Mikrosize®

iBRV-187.5EPC

Electric Motorized Vision Universal Hardness Tester

Video

Contact us

Mikrosize Precision Instrument Co.,Ltd
A-4035 RuiFeng Business Expo, Wuhu City, China , 241000.
Web:www.mikrosize.com
Email: mikrosize@mikrosize.com

Feature and Application

Product Feature

- Multi-method measurement: Capable of determining metal hardness based on Brinell, Rockwell, and Vickers hardness test methods to meet diverse metal material hardness testing needs.
- Precise test force grading: Equipped with 7 levels of test force.
- Different force levels suit materials of varying hardness ranges,ensuring testing accuracy
- Diverse indenter types: Different indenters are used for various hardness testing methods, ensuring adaptability to all metal materials.
- Reasonable structural design: Scientific design of test force application/release, transformation, and stage lifting mechanisms ensures convenient operation and equipment protection.
- Comprehensive accessories: Facilitates installation, debugging,and calibration to guarantee testing accuracy and reliability.

Product Application

- During mechanical processing, Brinell hardness testers can inspect raw material hardness to select suitable machining processes and tools.
- Inspect hardness of mechanical components (e.g., gears,bearings, bolts) to ensure compliance with design requirements and performance standards.
- Inspect hardness of power plant equipment components (e.g.,boilers, turbines, generators) to ensure safe operation.
- Inspect hardness of forgings to evaluate forging process effectiveness and product quality.

Product Structure

1.Dwell Time Display 2.Rockwell-specific Dial 3.Micrometer Eyepiece
4.Dwell Time Adjustment Keys 5.Start Button 6.Objective Lens
7.Illumination Lamp 8.Indenter 9.Sliding Stage 10.Lifting Rod
11.Handwheel 12.Emergency Stop Switch

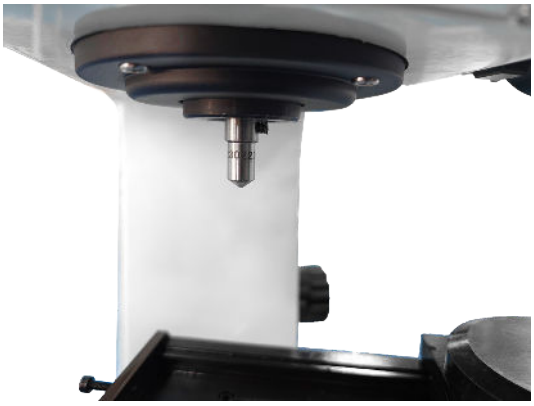
Product Structure

1.Illumination Lamp Switch	**2.Illumination Lamp Interface**
3.Internal Illumination	**4.Force-changing Handwheel**

1.Power Switch	**2.Power Cord Interface**	**3.RS232 Interface**

Product Detail

- Equipped with a 15X eyepiece and three objective lenses (2.5X, 5X, 10X) to observe and measure indentations of different scales.

