Product portfolio

Interior · Exterior
New Mobility · Autoneum Pure.
Measurement Systems · Simulation Tools
Autoneum has been the leading supplier of specialized measurement tools in automotive acoustics for 50 years. The innovative systems can be used to assess and compare noise-reducing components in next to no time. This facilitates the compilation of sound packages for vehicle manufacturers, while at the same time ensuring that customers receive a product that is optimally tailored to their needs. Autoneum’s measurement systems have become globally recognized industry standards that are successfully used by vehicle manufacturers, suppliers and research institutes alike.

For further information, please contact:
Autoneum | Measurement Systems
ms-sales@autoneum.com
AFR

The AFR (Airflow Resistance Measurement) system was designed to measure the airflow resistance of porous materials in an easy way without compromising measurement quality. The results comply with ISO standard 9053-1:2018.

**Dimensions**
- 600 x 600 x 2 260 mm (L x W x H)

- Sample diameter: 100 mm
- Airflow Source: Vacuum pump or compressed air
- Standards: ISO standard 9053-1:2018
- Output: Airflow resistance, airflow resistivity

**Benefits**
- Extremely robust, stable and durable construction
- Easy and intuitive operation
- Measurement of thin materials (fabrics or non-wovens)

Alpha Cabin

Alpha Cabin is the leading system to measure acoustic absorption properties of materials and components that contribute to noise reduction in vehicles. The system is particularly suitable for validation and quality assurance of the measured data. A recognized standard by car makers, the system is used in over 20 countries worldwide.

**Dimensions**
- 3 220 x 2 370 x 2 030 mm (L x W x H)

- Volume: 6.44 m³
- Sample surface area: 1.2 m² (standard sample), 0.6 – 2.6 m²
- Frequency range: 400 – 10 000 Hz
- Standards: Based on ISO 354:2003
- Output: Absorption coefficient, equivalent absorption area

**Benefits**
- Results enable specifications for the absorption properties of NVH products
- Fast and repeatable measurement processes
- Significantly smaller than normal reverberation rooms

APAMAT II

APAMAT II compares and classifies the complex range of soundproofing solutions currently used in the automotive industry. For instance, the system evaluates the effectiveness of NVH materials in terms of noise control, noise damping and noise insulation in just one system. Optionally, the system is compatible with the airborne excitation only, allowing the installation of loudspeakers in the excitation chamber.

**Dimensions**
- 1 760 x 1 180 x 1 865 mm (L x W x H)

- Sample size: 840 x 840 mm
- Frequency range: 100 – 10 000 Hz
- Output: Overall acoustic efficiency

**Benefits**
- Measurement of acoustic efficiency by reproducing material performance in the car
- Combination of structure-borne and airborne excitation
- Quick and easy measurement

CARTE+

The control of airflow resistance in the production of materials and components is a growing requirement in the automotive industry. CARE+ (Concentric Airflow Resistance Evaluator) is an apparatus designed to measure the airflow resistance of materials and parts.

**Dimensions**
- 1 500 x 950 x 1 800 mm (L x W x H)

- Sample size: 180 x 620 mm
- Suction head speed: 7 m/min
- Output: Cleanability index, dirt repellency index

**Benefits**
- Works with all carpet surfaces (tufted and non-wovens)
- Repeatability of the results ensured
- Quantitative assessment of carpet cleanliness

ARTIS3

The innovative ARTIS3 system features an optimized experimental set-up for the performance assessment of structure-borne noise of acoustic packages. The dedicated software for testing, archiving and analysis makes it easy for the user to find the best solution in terms of performance, weight or cost.

**Dimensions**
- 920 x 920 x 1 490 mm (L x W x H)

- Frequency range: 200 – 800 Hz
- Sample size: 125 x 250 mm
- Output: Structure-borne insertion loss

**Benefits**
- Robust evaluation of the acoustic effectiveness of a passive treatment versus structure-borne noise
- Immediate and easy measurement process
- Easy to transport thanks to comparatively small size

Carpet Cleanability Analyzer

Autoneum developed the Carpet Cleanability Analyzer measuring system to conceptualize carpet systems during predevelopment of new vehicle models. The underlying process enables the cleanability and dirt resistance of different carpet surfaces to be analyzed and compared. It can be supplied together with standardized soiling particles and tools for sample soiling preparation.

**Dimensions**
- 1 740 x 1 180 x 1 865 mm (L x W x H)

- Sample size: 840 x 840 mm
- Frequency range: 100 – 10 000 Hz
- Output: Overall acoustic efficiency

**Benefits**
- Produces validated results
- Works with all carpet surfaces (tufted and non-wovens)
- Repeatability of the results ensured
- Quantitative assessment of carpet cleanliness

**Dimensions**
- 3 220 x 2 370 x 2 030 mm (L x W x H)

- Volume: 6.44 m³
- Sample surface area: 1.2 m² (standard sample), 0.6 – 2.6 m²
- Frequency range: 400 – 10 000 Hz
- Standards: Based on ISO 354:2003
- Output: Absorption coefficient, equivalent absorption area

**Benefits**
- Non-destructive air flow resistance measurements
- Quality control adequate to manufacturing environment
- Easy to transport

