

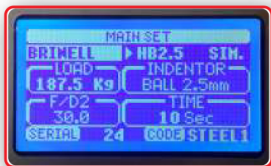
## Universal Hardness Testers UV Series

Koopa UV series are fully automatic digital universal hardness testers designed to test metal and plastic parts. Koopa UV series has been the first choice for metal hardness testing for many companies, manufacturers, suppliers, QC, and research centers due to its accuracy, repeatability, and fully automatic operation. The force is applied with a digital servo system and measured by a load cell with 0.01% full-load precision. The indentation depth is measured with 0.1 micrometer precision. 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
- Software user calibration
- 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
- 2000 built-in memory
- Hardness testing conversion based on DIN 50150 and ASTM E140 standards
- Hardness testing based on ASTM E10, ASTM E18, ASTM E92, and ASTM E384 standards
- USB port to transfer data to USB flash drive
- Automatic statistical calculation such as maximum, average, minimum, and range
- Capable of Uploading the indentation image via a 5Mps camera to computer and measuring the indentation width using Hareh software (optional).



### 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 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.

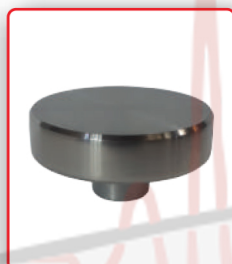
# KOOPA

Technical Specifications			
	UV1	UV3	UV4
Accuracy	In accordance with ASTM E10, ASTM E18, and ASTM E92		
Maximum specimen height	27 cm	60 cm	50 cm
Applicable depth	18 cm	25 cm	25 cm
Head / Anvil movement	Fixed head / Movable anvil		Movable head / Fixed anvil
Test force	1-187.5 kg		
Operating temperature	0-50 °C		
Dwell time	1-99 Sec		
Input	110-220V/50-60Hz		
Dimensions WxDxH	17 cm x 43 cm x 70 cm	74 cm x 74 cm x 175 cm	40 cm x 76 cm x 121 cm
Weight	80 kg	330 kg	100 kg

## Accessories



V-shaped anvil



Flat anvil



Indenter



Standard hardness test block

## Standard package

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

## 2000 memory for data storage

The device has a built-in memory in which 1500 hardness tests with all their statistical calculations can be stored. The statistical data for the test are hardness scale, number of tests, minimum, average, maximum, range, code, and serial number.

## Data transfer

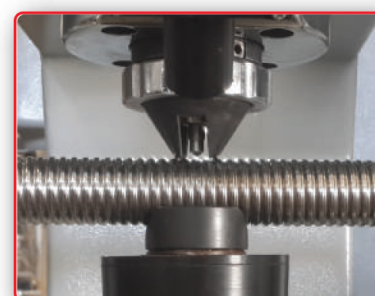
Measured hardness and their calculated statistical data can be transferred to an external USB flash memory, The device stores the data as a text file that can be retrieved on a computer in any text editor software such as excel.

## 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	HRM	HR15N	HR30X	HV3	HBx/5	HBx/31.25
HRB	HRP	HR30N	HR45X	HV5	HBx/6.25	HBx/40
HRC	HRR	HR45N	HR15Y	HV10	HBx/7.81	HBx/62.5
HRD	HRS	HR15T	HR30Y	HV20	HBx/10	HBx/100
HRE	HRV	HR30T	HR45Y	HV30	HBx/15.6	HBx/120
HRF		HR45T		HV50	HBx/20	HBx/125
HRG		HR15W		HV100	HBx/25	HBx/187.5
HRH		HR30W		HV120	HBx/30	
HRK		HR45W			x can be each of 1, 2, 2.5, 5, and 10 mm ball indenters.	
HRL		HR15X				



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