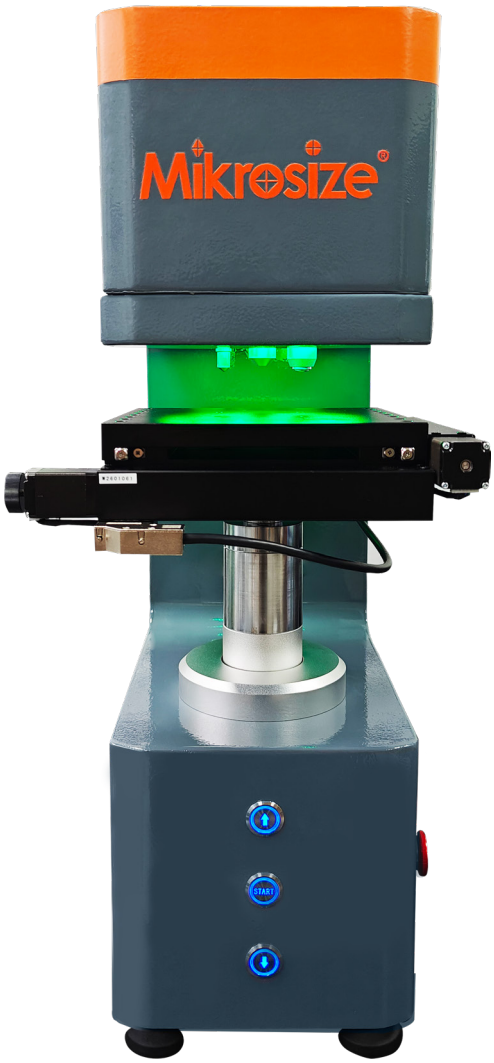
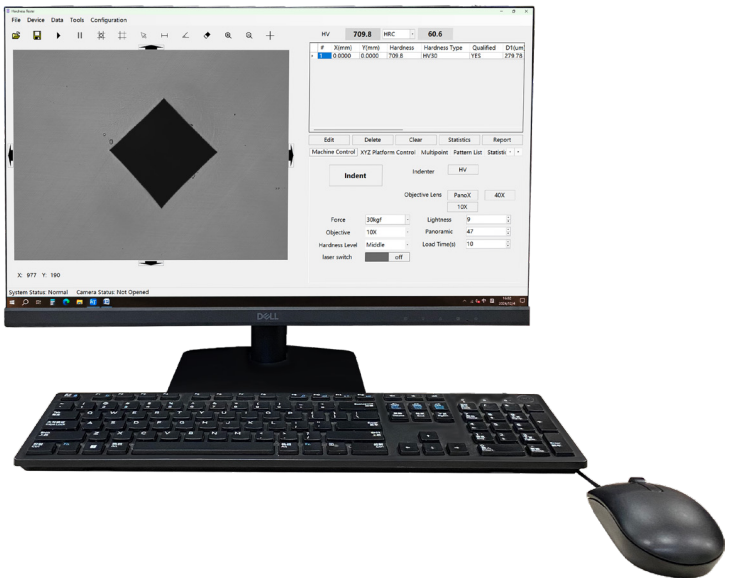
uVicky-AI

Intelligent Automatic Micro-Vickers Hardness Tester





Contact us

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Web:www.mikrosize.com
Email: mikrosize@mikrosize.com

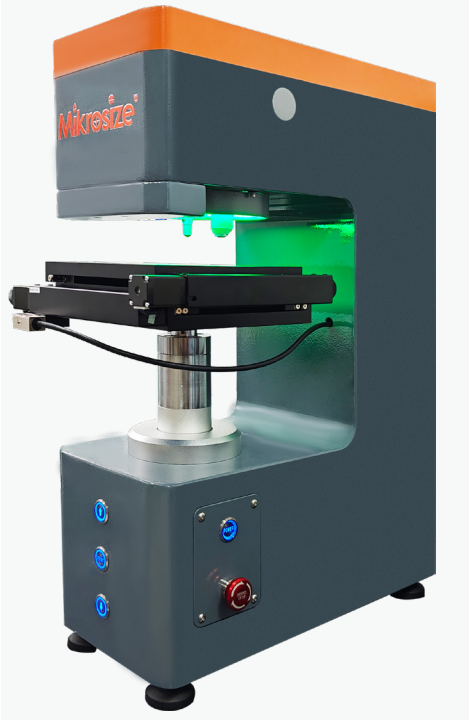
Features and Applications

Product Features

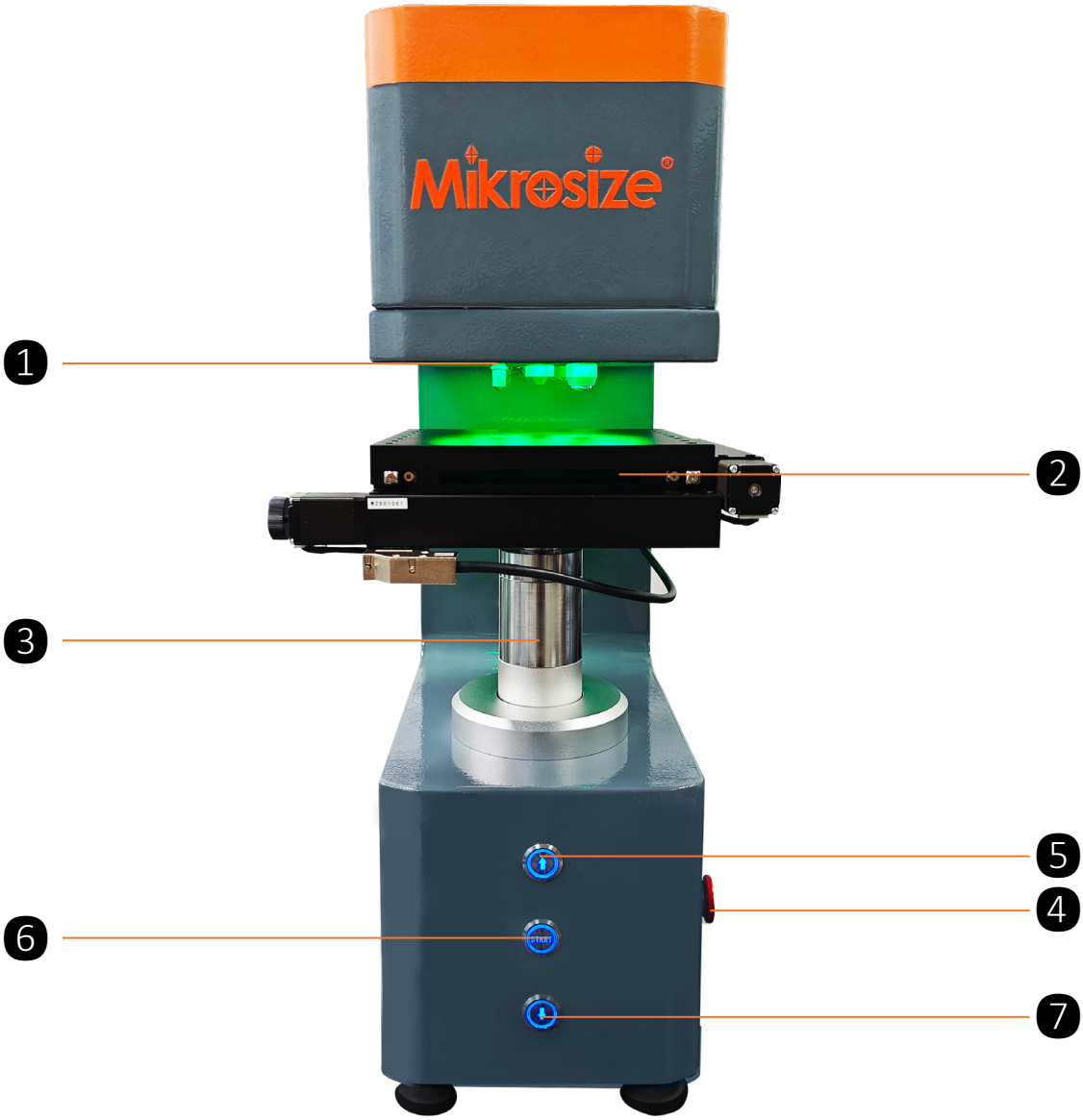
- Built-in light source, camera, focus, and switching force mechanism.
- Hardness value automatically measured, no manual positioning required, and precise automatic measurement.
- The new algorithm can detect indentations on surfaces that are not smooth or have scratches.
- Multi-station precision, automatic turret.
- HV/HK pressure heads, multiple objective lens configurations.
- Ultra-high precision X/Y stage, repeat positioning accuracy: 1 micron, maximum travel range up to 200mm.
- Z-axis automatic control, with optical cross guide rail lifting mechanism. Z-axis movement step size: 0.04 micron.

