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 prefered cost-effective choice.

FEATURES

- High up to **100 kHz** repetition rate
- High up to **3.5 W** output power
- Short pulse duration
- UV **355 nm** wavelength
- Fast galvo scanner based beam positioning
- Small down to **25 micron** spot size
- Large **100x100 mm** working area
- PC control/diagnostics
- User friendly software
- Simple and cost effective design

APPLICATIONS

- Glass and saphire marking
- Si and other semiconductors marking and scribing
- Polymers/plastics marking and cutting
- Composites (carbon fiber and fiberglass) marking
- Precise thin metal foil cutting
- Your application is wellcome...

EKSPLA
An EKSMA Group Company

SPECIFICATIONS

Type of scaning 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

[1] *At 355 nm.*

Specifications are subject to changes without advance notice.

Laser Parameters

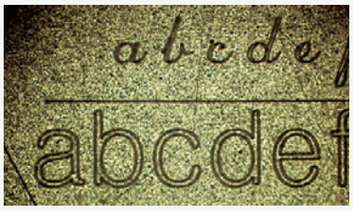
Output power, W	3.5
Wavelength, nm	355
Repetition rate, kHz	single shot – 100
Pulse duration, ns	< 20
M^2	< 1.5

RELATED PRODUCTS

Industrial grade Q-switched diode pumped Nd: YVO_4 laser NL15100 series

- Up to **100 kHz** repetition rate
- Up to **15 W** output power at 1064 nm
- **< 28 ns** pulse duration

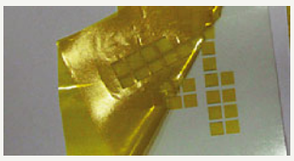
MATERIAL PROCESSING SAMPLES



Marking of sapphire

Silicon wafer marking

Glass marking

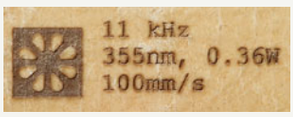


Polimer film cutting

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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