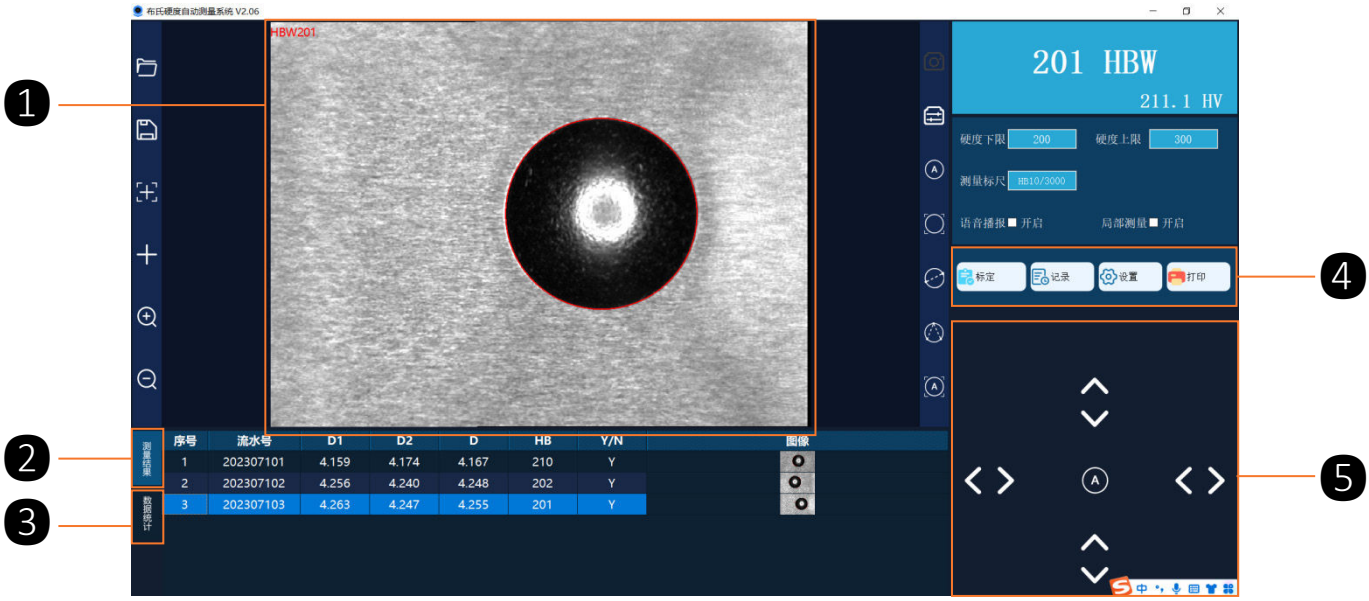


- Includes 5 indenters covering Rockwell, Brinell, and Vickers hardness scales. Manual replacement is quick and convenient.

- A force-changing handwheel on the right side adjusts test force magnitude.

Software

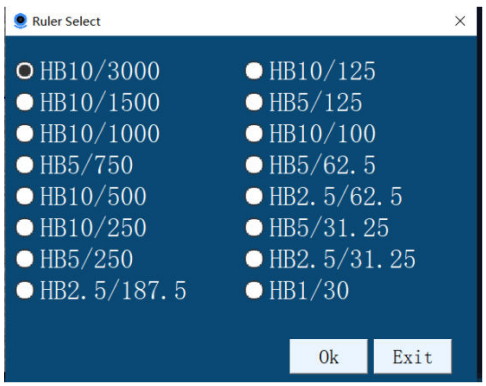
Brinell Hardness Software



1.Indentation Image **2.Test Results** **3.Data Statistics**
4.Function Key **5.Fine-tune The Buttons**

Workpiece Parameter Setting And Measuring Scale

2.Workpiece parameter setting



3.Measuring scale

- Click the edit box to edit the upper and lower hardness limits
- Click the measurement ruler to switch the measurement ruler, and the point is determined after selection

Software

Brinell Hardness Software

Function Key

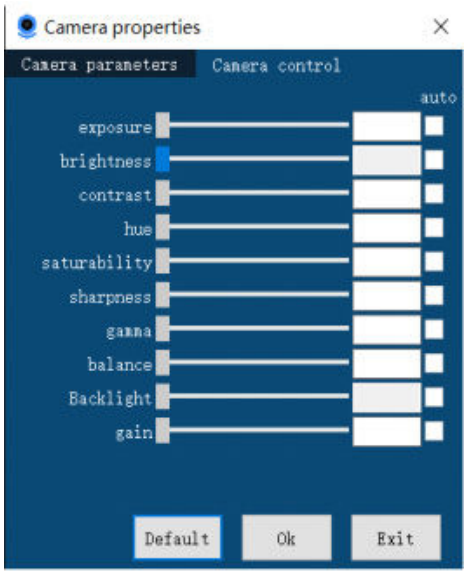
- Open Image: You can open the indentation image saved in the computer.
- Save Image: You can save the collected image to the computer.
- Cross line Reset: The cross line of the image area can be dragged to any position within the screen. Click Reset to restore the cross line to the center position.
- Cross line show and hide: by switching to click this button to show and hide the cross line.
- Zoom in: Magnify the image.
- Image Shrinks: Shrinks the image.

Function Key

- Real-time image capture and fixed image button: Display the real-time image, and then click to fix the image to the display area
- Automatic measurement: according to the automatic measurement can be fixed image and fixed image for automatic measurement indentation
- Toggle box manual measurement. Cut the upper tangent line and the left tangent line to the edge of the indentation and then press and hold the left mouse button (do not release) to cut the right tangent line and the lower tangent line to the other two edges of the indentation.
- Release the mouse to get the hardness value
- Two-point circle manual measurement. Hold the mouse down one point on the edge of the indentation (do not release) and then release the mouse on the other edge of the corresponding diameter position to get the hardness value
- Three-point circle manual measurement. The hardness value is obtained by 3 one point at any point on the edge of the indentation
- Automatic area measurement. Suitable for the case of multiple indentations in the display area.