Product Features

- **Metal Materials Processing and Manufacturing Industry**
- Used for testing the hardness of metal components to ensure they meet production standards and design requirements. It also measures the hardness of welded areas on metal materials to evaluate their quality and determine if the welding quality is satisfactory, ensuring the reliability of the welded structures.
- **Mechanical Manufacturing Field**
- This hardness tester can be used to measure the hardness of various mechanical comp nents, such as gears, shafts, molds, etc., ensuring the wear resistance, strength, and service life of the parts.
- **Automobile Manufacturing and Component Production Industry**
- Evaluates the surface hardening treatment effects of automobile components, such as carburizing, nitriding, quenching, etc., measuring the depth and hardness of the hardened layer to ensure good wear resistance and fatigue resistance of the component surfaces.
- **Aerospace Field**
- Used to measure the hardness of aerospace engine blades, spacecraft components, etc., ensuring they meet the requirements for high strength, lightweight, and high reliability.

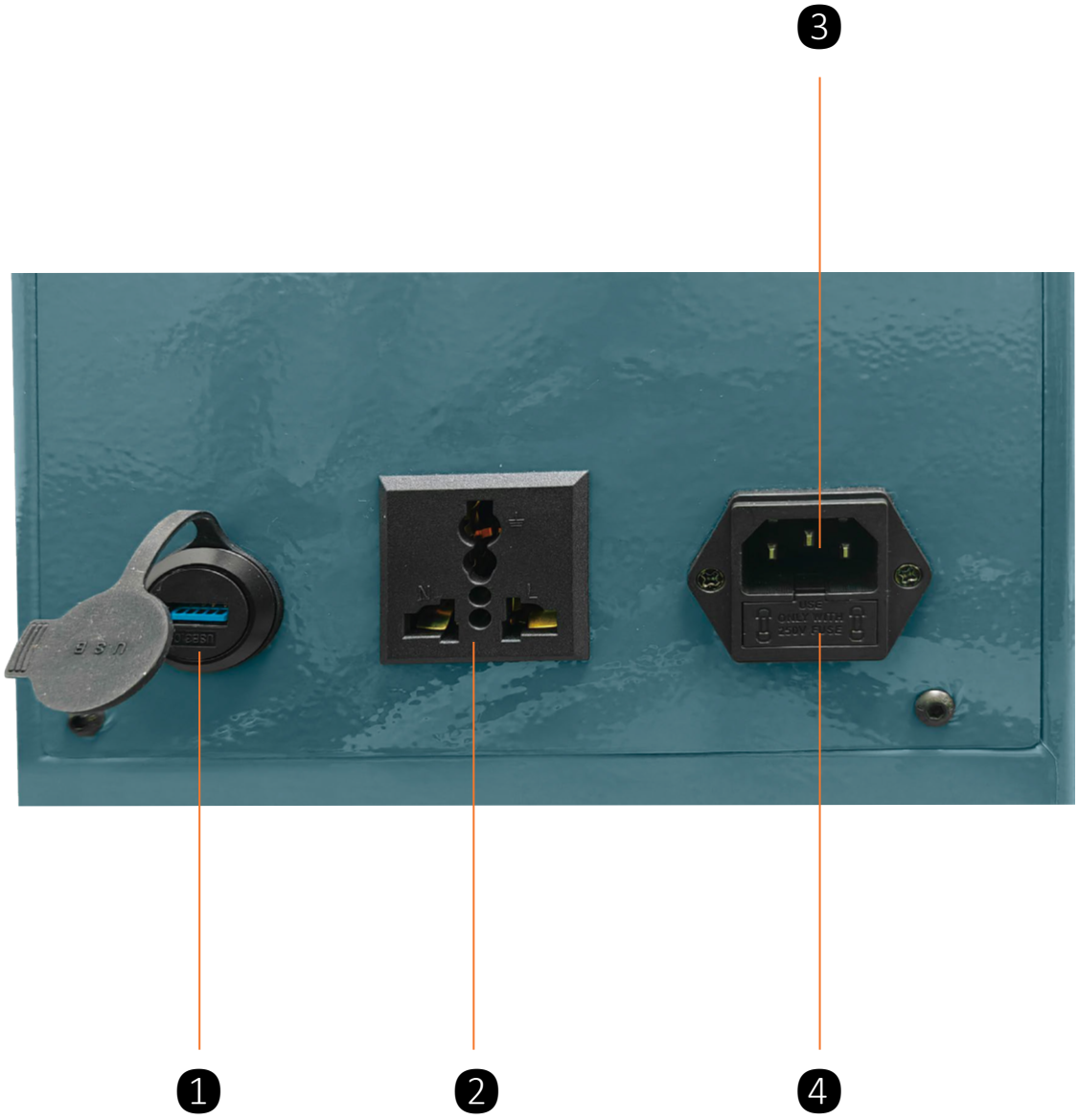


Instrument Appearance



1.Automatic Turret	2.X-Y Axis Stage		3.Lifting Rod
4.Emergency Stop Button	5.Rise Button	6.Start Button	7.Down Button

Instrument Appearance

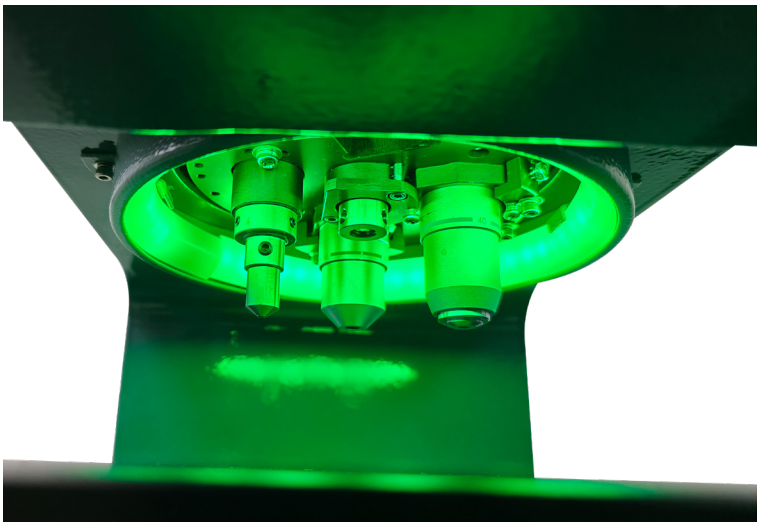


1.USB Interface: Used to connect the hardness tester to the computer

2.Power Output Interface **3.Power Cable Interface** **4.Fuse**

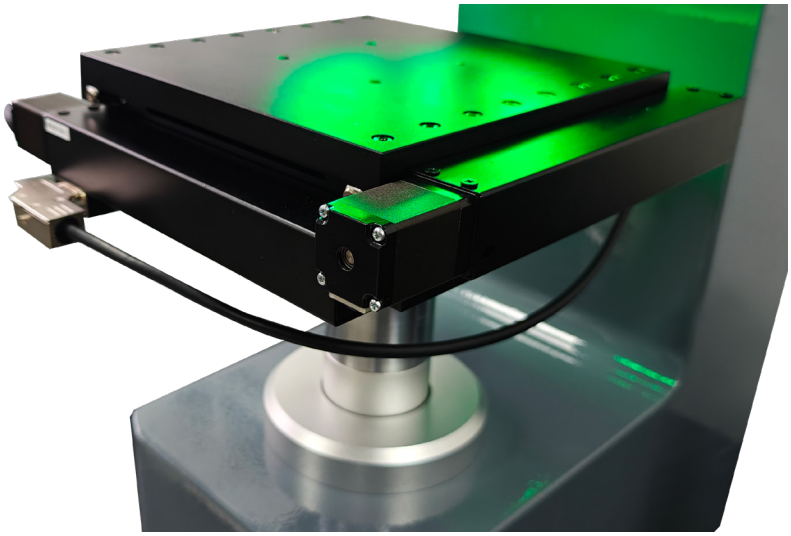
Product Details

Indenters and Objectives



- The turret is equipped with 2 indenters (one for micro Vickers and one for Knoop), and 3 objectives (one each of 5X, 20X, and 50X).

