modulation, marrying mechanical acoustics with optical control in a

Mar 24, 2026

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://eedenmarketing.co.za>

Email: info@moletenare-ew.co.za

Phone: +86 138 1658 3346

Address: Ningbo, China

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