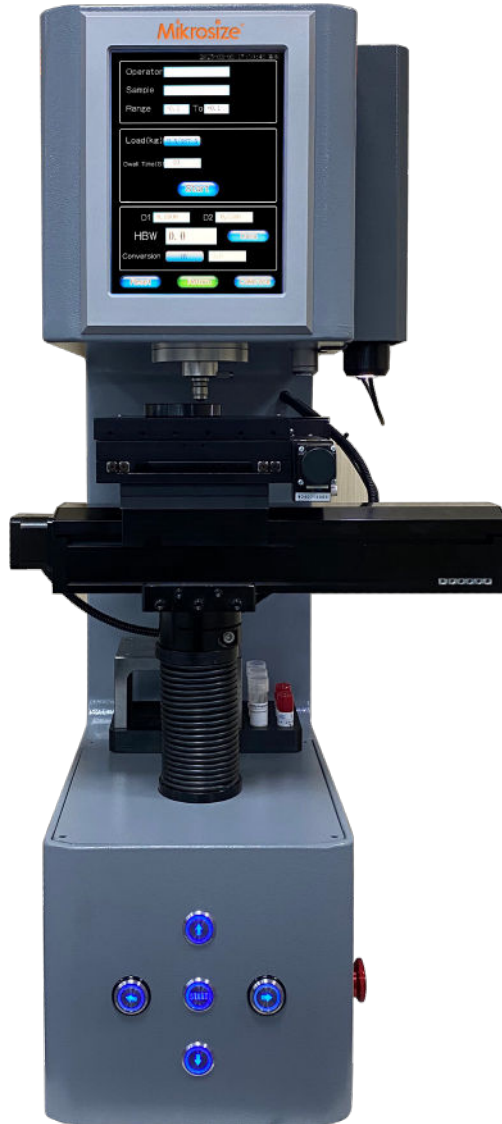
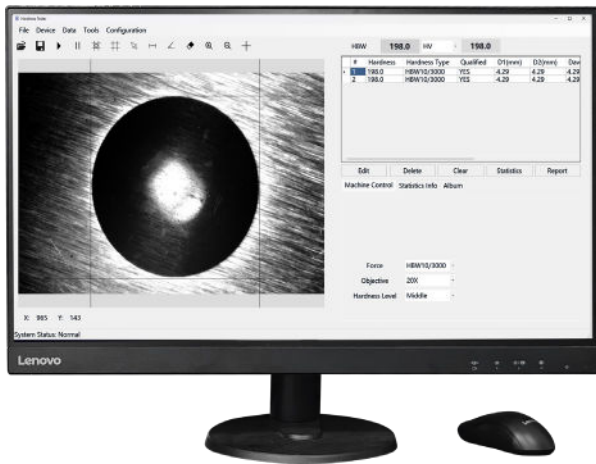


# MBRV-250A

## Intelligent Automatic Universal Hardness Tester



Video



## Contact us

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A-4035 RuiFeng Business Expo, Wuhu City, China , 241000.

Web: [www.mikrosize.com](http://www.mikrosize.com)

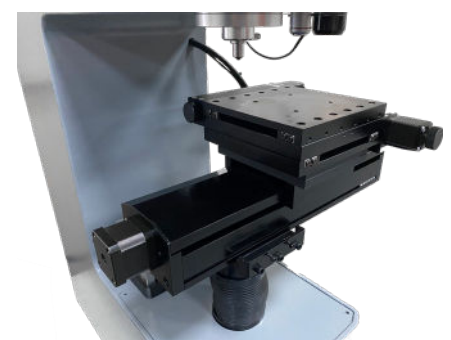
Email: [mikrosize@mikrosize.com](mailto:mikrosize@mikrosize.com)



## Feature and Application

### Product Feature

- Three testing methods: Brinell, Vickers, and Rockwell.
- Brinell test force range: 5 kgf - 250 kgf.
- Vickers test force range: 3 kgf - 120 kgf.
- Automatically applies initial test force and main test force.
- 8- inch touch screen for convenient operation.
- The test stage can be automatically lifted and also be manually fine-tuned. It is equipped with an anti - collision detection device and a Z - axis retraction system.
- Closed loop system with loading cell, equipped with a fully automatic high - precision sensor and a closed-loop feedback control system.
- An ultra - high - precision X/Y auto stage with a repeat positioning accuracy of 3 microns and a maximum travel of up to 200 mm (optional).
- Objective magnification: 2.5X, 5X (10X, 20X optional).
- Indenter specifications:
  - 120° Rockwell diamond indenter.
  - $\Phi 1.5875$  mm Rockwell ball indenter ( $\Phi 3.175$  mm,  $\Phi 6.35$  mm,  $\Phi 12.7$  mm are optional).
  - 136° Vickers diamond indenter.
  - $\Phi 2.5$  mm,  $\Phi 5$  mm Brinell ball indenter ( $\Phi 1$  mm,  $\Phi 10$  mm are optional).
- Brinell and Vickers tests can be automatically positioned to the measurement and observation positions.
- 5-megapixel industrial camera.
- Supports hardness value conversion between multiple scales.
- Hardness measurement software supports automatic/manual measurement, report, export, printing, and data statistics.
- Automatically calculates the uncertainty of the hardness value (optional).
- Automatically generates documents required for CNAS review (optional).