Testing Anvil

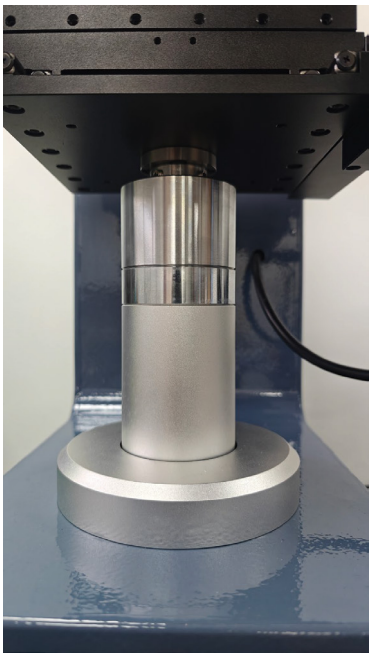


- The stage is electromechanically controlled, with selectable speed control. There is an RS232 interface on the side of the stage, which allows for software control when connected. For manual control, the "Motor Unlock" button must first be clicked on the software interface.

Product Details

Lifting Rod

- The lifting rod is also electromechanically controlled, with
- smooth and stable movement. There are two control methods for movement: it can be controlled through computer software, with selectable speed; or it can be manually controlled using the buttons below, with a fixed speed.

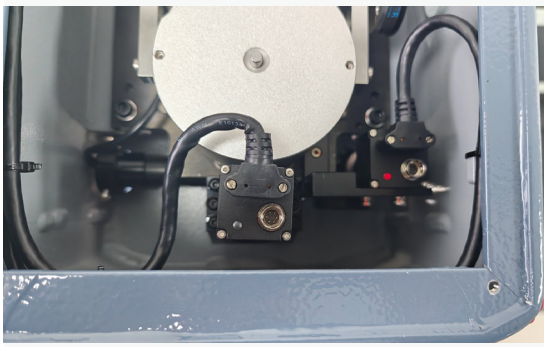


Buttons

- The Rise button and Down button are used to control the lifting rod's upward and downward movement.
- The START button is used to initiate the indentation testing.

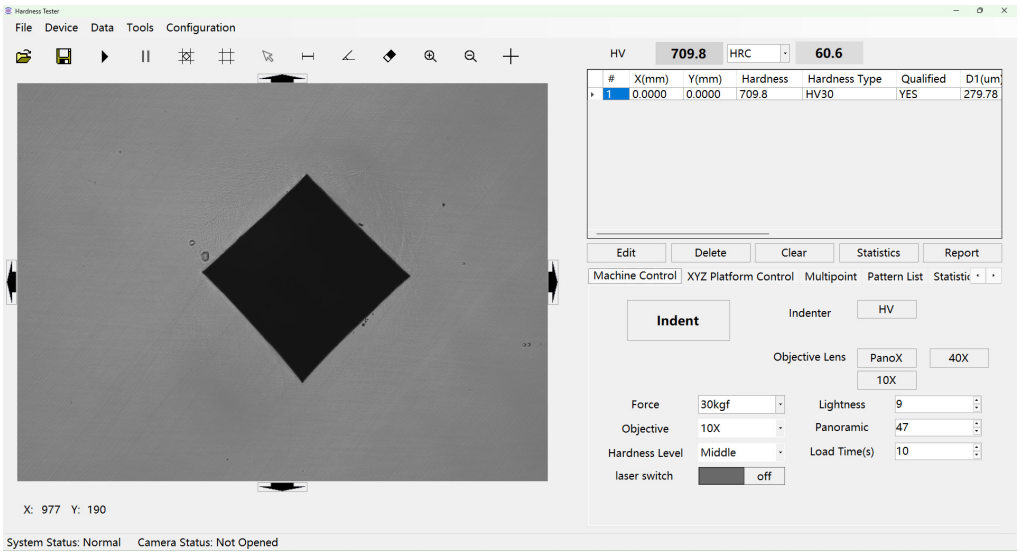
Camera

- In addition to the camera used for observing the indentations, this machine is also equipped with an additional panoramic camera. Without the need for image stitching, it can generate a panoramic image of the sample. In panoramic mode, the user can directly click on the area of the sample they wish to observe, and the stage will automatically adjust its position to align that area with the camera.
- The user can then observe the selected area directly on the screen.



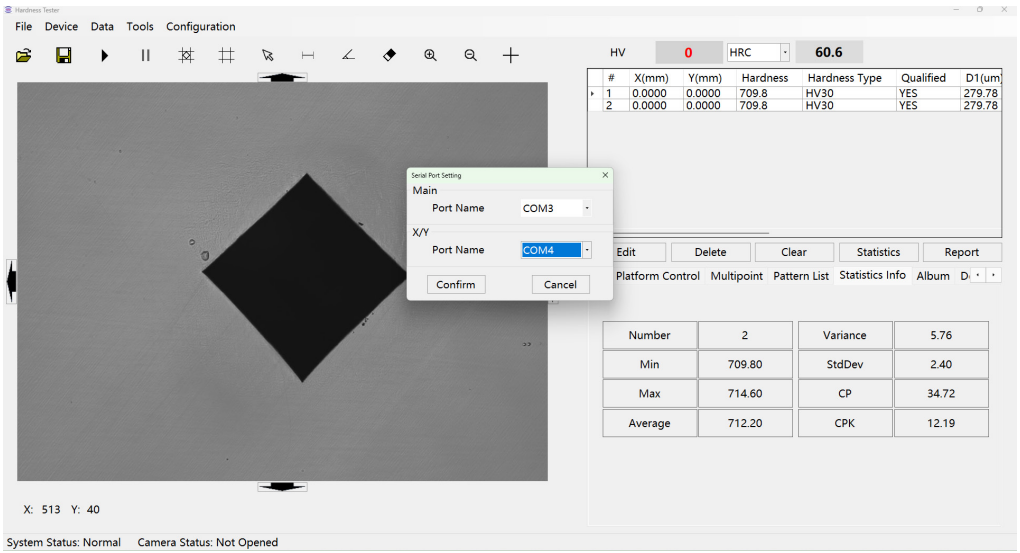
Operation Interface

Main Interface



- Self-developed indentation measurement software, supporting automatic and manual indentation measurement with direct data display.
  Allows selection of the device's force value and supports control of the automatic turret.

