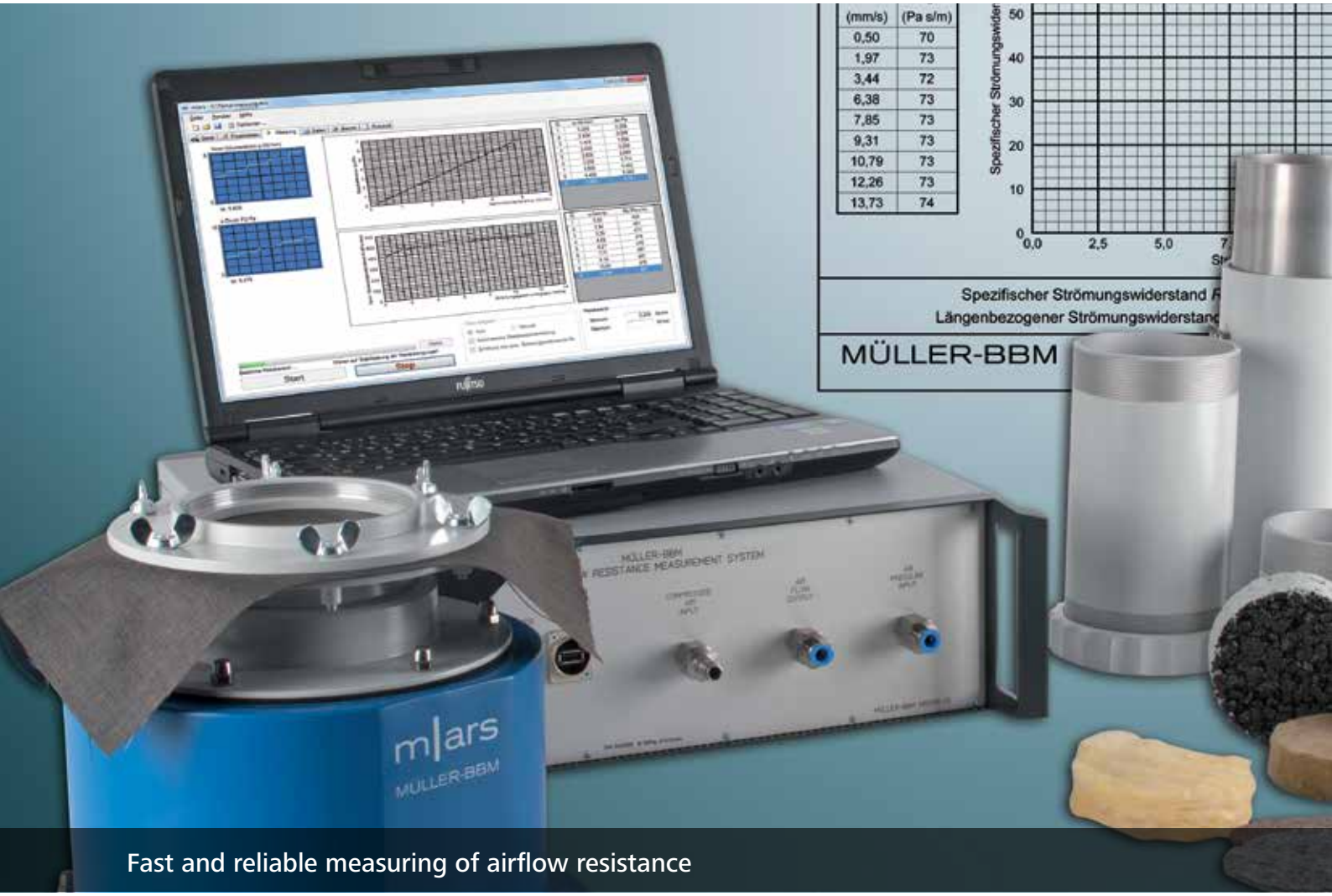
MÜLLER-BBM



Fast and reliable measuring of airflow resistance

m|ars

Measuring system for determining the specific airflow resistance according to EN 29053

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m|ars

Measuring system for determining the specific airflow resistance

Measuring the airflow resistance with **m|ars** ensures a convenient assessment of the sound absorption capacity of different types of materials.

Small sample sizes and the short measurement duration of only a few minutes are ideal for its use in routine production monitoring. Moreover, when developing new materials, **m|ars** helps to shorten and simplify the preselection process.

The measuring principle

m|ars uses the direct airflow method as described in standard EN 29053 for measuring the airflow resistance. To this end, a constant volume airflow is passed through the sample. The overpressure building up in front of the sample is measured. The ratio of overpressure to flow velocity results in the airflow resistance, which for most porous materials is not related to the airflow velocity.

According to EN 29053, the airflow resistance extrapolated to an airflow velocity of 0.5 mm/s is referred to as the specific airflow resistance.

Flexible: the measuring setup

For measuring different samples, **m|ars** is equipped with a pressure cylinder: thin samples such as fabrics or felts are clamped to a flange; thick, flexible samples can be pressed to a predefined thickness. A set of tubes of varying lengths makes it possible to measure firm samples.

Precise: the measuring unit

m|ars contains high-grade measuring transducers for providing precise results even at low airflow velocities. The transducers measure the volume flow and differential pressure with the highest resolution.

