

TUBE

Distributed & Maintained by



Conventional Impedance & Transmission Tubes

ISO 10534-2, ASTM E1050 and ASTM E2611

2, 3 or 4 Microphones Method



Mecanum's conventional impedance and transmission tubes are designed to measure key acoustic indicators of a wide range of materials from simple foams to complex multilayers, including resistive screens and fabrics. They can be used for acoustic material characterization and quality control.

MEASURING SYSTEM

Test Bench

- Impedance tube for 2, 3 or 4 microphones methods
- IEPE Microphones (up to 4)
- 24-bit acquisition system (DAQ) with embedded low distortion audio amplifier
- Certified verification sample
- Mounting rings and grids
- “End” anechoic termination
- Piston with integrated numeric thickness gage
- Ruggedized transportation case

Properties	2 Mics	3 & 4 Mics
Sound Absorption Coefficient	x	x
Reflection Coefficient	x	x
Surface Normalized Impedance	x	x
Sound Transmission Loss		x
Transfer Matrix Coefficient		x
Characteristics Impedance		x
Unwrapped Wavenumber		x
Eq. Fluid Dynamic Bulk Density & Modulus		x

TUBE-X Software

- Fully controls the procedure (from calibration to measurement) with report generation
- Corrects errors due to weather conditions, internal tube dissipation, mounting rings, mounting grids and automatically controls the sound pressure level inside the tube
- Additional features: microphone acoustic center measurement module, comparison project and merging tools, averaging module, air cavity simulation tool, acoustic penetration depth tool

OPTIONAL ACCESSORIES

- Porous material slicers and circular cutters
- Resistive screen and fabrics sample holder
- ENVIRO weather station
- Square sample holder

TECHNICAL DATA

Tubes

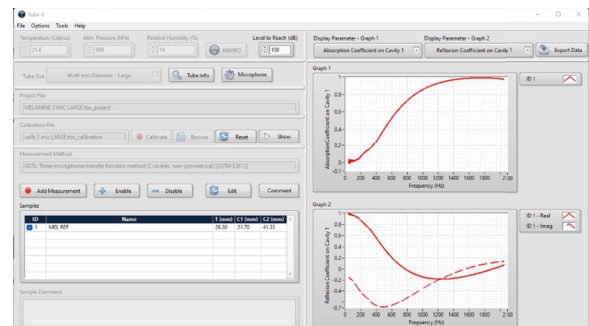
- Nominal dimensions:
 - 29-mm Ø: 800 (L) x 200 (W) x 200 (H) mm
 - 44.44-mm Ø: 800 (L) x 200 (W) x 200 (H) mm
 - 100-mm Ø: 1200 (L) x 200 (W) x 200 (H) mm
- Max sample thickness:
 - 2 microphones absorption: 250 mm
 - 3 microphones transmission: 220 mm
 - 4 microphones transmission: 125 mm
- Neodymium speaker with RCA connector

Instrumentation

- Power supply: 100-240 VAC 50/60 Hz 60 W
- Communication: USB 2.0 Type A
- Dimensions: 234 (W) x 223 (D) x 141 (H) mm
- Input: 4 channels 102.4 kHz / 24-bit channel
- Output: 1 channel 96 kHz / 24-bit channel
- 15 W low distortion audio amplifier
- IEPE ¼ " TEDs microphones

MEASURING RANGE

- 29-mm Ø tube: 50 Hz to 6600 Hz
- 44.44-mm Ø tube: 45 Hz to 4300 Hz
- 100-mm Ø tube: 35 Hz to 1800 Hz
- Hard wall measurement (zero absorption):
 - All ⅓ octave until 4 kHz. < 4 %
 - ⅓ octave 5 kHz and Above < 10 %



WARRANTY & SUPPORT

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

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