

How much does an optical modulator cost



Article Overview

The cost of an optical modulator typically ranges from a few hundred to several thousand dollars, depending on type, speed, and application.

Price Ranges by Type

- Electro-optic modulators (EOMs): Standard free-space or fiber-coupled EOMs from suppliers like Thorlabs generally start around \$500–\$1,500 for basic models, while high-speed or custom versions can exceed \$5,000 .
- Acousto-optic modulators (AOMs): These modulators, used for frequency shifting or pulse picking, typically cost \$1,000–\$3,000, depending on bandwidth and optical power handling .
- High-performance modulators: Devices designed for high-speed optical data transmission (e.g., 100G+ coherent systems) or specialized laser applications can cost \$5,000–\$10,000 or more, reflecting complex design, materials, and integration .

Factors Affecting Cost

- Material and Design: Lithium niobate, MgO-doped crystals, or indium phosphide wafers increase cost due to high purity and fabrication complexity .
- Speed and Bandwidth: Faster modulators with sub-nanosecond switching or high-frequency resonant designs require advanced electronics and precise crystal alignment, raising prices .
- Customization: Custom coatings, resonant frequencies, or integration with driver electronics can significantly increase cost .
- R&D and Engineering: High-end modulators for coherent optical communication involve extensive research, simulation, and digital signal processing design, contrib...

Article Content

Acousto-Optic Modulators | Coherent

Optics Acousto-Optic Modulators Pick pulses for amplification or to apply side-bands for heterodyne-sensing applications with one of

Acousto Optic Modulators from Top Brands

The result is a fiber optic modulator which offers multiple advantages over traditional modulator technologies such as an AOM or an

Photoelastic Modulators

Photoelastic modulators from Hinds Instruments are key components of photonics applications, and are a key piece in a wide range

Integrated Electro-Optic Modulators: Progress, Challenges, and ...

Electro-optic modulators are essential components in modern communication systems and are additionally expected to play an

Electro-optic Modulators – Buyer's Guide & Suppliers

This buyer's guide for electro-optic modulators provides technical background, comparison of major types, selection criteria, and an

Thorlabs · Spatial Light Modulators

The compact spatial light modulator (EXULUS-SE1) consists of a built-in SLM panel with compact housing. Two ECM175 aluminum

Fiber Electro-Optical Waveguide Low Voltage Intensity or Phase ...

Agiltron offers two types of high-speed lithium niobate waveguide fiber optic modulators: the standard proton-exchanged bulk crystal

Low voltage Electro-optic modulators from Leysop

This does impact slightly on maximum transmission as there are twice as many crystal surfaces compared to the other modulator

Spatial Light Modulators

Laser 2000 offers a wide range of Meadowlark optic spatial light modulators, from Optical Kits to transmissive and high-speed SLM'S.

Optics | Laser Optics | Laser Modulators

Shop DigiKey's large in-stock selection of Laser Modulators. View inventory, pricing and order now for same day shipping!

Electro-Optic Modulators

Long-wavelength (1260 - 1625 nm) fiber-coupled intensity or phase modulators for speeds up to 40 GHz can be driven by our EO

Modulation Basics – Wavelength Electronics

Although external modulation does have the benefit of faster speeds (higher bandwidths), the cost and complexity of the laser setups

Lithium Niobate Intensity Modulator – 10, 20, 40, 70, 100 GHz

Lithium Niobate Fiber Optical Modulator Auto-Bias Controller – Ensure Performance high extinction, little temperature dependence

Electro Optic Modulators | MEETOPTICS Academy

Electro-Optic Modulators In the presence of an external electric field, the distribution of electrons in a material changes, altering its

Optical modulator

An optical modulator is a device which is used to modulate a beam of light. The beam may be carried over free space, or propagated

Contact Us

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