

TESTSENS IMPEDANCE TUBE

Proven quality - precision machined
structure and highest quality subcomponents



Testsens is a Bias Mühendislik company brand. Testsens team is working on development of acoustic related R&D tools since 2008. With intensive knowledge on acoustic measurement technology, Testsens team has been introduced Impedance Tube, material sound transmission loss and material sound absorption measurement system. Porosity measurement system and material characterization software are recent developments on Acoustic field. Testsens Acoustic Team is continuously working on new developments and improvements on current products.

System Features

- Compliance with ASTM E2611 (4-Pole Transfer Matrix Method)
- Compliance with ASTM E1050 and ISO 10534-2 (Transfer Function Method)
 - 50-6.400Hz measurement range
 - Specially designed phase-matched microphones
 - High inner surface tolerance
 - Acoustic leakage-proof construction

System Components

- Measurement tubes with inner diameters of 30 mm and 100 mm
 - Dynamic signal analyzer
- GRAS phase matched measurement microphones
 - GRAS sound calibrator
 - 25W sound power amplifier

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Software

- Determination of sound barrier properties
(sound transmission loss, characteristic impedance, characteristic wave number)
- Determination of sound absorbing properties
(sound absorption coefficient, complex reflection coefficient, surface impedance)
 - Determination of dynamic density and dynamic bulk modulus
 - Determination of transfer matrix elements
- Random incidence absorption estimation models
- Tube attenuation removal algorithm for very low absorptive materials
- Conical adapter correction for transmission loss measurements
- Determination of intrinsic properties with Johnson-Champoux-Allard-Lafarge (JCAL) material model (Porosity - ϕ , Flow Resistivity - σ , Tortuosity - α_∞ , Viscous Characteristic Length - Λ , Thermal Characteristic Length - Λ' , Static Thermal Permeability)
 - Amplitude and phase calibration of microphones
 - Selectable frequency resolution and number of averages
 - ASCII, MS Excel™ export
- Direct export to MSC Actran for poro-elastic materials definition

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