

Is a spatial light modulator a lens



Overview

A Spatial Light Modulator (SLM) is an optical device that can dynamically modify the spatial properties of a light beam. Unlike fixed optical elements such as lenses or gratings, an SLM consists of a two-dimensional array of individually addressable pixels. Liquid crystals are birefringent, so applying a voltage to the cell changes the effective refractive index seen by the incident wave, and thus the phase retardation of the reflected wave. It plays a crucial role in fields like holography, microscopy, and even augmented reality, where managing light behavior is key. The Fourier transform of the input beam is multiplied by a stored Fourier transform in the Fourier plane.

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A spatial light modulator (SLM) is a device that can control the intensity, phase, or polarization of light in a spatially varying manner. A simple example is an overhead projector transparency. Usually when ...



One of the main key strengths of SLMs is their flexibility. Unlike static optical elements like lenses or masks, SLMs offer programmable control, letting users dynamically adjust light patterns ...



Spatial Light Modulators (SLMs) are quasi-planar devices, allowing for the modulation of the amplitude, phase and polarization, or a combination of these parameters of an incident light beam according to ...



A spatial light modulator (SLM) is a pixellated liquid crystal device that can individually control the phase value of each pixel. It imposes spatially varying modulation onto an incident beam, allowing for the ...



Unlike static optics, SLMs act like "digital lenses" you can reconfigure in real time—making them essential in advanced photonics research, AR/VR development, and high ...



What is a Spatial Light Modulator? A Spatial Light Modulator (SLM) is an optical device that electrically controls the spatial distribution of light's amplitude, phase, or polarization.



A spatial light modulator (SLM) is a transmissive or reflective device that's used to spatially modulate the amplitude and phase of an optical wavefront in two dimensions.



Spatial Light Modulators (SLMs) are versatile optical devices that modulate the intensity, phase, or polarization of light waves in space and time. They play a pivotal role in various advanced ...



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What are Spatial Light Modulators? Spatial light modulators (SLMs) are a type of transmissive or reflective device that is used to modulate amplitude, phase, or polarization of an optical wavefront in ...

Contact Us

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