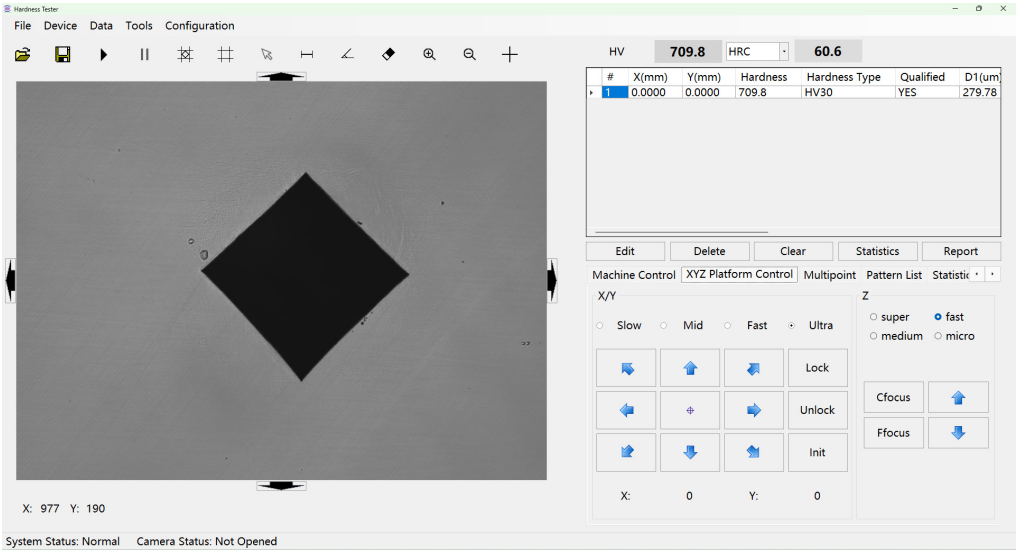
Serial Port Setting



- Select the correct serial port for the first installation, then exit and re-enter the software for the setting to take effect.
  Port selection will result in failure to control the electric test stage and its lifting/lowering functions.

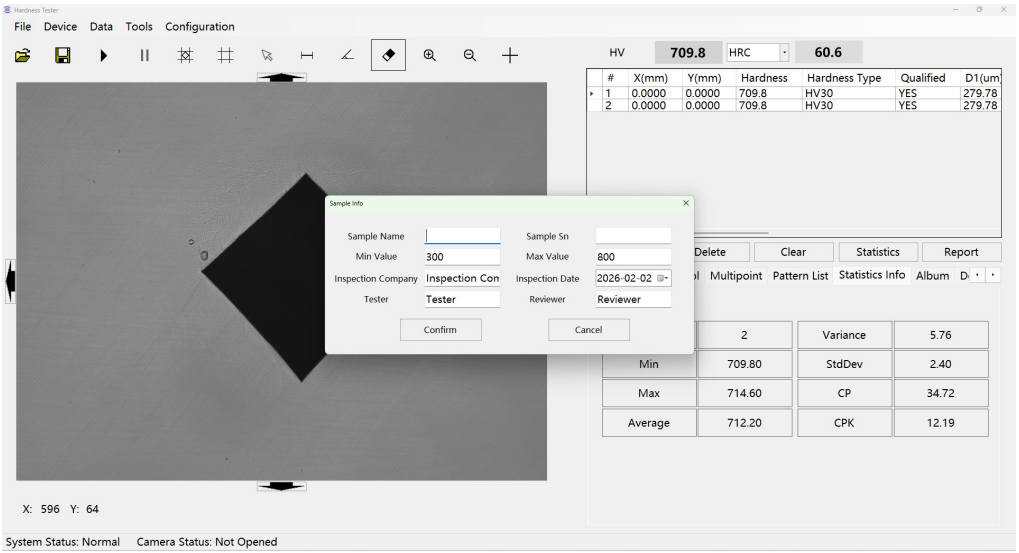
Operation Interface

Main Interface



- Supports locking/unlocking of the electric test stage; the stage can be manually turned when unlocked.
- Enables automatic center positioning of the test stage.
- Provides automatic focusing with two modes: coarse focus (Cfocus) and fine focus (Ffocus).

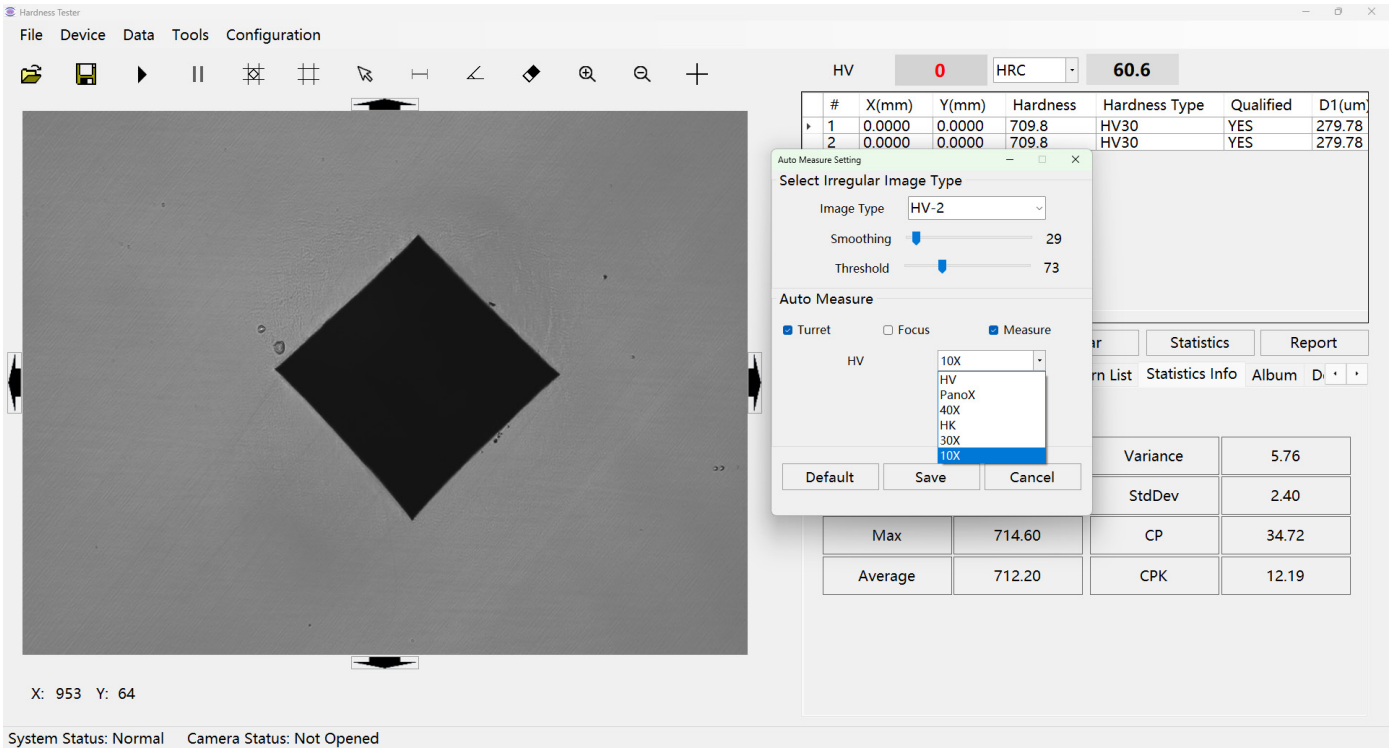
Sample Information



- Allows setting of test sample information, including sample name, sample number, tester, etc.

