

Which spatial light modulator is the best



Article Overview

The best spatial light modulator depends on your application, but for high-resolution phase modulation, LCOS-based SLMs like HOLOEYE GAEA or Thorlabs Exulus are top choices.

Key SLM Technologies

Liquid Crystal on Silicon (LCOS): LCOS SLMs are preferred for precise phase modulation, offering high resolution, low crosstalk, and stable phase control. They are ideal for holography, adaptive optics, and optical tweezers applications .

Digital Micromirror Devices (DMDs): DMDs excel in high-speed binary amplitude modulation, making them suitable for fast beam shaping and projection applications, but they are less precise for continuous phase control .

Leading SLM Models

HOLOEYE SLMs:

- GAEA: Highest resolution SLM with extremely small pixel pitch, ideal for detailed holography and optical trapping .
- GAEA-C: Compact 4K version with cost-optimized driver, suitable for space-constrained setups .
- LETO-3: Fast SLM platform with high bandwidth, capable of color sequential phase operation .
- ERIS-1.1: Offers highest phase stability, low latency, and minimal crosstalk, excellent for precision experiments

Article Content

May 23, 2026

Spatial Light Modulators | Suppliers | Photonics Buyers' Guide ...

Explore 8 top manufacturers and suppliers of Spatial Light Modulators in our comprehensive photonics buyers' guide. A spatial light

Dec 21, 2025

Spatial Light Modulators

Spatial light modulator (SLM) is a general term describing devices that are used to modulate amplitude,

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Spatial Light Modulators Expand Beyond Established Markets

Industrial, biomedical, and display technologies are spurring spatial light modulators into an era of speed, durability, and adaptability.

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Spatial Light Modulator Principles

Spatial Light Modulator Principles Meadowlark Optics award-winning Spatial Light Modulators (SLMs) provide precision retardance

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(PDF) Spatial light modulators

Spatial Light Modulators (SLMs) are quasiplanar devices, allowing for the modulation of the amplitude, phase and

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Spatial Light Modulators Expand Beyond Established Markets

A schematic of a liquid crystal on silicon (LCOS) spatial light modulator (SLM) showing how applied voltage reorients liquid crystal

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Spatial Light Modulators | MEETOPTICS Academy

Spatial light modulators (SLMs) are a type of transmissive or reflective device that is used to modulate amplitude, phase, or

Oct 21, 2025

SURPRISE – Spatial Light Modulators for Space Applications

In order to find the best solution for the special requirements of the project, Fraunhofer IPMS used its more than 25 years of

Feb 16, 2026

Innovative Solutions for the Best Spatial Light Modulator Applications

Spatial Light Modulators, or SLMs for short, are really important parts of modern optical setups. They allow us to

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High resolution multispectral spatial light modulators based ...

A spatial light modulator is demonstrated based on Fabry-Perot nanocavity resonances, enabling micrometer-sized

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Spatial Light Modulators

Discussing the properties of spatial light modulators and how to include them in a comprehensive analysis

Mar 15, 2026

Special Section Guest Editorial: Spatial Light Modulators: Devices and ...

This special section of Optical Engineering devoted to Spatial Light Modulators: Devices and Applications includes

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Digital spatial light modulators

Digital spatial light modulators (SLMs) provide fine-grained control of light, allowing the creation of two-dimensional light patterns with

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Spatial light modulator

A spatial light modulator (SLM) is a device that can control the intensity, phase, or polarization of light in a spatially varying manner.

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Spatial Light Modulators — Adaptive Optics | FindLight

On FindLight you can compare Spatial Light Modulators by wavelength range, resolution, pixel pitch, and modulation type to match

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Spatial Light Modulation Principles

Spatial Light Modulation Principles - Delivering the highest quality optics for over 40 years: polarizers,

Apr 14, 2026

Spatial Light Modulator (SLM) Basics and Vendors

Learn about Spatial Light Modulators (SLMs), including optically addressed and electrically addressed types, their drawbacks, and a

Feb 28, 2026

(PDF) A Review of Spatial Light Modulators

Projection lamps, spatial light modulators, CRTs and dynamic scanning are all eliminated by the application of an

Dec 01, 2025

Spatial Light Modulators (SLMs)

Mias, S. et al. (2005) Phase-modulating bistable optically addressed spatial light modulators using wide-switching

Apr 02, 2026

An Introduction to Spatial Light Modulators

Spatial light modulators are used to spatially modify an optical wavefront in two dimensions. The most commonly used models are

Apr 24, 2026

Spatial Light Modulators – Buyer's Guide & Suppliers

This buyer's guide for spatial light modulators provides technical background, comparison of major types, selection criteria, and an

Jun 12, 2026

Mastering Spatial Light Modulators

Discover the principles, types, and applications of Spatial Light Modulators in optics, including their role in beam

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