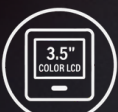


UNIVERSAL HARDNESS TESTER

MR-HD700/ MR-HD700 WITH NABL

Combining Ultrasonic Contact Impedance (UCI) and Leeb Rebound testing methods

High-Performance Quality Control Tester



AULIMET[®]
INSTRUMENTS

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UNIVERSAL HARDNESS TESTER

AULIMET MR-HD700/ MR-HD700 WITH NABL

The **AULIMET MR-HD700** is a versatile and high-precision portable hardness tester, meticulously engineered for accurate monitoring of metal hardness across diverse industrial environments. Combining Ultrasonic Contact Impedance (UCI) and Leeb Rebound testing methods, the MR-HD700 delivers unmatched flexibility for incoming inspection, in-process monitoring, and final quality control of metal components.

Applications

The MR-HD700 is ideal for evaluating the hardness of:

- Carbon steels and structural steels
- Surface-hardened and heat-treated materials
- Corrosion-resistant and stainless steels
- Aluminum and copper alloys
- Galvanized coatings and weld zones
- Thin-walled, small, and complex-shaped products
- Mirror-finished shafts, blades, and gear teeth

It effectively resolves variations in hardness results that may arise between departments or subcontractors during component acceptance, offering precision comparable to stationary laboratory hardness testers.

Design and Display

- Built for rugged industrial environments, the MR-HD700 features a durable, dust- and moisture-resistant housing with protective rubber inserts. The instrument is equipped with a bright 3.5" color TFT LCD display and a user-friendly interface, ensuring effortless operation in laboratories, workshops, or outdoor conditions.



Dynamic (Leeb) Sensor

The dynamic Leeb sensor is designed for testing large and heavy metal structures, ensuring reliable and repeatable measurements.

Interchangeable impact devices with varying spring stiffness and impact energy levels allow precise testing of different materials and geometries.

Applicable Standard: ISO 16859 — Metallic Materials — Leeb Hardness Test and ASTM A956/A956M-22 — Standard Test Method for Leeb Hardness Testing of Steel Products



Ultrasonic (UCI) Sensor

The UCI probe is ideal for measuring hardness in grooves, small-radius surfaces, and hard-to-reach areas. It provides accurate results even on polished, thin-walled, or complex components, such as shaft necks, turbine blades, and gear teeth.

Applicable Standard: ASTM A1038 — Standard Test Method for Portable Hardness Testing by the Ultrasonic Contact Impedance Method.

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ADVANCED MEASUREMENT TECHNOLOGY

- Dual-mode operation: Ultrasonic (UCI) & Dynamic (Leeb)
- Measures thin-walled parts and coatings with precision
- Suitable for grooves, holes, and internal components
- Works on round, concave, and non-parallel surfaces
- Supports 450+ hardness scales, including custom-defined scales



ACCURACY & PERFORMANCE

- High accuracy comparable to stationary hardness testers
- Single-point calibration for quick and reliable setup
- Fast measurement speed for improved productivity
- Non-destructive testing – no marks or damage on test surface
- Capable of replacing multiple conventional testers

USER EXPERIENCE & DESIGN

- “Turn ON & Work” simple and intuitive interface
- Bright backlit color display for all lighting conditions
- Portable & compact design for field and lab use
- Rugged build: dust & moisture resistant
- Stable performance across varying temperature & humidity



DATA MANAGEMENT & ANALYSIS

- Stores results with date & time stamps
- View data in tabular and graphical formats
- Large memory: saves 100+ custom scales & test histories
- Built-in statistical analysis tools
- Measurement alerts for out-of-limit values
- Easy data processing, storage, and export

SOFTWARE & CONNECTIVITY

- Dedicated software for data analysis and reporting
- Supports custom calibration creation
- Simplifies documentation and traceability