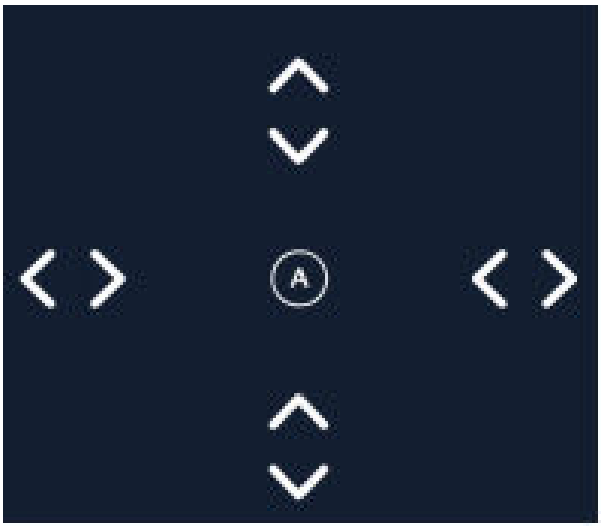
Software

Camera Parameter Settings



- Under normal circumstances, the camera parameters only need to be set when the software is installed for the first time. The system will then automatically save the parameter settings.

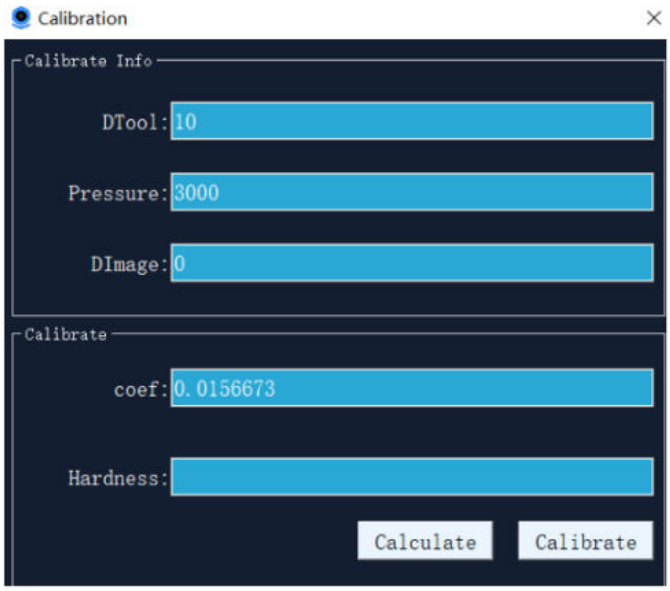
Fine-tune Function



- If the measured hardness value does not match the indentation, you can select the direction of the inconsistency for fine adjustment, or adjust it up or down

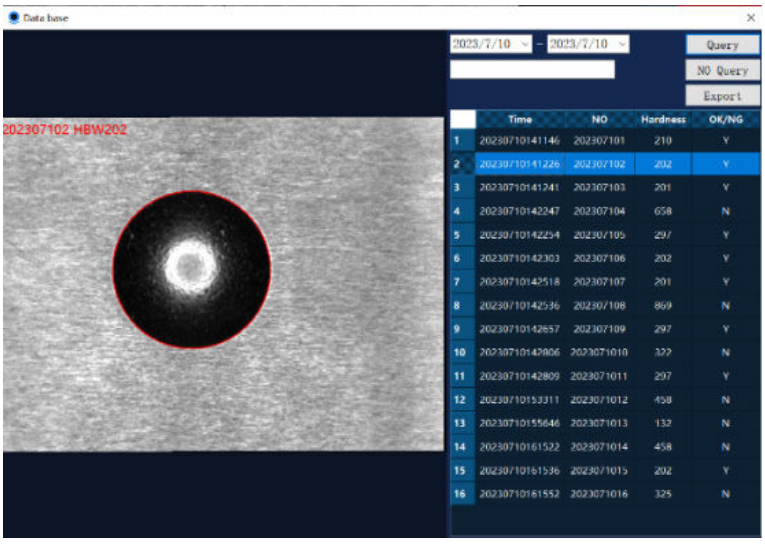
Software

Calibration



- First, use the camera to find a standard indentation on the standard block, select the measuring ruler, point automatic measurement, and measure the indentation. Click the calibration button to enter the calibration interface, fill the correct standard hardness value into the hardness of the standard block, click the calculation coefficient, and click the calibration.