Operation Interface

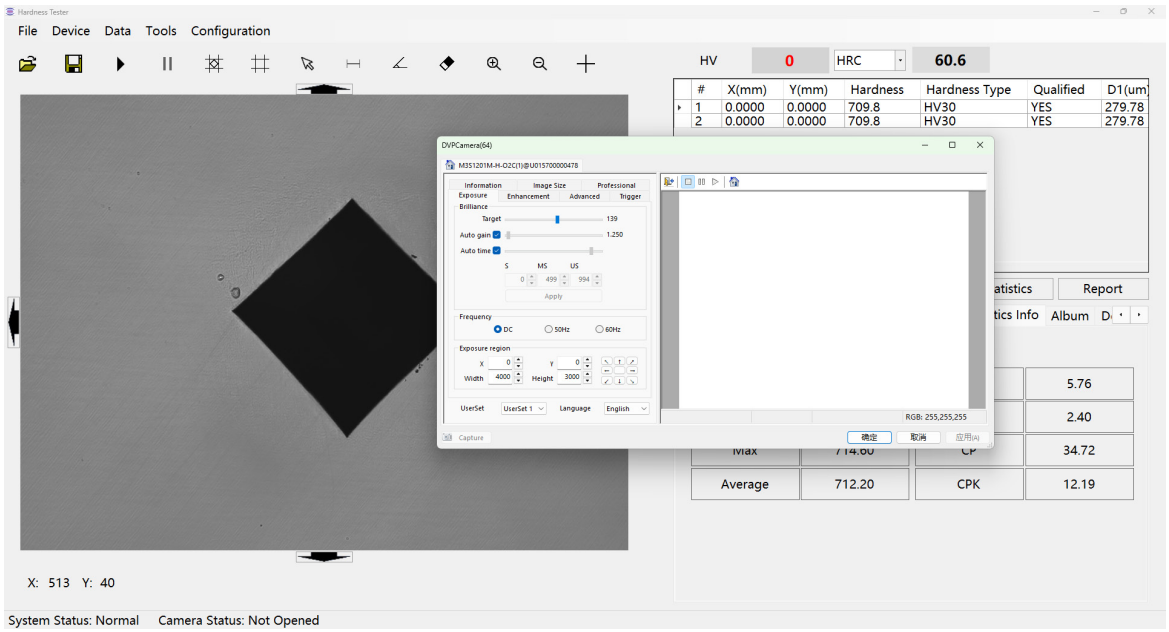
Auto Measure Setting



- When the deviation of automatic measurement is large and indentation measurement is inaccurate, simple corrections can be made by adjusting the indentation image type and threshold value.
- Enables selection between measuring immediately after indentation formation or only observing the indentation. The turret defaults to the 10X objective lens after indentation, and the lens can be customized as needed.

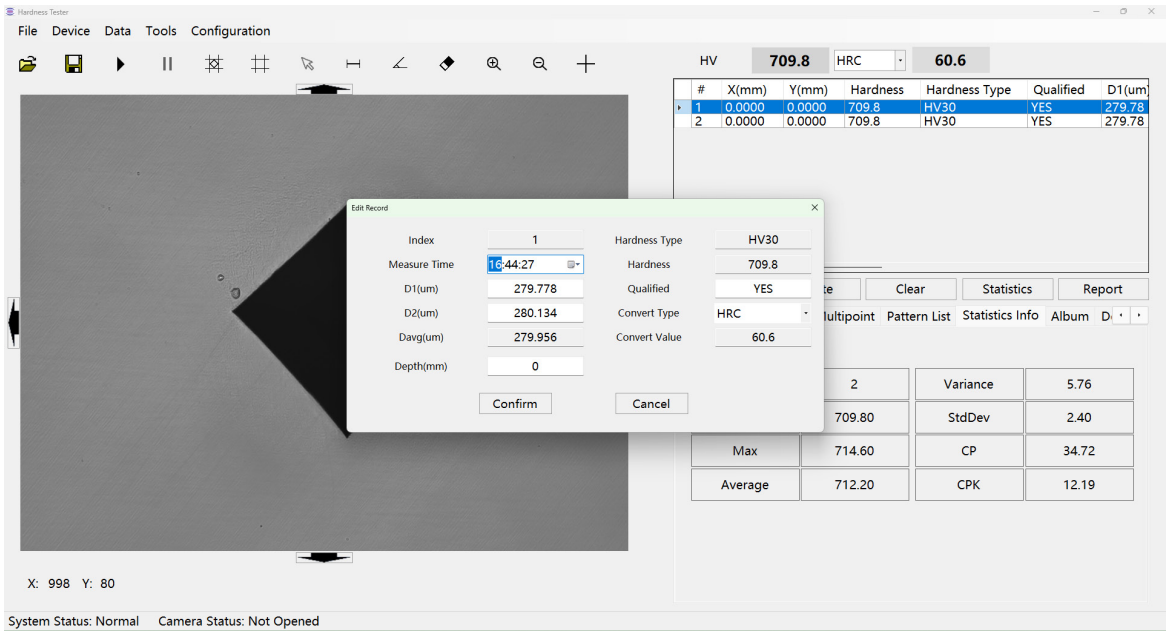
Operation Interface

Camera Setting



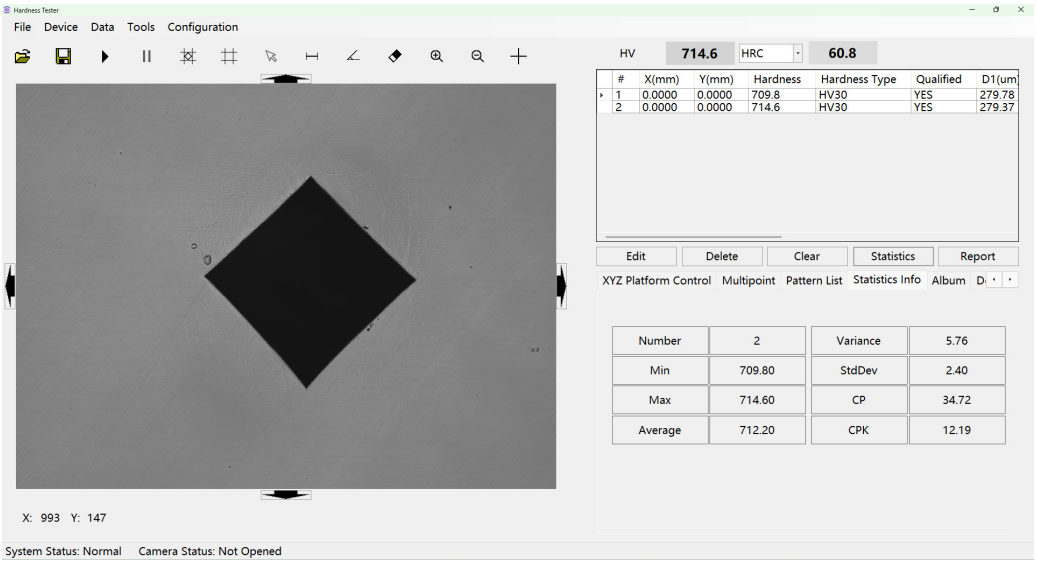
- When the indentation image is too dark or too bright, affecting observation and measurement, the image quality can be improved by modifying the camera parameters. Auto exposure and auto gain are enabled by default.

Data Editing and Statistics



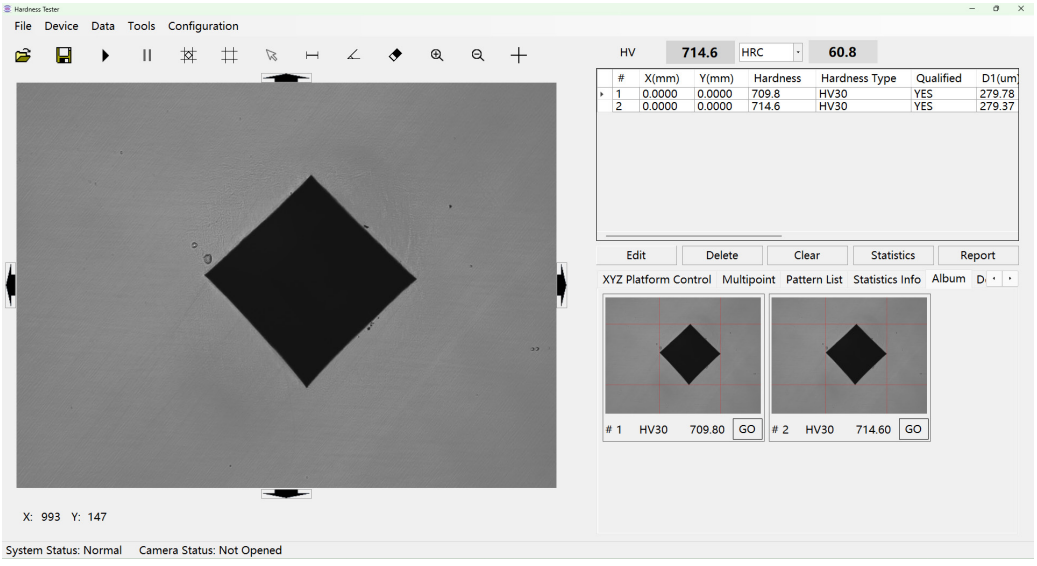
Operation Interface

Data Editing and Statistics



- Allows simple modification of parameters (e.g., indentation dimensions D1 and D2), with the hardness value updated accordingly.
- The software can perform data statistics, including maximum value, minimum value, average value, etc.