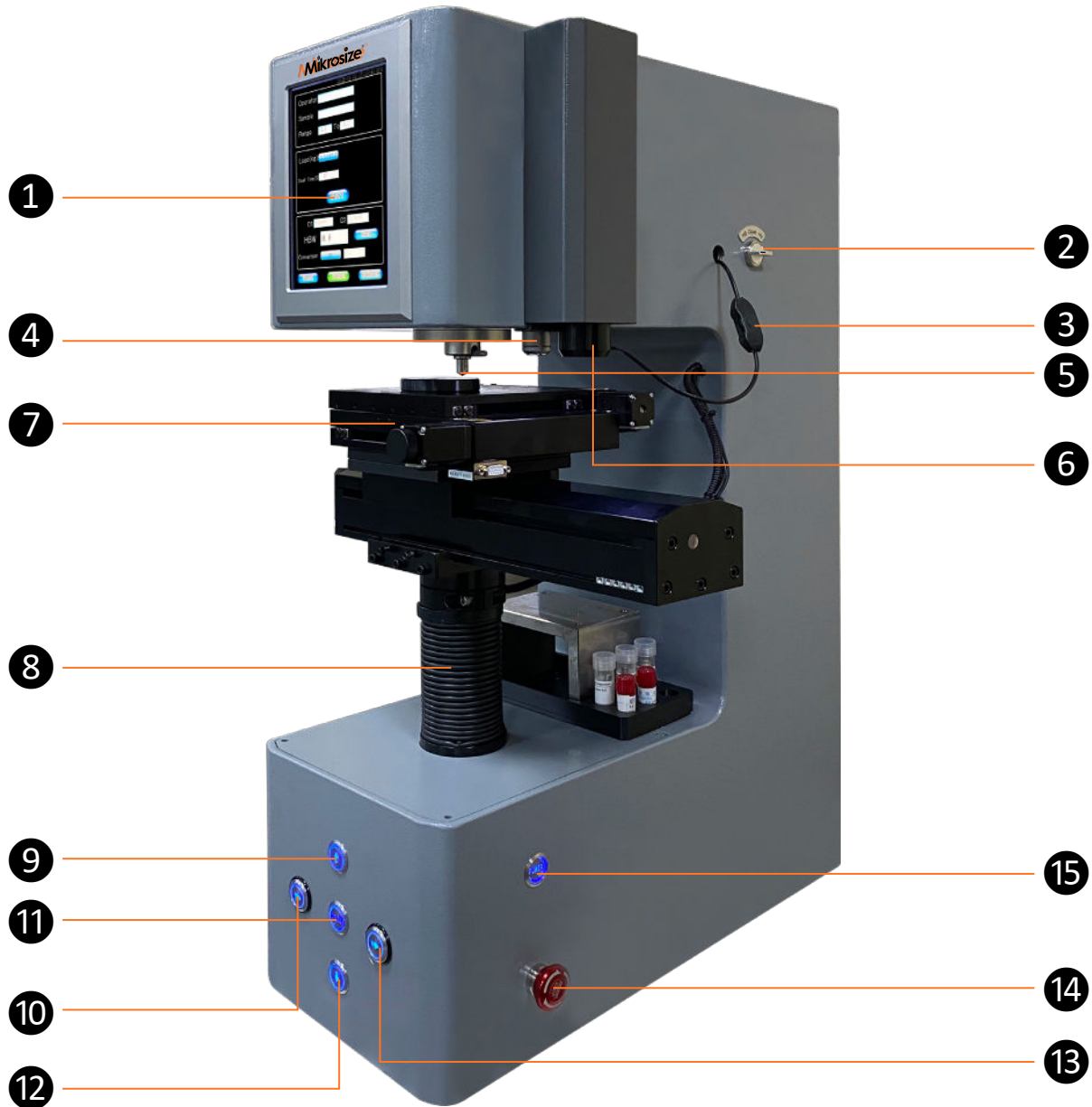
## Feature and Application

### Product Application

- Materials research:
- It is used to evaluate the hardness characteristics of materials and provide data support for material selection, design, and development.
- Production quality control:
- During the manufacturing process, it is used to detect whether the hardness of products meets the standards to ensure product quality.
- Failure analysis:
- When equipment or parts fail, by analyzing the changes in their hardness, the causes and mechanisms of the failure can be inferred.