History



- The hardness value of the workpiece measured before can be viewed in this interface.

Software

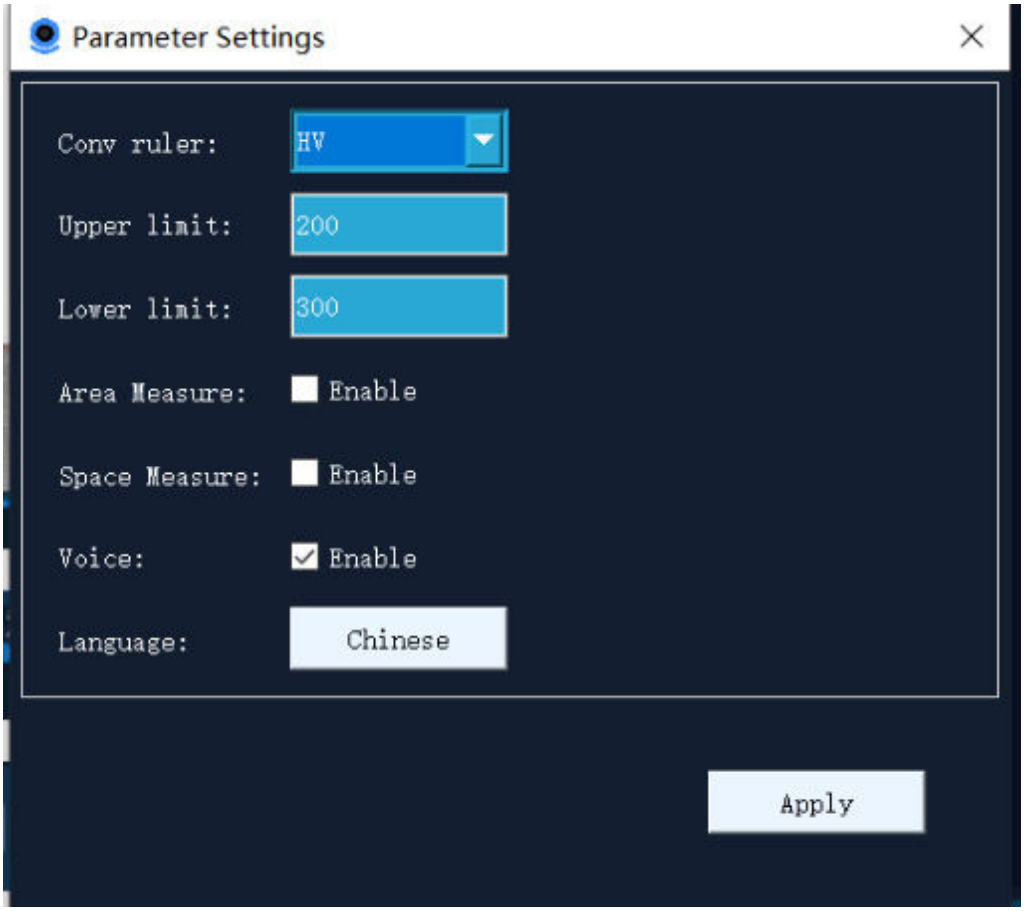
Export Records

	A	B	C	D	E	F
1	Hardness test record					
2	No	Time	Product ID	Diameter	Hardness	OK/NG
3	1	20230710141146	202307101	4.167	210	Y
4	2	20230710141226	202307102	4.248	202	Y
5	3	20230710141241	202307103	4.255	201	Y
6	4	20230710142247	202307104	2.391	658	N
7	5	20230710142254	202307105	3.530	297	Y
8	6	20230710142303	202307106	4.248	202	Y
9	7	20230710142518	202307107	4.255	201	Y
10	8	20230710142536	202307108	2.085	869	N
11	9	20230710142657	202307109	3.530	297	Y
12	10	20230710142806	2023071010	3.392	322	N
13	11	20230710142809	2023071011	3.530	297	Y
14	12	20230710153311	2023071012	2.858	458	N
15	13	20230710155646	2023071013	5.182	132	N
16	14	20230710161522	2023071014	2.858	458	N
17	15	20230710161536	2023071015	4.248	202	Y
18	16	20230710161552	2023071016	3.380	325	N

- You can query in chronological order or by workpiece code. After query, you can export EXCEL data table by Export Record.

