



**BUEHLER®**  
**MICROMET® 5104**  
*Microindentation Hardness Tester*

- **Three Objectives and Up To Two Indenters Mounted on a Motorized Turret**
- **Large Easy-To-Use LCD Console for Tester Control and Hardness Readout**
- **Precision Digital Filar With 0.01 $\mu$ m Resolution Readout**
- **Powerful Halogen Illuminator With Adjustable Aperture Diaphragm and Removable Green Filter**
- **Digital Readout of XY Stage Movement**
- **Data Output From Serial and Centronics Ports**

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## Specifications

**MICROMET® 5104 Microindentation Hardness Tester**, with digital control and an eight step 10gf – 1000gf test load range (10gf, 25gf, 50gf, 100gf, 200gf, 300gf, 500gf, and 1000gf). Tester features a motorized turret carrying three objectives (10x, 20x and 50x) and two indenter positions. Choice of either Knoop or Vickers, or both indenter types supplied factory mounted. Direct verification calibration of the tester and included test block is provided. A digital filar eyepiece provides measurement resolution to 0.01µm for precise measurement of both Knoop and Vickers microindentations with the corresponding hardness readings displayed on the large easy to read LCD console. Measured hardness values are displayed in Knoop or Vickers according to the indenter in use and can also be displayed as converted hardness values in other scales such as Rockwell. Hardness data from batches of up to 256 indentations may be stored and statistically analyzed with report generation and printing on the maximum, minimum, average, range, standard deviation and number of values within and outside of set limits of hardness. To help with the precise positioning of indentations, the tester also comes with digital readout stage X Y movement micrometers with 1" (25mm) travel and 0.0004" (0.001mm) reading resolution. Digital readout of the micrometers can be set to metric or to inches on the micrometer's LCD and in the LCD console. A 50W halogen illuminator with aperture diaphragm and removable green filter allows the tester to be used as a microscope. The tester comes complete with a comprehensive instruction manual, a sample vise, dust cover and accessory kit containing: video port tube, certified test block, fuse, and tools.

The image displays three screenshots of the MICROMET 5104's LCD interface. The first screenshot, titled 'TEST MODE', shows test parameters: N=42/256, X=0.14510 mm, Y=0.225 mm, and two surface readings: D1 56.71 and D2 56.84. The main display shows a large '575.2HV' reading, with 'T=13 s' and '53.9 HRC HV1' below it. The second screenshot, titled 'SET UP 1', shows configuration options for 'UP1' (CONVERSION TABLE HARD) and 'UP2' (JUDGMENT UPPER 0, LOWER 0). The third screenshot, titled 'STATISTICS', shows a table of statistical data for up to 256 hardness values.

Parameter	Value
N	10
MAX	814.5
MIN	330.5
AVR	439.6
RNG	484.0
UPPER	0
LOWER	0
GOOD	10
OVER	0
UNDER	0
SD(n-1)	142.00
SD(n)	134.71

**Large font size for the hardness readout and icon driven menu options ensure ease-of-use.**

**A number of set-up screens are provided for choice of hardness conversion, setting of limits and data output type.**

**Comprehensive statistical analysis is provided for up to 256 hardness values.**

**1600-5104** Tester weight approx 92 lbs. (42kg), Dimensions 16.1" x 23.6" x 23.2" (410 x 600 x 590mm)

**Model 1600-5122VA**, for operation on 110V 60Hz, mounted with Vickers indenter only (second position blanked)

**Model 1600-5122KA**, for operation on 110V 60Hz, mounted with Knoop indenter only (second position blanked)

**Model 1600-5122VKA**, for operation on 110V 60Hz, mounted with Vickers and Knoop

**Model 1600-5122VD**, for operation on 220V 50Hz, mounted with Vickers indenter only (second position blanked)

**Model 1600-5122KD**, for operation on 220V 50Hz, mounted with Knoop indenter only (second position blanked)

**Model 1600-5122VKD**, for operation on 220V 50Hz, mounted with Vickers and Knoop

**Model 1600-5122VE**, for operation on 240V 50Hz, mounted with Vickers indenter only (second position blanked)

**Model 1600-5122KE**, for operation on 240V 50Hz, mounted with Knoop indenter only (second position blanked)

**Model 1600-5122VKE**, for operation on 240V 50Hz, mounted with Vickers and Knoop

*Buehler continuously makes product improvements; therefore, technical specifications are subject to change without notice.*

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**BUEHLER ANALYST® SECTION 13**



**BUEHLER**

BUEHLER LTD. – Worldwide Headquarters  
41 Waukegan Road • P.O. Box 1  
Lake Bluff, Illinois 60044-1699 USA  
Tel: 847/295-6500 • Fax: 847/295-7979  
Sales: 1/800/BUEHLER • 1/800/283-4537  
Web Site: <http://www.buehler.com>

**BUEHLER GMBH - European and MESA Headquarters**

In der Steele 2 • 40599 Düsseldorf  
Postface 16 03 55 • 40566 Düsseldorf  
Telefon: (49) 211 974100 • Telefax: (49) 211 9741079  
Web Site: <http://www.buehler-met.de> • Email: [info@buehler.com](mailto:info@buehler.com)

**BUEHLER FRANCE**

Telephone: 0800 89 73 71 • Télécopie: 0800 88 05 27  
Web Site: <http://www.buehler.fr>  
Email: [info@buehler.fr](mailto:info@buehler.fr)

**BUEHLER UNITED KINGDOM**

Telephone: 0800 707 6273 • Fax: 0800 707 6274  
Web Site: <http://www.buehler.co.uk>

**BUEHLER CANADA**

10 Carlow Court, Unit #2 • Whitby, Ontario L1N 9T7  
Telephone: 1-800-268-3593  
Email: [info@buehler.ca](mailto:info@buehler.ca)

**BUEHLER ASIA**

5/F Vogue Centre • 696 Castle Peak Road  
Lai Chi Kok, Kowloon • Hong Kong, SAR, China  
Telephone: (852) 2307 0909 • Fax: (852) 2307 0233