



# Automatic Durometer - Shore and IRHD Hardness Tester - DRIVE Series



## STANDARDS

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ASTM D1414

ASTM D1415

ASTM D2240

EN 681-1

FIAT 50408

FIAT 50411

ISO 12046

ISO 48-2

ISO 48-4

ISO 868

VDA 675-202

Achieve the highest accuracy of your polymer/elastomer hardness testing with the latest generation of Automatic Shore IRHD Hardness Tester Durometer – DRIVE Series. Designed for precision, efficiency, and user-friendly operation, this instrument comes up with a versatile features such as interchangeable measuring heads, motor-controlled displacement, and automatic specimen rotation. With compatibility on standard PCs running latest Windows software, USB connectivity, and seamless integration, it ensures a hassle-free experience.

Choose your preferred language from a wide selection and benefit from the commitment to quality. Trust in reliable calibration services and sample-centering devices for O-rings, etc. for accurate and efficient hardness testing. Setting the standard in Shore / IRHD hardness testing of elastomer and polymer materials.

## DRIVE SERIES AUTOMATIC DUROMETER – AUTOMATIC SHORE IRHD HARDNESS TESTER



**Automatic Durometer – Shore and IRHD Hardness Tester – DRIVE Series**

### Advantages:

- ✓ Automatically move the specimen, eliminating the operator's influence on the measurement.
- ✓ Perform tests immediately with just a press of the Start button.
- ✓ Display the measurement result on the screen at the end of the test.
- ✓ Motorized sample holder: that allows for automated positioning of the specimen.
- ✓ Automated testing at various points on the specimen.
- ✓ Ideal solution to ensure dependable test results for both research laboratories and production control.

### Standards

- ✓ ASTM D2240
- ✓ ASTM D1415
- ✓ ISO 48-4
- ✓ ISO 868
- ✓ ISO 48-2
- ✓ JISK 6253

## APPLICATIONS

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## APPLICATIONS OF AUTOMATIC DUROMETER – AUTOMATIC SHORE IRHD HARDNESS TESTER IN VARIOUS INDUSTRIES



**Rubber and  
Plastics Industry**



**Automotive  
Industry**



**Medical Device  
Industry**



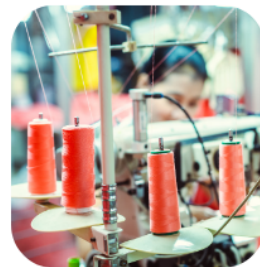
**Pharmaceutical  
Industry**



**Material Testing  
and Research**



**Paint and  
Coatings Industry**



**Textile and Apparel  
Industry**

## **Why Opt for Automatic Shore IRHD Hardness Tester Durometer?**

### **Discover the Benefits of Automatic Hardness Testing**

Our 'Automatic Shore IRHD Hardness Tester Durometer' stands out as the ultimate solution for hardness testing, offering unparalleled versatility tailored to your testing requirements. This state-of-the-art tester comes equipped with a motorized stand featuring a user-friendly digital display, making it perfect for standalone use. You can customize the configuration with various measuring heads, control software, and sample holders for precise testing of specific products. highest level of precision.

### **Why Choose Automatic Shore IRHD Hardness Tester Durometer?**

Our motor-controlled displacement of the measuring head guarantees consistently accurate results, while automatic specimen rotation enables seamless execution of multiple tests at different points. The digital display ensures quick and easy result readings. Rest assured, our instrument complies with international standards, and the ACCREDITED calibration certificate from accredited laboratory attests to its precision.

