

# LASER SYSTEM FOR SURFACE TEXTURING

## MODEL NO: SP2L-LTM-FL-DUAL



### Key Features of Laser Surface Texturing Machine

- **Motion & Axis Capabilities**

3-axis architecture, enabling the machine to texture complex, multi-angled surfaces in a single setup

- **Laser Source**

Dual Laser sources (nanosecond pulses); option for combining femtosecond Laser) and each optimized for different texturing needs

- **Material Versatility & Functional Texturing**

Capable of working with many materials e.g. metals, ceramics & composites, and imparting both aesthetic and functional textures: e.g., superhydrophobic, anti-icing, anti-wear, or optical effects

- **Precision & Repeatability**

Fully digital and non-contact, ensuring highly repeatable, accurate output—critical for industries like medical implants, luxury goods, and mass production.

### Applications

1. **Engineering & Manufacturing**

- \* Friction and Wear Control
- \* Tool Performance Enhancement
- \* Improved Adhesion
- \* Injection Moulding

2. **Materials Science**

- \* Corrosion Resistance
- \* Surface Wettability Control
- \* Optical Properties

3. **Automotive & Aerospace**

- \* Drag Reduction
- \* Noise Reduction

4. **Energy Sector**

- \* Solar Panels
- \* Fuel Cells & Batteries



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**SPECIALISE PRODUCTS PRIVATE LIMITED**

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Kharghar 410210 ( Navi Mumbai), RAIGAD, Maharashtra INDIA**

# LASER SYSTEM FOR SURFACE TEXTURING

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### Technical Specifications

#### MACHINE SPECIFICATIONS

Electrical Power Requirement	220 VAC, 50 Hz
Operating Temperature	10°C–28°C
Operating Humidity	5%–95%
Cooling	Air Cooled
Marking Area	60mm X 60mm
Marking preview	Available
Red pointer	Available
Machine Laser Controller of high accuracy and precision	Available
Granite Base & Granite Z-Axis Portal	Available

#### LASER TECHNICAL SPECIFICATIONS- **MADE IN EUROPE**

Laser Class	Class - IV
Wavelength	532 nm
Beam Quality (M2)	less than or equal to 1.3
Beam Diameter	18 µm or lower
Frequency Tuning	10kHz – 100kHz
Average Output Power	5 W
Pulse width	2–80 ns

#### SCANNING SYSTEM FEATURES

High resolution scanner	High resolution scanner (Made in Europe)
High precise scanner for laser positioning	Available
3-Dimensional Texturing	Featured to process 3-D Texturing

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### Technical Specifications

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#### MOTORIZED Z AXIS

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Precise servo driven system for Z axis

For focusing of laser beam for precise laser operations

Stoke Length: 250mm or more

Positional Accuracy:  $\pm 50\mu\text{m}$  or better

Software controlled

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#### COMPUTER- We will supply either DELL or HP make

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- Configuration Type: HIGH configuration industrial PC
  - Processor: i7 with 13th generation or better
  - RAM: 16GB or better
  - Hard Disk: 512 GB SSD or better
  - Installed Licenses Windows 11 Pro Monitor Dell (28 ") or Equivalent
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#### LENS- MADE IN EUROPE

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- Type: Telecentric or better
  - Feature For Parallel Beams: Focal Length 100mm or better and Marking Area  $\varnothing 50$  mm or better
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#### SOFTWARE

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- File formats: Many bitmap and vector import and export formats (bmp, plt, dxf, ai, svg, etc.).
  - Can support 3D formats such as STL, CNC, PLT, etc.
  - Barcodes 1D and 2D barcodes like 3of9, EAN, EAN-128, Code128, UPC-A, Data Matrix, extended Data Matrix ECC 200, Data Matrix dot generation, etc.
  - Text Linear and radial text, Windows True Type fonts, serial numbers, customizable date/time objects, laser fonts, font editor for defining customized laser fonts
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#### SAFETY ELEMENTS

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- Safety Cabinet will be provided.
  - Panel AC will be provided.
  - Integrated with tower light.
  - Emergency button provided.
  - Goggles will be supplied which will comply with ANSI Z136
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### Technical Specifications

#### FIBER LASER MODULE- **MADE IN EUROPE**

Laser Type	Fiber Laser
Laser Class	Class-IV
Wavelength	1059-1065 nm
Beam Quality (M2)	less than or equal to 1.3
Beam Diameter	36 µm or lesser
Frequency	Tuning 20kHz-1000kHz or better
Average Output Power	20W
Pulse width	3-500 ns or lower
Cooling	Air
Note	Fiber laser module Includes laser head with high resolution scanning system, telecentric lens, Motorized Z-Axis, Granite Z-Axis Portal

