PRODUCT CATALOG

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SEJONG
Scientific
Instrumunts

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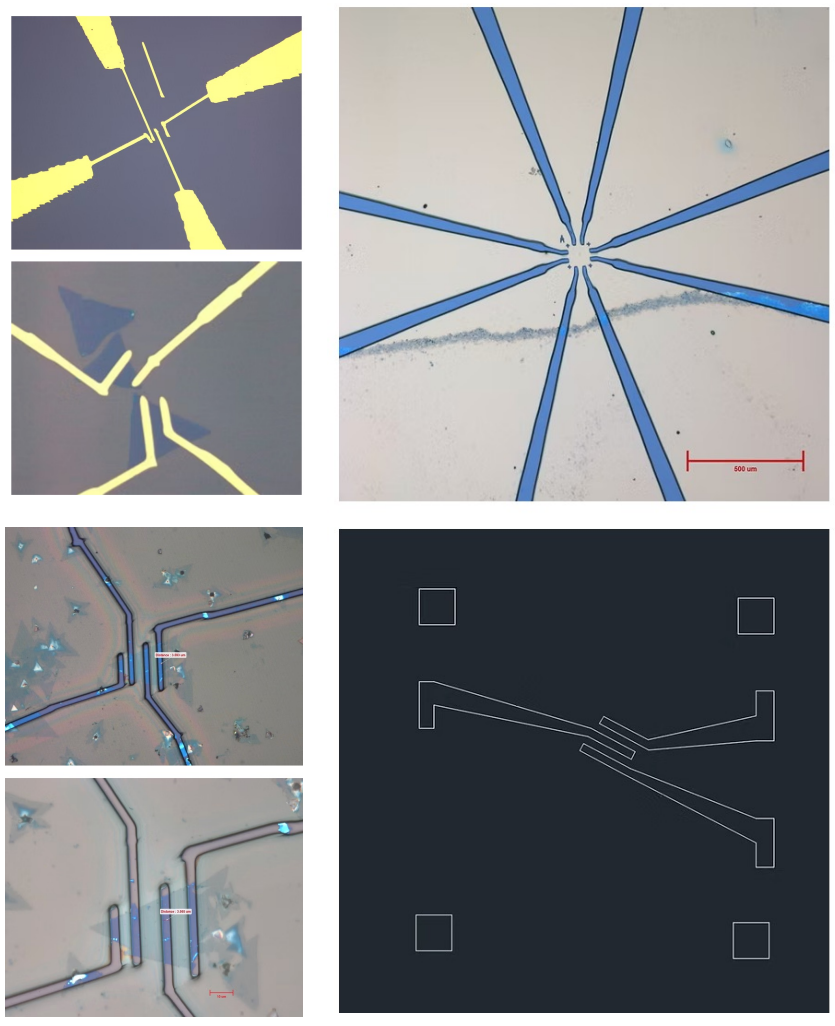


Laser Direct Writer UVW04

Product Information

Photolithography for Various Devices

- Research Device Fabrication
- Semiconductor Devices, Solar Cells
- Microfluidic Channels, Lab-on-a-Chip

Optical Microscope + 405 nm Laser Focus
Magnification: 5x, 10x, 20x, 50x, 100x
Automatic Objective Lens Switching
Laser Focus / Sample Focus Switching Available
Built-in Autofocus Function Includedv

Features

Affordable Price for Small-Scale Research

Open Architecture Design Allowing Modifications for Specialized Research

Compact Design (Height: 47 cm), USB Connection → Compatible with Glove Box Installation

Performances

Minimum Line Width: Approx. 1 μm
Sample Stage Resolution: 0.125 μm
Maximum Scan Area: 25 mm × 25 mm

Applications

Various Semiconductor Devices
Solar Energy Device Fabrication
Microfluidics, Lab-on-a-Chip