## Product Details



**1. Display Screen**

**4. Vickers Lens**

**8. Lifting Rod**

**13. Right**

**2. HB/HV Optical Conversion**

**5. Indenter**

**9. Up**

**14. Emergency Stop Button**

**6. Brinell Lens**

**10. Left**

**11. Start**

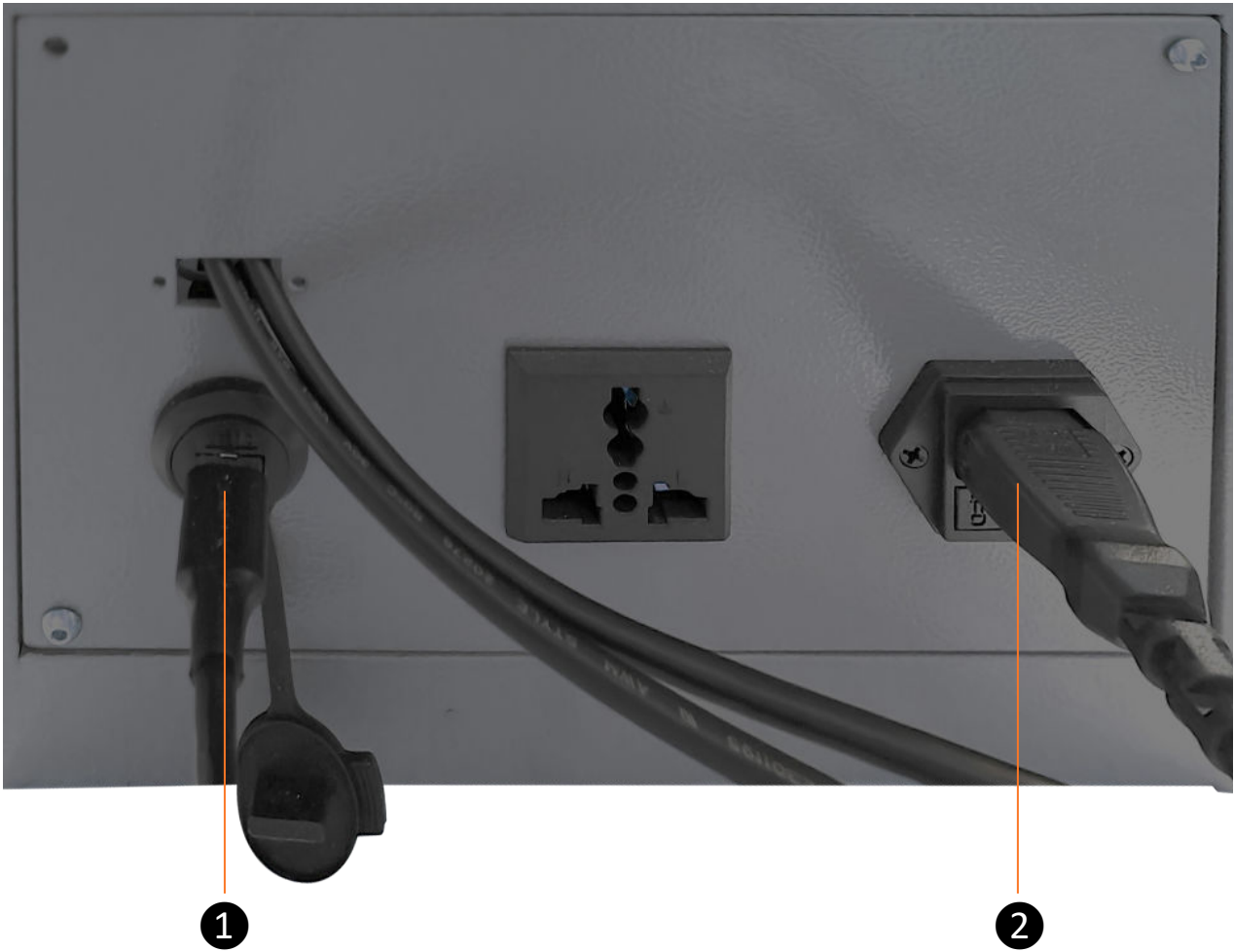
**15. Switch**

**3. Illumination Adjusting**

**7. Test Stage**

**12. Down**

## Product Details

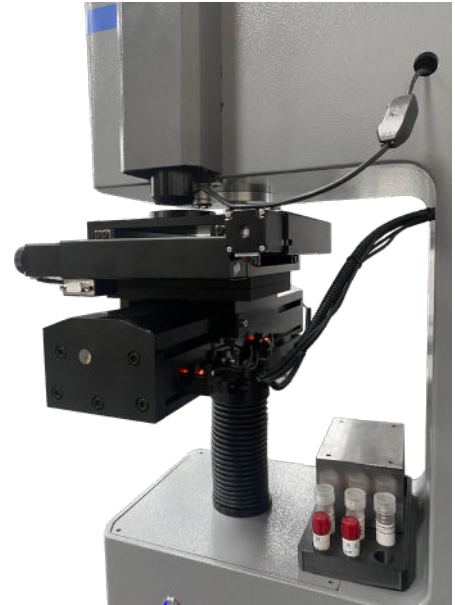
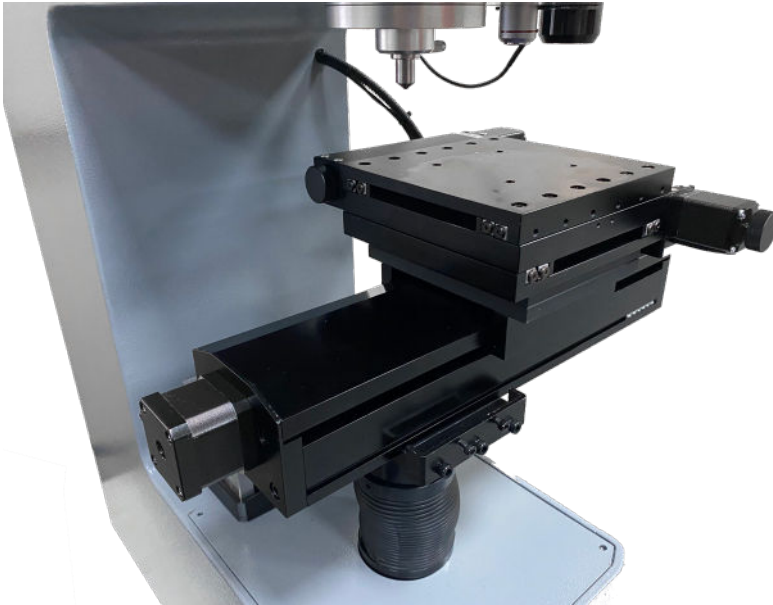


