Preliminary

SANTEC OPTICAL COMPONENTS

Spatial Light Modulator for laser processing (500W durable model)

Spatial Light Modulator / 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).

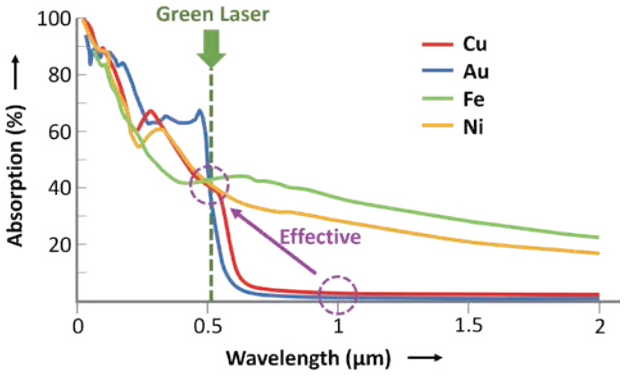
Using green lasers has a significant advantage over near-infrared lasers for laser processing because of excellent absorption of green light in numerous metals. Using high power durable SLMs at 515 nm enables new complex processes such as software programmable dynamic beam shaping, beam direction correction 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 (~0.003π rad.)
- Memory function
- Triggers-input & output
- High Power-durable LCOS based SLM

Applications

- Laser Processing
- 3D-Printing
- IC Trimming



Absorption wavelength dependence of metals

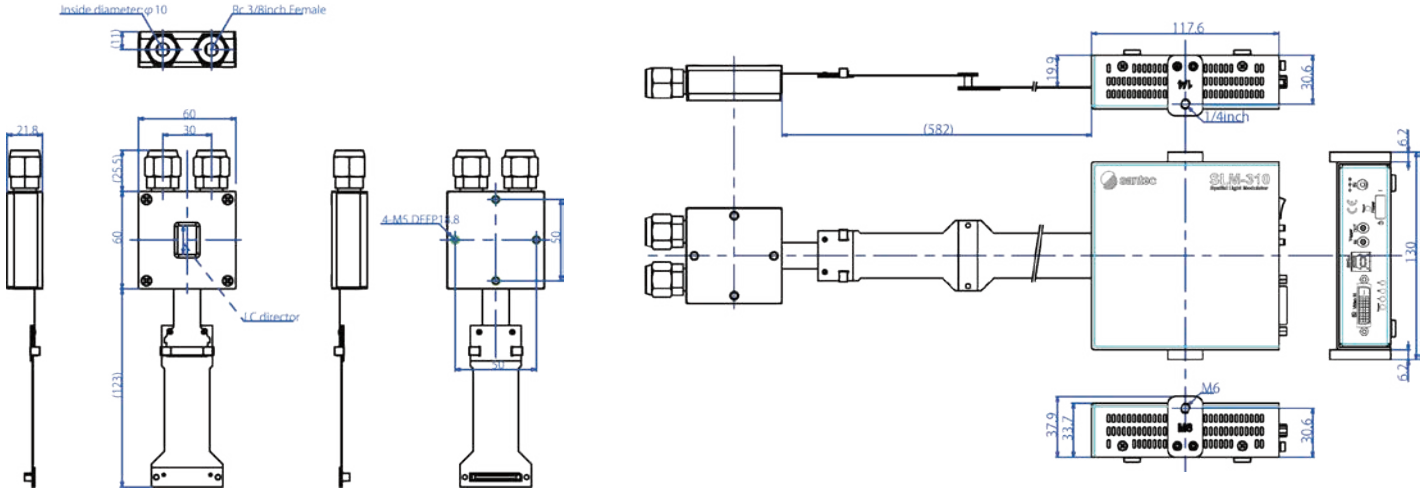
santec

Specifications

Item	min.	max.	Units	Notes
Operating wavelength range	482	582	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 [2]	Typ. > 80		%	
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 [3]	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 [4]	-	500	W	CW @ 532 nm
Dimensions	117.6 x 117.6 x 33.7		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 [5]

1) Specification on the defect pixels are no object.
2) Zero-order reflection.
Depending on specified wavelength range.
3) 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.
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.
5) Supports NPT standard using attached conversion adapters.

Dimensions Unit [mm]



www.santec.com/en/

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