#### X-Y LINEAR TRANSPORT SYSTEM FEATURES

High positional accuracy up to  $\pm 25\mu\text{m}$  or better

Stroke length of up to 300mm or better

Weight carrying capacity up to 3 kg or better

Movement along both X & Y direction

#### UPS (Uninterrupted power supply)

Type - Online

Features - Capacity: 3kVA or more

Highly recommended for maintaining continuous power supply to laser unit

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# LASER SYSTEM FOR SURFACE TEXTURING

## MODEL NO: SP2L-LTM-FL-DUAL



### Technical Specifications

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#### FUME EXTRACTOR (SMART)

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Features: Functions only during laser operation

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Operating voltage: 230V or better

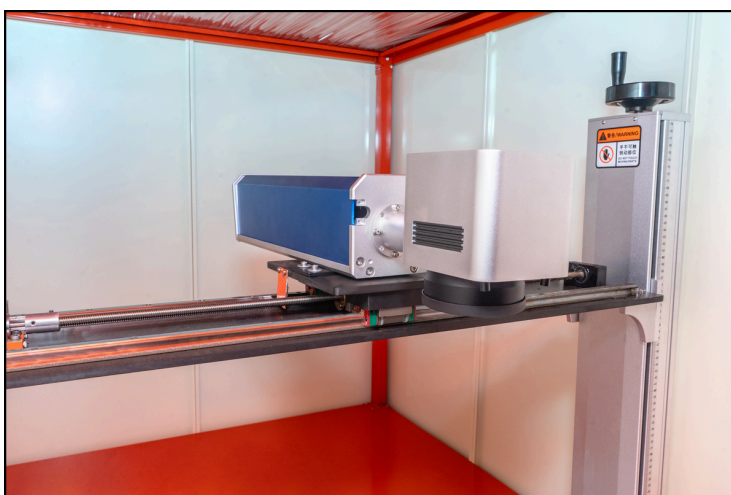
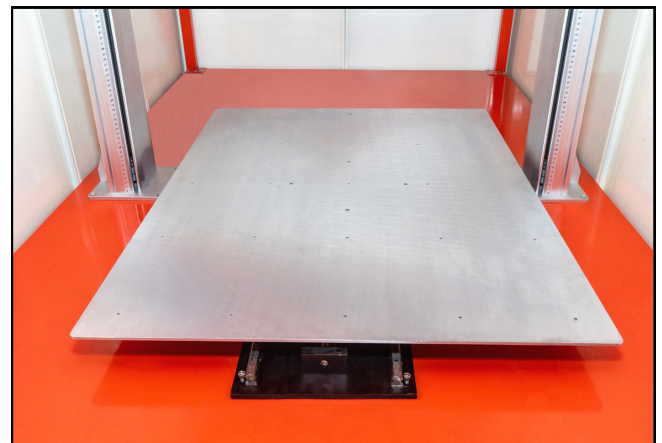
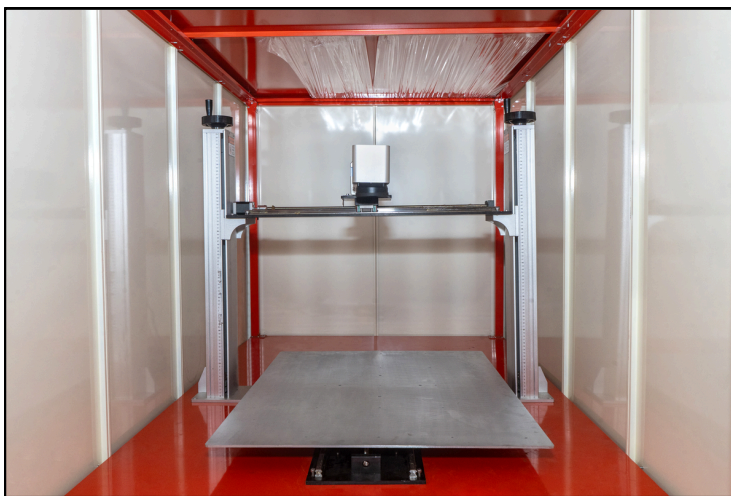
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Removes fumes extracted during laser operation

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Airflow: 380 m3/hr or better

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