**Dimensions**
- 440 x 180 x 305 mm (L x W x H)

- Bell overall dimensions: 145 mm
- Range of airflow resistances: 200 – 4 000 Ns/m³
- Recommended sample thickness: less than 20 mm
- Output: Airflow resistance

**Benefits**
- Results enable specifications for the absorption properties of NVH products
- Fast and repeatable measurement processes
- Significantly smaller than normal reverberation rooms

**Dimensions**
- 920 x 920 x 1 490 mm (L x W x H)

- Frequency range: 200 – 800 Hz
- Sample size: 125 x 250 mm
- Output: Structure-borne insertion loss

**Benefits**
- Robust evaluation of the acoustic effectiveness of a passive treatment versus structure-borne noise
- Immediate and easy measurement process
- Easy to transport thanks to comparatively small size

**Dimensions**
- 600 x 600 x 2 260 mm (L x W x H)

- Sample diameter: 100 mm
- Airflow Source: Vacuum pump or compressed air
- Standards: ISO standard 9053-1:2018
- Output: Airflow resistance, airflow resistivity

**Benefits**
- Extremely robust, stable and durable construction
- Easy and intuitive operation
- Measurement of thin materials (fabrics or non-wovens)
ELWIS

ELWIS (Evaluation of Light Weight Impedance System) offers a full, reliable and rapid characterization of the physical parameters of the porous materials (Biot-Allard parameters). The system consists of the ELWIS-A and ELWIS-S devices, which can be used independently from each other, although both applications are needed for a complete material modeling.

**BENEFITS**
- Rapid, easy and reliable data evaluation
- Adaptable to a wide range of materials and parts
- Easy-to-operate

Isokell

Isokell offers a flexible method geared specifically to the needs of the automotive industry for measuring airborne noise insulation and the transmission loss of vehicle components. The system is easier to use and less costly than traditional transmission loss suites.

**BENEFITS**
- Measurement of flat samples or components
- Fast and easy measurement procedure
- Used in combination with Alpha Cabin, it can also measure absorption

PORPOS

PORPOS measures the porosity (ratio of air to overall volume) of felts and foams on the basis of the so-called air-based method. Via a process of alternately compressing and decompressing air, the porosity of the sample under analysis can be derived from the resulting pressure changes.

**BENEFITS**
- Fast and easy measurement procedure
- Automatic evaluation of the measurement results
- Suitable for a wide range of porous materials such as felts and foams

ATLAS

New testing standard for measurement of acoustic insulation

ATLAS – short for “Airborne Transmission Loss Analysis System” – measures the acoustic insulation and transmission loss of interior components such as carpets, inner dashes and floor insulators. While developers previously had to analyze the NVH behavior of interior parts using material samples of around one square meter in size, ATLAS makes this process faster, cheaper and more environmentally-friendly. It enables measurements of small samples with a diameter of no more than ten centimeters, which substantially decreases the amount of material used. Thanks to four highly-sensitive microphones, only two trials are required to collect precise and valid test data, making the system especially suitable for quality assurance and repeatability of the results obtained. Users also benefit from time savings of up to 50 % compared to the previous testing standard.

**IN THE SPOTLIGHT**

- Overcomes limitations of current methods
- Measures insertion loss of single layers and multilayers on small samples
- Rapid, easy and reliable data evaluation

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**Dimensions**

**Dimensions**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>850 x 2210 x 1240 mm (L x W x H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>ELWIS-A: 60 mm-diameter additional option: 29 mm diameter ELWIS-S: 100 mm diameter</td>
</tr>
<tr>
<td>Frequency range</td>
<td>ELWIS-A: 200 – 3400 Hz additional option: 1000 – 6300 Hz ELWIS-S: 50 – 800 Hz</td>
</tr>
<tr>
<td>Standards</td>
<td>Meets ASTM (E-1050) and ISO (10534-1/2) for impedance tube measurements (measurements between 200 and 3400 Hz or up to 6300 Hz with the additional option)</td>
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<tr>
<td>Output</td>
<td>Acoustical and structural Biot-Allard parameters</td>
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</table>

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>3600 x 2500 x 3750 mm (L x W x H)</th>
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<tbody>
<tr>
<td>Sample apertures</td>
<td>1.0 x 1.2 m (standard flat samples) 1.0 x 1.8 m (dashboards) 1.5 x 2.0 m (larger parts)</td>
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<tr>
<td>Frequency range</td>
<td>125 – 6300 Hz (extendable up to 10 kHz)</td>
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<tr>
<td>Output</td>
<td>Transmission loss, insertion loss</td>
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</table>

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>600 x 600 x 1260 mm (L x W x H)</th>
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<tbody>
<tr>
<td>Sample holder length</td>
<td>50 mm</td>
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<td>Sample diameter</td>
<td>40 mm</td>
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<tr>
<td>Output</td>
<td>Porosity</td>
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<thead>
<tr>
<th>Dimensions</th>
<th>850 x 1210 x 1240 mm (L x W x H)</th>
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<tbody>
<tr>
<td>Frequency range</td>
<td>100 to 3000 Hz</td>
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<tr>
<td>Sample size</td>
<td>100 mm diameter</td>
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<tr>
<td>Output</td>
<td>Normal incidence transmission loss</td>
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</table>
Autoneum. Mastering sound and heat.