

Surf Master

SERIES

Laser Marking System



Surf Master series laser marking system is efficient tool for creating patterns on the surface of almost any material by all solid state diode pumped frequency tripled laser. Short 355 nm wavelength makes it possible to mark materials that are normally transparent like sapphire or glass. High photon energy of UV radiation results in high contrast photochemical rather than thermal interaction with material what allows this system to mark most of plastics at higher contrast, higher quality and faster processing speed as well as without any need of additional pigment additives to the material. Specificity of UV interaction with polymer also allows fast processing speed with no need for additional pigment additives to the material. Short UV wavelength makes it possible to focus laser radiation to relatively small spot sizes to create smaller patterns on the samples which in combination with higher UV radiation absorption is a perfect choice for processing semiconductors in electronics industry.

Diode pumped laser technology allows higher productivity – marking speed is available up to 2 meters per second. All solid state design ensures low operating costs and maintenance free operation – the features making the system suitable for high volume manufacturing conditions in wide range of applications.

The Surfmaster system is equipped with laser output energy control loop. Output power is monitored periodically in order to ensure long term repeatability of marking performance. Two axes galvo scanning system ensures fast beam positioning over large sample field. High positioning accuracy and small-seized dot allow formation of small features of marked picture on virtually any material.

For many applications such as marking serial numbers, bar codes for identification or small „invisible“ signs for trade mark protection or even to scribe semiconductors or plastics SurfMaster series marking system is a preferred cost-effective choice.

FEATURES

- High up to **100 kHz** repetition rate
- **UV 355 nm** wavelength
- High up to **3.5 W** output power @ **355 nm**
- **Fast** galvo-scanner based beam positioning
- Small **down to 25 micron** spot size
- **Large** 100×100 mm working area
- PC **control**/diagnostics
- **Simple** and cost **effective** design

APPLICATIONS

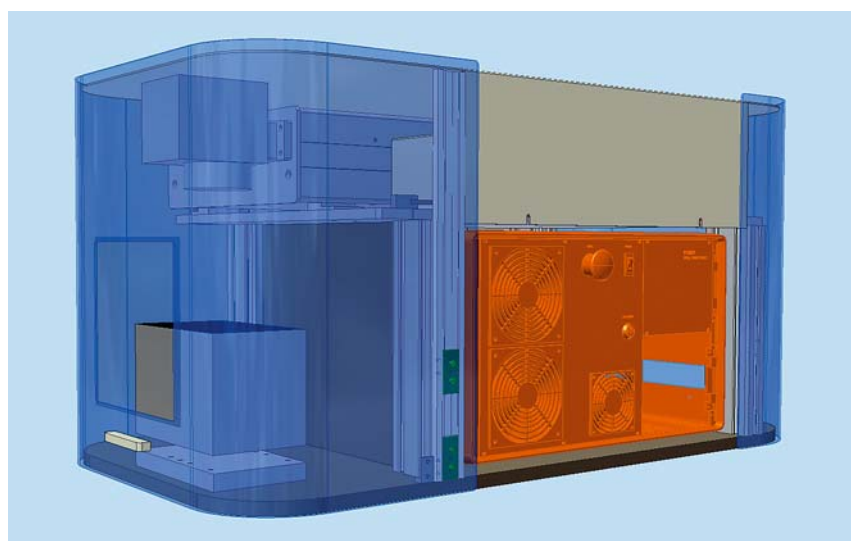
- Glass and sapphire marking
- Si and other semiconductors marking and scribing
- Polymers/plastics marking and cutting
- Composites (carbon fiber and fiberglass) marking
- Stainless steel or other metals precise marking
- Precise thin metal foil cutting
- Your application is welcome...

SPECIFICATIONS

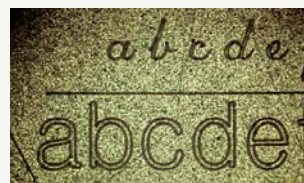
Type of scanning head	Galvanometric deflection of laser beam in X and Y axis
Optics	F-theta objective with flat field focus
Focus length, mm	160
Working field, mm ²	100 x 100
Working distance, mm	220
Spot size for low mode TEM ₀₀ ¹⁾ , μm	25
Marking speed, m/s	0–2 (up to 200 characters/s, dimension depend)
Positioning speed, m/s	0–7
Focus depth, mm	1.5 (depending on the material)
PHYSICAL CHARACTERISTICS	
Size (W x H x L), mm	516 x 500 x 966
OPERATING REQUIREMENTS	
Ambient temperature, °C	15–30
Relative humidity (noncondensing), %	10–80
Voltage	100–240 VAC, single phase 50/60 Hz
Power, kW	<1.5
LASER PARAMETERS	
Output power, W	From 1 to 3.5 (depending on model)
Wavelength, nm	355
Repetition rate, kHz	single shot – 100
Pulse duration, ns	< 20
M ²	< 1.5

¹⁾ UV extension is pumped by OPO signal beam.

Specifications are subject to changes without advance notice.



MATERIAL PROCESSING SAMPLES



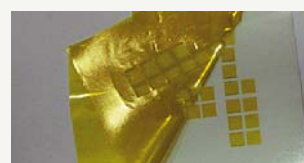
Marking of sapphire



Silicon wafer marking



Glass marking



Polymer film cutting



Marking of cast acrylic glass (PMMA)



Marking of polyester



Marking of carbon fiber



Marking of fiber glass

Requests for custom made products are welcome !

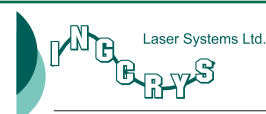


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