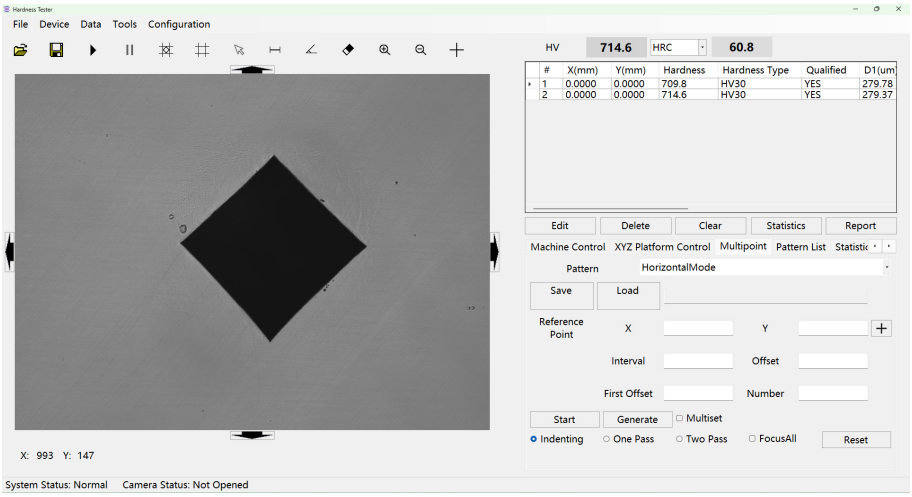
Indentation Album



- The software records all indentation images from each measurement in the same test, and historical indentation images can be viewed with a single click.

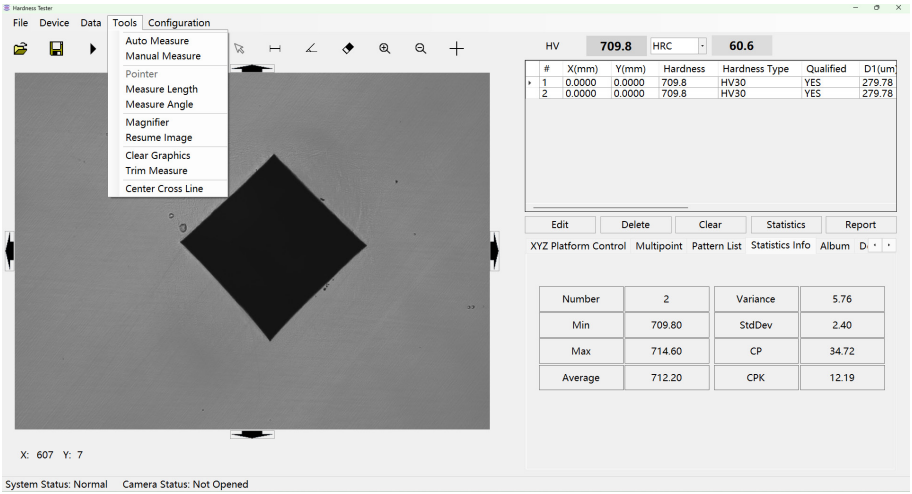
Operation Interface

Multipoint Mode



- Supports continuous multi-point indentation, with a variety of built-in curve modes including horizontal, vertical, matrix, arc modes, etc.
- Two measurement modes are optional: measuring after each single indentation (One Pass) or measuring after all indentations are completed (Two Pass).
- Curve files can be saved or loaded; note that the curve modes must match.

