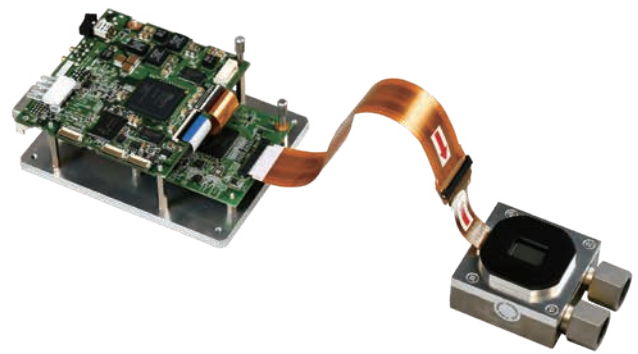


Liquid Crystal Based Spatial Light Modulator Embedded module (For OEM) / SLM-30

The SLM-30 is a spatial light modulator for high-power lasers that is compatible with 200 W (watt)-class lasers by optimizing the liquid crystal and heat dissipation structure. The LCOS-SLM head and drive circuit are connected by a flexible cable for easy integration into equipment. The LCOS-SLM head is equipped with a water-cooled heat sink for high cooling performance.

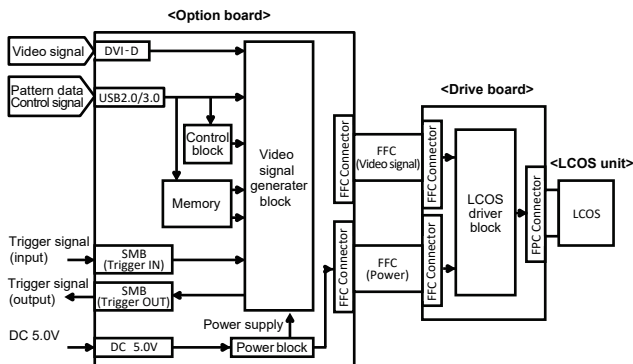


* Circuit board fixing jig is not included.

Features

- ▶ Center Wavelength 532, 800, 1064 nm
- ▶ High-power durability up to CW 200 Watts
- ▶ 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 $\sim 0.003\pi$ rad.(Typ.)

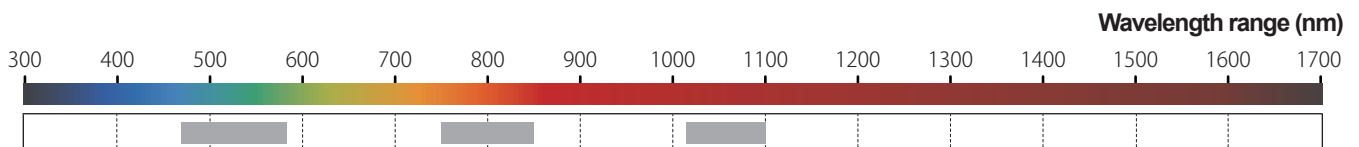
Block diagram



Applications

- ▶ Laser Processing
- ▶ 3D-Printing
- ▶ IC Trimming
- ▶ Wavefront adaptive optics
- ▶ Pulse / Spectral shaping

Wavelength option



Specifications

| Item | | min. | max. | Units | Notes |
|--|---------|---------------------------------------|------|-------------------|------------------------------------|
| Wavelength range | Type 01 | 485 | 580 | nm | |
| | Type 02 | 750 | 850 | | |
| | Type 03 | 1020 | 1110 | | |
| Phase depth | Type 01 | 2π | - | rad. | At 580 nm |
| | Type 02 | | | | At 850 nm |
| | Type 03 | | | | At 1110 nm |
| Response time ¹⁾ (Tr / Tf) | Type 01 | 37 / 72 | | ms | |
| | Type 02 | 171 / 324 | | | |
| | Type 03 | 163 / 330 | | | |
| AR coat reflectance | | - | 1.0 | % | Angle of incidence = 0 degree |
| Frame rate | | 60 | | Hz | |
| Panel reflectivity ²⁾ | | Typ. >80 | | % | |
| 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. < 0.003π | | rad. | |
| Gray level | | 10 (1024 levels) | | bit | |
| Optical power handling ⁴⁾ | | - | 200 | W/cm ² | 1064 nm CW |
| Water flow | | 1~10 | | L/min. | 15~25°C(Cooling water temperature) |
| Water inlet and outlet | | Pipe fitting Rc(PT) 3/8 inch female | | - | |
| 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.

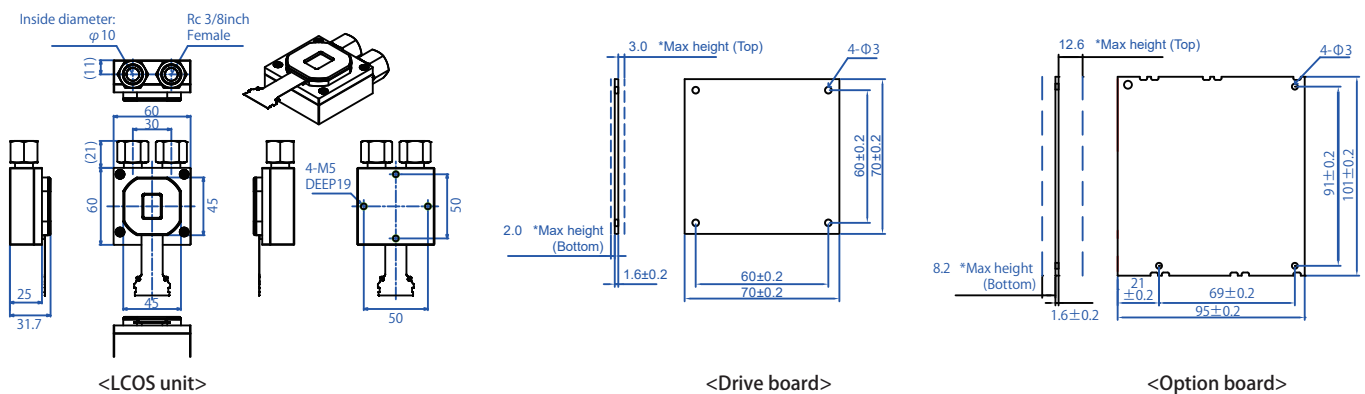
2) Zero-order reflection.

Depending on 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.

Dimensions Unit [mm]



www.santec.com/en/

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