Convenient Features

Load CAD (4 layers) or Image Files

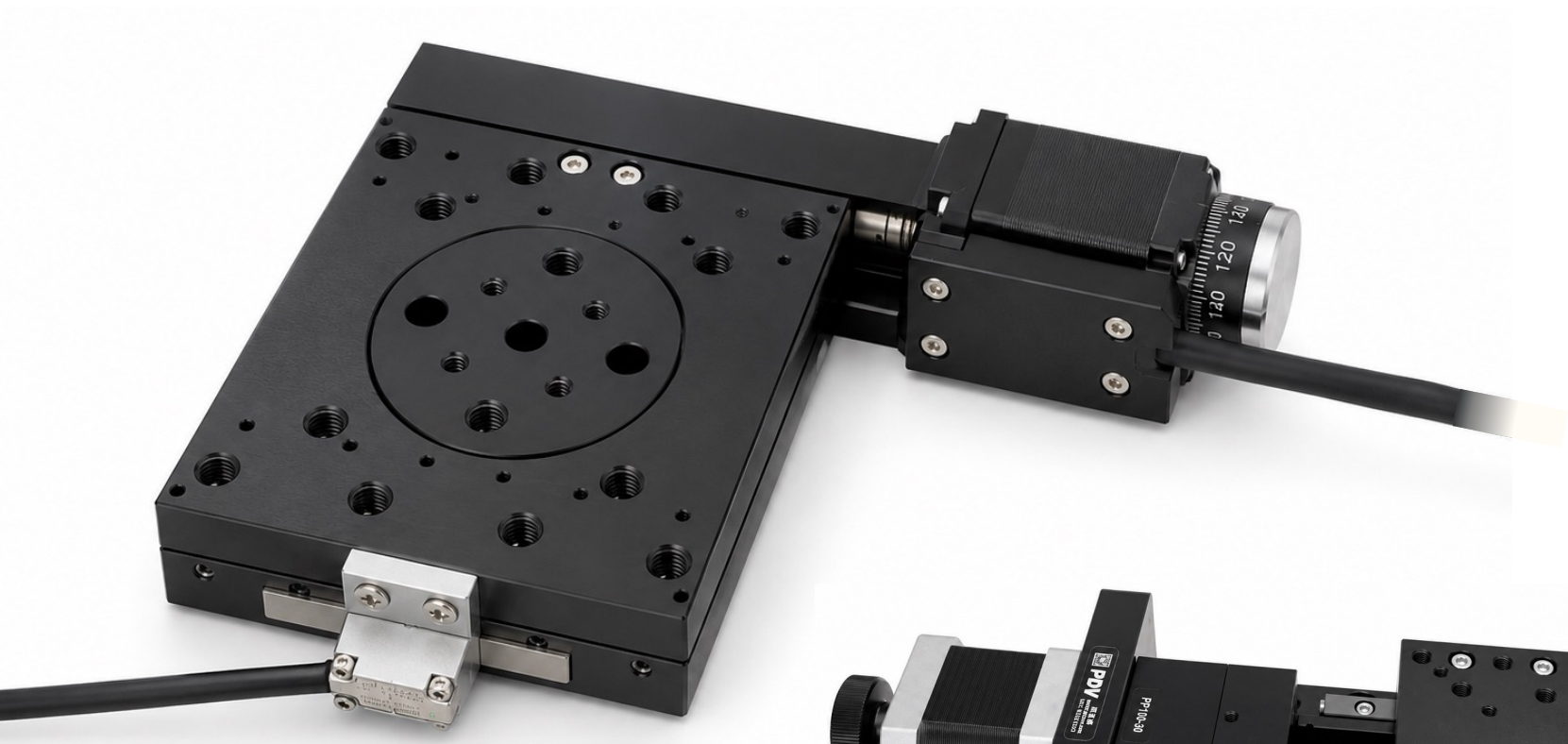
Direct Line Drawing Using Mouse

Automatic Focus Adjustment

Fine Patterns and Contact Pads Processed Simultaneously

Keyboard Control → Position Adjustment

Mouse Control → Move to a Specific Sample Position



Nano Motorized Stage with Long-Travel Range

ST01, PDV01

Product Information

Motorized stage based on Step motor and encoder feedback control for 10 nm resolution
Motorized Stage + Nanometer Controller
Simple interface based on USB connection
Step motor based long range stage controlled by encoder-based driver
Affordable price: ~$3,400 (ST1), ~$2,600 (PDV1)
Reliable performance

Features

USB interface with pc

Windows application as a Control panel

User interface through UART standard

Coding: support all languages (C, C++ C#, python, etc.)