**1.USB Interface**

**2.Power Cord Interface**

## Product Details

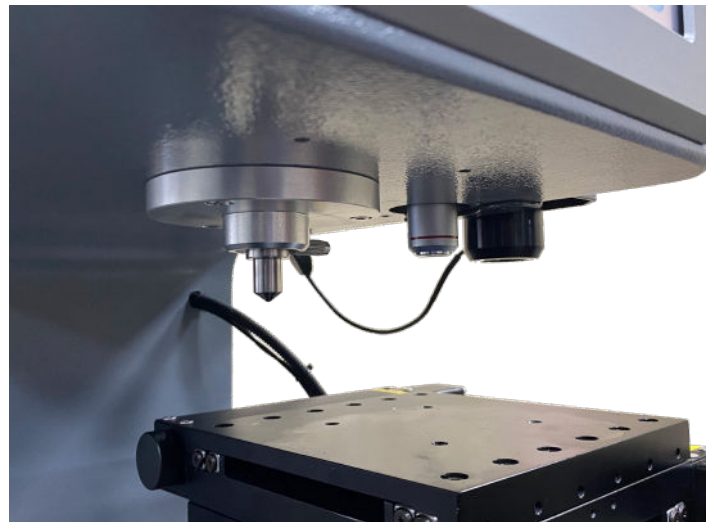
### Test Stage



- The test stage can be automatically lifted, and also be manually fine-tuned.
- It can automatically position to the observation and measurement positions of vickers and brinell lenses.
- The x-y electric motorized test stage (optional) has a repeat positioning accuracy of 3 microns, and the maximum travel can reach to 200 mm.

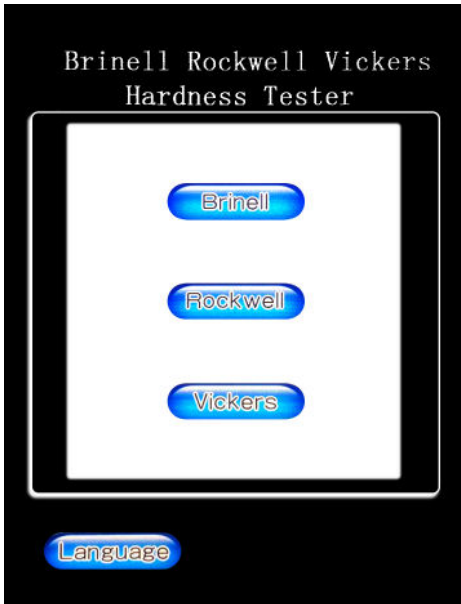
### Indenter & Objective Lens

- The indenter is replaceable.
- The Brinell lens and Vickers lens are integrally installed.
- Built-in optical system, and optical path can be switched.

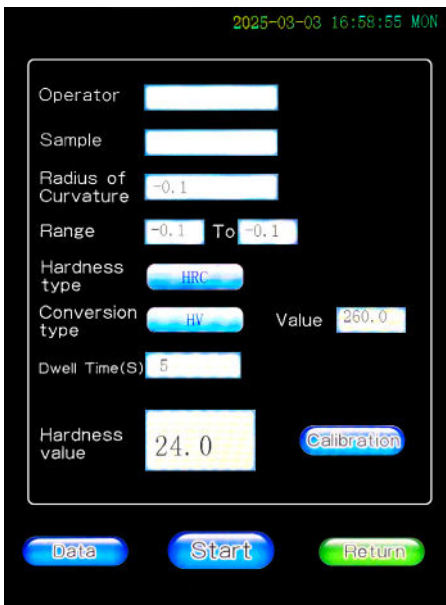


## Product Details

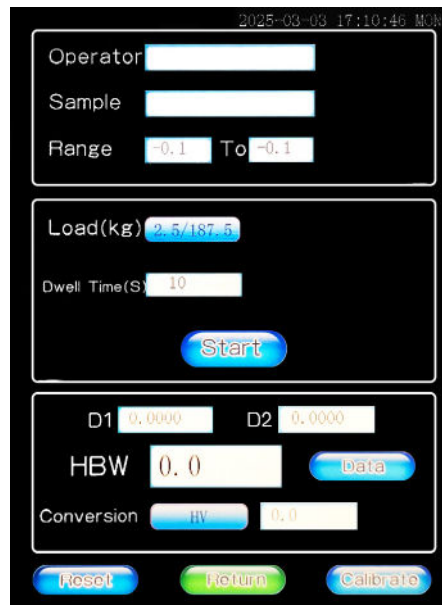
### Testing Mode



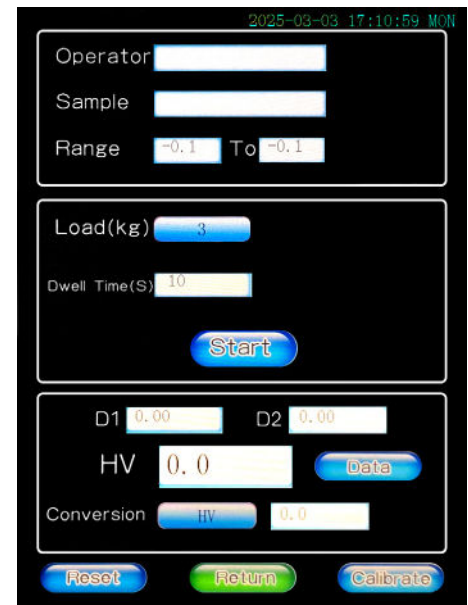
- Test method selection: Brinell, Rockwell, and Vickers. Language selection: Both Chinese and English are available. Customization of other languages is also supported.