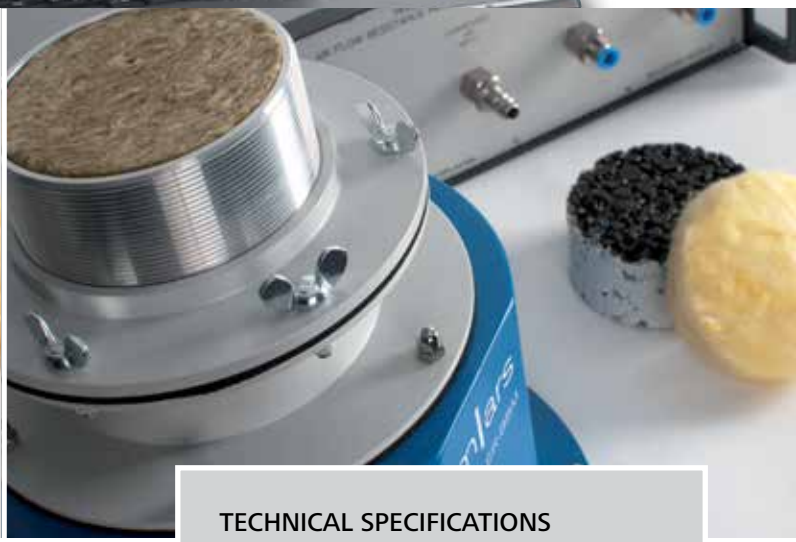
Sensors for temperature, humidity, and atmospheric pressure automatically and continually record the ambient conditions.

Reliable: the verifiability

The measuring system **m|ars** comes with two different reference resistors. By measuring the airflow resistance of these resistors, the precision of the measuring system can be verified at regular intervals.

All measuring units are adjusted to traceably calibrated reference measuring devices. The software works with characteristic calibration curves for compensating individual deviations of the measuring transducers.

A recalibration may regularly be performed at Müller-BBM every two years.



Simple: the software

The included **m|ars** isoftware is convenient, easy to operate and has the following functions:

- Individual adjustment and central storage of the default settings for measuring and test reports
- Automatic definition of the measuring range
- Creation of an adaptable test report including a presentation of measuring data in tables and graphs in different languages
- English or German user interface
- Software license for an unlimited number of workstations

TECHNICAL SPECIFICATIONS

- Volume flow adjustable from 0.1 Nl/min to 6 Nl/min
- differential pressure measurable between 0.1 Pa and 10 Pa
- Measurable flow resistance between 10 Pa s/m and 40,000 Pa s/m

SYSTEM REQUIREMENTS

- Dry compressed air that is oil-free and particle-free (1 bar – 15 bar)
- PC with Windows XP or higher and a USB port

THE SYSTEM INCLUDES

- Pressure cylinder with various fixtures for measuring thin, pressed or thick samples
- Measuring unit with air pressure reducer, volume flow regulator, differential pressure gauge and air pressure sensor
- Sensor for measuring temperature and humidity in the pressure cylinder
- Stencil for cutting holes in thin samples using a hollow punch so they can be clamped on the flange of the pressure cylinder
- 2 reference resistors
- Software and documentation (pdf file)

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BUILDINGS

Room acoustics
Multimedia and communications technology
Building acoustics
Thermal building physics
Building climatology
Sustainability
Fire protection
Structural dynamics
Building pollutants

ENVIRONMENT

Noise control
Air pollution control
Vibration control
Light and electromagnetic fields
Licensing management
Environmental compatibility
Plant safety
Legally compliant business organization
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TECHNOLOGY

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Ship acoustics
Railway technology
Industrial plant acoustics
Machine acoustics and machine dynamics
Psychoacoustics
Mobile communication
Product tests

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Müller-BBM GmbH is a subsidiary of Müller-BBM Holding AG headquartered in Planegg near Munich. Since 1962, Müller-BBM has provided consulting services to clients worldwide and has become one of the globally leading engineering firms in Germany. More than 400 highly qualified employees form an interdisciplinary team of engineers, architects and physicists in the most diverse specialist areas.

The company has more than ten offices in Germany as well as some branch offices in Austria, Switzerland, Russia and China.

Internationally active associate companies of Müller-BBM GmbH are: Müller-BBM Vibroakustik Systeme GmbH which develops and markets measuring and analysis systems in the areas of sound and vibration; BBM Akustik Technologie GmbH which, among other things, develops and manufactures large industrial silencers, as well as Müller-BBM Active Sound Technology GmbH specializing in active noise control.

The high standard of our products and services is guaranteed by a quality management system certified according to the standards EN ISO 9001 and BS OHSAS 18001.

More than five decades of test stand experience

A major factor for Müller-BBM's long-standing success are our acoustic test stands at our headquarters in Planegg/Munich. By continually developing and optimizing our test stands, we are capable of performing precise and cost-effective measurements for our clients.

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You may also be interested in the following measuring systems:

- **m|dod** Spherical loudspeaker for mobile use ISO 10140, ISO 16283 and ISO 3382
- **m|abstube** Sound absorption in the impedance tube ISO 10534-2
- **m|abshall** Sound absorption in the reverberation chamber ISO 354
- **m|abssitu** In-situ sound absorption CEN/TS 1793-5 and 1793-6

Do you have any questions? We will be happy to assist you!

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