

AUTOMATIC MICROINDENTATION HARDNESS TESTING

QE-MVH1000A

Automatic Micro-Vickers & Knoop Tester

Precision HV0.01–HV1 testing with automatic turret, motorized stage, digital imaging and computer-assisted reporting.

10–1000 gf

FORCE RANGE

8

TEST FORCES

100× / 400×

OPTICS

0.0625 μ m

RESOLUTION



Automated Microhardness for Fine Features

The QE-MVH1000A combines eight microindentation forces, automatic turret control, precise X-Y positioning and computer imaging for coatings, case-depth traverses and microstructures.

10 gf–1 kgf Range

Resolve thin layers and fine features from HV0.01 through HV1.

Automatic Workflow

Turret switching, loading, dwell and unloading are automated.

Precision Stage

25 × 25 mm travel supports controlled traverses and test patterns.

Digital Imaging

View, measure, store, print and report indentation results.

Test Forces and Optics

Characteristic	QE-MVH1000A
Forces	10, 25, 50, 100, 200, 300, 500, 1000 gf
HV designations	HV0.01–HV1
Magnification	100× observation / 400× measurement
X-Y stage	100 × 100 mm; 25 × 25 mm travel
Test modes	Vickers; optional Knoop

Applications

- Coatings, plating and surface-engineered layers
- Carburized, nitrided and induction-hardened case profiles
- Weld microstructures and individual metallurgical phases
- Small parts, foils, ceramics, glass and suitable gemstones
- Research, failure analysis and production quality control

QE-MVH1000A Technical Data

Parameter	Specification
Test forces	0.098–9.807 N; eight forces
Hardness range	1–2967 HV
Loading / turret	Automatic load cycle and automatic switching
Objectives / eyepiece	10× / 40× objectives; 10× digital eyepiece
Magnification / resolution	100× / 400×; 0.0625 µm
Dwell time	0–60 seconds
X-Y stage	100 × 100 mm; 25 × 25 mm; 0.01 mm resolution
Specimen capacity	Approx. 100 mm height / 98 mm throat
Data system	Storage, printer, RS-232, CCD and PC software
Dimensions / weight	Approx. 480 × 325 × 545 mm / 31 kg
Power / warranty	110 V, 60 Hz / 12 months

Important Application Limits

- Gemstone testing means controlled indentation—not Mohs scratch testing—and permanently marks the surface.
- Fragile, anisotropic or faceted specimens require an application review.
- Coating thickness and substrate influence must be considered when selecting force.
- Very small diagonals increase uncertainty; preparation and optical clarity are critical.

Complete Microindentation Workstation

Applicable Standards

Standard	Application
ASTM E384	Microindentation hardness testing
ASTM E92	Vickers/Knoop machine and block requirements
ISO 6507-1:2023	Vickers hardness test method
ISO 4545-1	Knoop method when configured

What's Included

- ✓ QE-MVH1000A tester
- ✓ Automatic turret and force control
- ✓ Micro-Vickers diamond indenter
- ✓ 10× eyepiece; 10×/40× objectives
- ✓ Precision X-Y and specialty stages
- ✓ CCD/video camera system
- ✓ PC, monitor, keyboard and mouse
- ✓ Measurement/reporting software
- ✓ Printer and RS-232 cable
- ✓ HV0.2 and HV1 reference blocks
- ✓ Tools, cover, manual, certificates
- ✓ 110 V, 60 Hz / 12-month warranty

Optional Accessories and Services

- Knoop indenter and software; additional certified blocks
- Alternative objectives, fixtures and expanded automatic stage
- Metallographic preparation equipment
- Calibration, installation, method development and training

CONFIGURE YOUR MICROHARDNESS WORKSTATION

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