Rockwell Interface



Brinell Interface



Vickers Interface

- Information such as operator details and sample names can be edited.
- It supports curved surface correction.
- The qualified range of hardness values can be set.
- Test stage can automatically move to the measurement position and the indentation position.
- It supports hardness value conversion.
- The loading time can be set.

## Product Details

### Rockwell Scale



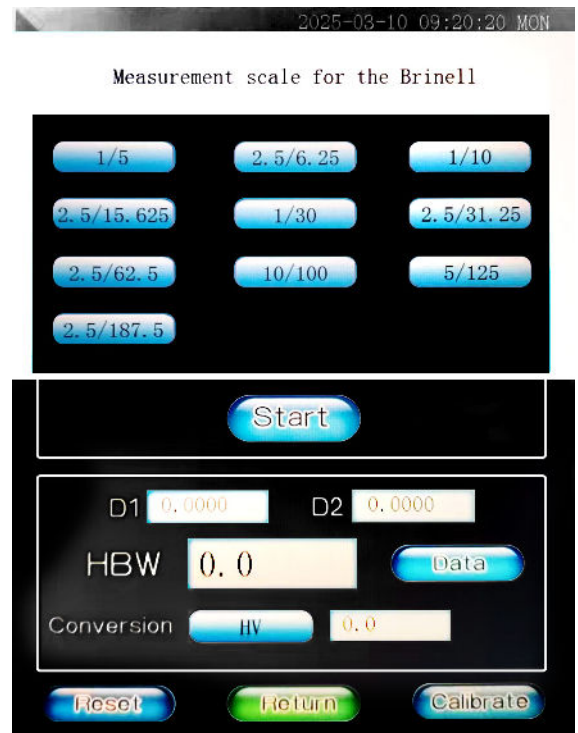
- 15 Rockwell scales, including common Rockwell scales and plastic Rockwell scales . The scale information includes test force and indenter specifications.

HRA、HRB、HRC、HRD、HRE、HRF、HRG、HRH、HRK、HRL、HRM、HRP、HRR、HRS、HRV

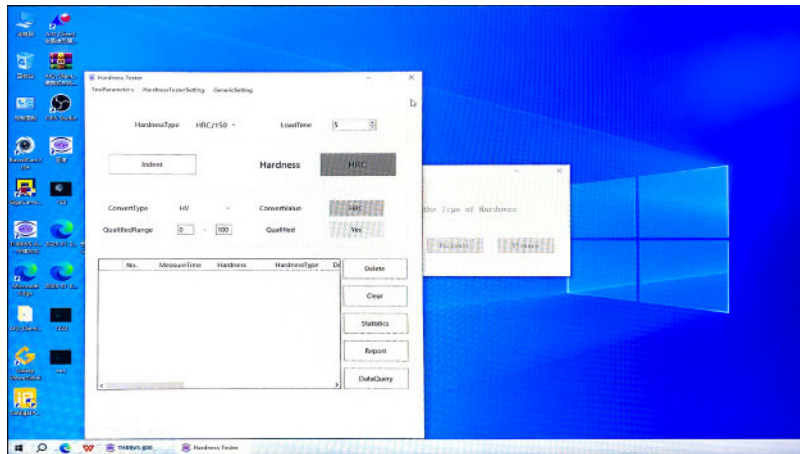
### Brinell Scale

- 4 indenter sizes, 2.5mm and 5 mm brinell indenters are standard configurations, while 1 mm and 10 mm brinell indenters are optional.

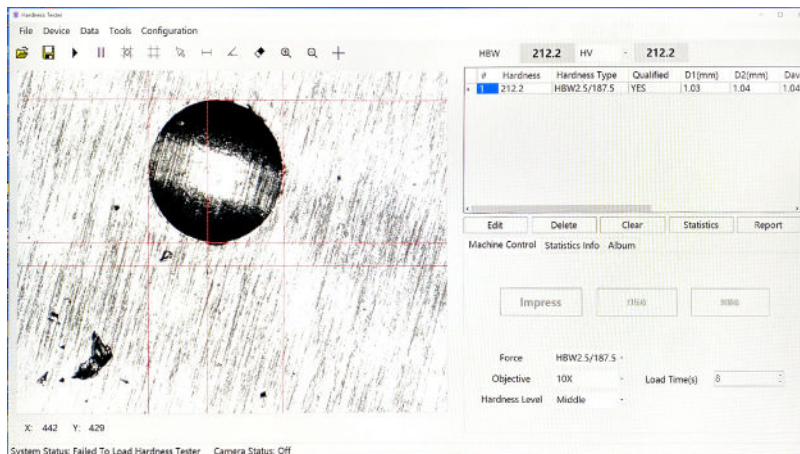
HBW1/5、HBW1/10、HBW1/30  
 HBW2.5/6.25、HBW2.5/15.625 HBW2.5/31.25、  
 HBW2.5/62.5、HBW2.5/187.5 HBW5/125  
 HBW10/100