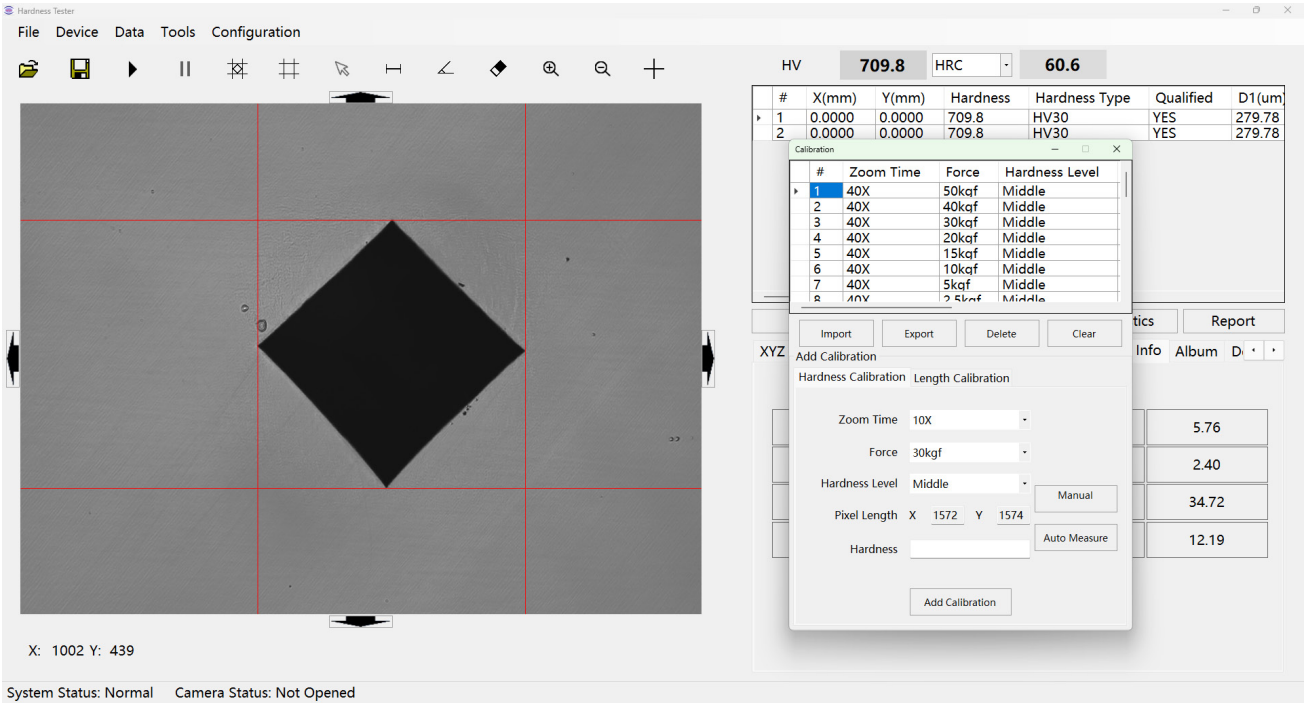
Toolbar Menu

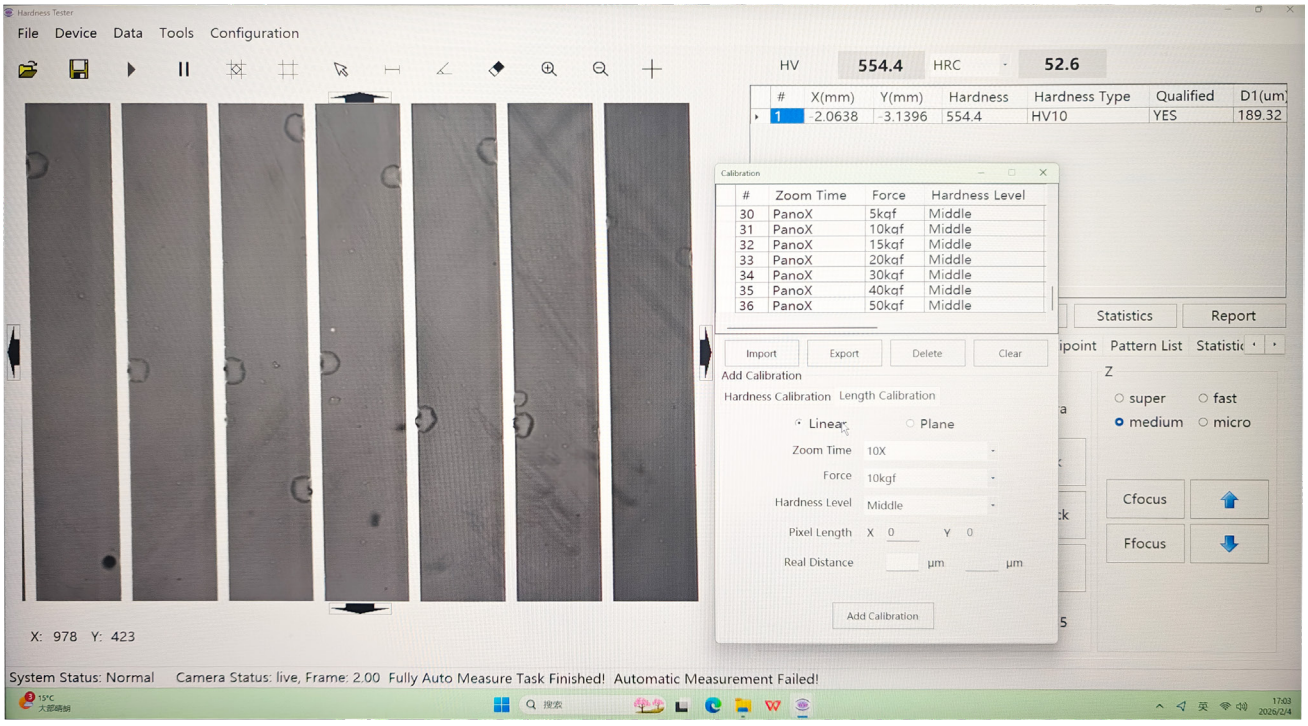


- The software offers a variety of functions, with shortcut keys for commonly used tools and all tools accessible via the toolbar menu.
- Main functions include: automatic measurement, manual measurement, length measurement, angle measurement, measurement fine-tuning, center cross line, etc.

Operation Interface

Calibration

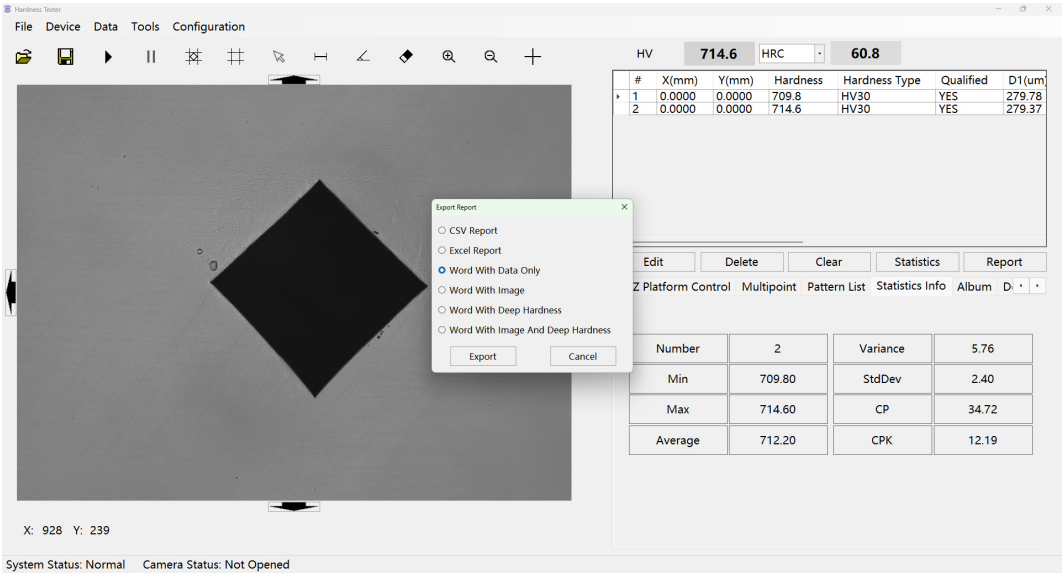




- Two calibration methods are supported: hardness block calibration and glass scale calibration.