UNIVERSAL HARDNESS TESTER SPECIFICATIONS

AULIMET MR-HD700/ MR-HD700 WITH NABL

Standards	ASTM A1038-26 (For UCI)		ASTM A956/A956M-22 (For Leeb)
Hardness Scales			
UCI probe (types U, S, R, P, L)	HRC, HB, HV, Mpa, BHN, BHV		
Leeb probe (types D, DC, DL, C, E, G) Additional scales for Calibration	HRC, HRB, HB, HV, HL, Mpa, BHN, BHV Standard scales, custom scales, 1-point calibration scales calibration		
Measurement range for the main scales. *Extended calibration is possible when certified reference samples are available for each hardness scale.			
Rockwell	20 – 70 HRC*		
Brinell	30 – 650 HB*		
Vickers	230 – 940 HV*		
Measurement error	Subject to following recommendations *	Requirements of ISO and ASTM standards	
Rockwell	±0.2 HRC	±2 HRC	
Brinell, in the range90-180 HB180-250 HB250-460 HB	± 3 HB	±10-20 HB	
Vickers in the range240-500 HV500-800 HV800-940 HV	± 3 HV	±15-25 HV	
Diameter of the surface for installing the sensor			
For the ultrasonic sensor	– from 1 mm on the plane,from 5 mm/0.197” in a blind hole (groove)		
For the dynamic sensor:	from 14 mm/0.551” on the plane		
The recommended roughness of the controlled product			
Type D, DL, D+15, S, E : ≤ 2.0 Ra	Type C : ≤ 0.4 Ra	Type G : ≤ 7.0 Ra	
UCI : ≤ 1.6 Ra	UCIS : ≤ 0.8 Ra	UCIR : ≤ 3.2 Ra	
Surface diameter for sensor installation			
UCI Probe	From 1mm on the plane		
	From 5mm (0.197") in a blind hole (groove)		
Leeb Probe	From 14mm on a flat surface		
Incorrect Measurement Rejection	Yes		
Materials	Ultrasonic sensor (UCI) – pre-calibrated for steel		
	Dynamic sensor – pre-calibrated for steel, cast iron, stainless steel, aluminum, bronze, brass, and copper		
	Additional user materials for calibration		
Calculations	Average value for 1-20 measurements;Minimum, maximum, average values;Algorithm for rejecting incorrect measurements		
Scale conversion	Rockwell: HRC, HRB, HRA, and others Brinell: HBW (various ranges) Vickers: HV1, HV5, HV10, etc. Shore: HS-D, HS-C Leeb: HL (D, G, C, DL probes) Tensile Strength: MPa (approximate for steels)		
Programmable scales	Additional scales beyond 450		
Construction of graphs	All points from the series that were considered in the calculation of the mean value		
Language	English, Indian Language Optional		
Memory capacity	128Mb (Possibility of saving more than 4000 measurements)		
Device body	Impact-resistant plastic casing with a rubber bumper (fall protection)		
Display	3.5" color TFT LCD display, 320x480 Px		
PC connection	USB, results processing, report generation		
Power supply	Rechargeable, Li-Pol, 3.7V 3000mAh		
Work without recharging	Upto 9 hours		
Operating temperature	-10...+50 °C, no condensation		
Overall dimensions	185 x 98 x 42 mm (including rubber inserts)		
Weight	0.35 kg		

The image shows the A350 Hardness Tester, a handheld electronic device with a black and teal body. It features a 3.5-inch color TFT LCD screen displaying various measurement data and icons. Below the screen is a numeric keypad with function keys, including a red 'U' button and a green 'OK' button. The brand name 'AULIMET' is visible on the bottom of the device.



PORTABLE HARDNESS TESTER

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OPTIONAL ADDITIONAL LEEB PROBE



Type	Image	Specifications
DC		The Dynamic Probe Type DC-R is designed for precise hardness testing in tight spaces like holes, cylinders, and internal machine parts. Its compact build and advanced design ensure reliable results in challenging environments.
C		The Leeb Probe Type C is designed for testing surface-hardened, coated, and thin or impact-sensitive materials. Its small indentation ensures accurate results with minimal surface damage, making it perfect for delicate applications.
G		The Leeb Probe Type G is built for hardness testing of solid components like heavy castings and forgings. Its robust design ensures reliable performance on large, dense materials where standard probes fall short.
D+15		The Leeb Probe Type D+15 is designed for hardness testing in grooves and recessed surfaces. Its extended design enables access to hard-to-reach areas, making it ideal for specialized testing applications.
DL		The Leeb Probe Type DL is designed for precise hardness testing in tight spaces and groove bases. Its slim design ensures accurate measurements where access is limited, making it ideal for specialized testing applications.

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OPTIONAL ADDITIONAL UCI PROBE



Type	Image	Specifications
UCI-L		The AULIMET Sensor UCI-L (50 N) is a precision Ultrasonic Contact Impedance probe designed for hardness testing in confined or hard-to-reach areas, offering accurate, repeatable, and non-destructive measurements on complex geometries such as grooves, pipes, and weld seams.
UCI		The AULIMET Sensor UCI-05 (5 N) is a high-sensitivity UCI probe designed for microhardness testing of ultra-thin coatings and delicate surfaces, delivering precise, repeatable, and non-destructive measurements ideal for micro-components, plating, and fine surface analysis.
UCI-S		The AULIMET Sensor UCI-S (10 N) is a precision Ultrasonic Contact Impedance probe designed for accurate, non-destructive hardness testing of electroplated and thin coatings, ensuring reliable measurement of chrome, nickel, copper, and other delicate layers without damaging the surface.
UCI-R		The AULIMET Sensor UCI-R (100 N) is a high-load Ultrasonic Contact Impedance probe engineered for accurate hardness testing on rough or unpolished surfaces (up to Ra 5 µm), ensuring reliable, repeatable, and non-destructive measurements on castings, forgings, and other challenging materials.
UCI-P		The AULIMET Sensor UCI-P (50 N) is a specialized Ultrasonic Contact Impedance probe designed for precise hardness testing inside pipes, tanks, and confined internal surfaces (≥80 mm diameter), delivering accurate, repeatable, and non-destructive results even in challenging industrial environments.

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Delivery Scope

- 1 × Universal Portable Hardness Tester MR-HD700
- 1 × UCI Measuring Probe
- 1 × Rebound Probe Type D
- 1 × Test Block
- 1 × Charger
- 1 × USB Cable
- 1 × Cable for Type D Sensor
- 1 × Cable for UCI Sensor
- 1 × Carrying Case
- 1 × Software Pen Drive/CD
- 1 × Instruction Manual
- 1 × AC USB charger
- 1 × Protective case
- 1 × Warranty Card
- 1 × Factory Calibration Certificate
- 1 × NABL Calibration Certificate (Optional)
- Additional types of Sensors (Optional)
- Additional hardness measurement scales (Optional)



The AULIMET MR-HD700 redefines portability and precision in hardness testing. With its dual-mode measurement capability, ergonomic design, and compliance with international standards (ASTM A956 and ASTM A1038), it is the ultimate solution for comprehensive metal hardness assessment in industrial and laboratory settings.



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