Serial Commands: Text-based ASCII Commands provided for full control by user application

No acoustic noise: high performance step motor driver

Specification

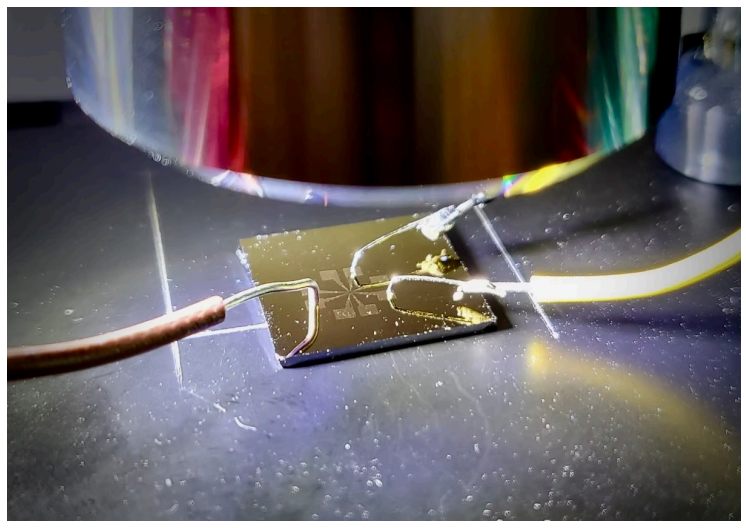
Two models: ST1, PDV1 (drawings)
Supports all combinations: X, XY, and XYZ
XY model: synchronized for vector scanning
Minimum Resolution: 10 nm
Stability: 20 nm (ST1), 60 nm (PDV1)
Repeatability: 20 nm (ST1), 60 nm (PDV1)
Travel range: 25 mm (ST1), 30 mm (PDV1)
Step motor & lead screw type
Feedback control
No Backlash - compensated y feedback
No Creep - eliminated by feedback control
Feedback control: Microcontroller
Setting time: <100 ms

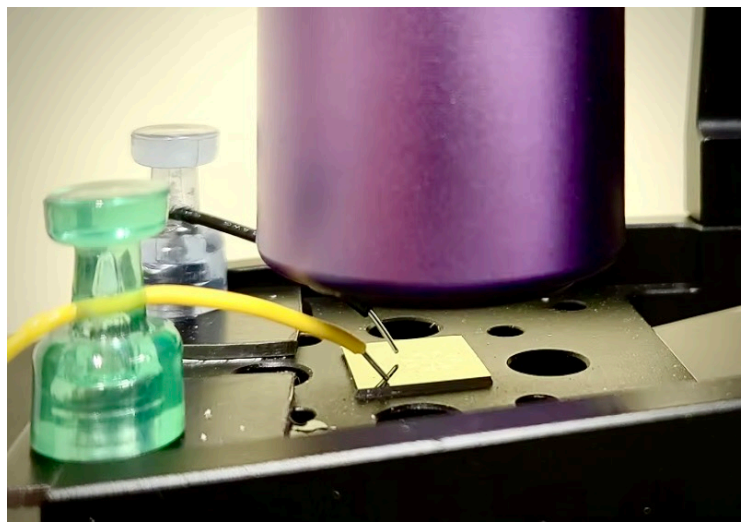
Performances

Encoder 1MHz, 10 nm (by Renishaw)
Max speed: 600 um/s
Step motor full step: 0.125 µm
256 micro-step
Scan range: 25 mm x 25 mm x 25 mm

Applications

Optical experiments
Lab-made lithography
Microscopic Mapping experiments
Alignment for wafer, mask, optics, etc.
Profilometer
3D nano-scanner
3D nano-printer