### **ACCREDITED Calibration: Setting the Standard**

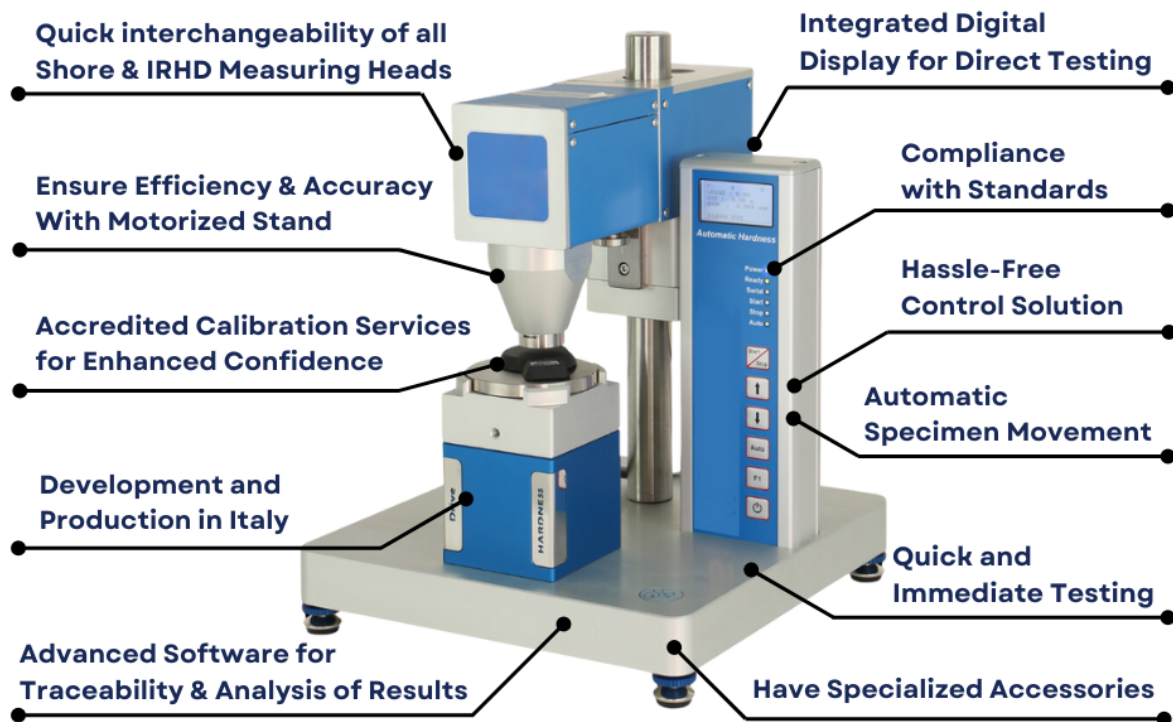
The instrument can be supplied with an ACCREDITED Calibration Certificate, ensuring accuracy according to ISO 48-2 (IRHD), ISO 48-4 (Shore A), and ISO 868 (Shore D) standards. Calibration covers key aspects such as dimensions of the Indentor and Annular foot, forces applied, displacement of the indenter, and test duration. Trust in our commitment to delivering reliable and quality measurements for your research laboratories and production control needs. Choose Automatic Shore IRHD Hardness Tester [Durometer](#) for unmatched performance and precision.



## FEATURES

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## KEY FEATURES OF AUTOMATIC DUROMETER – AUTOMATIC SHORE IRHD HARDNESS TESTER



# **Automatic Durometer - Shore and IRHD Hardness Tester - DRIVE Series**

## **Features:**

- Interchangeable Measuring Heads: Shore A, Shore D, Shore A0, Shore 00, Shore AM (micro), IRHD-Micro, IRHD-Normal, IRHD-Hard, IRHD-Low.
- Motor-Controlled Displacement: Ensures high repeatability of results.
- Automatic Specimen Rotation: Allows for multiple tests at different points with ease.
- Instant Results: Digital display for immediate reading of results.
- International Standards: Fully compliant with international standards.
- ACCREDITED Calibration Certificate: ISO 17025 accredited laboratory for the highest level of precision.



## **ADVANTAGES OF AUTOMATIC DUROMETER – AUTOMATIC SHORE IRHD HARDNESS TESTER**

- 1** Accuracy and Precision
- 2** Time Efficiency
- 3** Ease of Use
- 4** Quality Control and Process Optimization
- 5** Compliance with Standards
- 6** Wide Range of Applications
- 7** Cost-Effective
- 8** Versatile Testing Modes

Our Datagest program enhances your testing experience with advanced features for efficient reporting and tolerance control for the 'Automatic Shore IRHD Hardness Tester Durometer.'

**Customizable Test Reports:** Easily generate test reports in your preferred language, either for printing or saving to PDF. The user has the flexibility to customize the format of the test report, ensuring it meets specific requirements.

**Tolerance Limits Management:** Take advantage of Datagest's powerful capabilities to set precise tolerance limits for each product, customer, test procedure, and aging treatment. Define tolerance and alarm limits for each result, enabling automatic color-coded comparison at the end of each test (Green, Yellow, or Red). The outcome of this comparison is seamlessly saved in the database along with the test results.

