

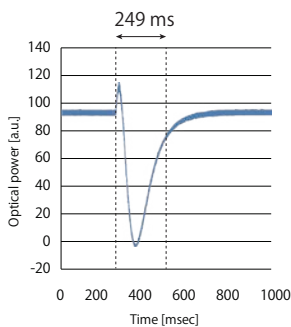
Liquid Crystal Based Spatial Light Modulator High Speed model / SLM-210

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.

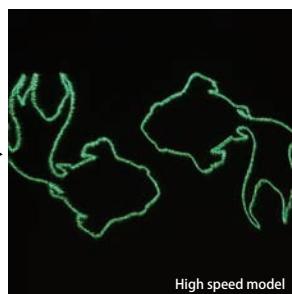
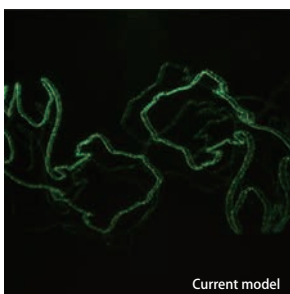
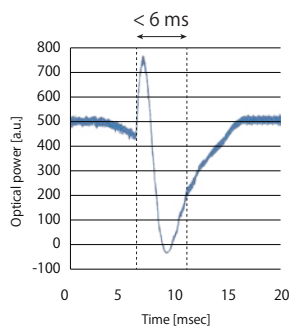
Features

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

Current model / 249 ms

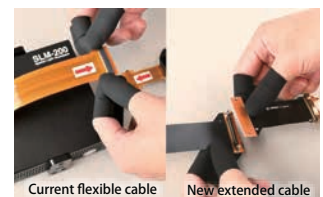


High speed model / 6 ms



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	400	700	nm	Ordering code : ①-⑥
	Type B	750	1100		Ordering code : ⑦-⑫
	Type C	450	1600		Ordering code : ⑬-⑳
Phase depth	Type A	2π	-	rad.	At 700 nm
	Type B				At 1100 nm
	Type C				At 1600 nm
Response time ¹⁾ (Tr / Tf)	Type A	6 / 18		ms	
	Type B	17 / 53			
	Type C	48 / 200			
Frame rate		60 or 120		Hz	Factory setting, default 60 Hz
Panel reflectivity ²⁾		Typ. > 70@532 nm		%	
Aperture ratio		95		%	
Pixel size / pitch		7.8 / 8.0		μm	
Panel size		(H)15.36 x (V)9.60		mm	Active area
Panel resolution ³⁾		(H)1920 x (V)1200		pixel	
LCOS drive frequency		1200		Hz	
Phase stability		Typ. < 0.002π		rad.	
Gray level		10 (1024 levels)		bit	
Optical power handling ⁴⁾		Typ. 10		W/cm ²	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.

Tr: Rise time between 10% and 90% levels in a phase change of 0 to 1023 bit (2π rad.) at 25°C.

Tf: Fall time between 90% and 10% levels in a phase change of 1023 to 0 bit (2π rad.) at 25°C.

2) Zero-order reflection.

Depending on specified wavelength range.

3) Specification on the defect pixels are no object.

4) The value is not guaranteed. Depending on the conditions of the laser oscillator used, the product's life may be significantly shortened due to accumulated exposure time.

Ordering code

Ordering code	Wavelength range (nm)	Phase depth (rad.)	Response time Tr / Tf (ms)	AR coating range ⁵⁾ (nm)	AR coating reflectance ⁶⁾ (%)	Frame rate (Hz)
① SLM-210-0002-A-00-1	400 to 700	min 2π(At 700 nm)	6 / 18	no coating	4	60
② SLM-210-0002-A-00-2				no coating	4	120
③ SLM-210-0002-A-01-1				450-550	<0.5	60
④ SLM-210-0002-A-01-2				450-550	<0.5	120
⑤ SLM-210-0002-A-12-1				400-700	<1.5	60
⑥ SLM-210-0002-A-12-2				400-700	<1.5	120
⑦ SLM-210-0002-B-00-1	750 to 1100	min 2π(At 1100 nm)	17 / 53	no coating	4	60
⑧ SLM-210-0002-B-00-2				no coating	4	120
⑨ SLM-210-0002-B-02-1				750-850	<0.5	60
⑩ SLM-210-0002-B-02-2				750-850	<0.5	120
⑪ SLM-210-0002-B-03-1				1000-1100	<0.5	60
⑫ SLM-210-0002-B-03-2				1000-1100	<0.5	120
⑬ SLM-210-0002-C-00-1	450 to 1600	min 2π(At 1600 nm)	48 / 200	no coating	4	60
⑭ SLM-210-0002-C-00-2				no coating	4	120
⑮ SLM-210-0002-C-04-1				1500-1600	<0.5	60
⑯ SLM-210-0002-C-04-2				1500-1600	<0.5	120
⑰ SLM-210-0002-C-14-1				450-550/1500-1600	<0.6	60
⑱ SLM-210-0002-C-14-2				450-550/1500-1600	<0.6	120
⑲ SLM-210-0002-C-21-1				450-1600	<2.5	60
⑳ SLM-210-0002-C-21-2				450-1600	<2.5	120

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

6) Angle of incidence = 0 degree

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