Software

Settings



- Ruler conversion: You can select the ruler to be converted.
- Hardness upper limit, hardness lower limit: fill in the hardness value range of the workpiece.
- Local measurement: suitable for the case of multiple indentations in the display area.
- Space measurement: select on, press the space button to capture the image and measure,and then press the space bar to release the camera.
- Voice Broadcast: Select on to broadcast the hardness value by voice after the hardness value is calculated area.
- Language switching: can be switched between Chinese and English. After selecting, confirm the exit and restart the software.
- Automatic area measurement. Suitable for the case of multiple indentations in the display area.

Software

Output A Report

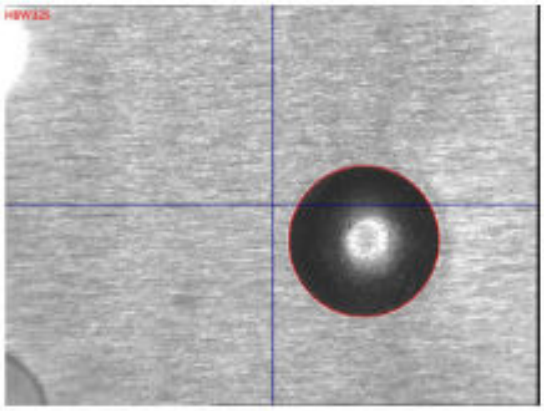
Brinell Hardness (HB) Test Results

Submitter		Date Submitted	2023.07.10
Part Name		Part ID	2023071014
Test Standard		Sample Description	
Qual. UL	300	Qual. LL	200
Indenter Diam. (mm)	10	Force (Kg)	3000