**Unified Tolerance Limits Management:** Datagest simplifies tolerance limits management, allowing for efficient and centralized control across products, customers, test procedures, and aging treatments.

**Real-time Statistics for Ongoing Tests:** Experience real-time statistical analysis with the Datagest program, providing insights such as maximum, minimum, average, median, standard deviation, Cp, and Cpk. Visualize the Gaussian curve representing the results alongside tolerance limits, offering an immediate overview of ongoing test progress.

**Advanced Statistical Analysis:** Datagest goes beyond ongoing tests, enabling in-depth statistics related to saved results. Represent data using X and R Charts, grouped by order, batch, date, and more, for a comprehensive understanding of the testing landscape.

Choose Datagest for a sophisticated, user-friendly system that streamlines test reporting, tolerance management, and statistical analysis. Elevate your testing processes with precision, efficiency, and insightful data representation.

## **THEORY & METHOD**

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# **Hardness Software for Advanced Durometer Control**



**Calculated Results for SHORE Hardness:** Craft customized test procedures seamlessly with the software, covering all required calculations according to standards and product specifications. Detailed information on available calculations is conveniently presented on a dedicated page.

Choose Hardness Software for efficient, accurate, and customizable control of your Automatic Shore IRHD Hardness Tester [Durometer](#). Elevate your testing processes with advanced automation and comprehensive results management.

## Efficient Data Management for Seamless Integration

**Test Result and Curve Management:** All test results and curves are securely stored in the SQL database, easily accessible through the Datagest program. This ensures a centralized repository for efficient data retrieval and analysis.

**Datagest: Your Laboratory Information Management System (LIMS):** Datagest, a crucial component always installed with instrument-control programs, serves as the Laboratory Information Management System (LIMS). Acting as a central collector, Datagest manages common archives used by instruments, including Product Lists, Customer Lists, Tolerance Limits, and Order Lists.

**Datagest: The Brain for Your Instruments:** Consider Datagest as the intelligence behind your instruments, providing a unified platform for managing test results and essential archives. It streamlines your data management processes, enhancing overall efficiency.

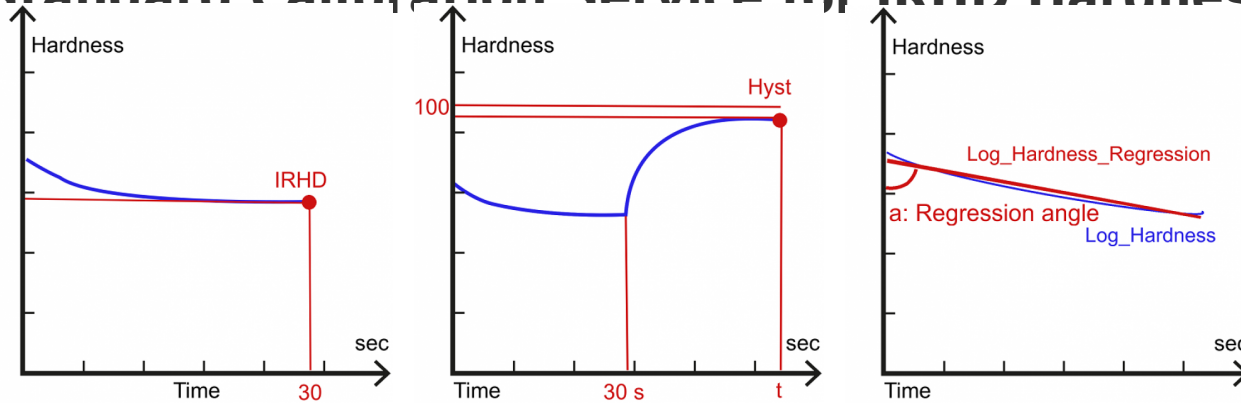
**Industry 4.0 Integration:** Our instrument and software are designed with Industry 4.0 integration in mind. The SQL-format database and Company\_Connect program facilitate synchronization with your company management software. This integration speeds up test identification, allowing the use of barcode readers or similar devices for seamless operations.

**Integration between Management Software and Laboratory:** Experience smooth integration between your management software and laboratory operations. The instrument and software have been meticulously developed to optimize compatibility with various environments, ensuring a cohesive and streamlined workflow.

