

PHI

Semi-automatic Porosity and Density Meter

PHI is designed to measure *Open Porosity* and *Bulk Density* of acoustic materials following the pressure/mass method (*Journal of Applied Physics 101 (2007)*).

It can be used for acoustic material characterization and quality control.



* Please note that the technical aspects of our equipment may be subject to change without notice.

Measuring System

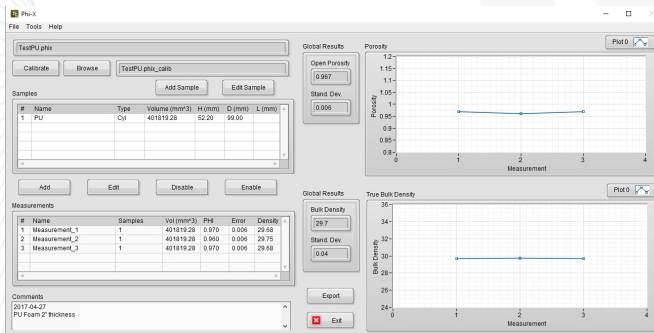
Test Bench

- Test chamber
- DAQ system
- Integrated vacuum pump
- 10 mg precision digital balance
- Class 1 calibration mass (2 kg)
- Certified verification sample
- PHI system works with cylindrical-shaped samples (default) and accepts other shapes.



Software PHI-X

- Automatically controls and guides the user during measurements
- Calculates *Open Porosity* and *Bulk Density* using the pressure/mass method
- Calculates measurement uncertainties and statistics
- Integrated atmospheric temperature measurement
- Works with cylindrical samples or other shapes
- Reports generation



Optional Complements

- Circular cutter (29, 44.44 and 100 mm)
- Porous material slicer (29, 44.44 and 100 mm)
- Air compressor

Warranty and Support

All Mecanum characterization systems are covered by a one-year limited warranty and technical support. The Mecanum warranty is valid only on manufacturing defects and does not cover damage due to abuse or improper use of the equipment.

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Technical Data

Test Bench

- Dimensions: 432 (L) x 368 (W) x 134 (H) mm
- Power supply: 100-240 VAC / 50-60 Hz / 60 W
- Operating temperature: 10°C to 30°C
- Test Chamber internal dim.: 111 (D) x 120 (H) mm
- Maximum sample mass: 2 kg
- Material: CNC machined aluminum, black anodized
- Measuring pressure: 95 psi (655 kPa)
- Communication: USB 2.0 type A

Measuring Range

- Open porosity*: 0 to 99.9%
- Bulk Density: from 0.1 kg /m³

*The accuracy depends on the type of gas used as well as the volume of material available. See full scientific article for detail: Salissou and Panneton: Pressure/mass method to measure open porosity of porous solids, J. Appl. Phys. 101 (2007)

Special Requirements

- PHI system must be supplied with argon or clean and dry compressed air at a pressure of 105 psi (724 kPa).
- Argon increases measurement accuracy.
- A pressurized gas line with pressure regulator must be provided by the customer.