Scanning Photo-Current Microscope SPCM02

Product Information

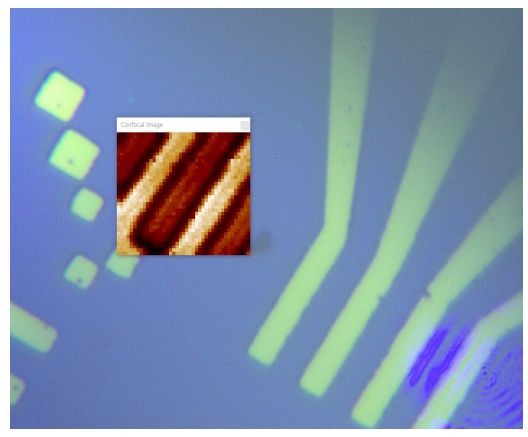
Photocurrent mapping for pn junction device, optoelectronic device
Optical microscope functionality (objective lens 50x)
Simultaneous measurement of confocal image and photocurrent map
I-V curve measurement based on laser irradiation
Measurement of photocurrent change over time
Characteristics of nano devices and solar cells

Features

Affordable price for small-scale research

Open design specialized research through modification

Compact design (height: 47cm),
USB connection → Glove box insertable



Performances

Minimum resolution: ~ 700 nm

Sample stage resolution: 0.125 μm

Scannable range: up to 25 mm x 25 mm

Usage

Performance evaluation of semiconductor pn junction devices
Solar cell design
LED device performance evaluation

Convenient Features

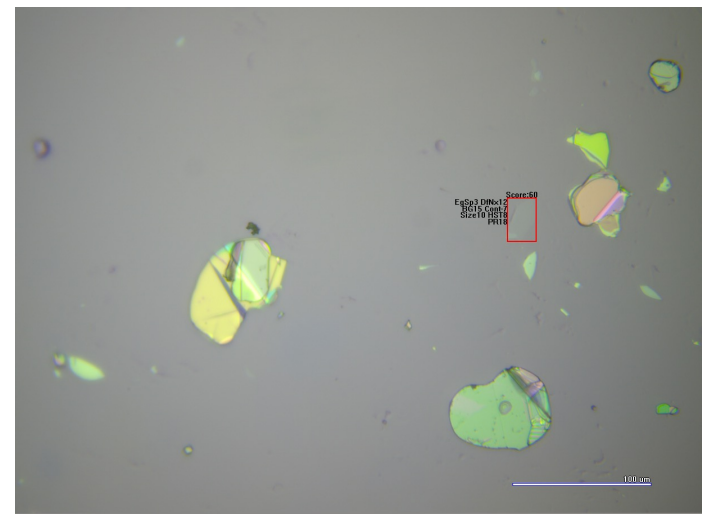
Auto-focusing

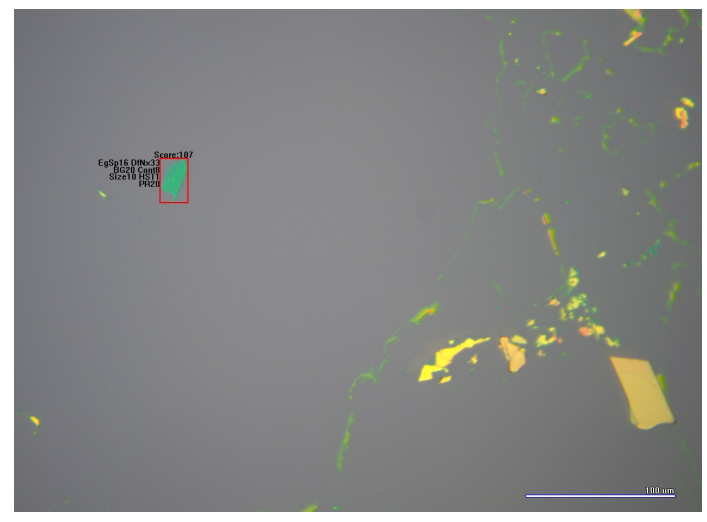
Large area scanning stage

Magnet holder for electric lead contact
Device protection using jumper wire on bread board

Keyboard operation position adjustment

Mouse operation move to a specific location on the sample





2D Material Detector SLG2

Product Information

scan range: 5cm x 5cm maximum
materials: graphene, hBN, TMDC, Mxene, etc. including all 2d materials
substrate: SiO_2/Si, glass,
scan speed: 200 um/sec.
accuracy: single layer (for graphene, hBN)
Saved image format: jpg file
coordinate: recorded in file name

Features

Upgrade: AI based 2d inference

Auto focusing while scanning

High accuracy to single layer detection

Affordable price for small-scale research

Compact design → Glove box insertable

Performances

Searches using an optical microscope and saves the location and image.
Scan time: 15 minutes to scan 25 cm²
measuring changes in the preset RGB values due to interference effects.
Can be used for research on discovering unknown two-dimensional materials.