**Automatic Sample Displacement:** Our system features the motorized up-and-down movement of the measuring head, enabling automatic testing. The automatic rotation of the specimen holder plate allows for tests at different points on the specimen. Operators have the flexibility to set the number of tests, along with the rotation angle between successive tests, providing a customizable and efficient testing process.

Choose for advanced data management, seamless integration, and automated testing capabilities. Elevate your laboratory operations with our intelligent solutions designed for precision and efficiency.

## Standard Calibration Service for IRHD Hardness Tester:



Ensure the accuracy of your IRHD Hardness Tester with our Standard Calibration service, conducted in strict adherence to ISO 48-2 standards. The service includes:

- Ordinary maintenance of the instrument
- Visual inspection of the Indentor.
- Calibration of the Pre-Load, Main Load, and the weight of the Annular foot.
- Calibration of the force application time for Pre-Load and Main-Load (NEW)
- Calibration of the displacement of the indenter corresponding to various IRHD Hardness readings

- Pre-calibration and Post-Calibration tests with reference test samples (NEW)
- Issuance and email shipment of the Calibration Certificate with traceability to primary standards.

## **Calibration: Full Conformity with Standards**

**Standard Calibration Service for SHORE Hardness Tester:** Maintain the precision of your SHORE Hardness Tester with our Standard Calibration service, performed in accordance with ISO 48-4 standards. The service covers:

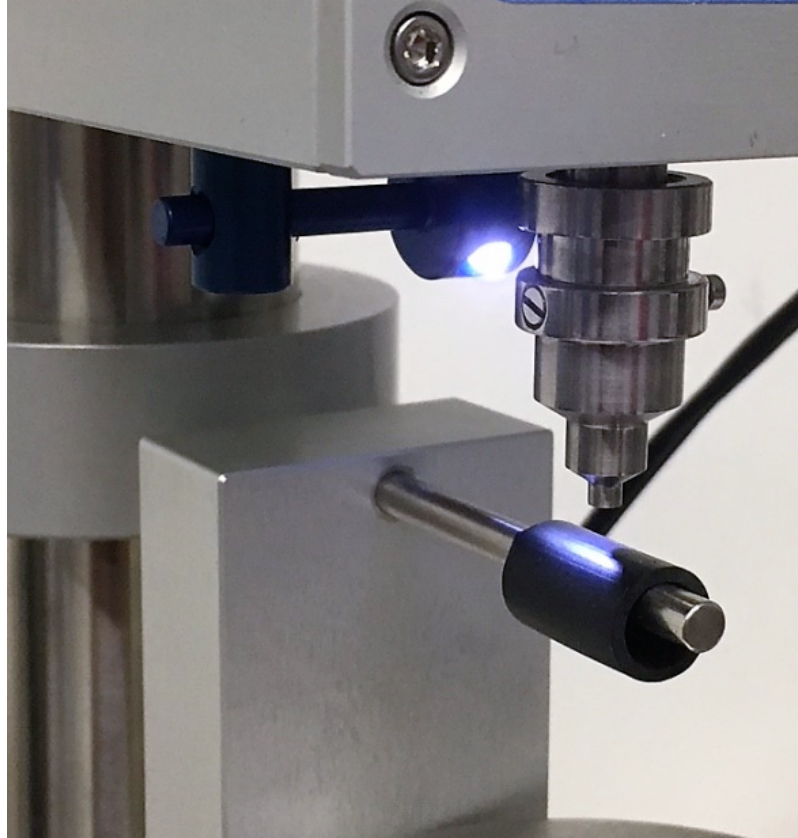
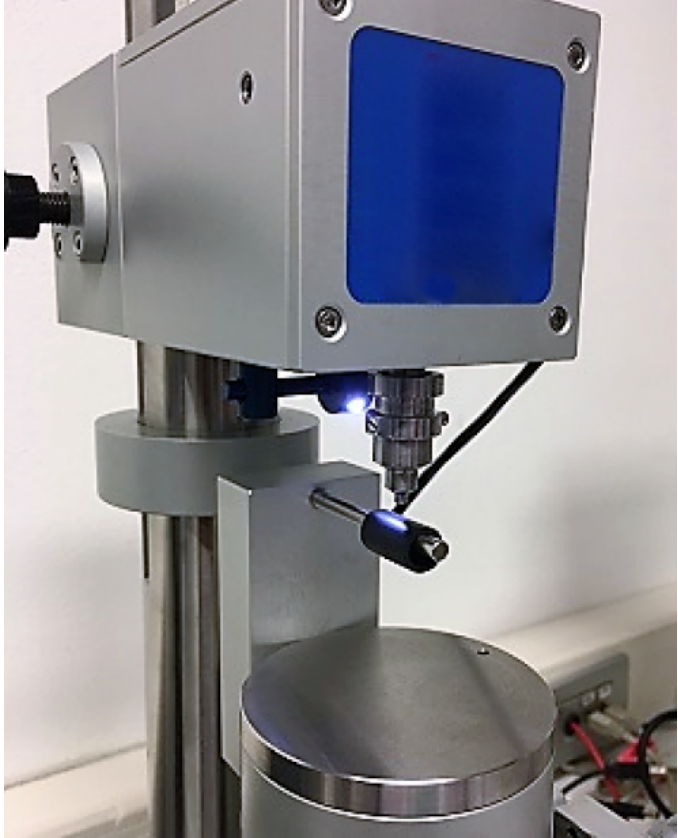
- Ordinary maintenance of the instrument
- Visual inspection of the Indentor.
- Calibration of the total run of the indentor (readings at 0 and 100 Shore points).
- Calibration of the displacement of the indentor and the force applied by the indentor corresponding to various Shore readings (20, 40, 50, 60, 80, 90 Shore).
- Calibration of the force application time (NEW)
- Issuance and email shipment of the Calibration Certificate with traceability to primary standards.

