Liquid Crystal Dimmable Attenuator

Overview

Our attenuator consists of an LC Variable Retarder (with attached compensator) operating between crossed linear polarizers. With crossed polarizers, light transmission is maximized by applying the correct voltage to achieve half-wave retardance from the LC cell. Meadowlark Optics' Liquid Crystal Variable Attenuator (LCVA) offers real-time, continuous control of light intensity. They use a liquid crystal retarder and a polarizer with a closed-loop feedback system to precisely and quickly attenuate light with no moving parts. The variable gray filter functions for polychromatic or monochromatic light as well as. BVO manufactures nematic phase liquid crystal devices and each mode has its advantages. Electronically Controlled Birefringence (ECB) Mode: Versatile tunable retarder.

Article Content

Sep 22, 2025

Variable beam attenuator

High-precision variable beam attenuator: real-time control of light intensity with liquid crystal technology. Ideal for lasers and measurement technology.

Jan 26, 2026

Variable attenuator

The variable attenuator is based on a combination of two cells filled a specially developed mixture of liquid crystals with dichroic molecules. The two cells act as

Aug 23, 2025

Liquid Crystal Variable Attenuator

Our attenuator consists of an LC Variable Retarder (with attached compensator) operating between crossed linear polarizers. With crossed polarizers, light

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Electrically tunable liquid crystal waveguide attenuators

The attenuator is fabricated by infiltrating liquid crystal (LC) E7 into hollow waveguides (HWGs). The attenuation of device is over 30 dB. The performance of device is independent of the

Feb 20, 2026

A Liquid Crystal-Based Tunable Millimeter-Wave Attenuator Design

This article introduces a novel design for a tunable millimeter-wave (MMW) attenuator utilizing liquid crystal (LC) material. The design features a microstrip transmission line integrated with multiple,

Aug 02, 2025

Liquid-crystal-deflector based variable fiber-optic attenuator

A compact, low-component-count, no-moving-parts variable optical attenuator (VOA) is demonstrated for the first time by means of beam spoiling that is implemented via an electrically reconfigurable

Mar 09, 2026

Low threshold optical attenuator based on electrically tunable liquid ...

Abstract We propose a multimode planar waveguide with polymer core of negative photoresist AZ15nXT with an upper cladding of electrically tunable 4-cyano-4''-pentylbiphenyl (5CB)

Aug 02, 2025

Liquid Crystal EO Amplitude Modulators, Free Space

Thorlabs'' Noise Eaters are liquid crystal (LC) devices that can function as electro-optic (EO) modulators. They use a liquid crystal retarder and a polarizer with a closed-loop feedback system to precisely

Jul 29, 2025

Liquid Crystals – Bolder Vision Optik

Precision liquid crystal components can be custom designed to meet customer specifications. Small and large lot sizes targeted for OEM developers and optical

Apr 03, 2026

Liquid Crystal Variable Attenuator

Meadowlark Optics'' Liquid Crystal Variable Attenuator (LCVA) offers real-time, continuous control of light intensity. Our attenuator consists of an LC Variable Retarder (with attached compensator) operating

Jan 20, 2026

Liquid Crystal

Liquid Crystal Variable Attenuator Meadowlark Optics'' Liquid Crystal Variable Attenuator (LCVA) offers real-time, continuous control of light intensity. Our attenuator consists of an LC Variable Retarder

Feb 27, 2026

A Pixelized Variable Optical Attenuator Using Liquid Crystal on Silicon ...

We have fabricated a 512-pixel liquid crystal VOA (variable optical attenuator) with biased PWM based on liquid crystal on silicon, using ITiO as a common electrode.

Jan 29, 2026

TN Liquid Crystal Attenuator – Bolder Vision Optik

Visible TN Liquid Crystal Attenuator 25.4mm x 26.2mm x 1.8mm Active area: 22.8mm x 21.8mm Visible Broadband TN attenuator features High contrast / Low

May 13, 2026

Liquid Crystal Clad Polymer Waveguide based Electro-Optic Attenuator ...

In the proposed work, we fabricated a liquid crystal cladding waveguide-based variable optical attenuator. The waveguide is realized using a negative photoresist (AZ15nXT) core on indium tin

Dec 28, 2025

Compact laser module with a high-speed liquid crystal attenuator for ...

Many kinds of head mount displays (HMDs) and head up displays (HUDs) have been appeared on the HMD / HUD early adaptor market. Many of them have become equipped with see-through capability

Nov 09, 2025

DUNN et al.: LIQUID-CRYSTAL-BASED CONTROLLABLE

Fig. 1. Showing the typical composition of the planar liquid-crystal cells used in these measurements. The cells consisted of two fused quartz windows in e) poly-4-styrene sulfonate] electrode layer and

Nov 22, 2025

Low threshold optical attenuator based on electrically tunable liquid ...

Request PDF | Low threshold optical attenuator based on electrically tunable liquid crystal cladding waveguide | We propose a multimode planar waveguide with polymer core of negative

Nov 30, 2025

Variable attenuator / liquid crystal

Liquid Crystal Variable Attenuator (LCVA) offers real-time, continuous control of light intensity. Our attenuator consists of an LC Variable Retarder (with attached

Jan 08, 2026

Liquid-Crystal-Based Controllable Attenuators Operating

Liquid-Crystal-Based Controllable Attenuators Operating in the 1–4 T erahertz Band Aniela Dunn, Zhaopeng Zhang, Michael D. Horbury, Eleanor V.

Mar 06, 2026

[2306.07665] Liquid-Crystal-Based Controllable Attenuators Operating

Liquid-crystal devices (LCDs) offer a potential route toward adaptive optical components for use in the < 2 THz band of the electromagnetic spectrum. We demonstrate LCDs using a

Oct 12, 2025

Optical-fiber variable-attenuator arrays using polymer-network liquid ...

This paper describes compact variable optical attenuator arrays made by using fiber splicers and polymer-network liquid crystal. Fibers are inserted into the splicers and the gaps

Mar 09, 2026

Low-voltage, high-contrast ratio, broadband tunable attenuator based

The purpose of this study is to investigate a new tunable LC attenuator with large contrast ratio, fast response, and low operation voltages. Methods : For LC devices, one way to reduce the operation

Jun 14, 2026

Low threshold optical attenuator based on electrically tunable liquid ...

Low threshold optical attenuator based on electrically tunable liquid crystal cladding waveguide Rahul Panchal, Aloka Sinha Show more Add to Mendeley

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