

**NEW**

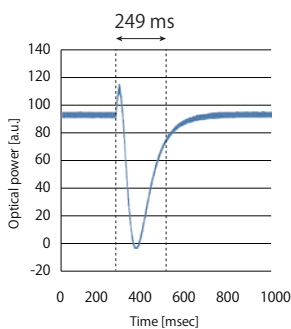
# Liquid Crystal Based Spatial Light Modulator High Speed model / SLM-210

SLM-210 series are our latest High speed model with significantly improved response time as a high performance product which uses its second generation LCOS technology. SLM-210 is a LCOS-SLM with a response time of less than 10 ms, which is more than 20 times faster than the conventional LCOS-SLM and it is expected to contribute to the improvement of performance in optical applications such as wavefront correction, optical beam shaping, biosensing and quantum computing.

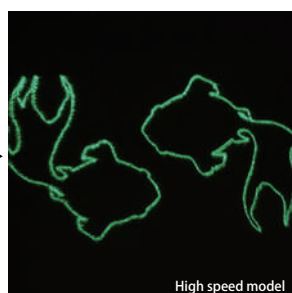
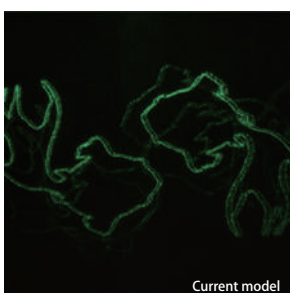
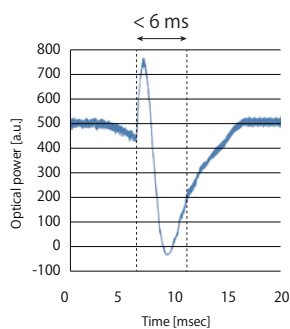
## Features

- ▶ Response time typ. 6 ms, (Type A)
- ▶ WUXGA (1920 x 1200)
- ▶ Memory function
- ▶ Triggers-input & output
- ▶ Robust long FPC

Current model / 249 ms

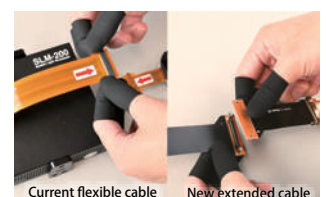


High speed model / 6 ms



## Applications

- ▶ Holography
- ▶ Wavefront correction
- ▶ Beam steering
- ▶ Biosensing
- ▶ Quantum computing
- ▶ Pulse/Beam shaping
- ▶ Programmable phase pattern



## Specifications

Item		min	max	Units	Notes
Wavelength range	Type A	450	700	nm	AR coating options: -00, -01, -12
	Type B	450	1100		AR coating options: -00, -02, -03
	Type C	450	1600		AR coating options: -00, -04, -14, -21
Phase depth	Type A	2 $\pi$	-	rad.	At 700 nm
	Type B				At 1100 nm
	Type C				At 1600 nm
Response time <sup>1)</sup> (Tr / Tf)	Type A	6 / 18		ms	Tr: Rise time between 10% and 90% levels in a phase change of 0 to 2 $\pi$ rad at 25°C. Tf: Fall time between 90% and 10% levels in a phase change of 0 to 2 $\pi$ rad at 25°C.
	Type B	17 / 53			
	Type C	48 / 200			
Frame rate		60 or 120		Hz	Factory setting, default 60 Hz
Panel reflectivity		Typ. >90		%	Depending on specified wavelength range
Aperture ratio		95		%	
Pixel size / pitch		7.8 / 8.0		$\mu$ m	
Panel size		(H)15.36 x (V)9.60		mm	Active area
Panel resolution <sup>2)</sup>		(H)1920 x (V)1200		pixel	
LCOS drive frequency		1200		Hz	
Phase stability		Typ. < 0.002 $\pi$		rad.	
Gray level		10 (1024 levels)		bit	
Optical power handling <sup>3)</sup>		Typ. 10		W/cm <sup>2</sup>	1550 nm CW, 2.0 mm beam diameter
Operation temperature		15	35	°C	No condensation
Storage temperature		0	40	°C	No condensation
Interface		DVI*/ USB 3.0		-	*10-bit using RGB 8-bit, 3 colors
Dimensions		117.6 x 117.6 x 33.7		mm	
Control software		GUI software and SDK for Windows		-	C#, Python, Matlab, Labview

1) Response time is a typical value and is not affected by frame rate.

2) Specification on the defect pixels are no object.

3) The value is not guaranteed.

## Ordering code

Ordering code	Wavelength range (nm)	Phase depth (rad.)	Response time Tr / Tf (ms)	AR coating range <sup>4)</sup> (nm)	AR coating reflectance <sup>5)</sup> (%)	Frame rate (Hz)
SLM-210-0002-A-00-1	450 to 700	min 2 $\pi$ (At 700 nm)	6 / 18	no coating	4	60
SLM-210-0002-A-00-2				no coating	4	120
SLM-210-0002-A-01-1				450-550	<0.5	60
SLM-210-0002-A-01-2				450-550	<0.5	120
SLM-210-0002-A-12-1				400-700	<1.5	60
SLM-210-0002-A-12-2				400-700	<1.5	120
SLM-210-0002-B-00-1	450 to 1100	min 2 $\pi$ (At 1100 nm)	17 / 53	no coating	4	60
SLM-210-0002-B-00-2				no coating	4	120
SLM-210-0002-B-02-1				750-850	<0.5	60
SLM-210-0002-B-02-2				750-850	<0.5	120
SLM-210-0002-B-03-1				1000-1100	<0.5	60
SLM-210-0002-B-03-2				1000-1100	<0.5	120
SLM-210-0002-C-00-1	450 to 1600	min 2 $\pi$ (At 1600 nm)	48 / 200	no coating	4	60
SLM-210-0002-C-00-2				no coating	4	120
SLM-210-0002-C-04-1				1500-1600	<0.5	60
SLM-210-0002-C-04-2				1500-1600	<0.5	120
SLM-210-0002-C-14-1				450-550/1500-1600	<0.6	60
SLM-210-0002-C-14-2				450-550/1500-1600	<0.6	120
SLM-210-0002-C-21-1				450-1600	<2.5	60
SLM-210-0002-C-21-2				450-1600	<2.5	120

4) We support custom AR coating request. Please contact us for detail.

5) Angle of incidence = 0 degree

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