## **Calibration: Full Conformity with Standards**

**Accredited Calibration of the Instrument:** Opt for the highest level of calibration with our Accredited Calibration Certificate, issued by the Accredited laboratory of instruments. The calibration is carried out according to the Technical Procedure approved by the Accredited and in compliance with the requirements of ISO 48-2 (IRHD), ISO 48-4 (Shore A), and ISO 868 (Shore D) standards. Calibration covers dimensions of the Indentor and Annular foot, forces applied, indentor displacement, and duration of the test.

Trust for precise, accredited calibration services to maintain the accuracy and reliability of your hardness testing instruments. Choose excellence, choose.

## **Efficient and Versatile Sample Centering Devices for Precise Hardness Testing**





**Universal Centering Device for O-rings:** Simplify hardness testing on O-rings with our Universal Centring Device, accommodating ropes between 1 and 11 mm and internal diameters up to 200 mm. Key features include:

- Quick setup for hardness tests
- Extension plate for precise positioning between adjustment micro-cylinders
- Adjustable wheel for setting the distance between cylinders based on O-ring diameter
- Fixing clip for maintaining the correct positioning of curved pieces
- Magnetic fixing for rapid installation and removal on the instrument's standard plate

This device ensures swift and accurate testing of O-rings, providing ease of use and flexibility in accommodating various dimensions.

**Centring Device for Cylinders and Hoses:** Streamline the measurement of Micro-IRHD hardness on the outer surface of rubber tubes with our Centring Device for Cylinders and Hoses. Features include:

- Centering system for measuring Micro-IRHD hardness
- Suitable for rubber tubes with a maximum external diameter of 50 mm (other dimensions available on request)
- No sample preparation needed to maintain a flat surface

- Simple test initiation by placing the hose on the device and pressing start

This device eliminates the need for sample preparation, ensuring efficient and hassle-free hardness testing on rubber tubes.

Choose our sample centering devices for their precision, versatility, and user-friendly design. Experience seamless hardness testing on a variety of samples, enhancing your testing capabilities.

## Hardware Requirements:

- **Operating System Compatibility:** Programs are designed to be installed on standard PCs running either WINDOWS 10 or 11.
- **Connection Setup:** The connection between the instruments and the PC is established using the USB CABLE provided with the instrument, ensuring a seamless and reliable connection.
- **Compatibility Assurance:** The programs are fully compatible with antivirus software and other programs installed on the PC, ensuring smooth operation without conflicts.
- **Standard PC Sufficiency:** The programs can be operated on standard PCs, making them accessible and user-friendly for a wide range of users.

## Language Selection:

- **Multi-Language Support:** All programs developed are multi-language, allowing operators to choose their preferred language for ease of use.
- **Test Report Language Flexibility:** Regardless of the language used for program interaction, the test report can be produced in the desired language. Currently available languages include Italian, English, German, French, Portuguese, Russian, Chinese, Japanese, Turkish, Polish, and Czech.
- **Choose Your Language:** Provides the flexibility for users to choose the language that best suits their preferences and requirements.

