

## Universal Hardness Testers UV Series

Koopa UV series are fully-automatic digital universal hardness testers designed to test every kind of parts. The force is applied with a digital control system and is measured by a loadcell with 0.01% of full-load precision. The indentation depth is measured with 0.1 micrometer precision. Koopa UV series has been the first choice for metal hardness testing for many companies, manufacturers, suppliers, and research centers due to its accuracy, repeatability, and fully-automatic operation. UV series measure the hardness in the most common hardness scales such as Rockwell, Superficial Rockwell, Brinell, and Vickers.



### Features

- Fully-automatic hardness testing procedure
- Hardness testing accuracy based on standard
- Real and simulated Brinell hardness testing modes
- Hardness testing based on 15 Rockwell, 15 Superficial Rockwell, all Vickers and Brinell methods up to 187.5 kg
- 1500 built-in memory
- Hardness testing based on ASTM E10, ASTM E18, ASTM E92, and ASTM E384 standards
- Hardness testing conversion based on DIN 50150 and ASTM E140 standards
- USB port to transfer data to external memory
- Automatic statistical calculation such as maximum, average, minimum, and range



### Real and Simulation Brinell hardness testing modes

In Real Brinell hardness testing mode, indentation diameter needs to be measured by the operator by using the optical system. In Simulation Brinell hardness testing mode, the controller calculates the indentation diameter using the indentation depth. In simulation mode, the device measurement error is less than standards' permissible error.

### Software user calibration

The user can calibrate the device for each hardness test method on three hardness ranges, i.e., low, medium, and high. Calibration for each hardness test method provides flexibility and accuracy for the user to calibrate the device based on a specific application. A linear estimation is used to compensate the error for the whole range of hardness testing using the three calibrated ranges.



### High precision optical system

The optical system benefits from different magnification lens by which accurate measurement of the different indentation width is possible. The high visibility of the optical system provides very sharp images of indentation edges for accurate hardness testing measurement.

### Automatic statistical calculation

All statistical calculations are performed automatically when the test is done. The statistical calculations include maximum, minimum, average, and range of hardness tests in a group of maximum nine tests.

## Technical Specifications

	UV1	UV3	UV4
<b>Accuracy</b>	In accordance with ASTM E10, ASTM E18, and ASTM E92		
<b>Maximum specimen height</b>	28 cm (11 in)	60 cm (23.6 in)	50 cm (19.7 in)
<b>Applicable depth</b>	18 cm (7.1 in)	25 cm (9.8 in)	25 cm (9.8 in)
<b>Test force</b>	1-187.5 kg		
<b>Input</b>	110-220V/50-60Hz		
<b>Operating temperature</b>	0-50 °C (32-122 °F)		
<b>Dimensions W×D×H</b>	17 cm×43 cm×70 cm	74 cm×74 cm×175 cm	40 cm×76 cm×121 cm
<b>Weight</b>	80 kg (176.4 lb)	330 kg (727.5 lb)	380 kg (837.8 lb)

## Accessories



Small and large V-shape anvil



Indenter



Small flat anvils



Standard hardness test blocks

## Standard package

UV series device
User manual
Standard hardness test block
Hardness conversion table
Warranty letter
Small flat anvils
Small V-shaped anvils
HRC indenter

## 1500 memory for data storage

The device has 1500 built-in memory in which hardness test's data such as part information and all the statistical calculations can be stored. These data are hardness scale, number of tests, minimum, average, maximum, range, code, and serial number.

## Data transfer

The device can transfer the measured hardness and their calculated statistical data to an external USB flash memory. The stored data is in the form of a text file and any text editor software such as Excel can retrieve them for further statistical analysis.

## High-precision measurements

The device is equipped with a high-precision displacement measurement system by which the indentation depth can be measured with 0.1 micrometer accuracy. The applied force is measured by a high-precision loadcell with 0.1% of full scale force accuracy. The optical system is designed based on ASTM E10 and ASTM E92 standards.

Rockwell	Superficial Rockwell	Vickers	Brinell
HRA	HR15N	HV1	HBx/1
HRB	HR30N	HV2	HBx/1.25
HRC	HR45N	HV5	HBx/2.5
HRD	HR15T	HV10	HBx/4
HRE	HR30T	HV20	HBx/5
HRF	HR45T	HV30	HBx/6.25
HRG	HR15W	HV50	HBx/7.81
HRH	HR30W	HV100	HBx/10
HRK	HR45W	HV120	HBx15.6
HRL	HR15X		HBx/20
HRM	HR30X		HBx/25
HRP	HR45X		HBx/30
HRR	HR15Y		HBx/31.25
HRS	HR30Y		HBx/40
HRV	HR45Y		HBx/62.5
			HBx/100
			HBx/120
			HBx/125
			HBx/187.5



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