Convenient Features

Long time stable scanning (> 10 hr)

Auto-focusing and tilt correction

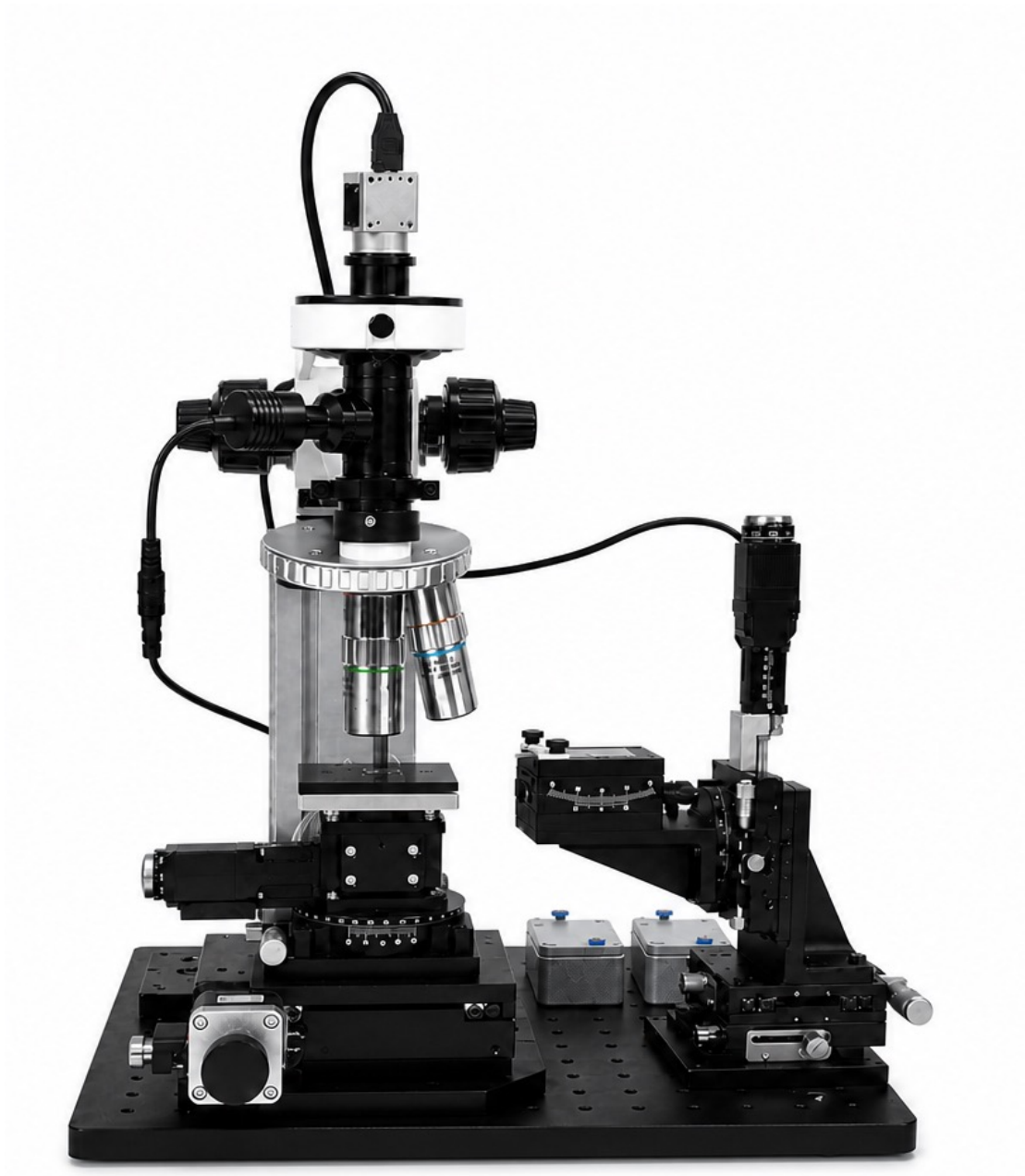
Keyboard operation → position adjustment