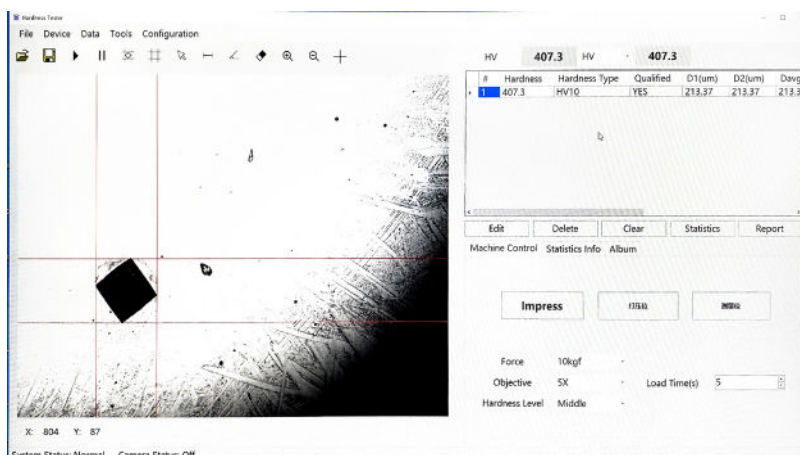
## Software



Rockwell



Brinell



Vickers

- The software supports three testing methods: Brinell, Rockwell, and Vickers.
- The hardness tester main unit can be controlled through the software for testing.
- The testing scales and objective lens magnifications of the software can be selected.
- The indentation images support both manual and automatic measurement.

## Software

### Conversion Scales

#	X(mm)	Y(mm)	Hardness Type	Qualified	D1(um)
1	0.0000	0.0000	HV1	YES	49.56

- The hardness value can be converted into the hardness of other scales according to the International standard and ASTM.

### Data Editing

## Software

### Data Statistics

Number	4	Variance	102.35
Min	709.30	StdDev	10.12
Max	736.90	CP	8.24
Average	724.68	CPK	2.48

- When a certain measurement record is selected, the measurement result can be edited and modified.
- For the results of multiple tests, the software will statistically calculate the maximum value, minimum value, average value, and standard deviation of the data.

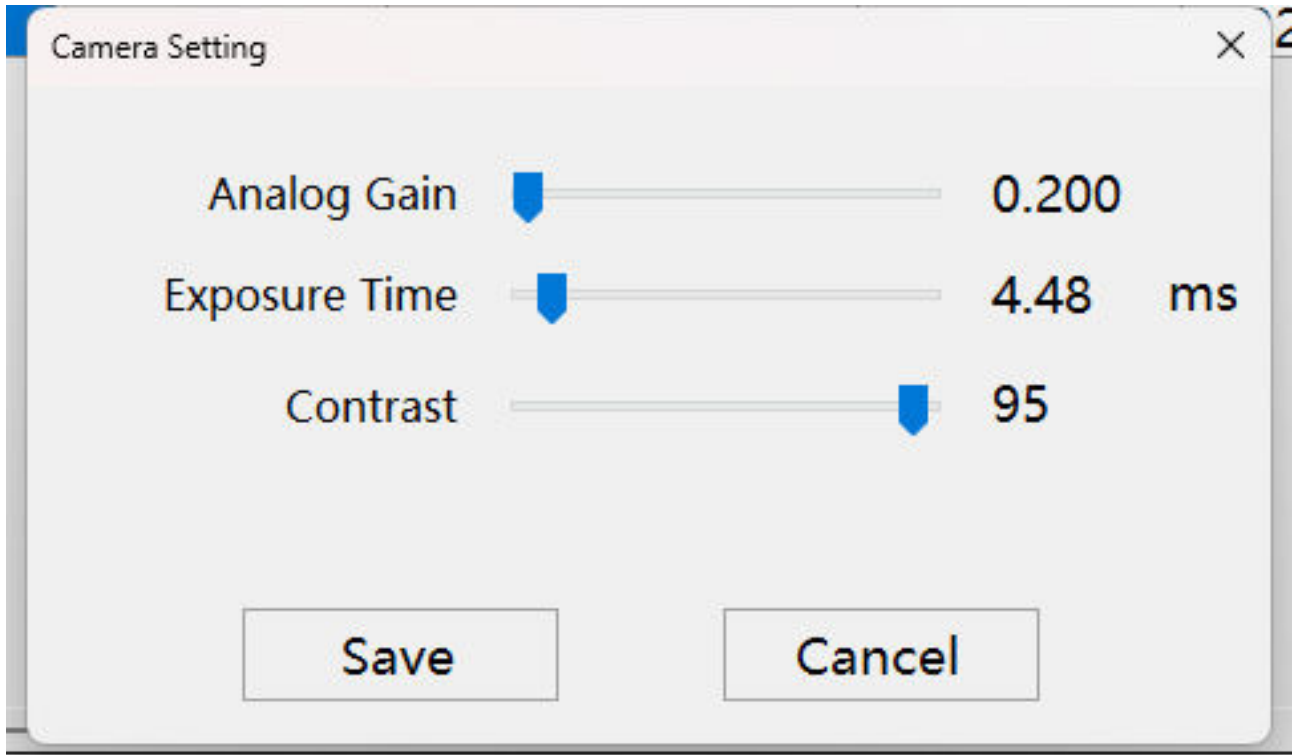
### Sample Information

Sample Info ×

Sample Name	<input type="text" value="Sample Name"/>	Sample Sn	<input type="text" value="Sample Sn"/>
Min Value	<input type="text" value="300"/>	Max Value	<input type="text" value="800"/>
Inspection Company	<input type="text" value="Inspection Con"/>	Inspection Date	<input type="text" value="2024-11-19"/> <small>📅</small>
Tester	<input type="text" value="Tester"/>	Reviewer	<input type="text" value="Reviewer"/>

