



JENOPTIK

Liquid crystal spatial light modulators

Modulation of ultrashort laser pulses using Jenoptik's liquid crystal modulators. SHARING EXCELLENCE

Spatial Light Modulators SLM-S320(d) / 640(d) are linear array SLMs based on nematic liquid crystals and are proven tools for modulation of ultrashort laser pulses in the wavelength range 430-1600 nm.

The SLMs are available as single mask configuration for phase or amplitude/polarization modulation and as dual mask SLMs for simultaneous modulation of phase and amplitude in a 4f-arrangement or in a chirped pulse amplification system.

The large active area allows modulation even of high power lasers.

Benefits

- Extensive LabView instruction set, MATLAB and C-libraries for an easy and comfortable operation
- ADC port, e.g. for feedback pulse optimization
- Optional custom-made AR coatings
- Optional removable mirror for reflective mode

Application

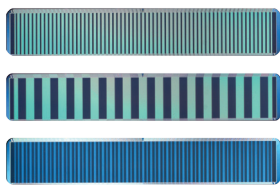
- High-resolution laser light modulation in phase and amplitude particularly for pulse shaping of ultrashort laser pulses and high power lasers

Liquid crystal spatial light modulators

SLM-S640(d) USB/Ethernet & SLM-S320(d) USB/Ethernet

Specifications

	Single Mask Configuration		Dual Mask Configuration	
	SLM-S640	SLM-S320	SLM-S640d	SLM-S320d
Active area	64 mm x 10 mm	32 mm x 13 mm	64 mm x 10 mm	32 mm x 13 mm
Number of addressable strips	640	320	2x 640	2x 320
Strip size	97 μ m (3.8 mil) x 10 mm	97 μ m (3.8 mil) x 13 mm	97 μ m (3.8 mil) x 10 mm	97 μ m (3.8 mil) x 13 mm
Liquid crystal orientation (Extraordinary axis n_e)	0° (horizontally aligned) (other orientations on request)		$\pm 45^\circ$	
Transmission (@ 450 nm ... 1100 nm, without polarizers)	> 80 %		> 75 %	
Gap	3 μ m (0.12 mil)			
LC type	nematic			
Phase modulation	Phase shift @ 430 nm Phase shift @ 1600 nm		approx. 7 π approx. 2 π	
Wavelength range	430 nm ... 1600 nm			
Driving voltage	0 V ... 8 V 0 V ... 5 V (switchable) 12 bit resolution			
Frame buffers	0 ... 63			
ADC port	0 V ... 1.0 V 12 bit resolution			
Interfaces	USB 2.0 Ethernet			
Trigger in/out	via optocoupler			
Functions	extended instruction set integrated in firmware (based on SLM-S640/12 instruction set)			
Software driver requirements and programming interface	Microsoft Windows: LabView and MATLAB drivers C-Interface: Microsoft Windows			
Mirror (optional)	enabling operation in reflective configuration (removable for operation in transmissive configuration)			
Antireflective coating (optional)	customized coatings on request (broad or narrow band)			



Examples of strip patterns



Delivery includes

- LC display with controller unit and PC connection
- USB cable
- ADC / Trigger cable
- Power supply
- Printed documentation
- LabView, MATLAB and C-library drivers for Microsoft Windows
- Demonstration software
- Transportation case

It is our policy to constantly improve the design and specifications. Accordingly, the details represented herein cannot be regarded as final and binding.