

## Product Information

### ZHU250 - Universal Hardness Tester up to 250 kg

CTA: 46098 46099



#### Applications

The **ZwickRoell ZHU 250 universal hardness testing machine** is suitable for the following hardness testing methods.

#### Metals

- Vickers (HV) as per EN ISO 6507, ASTM E92
- Knoop (HK) as per ISO 4545, 4546
- Brinell (HB) as per EN ISO 6506, ASTM E10
- Rockwell (HR) as per EN ISO 6508, ASTM E18
- Vickers depth measurement (HVT) as per VDI/VDE 2616-1
- Brinell depth measurement (HBT) as per VDI/VDE 2616-1

#### Plastics

- Ball indentation hardness to ISO 2039-1

#### Advantages and Features

- A rugged, high-accuracy hardness testing machine for many different applications.
- Intuitive menu navigation via large color display and keyboard.

- Robust digital measuring system for convenient, high-accuracy measurement..
- Fast, easy, precise handling.
- Large standardized test area (250 x 300 mm).
- Load application up to 250 kg via closed-loop system.
- Online display of force-time or indentation depth-time diagrams.
- Automatic display of measured quantities (diagonals/indentation depths) and hardness value.
- Motorized changeover between lens and indenter position.
- Automatic travel to set focal-plane when optics are swiveled into position.
- Large, highly tempered, non-reflective focusing screen (diameter 150 mm).
- Individual accessories directly matched to the relevant testing requirements.
- Conversion of hardness values as per current standard DIN 18265.
- testXpert: transfer (export) of data to QA programs, report generation etc. etc.
- Direct printer connection (LPT1).

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#### Technical data

##### Basic device

Item no.	024484	
Test load, min.	1	kg
Test load, max.	250	kg
Included in the scope of delivery	Holding down clamp	
Optical indentation measuring device	Focusing screen	
Test method	<ul style="list-style-type: none"> <li>• Vickers: HV1, HV2, HV3, HV5, HV10, HV20, HV30, HV50, HV60, HV100, HVT</li> <li>• Knoop: HK1</li> <li>• Brinell: HBW 1/1 ... 1/30 - HBW 2.5/6,25 ... 2.5/187.5 - HBW 5/25 ... 5/250 - HBW 10/100 ... 10/250 and HBT</li> <li>• Rockwell: HR scales A, B, C, D, E, F, G, H, K, 15N, 30N, 45N, 15T, 30T, 45T</li> <li>• Ball indentation hardness: H - 49.03 N / 132.39 N / 357.9 N / 961.0 N</li> </ul>	
Voltage	Adjustable, 100 ... 250	V
Dimensions:		
Height, approx.	1200	mm
Width, approx.	270	mm
Depth, approx.	870	mm
Weight, approx.	300	kg

#### Lenses

Description	Item number
Lens for 15x magnification, field of view diameter approx. 10.0 mm	<b>369404</b>
Lens for 45x magnification, field of view diameter approx. 3.3 mm	<b>369405</b>
Lens for 90x magnification, field of view diameter approx. 1.7 mm	<b>369406</b>
Lens for 185x magnification, field of view diameter approx. 0.8 mm	<b>369407</b>
Lens for 360x magnification, field of view diameter approx. 0.42 mm	<b>1037407</b>
Lens for 520x magnification, field of view diameter approx. 0.29 mm	<b>369409</b>

#### Rockwell hardness tests

Type	Indenter as per hardness test method	Included in delivery	Item No.
Indenter	Rockwell, with hard metal ball, 1/16" (1.587 mm)	Official test certificate	320859
Indenter	Rockwell, with hard metal ball, 1/8" (3.175 mm)	Official test certificate	320861
Indenter	Rockwell, with hard metal ball, 1/4" (6.35 mm)	Official test certificate	368896
Indenter	Rockwell, with hard metal ball, 1/2" (12.7 mm)	Official test certificate	368897
Indenter	Rockwell, with diamond tip 120°, Ø 0.2 mm	Official test certificate	368899

#### Brinell hardness test

Type	Indenter as per hardness test method	Included in delivery	Item No.
Indenter, one-piece	Brinell, with hard metal ball, 10 mm	Official test certificate	368898
Indenter, one piece	Brinell, with hard metal ball 5 mm		320894

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Type	Indenter as per hardness test method	Included in delivery	Item No.
Indenter, one-piece	Brinell, with hard metal ball, 2.5 mm	Official test certificate	320896
Indenter, one-piece	Brinell, with hard metal ball, 1 mm	Official test certificate	320900

#### Vickers hardness test

Type	Indenter as per hardness test method	Included in delivery	Item No.
Indenter	Vickers, with pyramidal diamond point 136°	Official test certificate	318061

#### Knoop hardness test

Type	Indenter as per hardness test method	Included in delivery	Item No.
Indenter	Knoop, with diamond pyramid to Knoop, 172° 30'/130°	Official test certificate	318845

#### Table

Height of support table [mm]	Width of support table [mm]	Depth of support table [mm]	Item No.
610	750	800	369423
620	600	780	018617

#### Test tables

Description	Item number
Specimen platform, diameter 90 mm	<b>369427</b>
Specimen platform, diameter 10 mm (ball indentation hardness)	<b>369429</b>
Specimen platform, diameter 150 mm	<b>369425</b>
Specimen platform, diameter 250 mm	<b>369426</b>
Specimen platform, 400 x 600 mm, with inset for prism supports and smaller test tables	<b>007867</b>
V-shaped test table for diameters 15 to 55 mm	<b>369432</b>
V-shaped test table for diameters 22 to 220 mm	<b>369433</b>

#### testXpert® III testing software

Description	Item number
testXpert III Basic program in German <sup>1)</sup>	<b>1035123</b>
testXpert III Basic program in English <sup>1)</sup>	<b>1035124</b>
testXpert III Standard Test Program data connection via serial port	<b>1035143</b>
testXpert III Master Test Program data connection via serial port (3rd license) <sup>2)</sup>	<b>1035512</b>
Connecting cable for PC, RS232 C	<b>310678</b>

1) further languages on request

2) A 3rd license may be quoted for for connection of hardness testers in the first case also.