



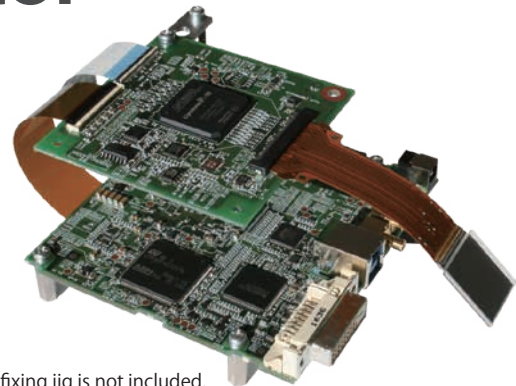
Embedded Module – Standard

Liquid Crystal on Silicon Based Spatial Light Modulator

SLM-20

Product Overview

The SLM-20 is a spatial light modulator for industrial applications. The SLM-20 consists of a compact LCOS head module and driver board, enabling easy integration into systems requiring accurate wavefront control, especially laser processing and microscopic applications.



* Circuit board fixing jig is not included.

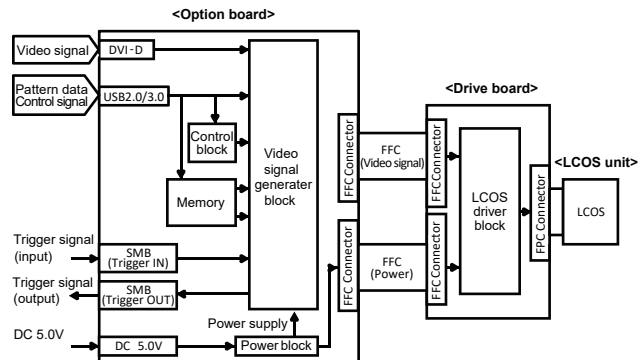
Features

- Wavelength range 400-1600 nm
- Small-sized and reasonable price for equipment integration
- WUXGA (1920 x 1200) resolution
- High Phase Resolution 10bit (1024) Gray Level
- Ultra Low Phase Noise $\sim 0.001\pi$ rad.(Typ.)

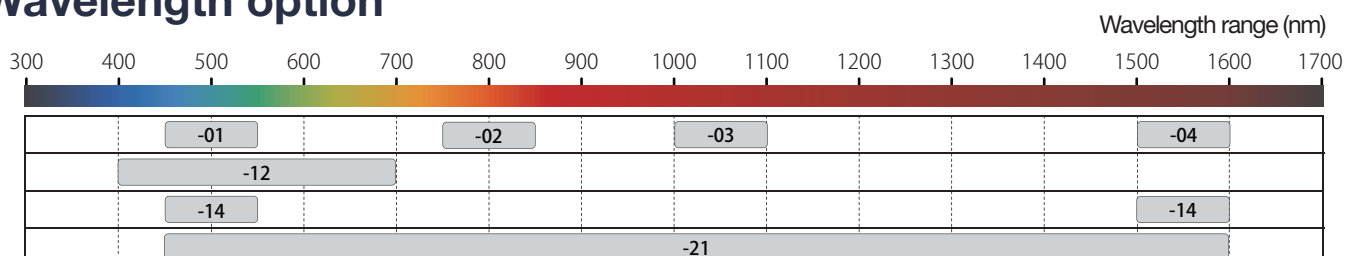
Applications

- Beam steering
- Wavefront correction
- Pulse/Beam shaping
- Diffractive optics
- Optical manipulation
- Programmable phase pattern

Block diagram



Wavelength option



Specifications

Parameter	Min	Max	Unit	Notes
Wavelength range	400	1600	nm	See AR Coating Options for more details
Phase depth	2π	-	rad.	
Response time ¹⁾ (Tr / Tf)	Typ. 200		ms	
Frame rate	60 or 120		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. < 0.001π		rad.	
Gray level	10 (1024 levels)		bit	
Optical power handling ⁴⁾	Typ.10		W/cm ²	CW @1550 nm, 2.0 mm beam diameter
Operation temperature	15	35	°C	No condensation
Storage temperature	0	40	°C	No condensation
Interface	DVI*/ USB 3.0 / Trigger IN, OUT (SMB)		-	*10-bit using RGB 8-bit, 3 colors
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 wavelength range.
- 3) Pixel defects are not warranted.
- 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.

AR coating option

Parameter	-00	-01	-02	-03	-04	-12	-14	-21	Unit
AR coating range ⁵⁾	no coating	450-550	750-850	1000-1100	1500-1600	400-700	450-550 / 1500-1600	450-1600	nm
AR coating reflectance ⁶⁾	4	< 0.5				< 1.5	< 0.6	< 2.5	%

- 5) We support custom AR coating request. Please contact us for detail.
- 6) Angle of incidence = 0 degree

Dimensions Unit [mm]

