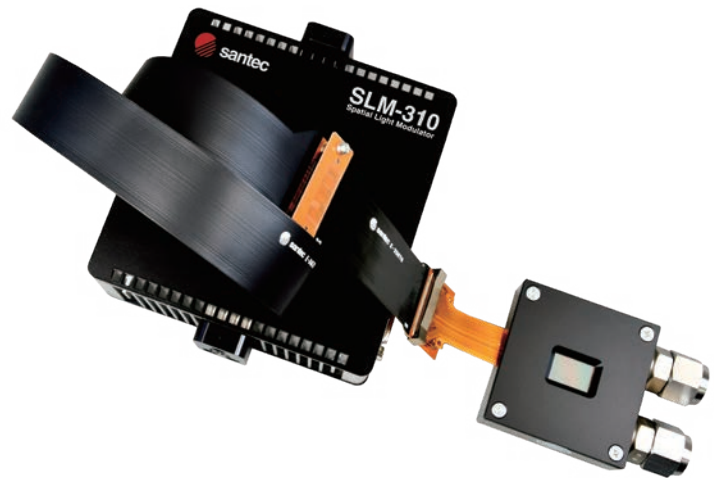


Spatial Light Modulator for laser processing (500W durable model) / SLM-310-G

SLM-310-G with significantly improved higher input power durable up to 500 W at 515 nm (green light). This product combines santec LCOS technology with a highly durable specialty liquid crystal and a proprietary water-cooling design to dissipate heat generation for maximum performance.

The SLM-310-G water-cooling LCOS based SLM utilizes a (V)15.36mm x (H)9.6mm, small diagonal 0.72 inch LCOS panel size with a pixel resolution of WUGA (1920 x 1200) 2.3 Mega-pixels, and It has a superior 10 bit (1024 gray level) phase resolution exceeding the standard commercially available 8 bit (256 gray level).

Using green lasers has a significant advantage over near-infrared lasers for laser processing because of excellent absorption of green light in numerous metals. Using high power durable SLMs at 515 nm enables new complex processes such as software programmable dynamic beam shaping, beam direction correction and multiple beam splitting and focusing using computer-generated holograms, which can not be achieved using current laser processing methods such as a Galvano-scanner.



Features

- ▶ WUXGA (1920 x 1200) resolution
- ▶ 10-bit (1024 gray levels)
- ▶ Excellent phase stability ($\sim 0.003\pi$ rad.)
- ▶ Memory function
- ▶ Triggers-input & output
- ▶ High Power-durable LCOS based SLM

Applications

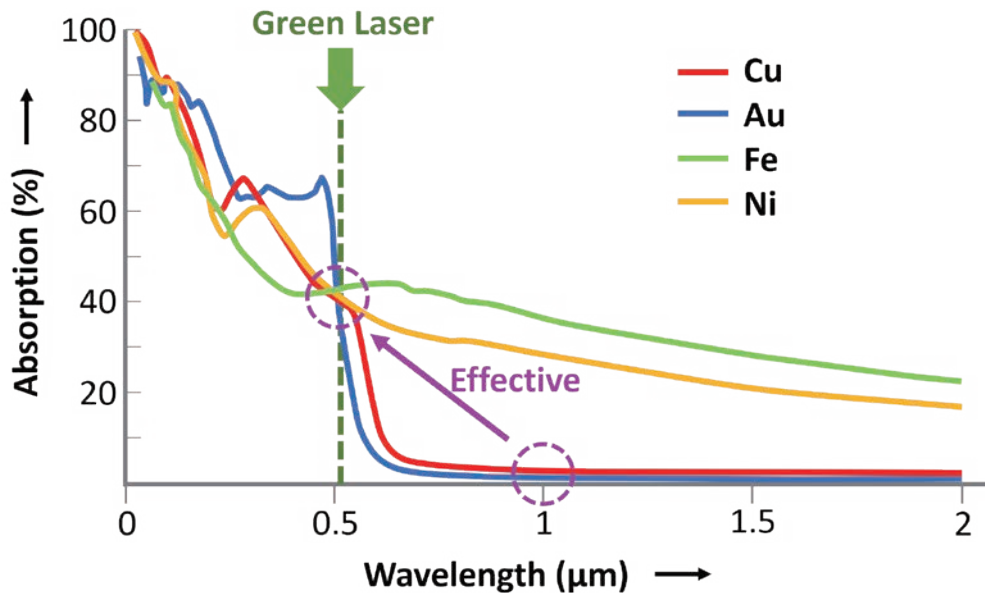
- ▶ Laser Processing
- ▶ 3D-Printing
- ▶ IC Trimming

Specifications

| Item | min. | max. | Units | Notes |
|--------------------------------------|----------------------------------|------|--------|--------------------------------------|
| Operating wavelength range | 532 ± 50 | | nm | |
| Panel size | (H)15.36 x (V)9.60 | | mm | Active area |
| Pixel resolution ¹⁾ | (H)1920 x (V)1200 | | pixel | |
| Pixel size / pitch | 7.8 / 8.0 | | μm | |
| Panel reflectivity | Typ. >92 | | % | |
| Aperture ratio | 95 | | % | |
| Gray level | 10 (1024) | | bit | |
| Frame rate | 60 or 120 | | Hz | Factory default setting |
| LCOS drive frequency | 1200 | | Hz | |
| Phase depth | 2π | - | rad. | |
| Phase stability | Typ. <0.003π | | rad. | |
| Response time ²⁾ | Typ. 200 | | ms | |
| Interface | DVI* / USB3.0 | | - | *10-bit using RGB 8-bit, 3 colors |
| Operating temperature range | 15 | 35 | °C | No condensation |
| Storage temperature | 0 | 40 | °C | No condensation |
| Optical power handling ³⁾ | - | 500 | W | CW @ 532 nm |
| Dimensions | 122 x 122 x 38.3 | | mm | |
| Control software | GUI software and SDK for Windows | | - | |
| Water flow | 8 | | L/min. | 15 ~ 25 °C |
| Water inlet and outlet | Pipe fittings | | - | Rc(PT) 3/8 inch female ⁴⁾ |

- 1) Specification on the defect pixels are no object.
- 2) Response time is a typical value and is not affected by frame rate.
- 3) The value is not guaranteed.
- 4) Supports NPT standard using attached conversion adapters.

Absorption wavelength dependence of metals



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