## Development and Production:

- **Origin of Instrument:** The instrument is entirely developed and produced at the Instruments plant.

- **In-House Production:** All mechanical parts are manufactured in the company workshop using modern CNC machines, ensuring precision and quality.
- **Component Selection:** Components and sensors from reputable brands are meticulously selected to guarantee maximum reliability in measurement.
- **Internal Expertise:** Internal trained personnel manage all stages of production, including assembly, start-up, calibration, packing, shipment, and installation. This internal expertise ensures a high level of quality control throughout the entire manufacturing process.

## TECHNICAL SPECIFICATIONS

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# Automatic Shore IRHD Hardness Tester Durometer Technical Specifications:

### Reference Standards

**STANDARDS THE INSTRUMENT COMPLIES WITH**

ASTM D2240; ASTM D1415; ASTM D1414; ISO 12046; ISO 868; ISO 48-2; ISO 48-4; EN 681-1; FIAT 50408; FIAT 50411; VDA 675-202;

### Instrument Characteristics

**AVAILABLE HARDNESS TYPES**

Shore:(A, D, 00, M)  
 IRHD: (Micro, Normal, Hard, Low)

**TEST MODALITY**

Fully automatic test in different points of the same sample

<p><b>RESOLUTION</b></p> <p>0.01 Hardness point</p>	<p><b>MAXIMUM SAMPLE THICKNESS</b></p> <p>100 mm</p>
<p><b>INTEGRATED DIGITAL DISPLAY</b></p> <p>Allows complete control of the instrument and display of results</p>	<p><b>OPTIONAL SOFTWARE</b></p> <p>Software for the complete control of the instrument compatible with Windows 10 and 11.</p>

## Software:

<p><b>TEST RESULTS CALCULATED FOR EACH TEST</b></p> <p>Shore units: Initial hardness, hardness values after set test times  IRHD/micro IRHD: Hardness at 30 sec (and at set test times), Angle Coeff. of Hardness vs. time curve, Hysteresis after load removal.</p>	<p><b>RESULTS STORAGE</b></p> <p>The test result sand the curves are stored in the SQL database which is installed in combination with the software</p>
<p><b>REGRESSION CURVE ANALYSIS</b></p> <p>Angle coefficient of the Regression curve</p>	<p><b>HYSTERESIS ANALYSIS (IRHD TESTS)</b></p> <p>% recovery after set time after main force removal</p>
<p><b>DATA ANALYSIS</b></p> <p>Mean, std. Dev., min, max, Cp, Cpk of test results. X-Chart and Gaussian distribution</p>	<p><b>GRAPHS</b></p> <p>Rubber Relaxation curve (hardness versus test time) in linear and logarithmic axes</p>

## Control of the instrument with Digital Display

### **DISPLAY CHARACTERISTICS**

The Touch-screen display permits to start and stop of the automatic execution of the test and to display the hardness reading

## **Safety Devices**

### **LABELLING**

CE Labelling

## **Calibration**

### **ACCREDITED CALIBRATION**

(OPTIONAL) ACCREDITED calibration Certificate issued by Instruments ISO 17025-Accredited Laboratory

### **STANDARD CALIBRATION**

Calibration Report conforming to ISO 48-2 (IRHD units) or ISO 48-4 (Shore Units) with traceability to primary references

## **Technical specifications**

### **POWER SUPPLY**

110-240 V, 50/60 Hz, 15 W, single phase

### **DIMENSIONS**

(W x D x H) 280 x 280 x 400 mm

### **WEIGHT**

20 Kg

## **Personal Computer (optional)**

**PERSONAL COMPUTER (OPTIONAL)**

Minimum Configuration: Intel Core i5 4 GB RAM.  
Compatible Operating Systems: Windows 10 and 11;  
Connection to the instrument via USB Cable (included)