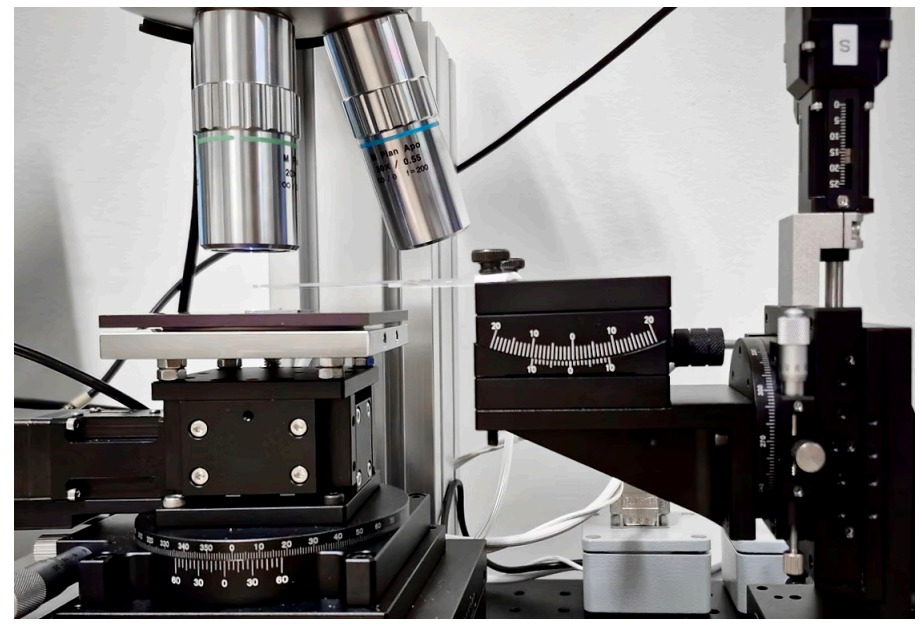
Mouse control → move to a specific location on the sample

Marking on the microscopic image

Applications

Finding Exfoliated 2d materials
Grown crystal detection
Searching large flakes after synthesis





Transfer System + Detector for 2D Material

Innovative Features

- A unique feature available only in our system: automatic detection and localization of 2D materials prior to transfer.
- Stamp stage: Z-axis motorized, (Optional, XY-motorized), accurate speed, distance control from PC application
- Heater Stage: 80 mm × 80 mm, Up to 200 °C, PID Temperature Control from PC app.
- Vacuum chucks: Secure wafer handling is achieved using a vacuum chuck during the pickup and transfer process. With a spacious stage capable of holding up to five vacuum chucks, multiple 2D materials can be prepared simultaneously. This unique design significantly streamlines the fabrication of van der Waals heterostructures, enabling researchers to quickly alternate between different materials and build complex multilayer devices with maximum efficiency.
- Rotation stage for sample (optionally motorized): compatible for "Tear-and-Stack" method for twisted van der Waals heterostructures (0.1° rotation accuracy guaranteed)
- Tilt stages (goniometer and rotation stage) for stamp
- Compact design allowing installation in a glove box for air sensitive materials.
- The Transfer system can be ordered either together with a 2D detector or separately.

Specification

- Sample scan range: 5cm x 5cm maximum
- Objective lens: 20x(basic), 10x, 50x (all compatible, but not included in basic model)
- Substrate: SiO2/Si, glass
- Detection Speed: 1.3 sec/frame
- Stamp Stage Z-Scan speed: 1 - 1000 um/sec.
- Sample Stage Speed: 2500 um/sec.
- Image Format: jpg file Coordinate: recorded in file name

Toward Independence in Research Equipment.

We use only standardized components, empowering users to fully customize them for their unique research needs.
Built on an open-source platform, our system is designed for seamless modification and specialized research applications.
We provide a robust software library, giving users full control to tailor the program precisely to their requirements.
We offer custom software modifications (available as a premium service) to meet specific user needs.
We uphold our commitment with one full year of complimentary service and support, plus 10 years of guaranteed software updates to accommodate any PC changes.