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

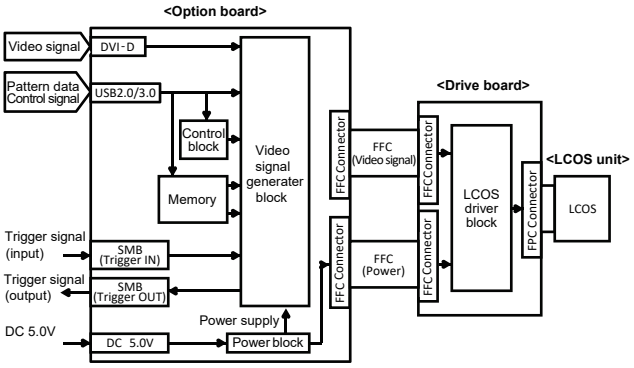
The SLM-20 is a spatial light modulator for industrial applications. The SLM-20 consists of a compact LCOS head module and driver board, enabling easy integration into systems requiring accurate wavefront control, especially laser processing and microscopic applications.

＊Circuit board fixing jig is not included.

Features

- Wavelength range 450-1600 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 ~0.001πrad.(Typ.)

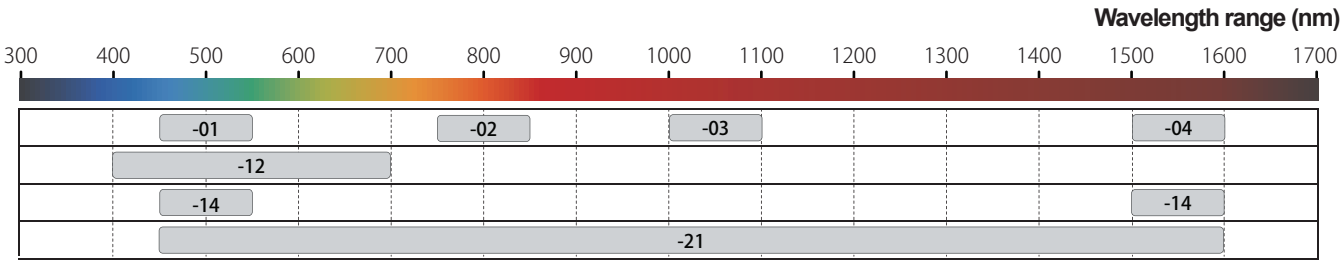
Block diagram



Applications

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

Wavelength option



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Specifications

Item	min.	max.	Units	Notes
Wavelength range	450	1600	nm	
Phase depth	2π	-	rad.	
Response time [1] (Tr / Tf)	Typ. 300		ms	
Frame rate	60 or 120		Hz	
Panel reflectivity	Typ. >90		%	Depending on specified wavelength range
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 [2]	(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 [3]	Typ.10		W/cm²	
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 2π rad. at 25°C.
Tf: Fall time between 90% and 10% levels in a phase change of 0 to 2π rad. at 25°C.

2) Specification on the defect pixels are no object.

3) The value is not guaranteed.

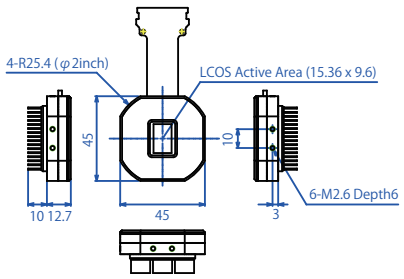
< AR coating option >

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

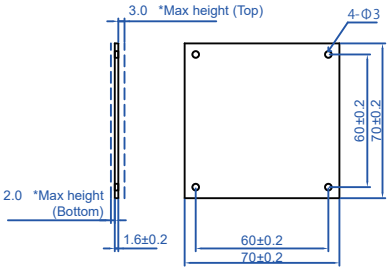
4) We support custom AR coating request. Please contact us for detail.

5) Angle of incidence = 0 degree

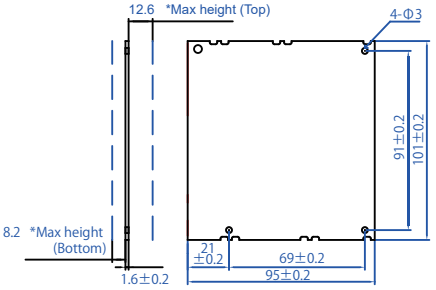
Dimensions Unit [mm]



<LCOS unit>



<Drive board>



<Option board>

Santec Japan Corporation
5823 Ohkusa-Nenjozaka, Komaki, Aichi 485-0802, Japan Tel. +81-568-79-3536 Fax +81-568-79-1718

Santec USA Corporation
400 Kelby Street Suite 1501, Fort Lee, NJ 07024, USA Toll Free +1-800-726-8321(santec-1) Tel. +1-201-488-5505 Fax +1-201-488-7702

Santec Europe Ltd.
99 Park Drive Milton Park, Abingdon Oxfordshire, OX14 4RY, U.K. Tel. +44-20-3176-1550

Santec (Shanghai) Co., Ltd.
21F Room H, Hua Du Bldg., No.838 Zhangyang Road, Pudong District, Shanghai 200122 China Tel: +86-21-58361261, Fax: +86-21-58361263

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