Test Results

#	D	HB	HV	#	D	HB	HV
1	2.858	458	491.9	2	4.248	202	211.8
3	3.380	325	342.9				

Indentation Images

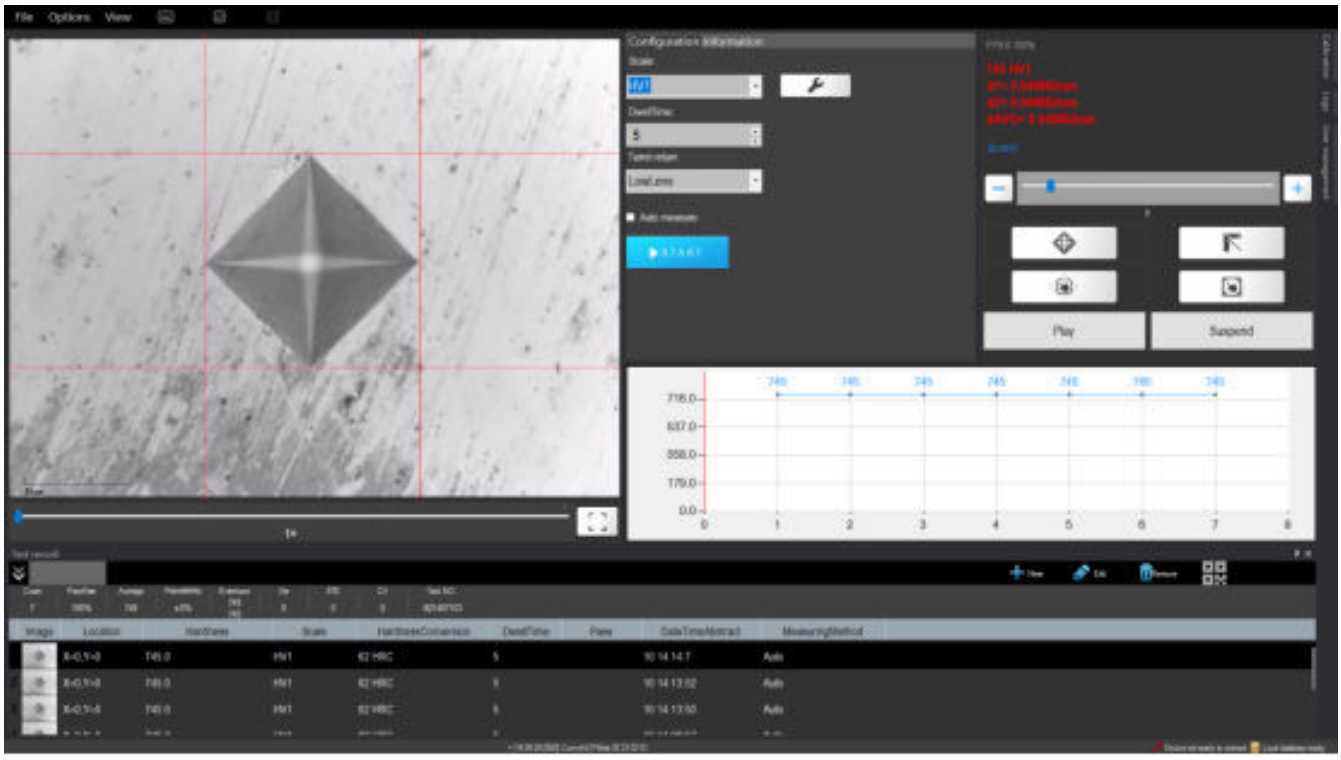


ss Curve

- The results of the measured area can be output in word format.

Software

Output A Report



- Automatically or manually capture the indentation and measure the diagonal length of the indentation, and calculate the corresponding Vickers hardness value.
- Support manual tangent measurement and manual four-point measurement, automatic D2 (manual point setting)
- Support one-key start of hardness tester loading and unloading, turret homing, automatic fitting and indentation automatic measurement; Support separate control of hardness tester startup, turret position switching, and convenient sliding dimming.
- The system automatically calculates the average value of the measured hardness, repeat-abili ty error, variance and other statistical values.
- Automatically indicate the abnormal value, when the hardness exceeds the specified value, the automatic alarm
- Automatically generate reports in EXCEL/PDF/CSV and other formats. The report board can be customized
- Each form in the software interface can be arbitrarily adjusted in position and size, opened or hidden, and users can customize the software window layout according to their needs.
- The measurement image can be stored in a document, and the measurement results can be permanently saved.

Mikrosize®

Technical Specification

Name		Electric Motorized Vision Universal Hardness Tester
Model		iBRV-187.5EPC
Rockwell Scales	**Initial Test Force**	98.07N（10kg）
	Total Test Force	588.4N、980.7N、1471N
		60kg、100kg、150kg
	Indenter	Diamond Rockwell indenter, Φ1.5875mm ball indenter
	Scales	HRA、HRB、HRC、HRD
	Max. Sample Height	210mm (expandable to 400mm)
Brinell Scales	**Test Force**	294.2N、306.5N、612.9N、980.7N、1839N 30kg、31.25kg、62.5kg、100kg、187.5kg
	Indenter	Φ2.5mm、Φ5mm ball indenters
	Scales	HBW1/30、HBW2.5/31.25、HBW2.5/62.5、 HBW2.5/187.5、HBW5/62.5、
	Eyepiece Magnification	15X
	Objective Magnification	2.5X、5X
	Max. Sample Height	180mm

Mikrosize®

Technical Specification

Vickers Scales	Test Force	294.2N、980.7N 30kg、100kg
	Indenter	Diamond Vickers indenter
	Scales	HV30；HV100
	Eyepiece Magnification	15X
	Objective Magnification	10X
	Max. Sample Height	180
Main Unit	Display Method	Hardness tester-specific dial
	Dwell Time Control	0–60s adjustable
	Indenter-center -to-body Distance	165mm
	Dimensions (L×W×H)	550X230X780
	Weight Approx	80kg
	Power supply	AC220V 50Hz

Standard Delivery

Name	Qty	Photo
Main Unit	1pc	
Micrometer Eyepiece	1pc	
Φ150mm Platform	1pc	
V-shaped Stage	1pc	
Sliding Stage	1pc	
Diamond Rockwell Indenter	1pc	
Φ1.5875mm Carbide Ball Indenter	1pc	
Φ2.5mm Brinell Indenter	1pc	

Standard Delivery

Name	Qty	Photo
Φ2.5mm Brinell Indenter	1pc	
Φ5mm Brinell Indenter	1pc	
2.5X、5X、10X Objective Lens	3pcs	
HRA/B/C Hardness Test Block	5pcs	
HV30 Hardness Test Block	1pc	
HBW2.5/187.5 Hardness Test Block	1pc	
Level	1pc	

Standard Delivery

Name	Qty	Photo
Leveling Screws	4pcs	/
Small Screwdriver	1pc	/
Power Cord	1pc	
2A Fuse	2pcs	/
Phillips Screwdriver	1pc	/
Dust Cover	1pc	/
User manual (incl. warranty & packing list)	1copy	/