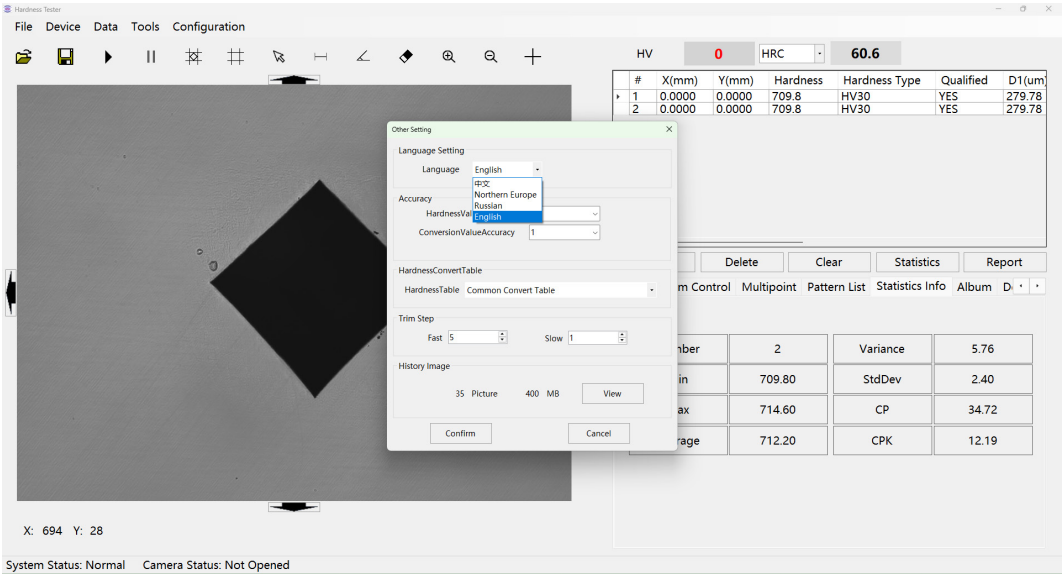
Operation Interface

Report Output



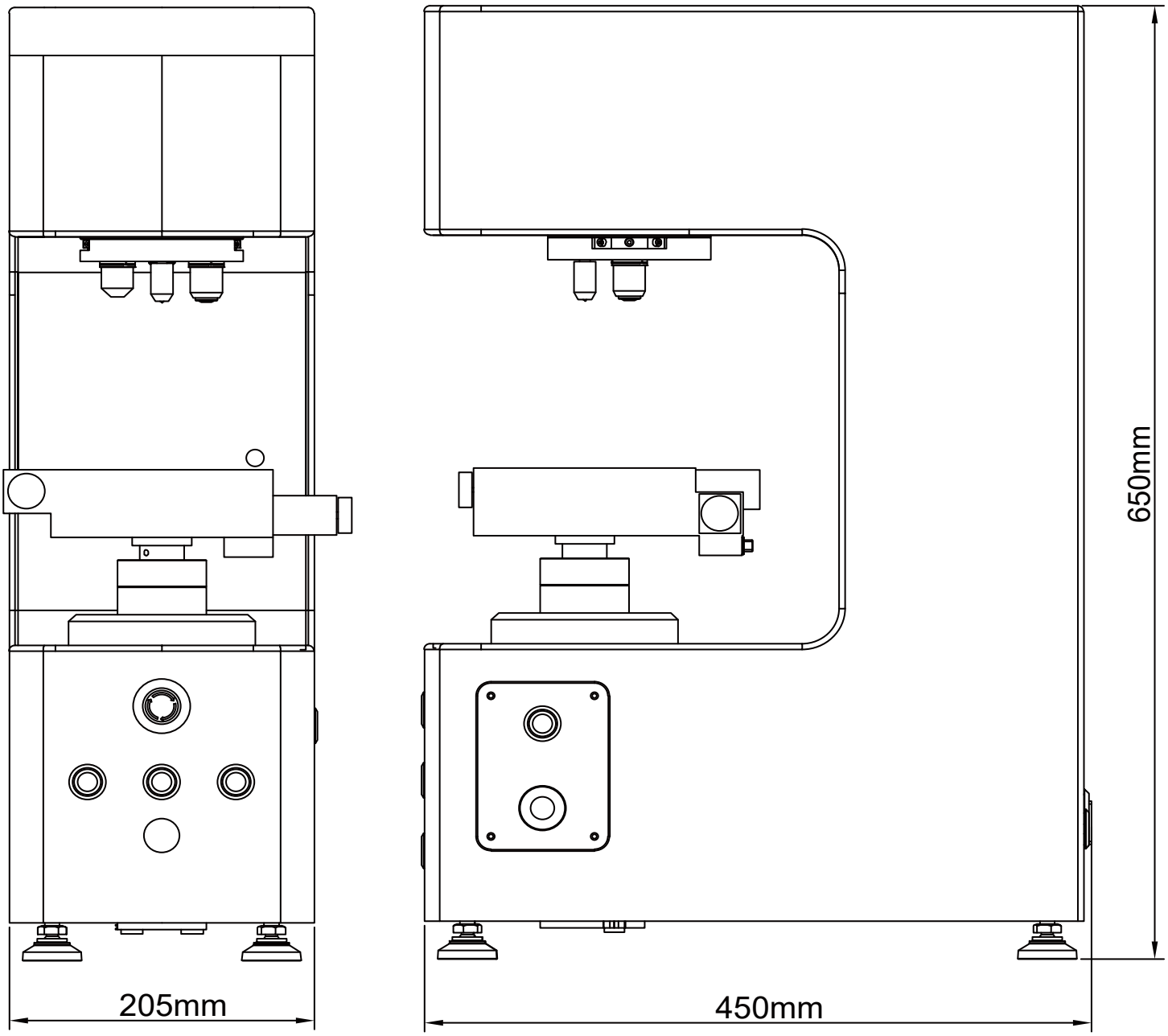
- Supports report output in multiple formats.

Other Setting



- Features language switching, with four languages available by default and custom languages supported on request.
- All historical images can be viewed; regular cleanup is recommended to ensure smooth software operation.

Instrument Dimension



Mikrosize®

Technical Specification

Model	uvicky-1AI	uvicky-10AI	uVicky-50AI
Load Range (Main Loads)	10 gf - 1 kgf	0.3-10 kgf	0.5-50 kgf
Auto Change Load	Yes	Yes	Yes
Vickers Capability	Yes	Yes	Yes
Knoop Capability	Yes	/	/
Brinell Capability(Optional)	/	Yes	Yes
Xy-Stage	Automatic	Automatic	Automatic
Xy-Stage Size (mm)	150x150	150x150	150x150
Xy-Stage Travel Max Size: 200 X200mm	50x50	50x50	50x50
Xy-Stage Repeatability(μm)	1	1	1
Test Height (mm)	160	160	160
Test Throat (mm)	170	170	170

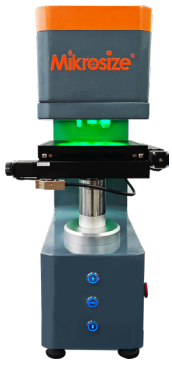
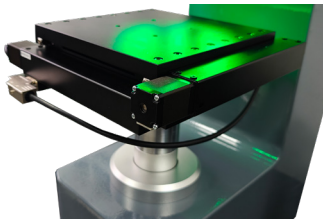
Technical Specification

Motorized 2-Axis	Yes	Yes	Yes
Z-Axis Step Length (μm)	0.08	0.08	0.08
Motorized Turret	Yes	Yes	Yes
Turret Positions	3 (6)	3 (6)	3 (6)
Weight(kg)	45	45	45
Size, L*W*H(mm) (Not Include pc)	450*205 *650	450*205 *650	450*205 *650
Objective Lens	10X,40X(2.5X,5X, 20X,50X)	10X,20X(2.5X,5X, 40X,50X)	10X,20X(2.5X,5X, 40X,50X)
Evaluation Camera Resolution	12 MP	12 MP	12 MP
Panorama Camera	Optional	Optional	Optional
Overview Cam Sample Max. Size(mm)	40*30	40*30	40*30
Panorama Camera Resolution	12 MP	12 MP	12 MP
Auto Illumination	Yes	Yes	Yes

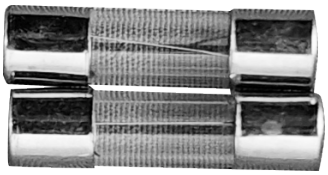
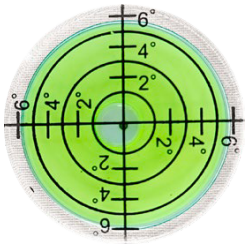
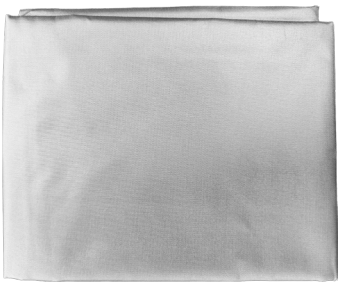
Technical Specification

Stage Illumination	Optional	Optional	Optional
Laser Guider	Optional	Optional	Optional
Automatic Measurement Of Hardness Values	Yes	Yes	Yes
CHD Measurement	Yes	Yes	Yes
Edge Detection	Optional	Optional	Optional
Mapping Module	Optional	Optional	Optional
Welding Module	Optional	Optional	Optional
Kc Fracture Measurement	Yes	Yes	Yes
Report Editor	Yes	Yes	Yes
Data Export	Yes	Yes	Yes
0S Operating System	Win 10	Win 10	Win 10
Wi-Fi	Yes	Yes	Yes
Blue Tooth	Optional	Optional	Optional

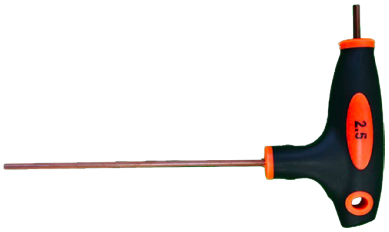
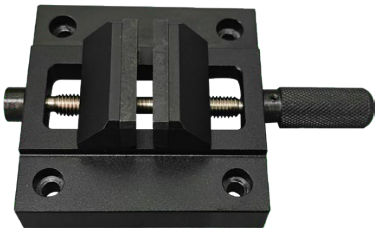
Standard Delivery

Name	Qty	Photo
Machine Mainframe	1 set	
Computer	1 set	
Auto XY Stage	1 pc	
Adjusting Screw	4 pcs	

Standard Delivery

Name	Qty	Photo
Vickers Hardness Blocks	3 pcs	
Spare Fuse (2A)	2 pcs	
Gradienter	1 pc	
Anti-dust Cover	1 pc	

Standard Delivery

Name	Qty	Photo
Powder Cord	1 pc	
Hex Wrench (2.5mm)	1 pc	
USB Cable	1 pc	
Flat-jaw Clamping Stage	1 pc	
Thin Sheet Clamping Stage	1 pc	

Standard Delivery

Name	Qty	Photo
Fine Wire Clamping Stage	1 pc	
Product Certificate	1 copy	
Warranty Card	1 copy	
Instruction Manual	1 copy