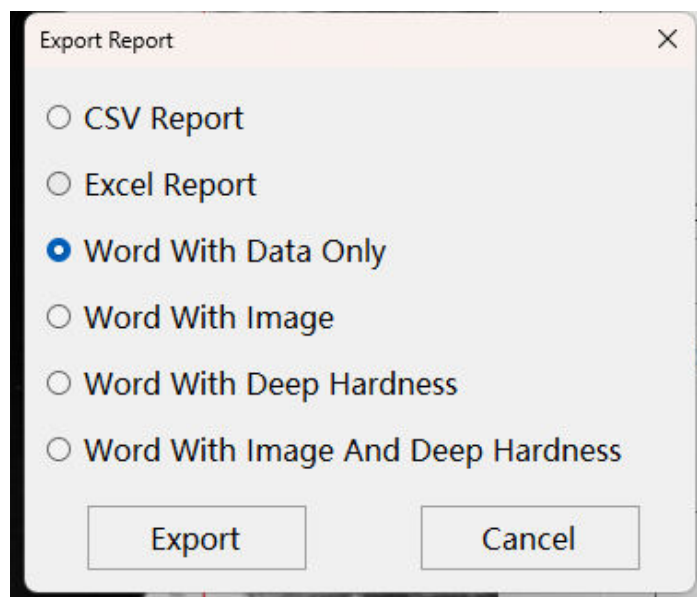
- Users can edit the information of the test samples, including the sample name, hardness range, tester, test date and other information, which is convenient for later management and query.

### Camera Setting



- Adjust the camera settings parameters to improve the quality of the indentation image.

### Report Format



## Software

### Excel Format

Report												
Sample Info												
Sample Name	Sample Name	Sample Sn	Sample Sn	Inspection Company	Inspection Company							
Lower Limit	0	Upper Limit	800	Inspection Date	2025/1/17							
Tester	Tester	Reviewer	Reviewer	Force	HBW10/3000							
Statistic Info												
Number	2	Max	206.1	MIN	202.6							
Average	204.35	Variance	3.06	StdDev	1.75							
CP	76.19	CPK	38.92									
Detailed data												
#	X(mm)	Y(mm)	Depth	D1(um)	D2(um)	Davg(um)	Hardness Type	Hardness	Convst Type	Convst value	Qualified	
1	0	0	0	4.25	4.22	4.24	HBW10/3000	202.6	HRA	57.3	YES	
2	0	0	0	4.2	4.2	4.2	HBW10/3000	206.1	HRA	57.8	YES	

### Word Format

**Report**

Sample Name	Sample Name	Sample Sn	Sample Sn
Min Value	0	Max Value	800
Inspection Company	Inspection Company	Inspection Date	2025/02/04
Tester	Tester	Reviewer	Reviewer
Force	HBW10/3000	Load Time (s)	0

NDv	Maxv	Minv	AVGv	VARv	STDv	CPv	CPkv
5	204.50	202.60	203.83	0.46	0.67	197.55	100.67

#	D1(um)	D2(um)	Convst value	Hardness type	Hardness value	Convst Type	Convst value	Qualified	Depth
1	4.25	4.22	202.6	HBW10/3000	202.6	HRA	57.3	YES	0.000
2	4.2	4.2	206.1	HBW10/3000	206.1	HRA	57.8	YES	0.000

