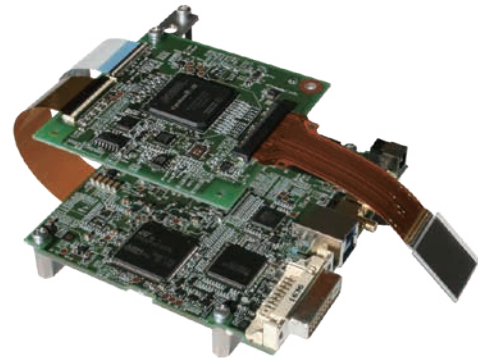


# Liquid Crystal Based Spatial Light Modulator Embedded module (For OEM) / SLM-20

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.

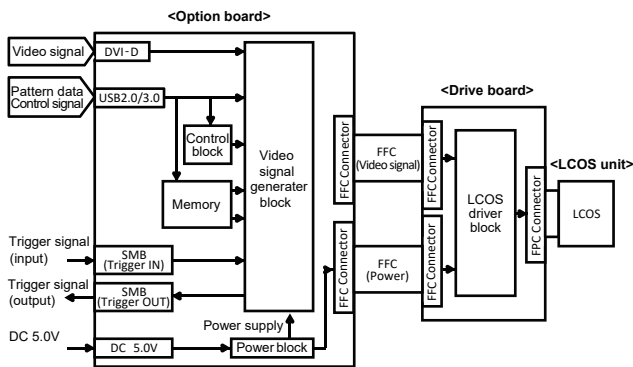


\* Circuit board fixing jig is not included.

## Features

- ▶ Wavelength range 400-1600 nm
- ▶ Small-sized and reasonable price for equipment integration
- ▶ Panel resolution beyond Full HD (1920 x 1200 pixels)
- ▶ High Phase Resolution 10-bit (1024) Gray Level
- ▶ Ultra Low Phase Noise ~0.001mrad.(Typ.)

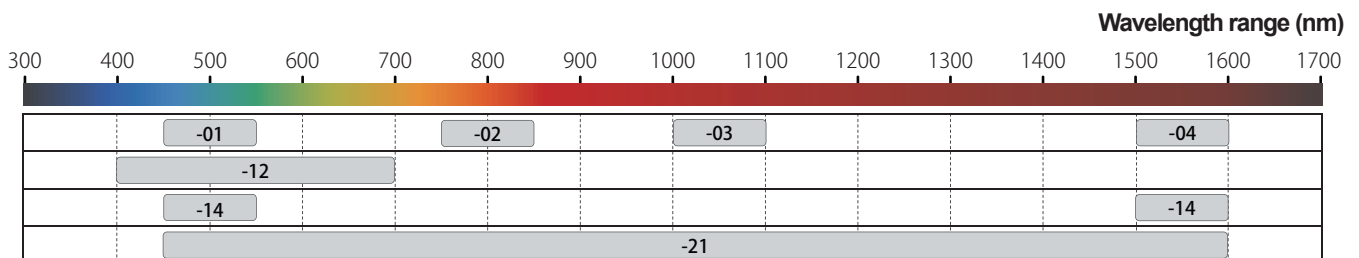
## Block diagram



## Applications

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

## Wavelength option



## Specifications

Item	min.	max.	Units	Notes
Wavelength range	400	1600	nm	See AR Coating Options for more details
Phase depth	$2\pi$	-	rad.	
Response time <sup>1)</sup> (Tr / Tf)	Typ. 300		ms	
Frame rate	60 or 120		Hz	
Panel reflectivity <sup>2)</sup>	Typ. >70@532 nm		%	
Aperture ratio	95		%	
Pixel size / pitch	7.8 / 8.0		$\mu\text{m}$	
Panel size	(H)15.36 x (V)9.60		mm	Active area
Panel resolution <sup>3)</sup>	(H)1920 x (V)1200		pixel	
LCOS drive frequency	1200		Hz	
Phase stability	Typ. < $0.001\pi$		rad.	
Gray level	10 (1024 levels)		bit	
Optical power handling <sup>4)</sup>	Typ.10		W/cm <sup>2</sup>	
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 ( $2\pi$  rad.) at 25°C.

Tf: Fall time between 90% and 10% levels in a phase change of 1023 to 0 bit ( $2\pi$  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.

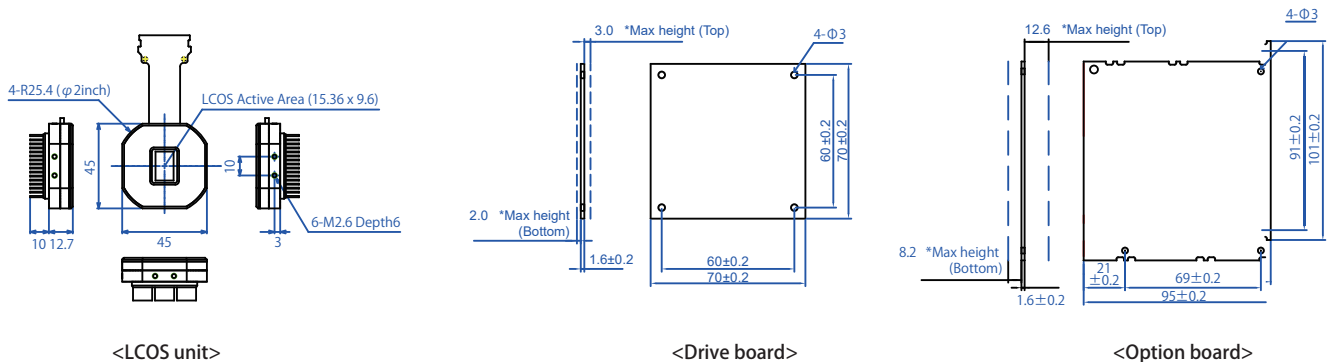
### < AR coating option >

Item	-00	-01	-02	-03	-04	-12	-14	-21	Units
AR coating range <sup>5)</sup>	no coating	450-550	750-850	1000-1100	1500-1600	400-700	450-550 / 1500-1600	450-1600	nm
AR coating reflectance <sup>6)</sup>	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]



[www.santec.com/en/](http://www.santec.com/en/)

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