# Hardness Scales

## SHORE SCALES

<p><b>SHORE A</b></p> <p>Standards: ISO 48-4, ASTM D2240</p> <p>Application: Soft Rubber, Plastics, Elastomers</p> <p>Sample standard thickness: 6 mm</p>	<p><b>SHORE A</b></p> <p>Indentor Force: 8.05 N (at 100 Shore) Contact force: 1000 g Indentation: 2.5 mm Measurement Range: 0-100 Shore Resolution: 0.01 Shore</p>
<p><b>SHORE D</b></p> <p>Standards: ISO 48-4, ASTM D2240, ISO 868</p> <p>Application: Hard Rubber, Thermoplastics</p> <p>Sample standard thickness: 6 mm</p>	<p><b>SHORE D</b></p> <p>Indentor Force: 44.5 N (at 100 Shore) Contact force: 5000 g Indentation: 2.5 mm Measurement Range: 0-100 Shore Resolution: 0.01 Shore</p>

<p><b>SHORE A0</b></p> <p>Standards: ISO 48-4</p> <p>Application: Light Foams, Sponge Rubber, Gels, Human Tissue</p> <p>Sample thickness: 6 mm</p>	<p><b>SHORE A0</b></p> <p>Indentor Force: 8.05 N (at 100 Shore)</p> <p>Contact force: 1000 g</p> <p>Indentation: 2.5 mm</p> <p>Measurement Range: 0-100 Shore</p> <p>Resolution: 0.01 Shore</p>
<p><b>SHORE 00</b></p> <p>Standards: ASTM D2240</p> <p>Application: Light Foams, Sponge Rubber, Gels, Human Tissue</p> <p>Sample thickness: 6 mm</p>	<p><b>SHORE 00</b></p> <p>Indentor Force: 1.111 N (at 100 Shore)</p> <p>Contact force: 400 g</p> <p>Indentation: 2.5 mm</p> <p>Measurement Range: 0-100 Shore</p> <p>Resolution: 0.01 Shore</p>
<p><b>SHORE AM</b></p> <p>Standards: ISO 48-4, ASTM D2240</p> <p>Application: Small Technical Articles, O-rings</p> <p>Sample thickness: 1.5-6 mm</p>	<p><b>SHORE AM</b></p> <p>Indentor Force: 0.76 N (at 100 Shore)</p> <p>Contact force: 250 g</p> <p>Indentation: 1.25 mm</p> <p>Measurement Range: 0-100 Shore</p> <p>Resolution: 0.01 Shore</p>

## IRHD SCALES

<p><b>IRHD-M (MICRO)</b></p> <p>Standards: ISO 48-2, ASTM D1415</p> <p>Application: Small Technical Articles, O-rings</p> <p>Sample thickness: 1-5 mm</p>	<p><b>IRHD-M (MICRO)</b></p> <p>Pre-Load: 8.3 mN  Total Load: 153.3 mN  Anular Foot: 235 mN  Indentation: 0.3 mm  Measurement Range: 30-100 irhd  Resolution: 0.01 irhd</p>
<p><b>IRHD-N (NORMAL)</b></p> <p>Standards: ISO 48-2, ASTM D1415</p> <p>Application: Rubber Parts with Hardness &gt;30 irhd</p> <p>Sample thickness: 8-10 mm</p>	<p><b>IRHD-N (NORMAL)</b></p> <p>Indentor Diameter: 2.5 mm  Pre-Load: 0.3 N  Total Load: 5.7 N  Anular Foot: 8.3 N  Indentation: 1.8 mm  Measurement Range: 30-85 irhd  Resolution: 0.01 irhd</p>
<p><b>IRHD-H (HIGH HARDNESS)</b></p> <p>Standards: ISO 48-2, ASTM D1415</p> <p>Application: Hard Rubber Parts with Hardness &gt;85 irhd</p> <p>Sample thickness: 8-10 mm</p>	<p><b>IRHD-H (HIGH HARDNESS)</b></p> <p>Indentor Diameter: 1.0 mm  Pre-Load: 0.3 N  Total Load: 5.7 N  Anular Foot: 8.3 N  Indentation: 0.44 mm  Measurement Range: 85-100 irhd  Resolution: 0.01 irhd</p>

**IRHD-L (LOW HARDNESS)**

Standards: ISO 48-2, ASTM D1415

Application: Soft Rubber Parts with Hardness <35 irhd

Sample thickness: 8-10 mm

**IRHD-L (LOW HARDNESS)**

Indenter Diameter: 1.0 mm

Pre-Load: 0.3 N

Total Load: 5.7 N

Anular Foot: 8.3 N

Indentation: 0.09-1.1 mm

Measurement Range: 10-35 irhd

Resolution: 0.01 irhd



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