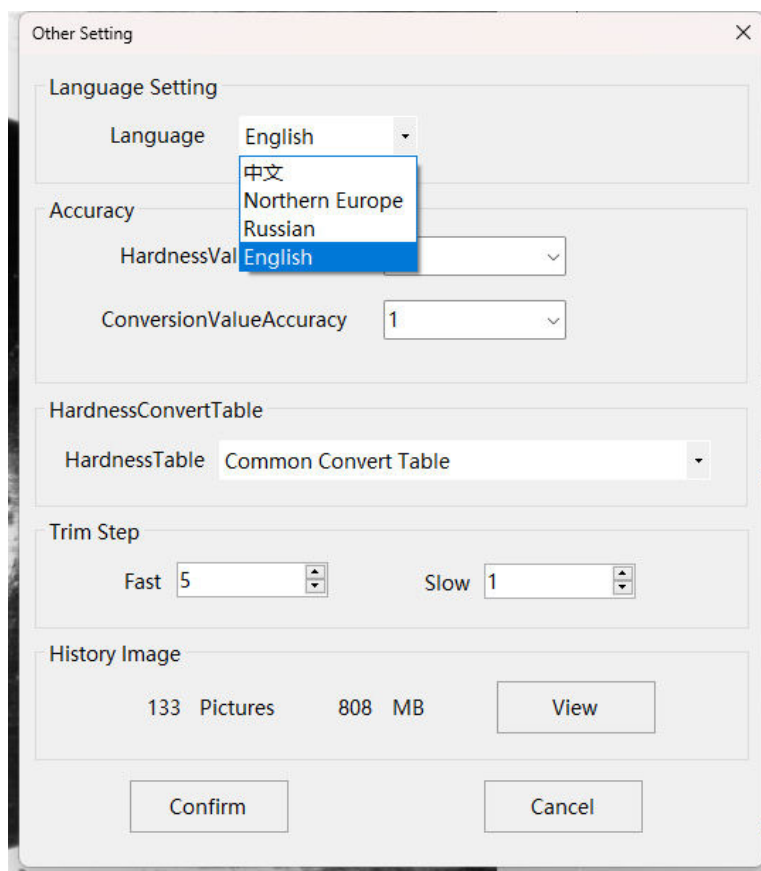
## Software

### CSV Format

A	B	C	D	E	F	G	H	I	J	K
#	Hardness	Hardness	Qualified	D1(mm)	D2(mm)	Davg(mm)	Convert	TConvert	VMeasure	Time
1	204.5	HW10/30	YES	4.22	4.22	4.22	HRA		57.5	#####
2	204.5	HW10/30	YES	4.22	4.22	4.22	HRA		57.5	#####
3	204.2	HW10/30	YES	4.24	4.2	4.22	HRA		57.5	#####
4	203.4	HW10/30	YES	4.24	4.22	4.23	HRA		57.4	#####
5	202.6	HW10/30	YES	4.25	4.22	4.24	HRA		57.3	#####
6	203.8	HW10/30	YES	4.25	4.2	4.23	HRA		57.5	#####

- It can export reports in three formats: Word, Excel, and CSV.

### Language Selection



- Multiple languages are available, and customization of other languages is supported.

# Technical Specification

<b>Model</b>	MBRV-250A
<b>Name</b>	Intelligent Automatic Universal Hardness Tester
<b>Hardness Scale</b>	Brinell, Rockwell, Vickers
<b>Test Force</b>	3~250kgf
<b>Brinell Scale</b>	HBW1/: 5、 10、 30kgf HBW2.5/: 6.25、 15.625、 31.25、 62.5、 187.5kgf HBW5/: 125kgf HBW10/: 100kgf
<b>Rockwell Scale</b>	HRA, HRB,HRC, HRD,HRE,HRF,HRG, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV
<b>Vickers Scale</b>	HV3、 HV5、 HV10、 HV20、 HV30、 HV50、 HV100、 HV120kgf
<b>Conversion Scale</b>	HRA、 HRB、 HRC、 HRD、 HRF、 HV、 HBW、 HR15N、 HR30N、 HR45N、 HR15T、 HR15T、 HR15T
<b>Measuring System</b>	Automatic
<b>Objective Lens Magnification</b>	2.5X、 5X (Optional 10X、 20X)
<b>Camera</b>	5 Megapixel
<b>Data Display</b>	Computer Screen
<b>Loading Method</b>	Auto Loading/Dwelling/Unloading

# Technical Specification

<b>Indenter</b>	Diamond Rockwell Indenter:120° Rockwell Ball Indenter:Φ1.5875mm,(Optional Φ3.175mm, Φ6.35mm, Φ12.7mm) Diamond Vickers Indenter:136° Brinell Ball Indenter Φ2.5mm, Φ5mm (OptionalΦ1mm, Φ10mm)
<b>Illumination</b>	LED
<b>Executive Standards</b>	GB/T230、GB/T231、GB/T4340、JJG144、GB/T18449、ISO 6508、ASTM E 10、ASTM E92、ASTM E18、ASTM E384、ASTM E103
<b>Total Test Force Dwelling Time</b>	1 - 99 s
<b>Test Sample</b>	Test Space: 220x200mm(HxD) Cylindrical Specimen: The Minimum Diameter of The Uter Surface of The Cylindrical Specimen is 4 mm.
<b>Test Height</b>	Rockwell : 220mm Brinell/Vickers:150mm
<b>Test Throat</b>	200mm
<b>Machine Size L*W*H (mm)</b>	500*260*750
<b>Net Weight (kg)</b>	70
<b>Power Supply</b>	AC220V+5%, 50-60Hz
<b>Package Size L*W*H</b>	710*430*980 (mm)
<b>Gross Weight (kg)</b>	102

## Standard Delivery

Name	Qty	Photo
Machine Mainframe	1pc	
USB Flash Drive ( Measurement Software Included)	1pc	
Dell Computer	1pc	
5-megapixel Industrial Camera	1pc	/
Dongle	1pc	
Lighting Source	1pc	/
Electric Motorized Sliding Test Stage	1pc	
Objective Lens ( 2.5X、 5X)	each 1pc	
Rockwell Diamond Indenter	1pc	

## Standard Delivery

Name	Qty	Photo
Rockwell Ball Indenter Φ1.5875mm	1pc	
Vickers Diamond Indenter	1pc	
Brinell Ball Indenter Φ2.5mm	1pc	
Brinell Ball Indenter Φ5mm	1pc	
Test Anvil Φ150mm	1pc	
Test Anvil Φ60mm	1pc	
V-shape Test Anvil Φ38mm	1pc	
Rockwell Hardness Block High Value HRC	1pc	
Rockwell Hardness Block Low Value HRC	1pc	

## Standard Delivery

Name	Qty	Photo
Rockwell Hardness Block HRB	1pc	
Brinell Hardness Block HBW2.5/187.5	1pc	
Vickers Hardness Block HV30	1pc	
Level Gauge	1pc	
Anti-dust Cover	1pc	
Power Cord	1pc	
Product Certificate	1pc	
Warranty Card	1pc	
Instruction Manual	1pc	

## Optional Delivery

### Optional

10X、 20X Objective Lens

1/8"、 1/4"、 1/2" Rockwell Ball Indenter

Φ1mm、 Φ10mm Brinell Indenter

X-Y Auto Test Stage

Other Test Anvil

Other Hardness Block

### Mikrosize Precision Instrument Co.,Ltd

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