

Mecanum Acoustic Test Cabin

ASTM C423 & ISO 354 absorption tests adapted for small cabins*

ISO 15186 Transmission loss tests adapted for small cabin*

The Mecanum Acoustic Test Cabin (MATC) is the ideal solution for quickly measuring the near diffuse field *absorption coefficient* (α) and *transmission loss* (TL) on small samples. The diffuse field inside the cabin is generated by four uncorrelated loudspeakers. Diffusivity of the sound inside the cabin is reinforced by a set of FEA-optimized deflectors.



* Minimum measurement Third Octave Band Frequency: 315 Hz.

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

Specifications

Test Cabin

- Dimensions & weight
 - Interior: 2.5 m × 1.4 m × 1.7 m (5.95 m³)
 - Exterior: 2.7 m × 1.6 m × 2 m
 - Weight: 1200 kg
- Absorption test samples: 0.36 cm² up to 1.3 m²*
- Transmission samples: 61 cm x 61 cm
- STC-45 walls and door
- FEA optimized sound diffusors
- Fixed antenna with four IEPE 1/4" microphones
- Four loudspeakers with uncorrelated excitation
- GRAS IEPE intensity probe (for TL option)

DAQ

- Power: 100-240 VAC 50/60 Hz
- 8 Inputs , IEPE-AC-DC 51.2 ks/s/ch, 24-bits, TEDs
- 4 Outputs 100 ks/s
- 4 x 100 W audio amplifier
- 4 channels audio equalizer
- Mecanum Enviro Stations

Software Alpha-X

- Automatically controls the measurement sequence following ASTM C423 & ISO 354 procedure
- Calculation of Diffuse field absorption coefficient Estimated *NRC*, *SAA* and α_w^*
- Report generation

Software TL-X

- Automatically controls the measurement sequence following ISO 15186 procedure
- Calculation of estimated *STC* & *R_w* index*
- Report generation

* Depends on material sound absorption coefficient, 1 m² is the recommend area.

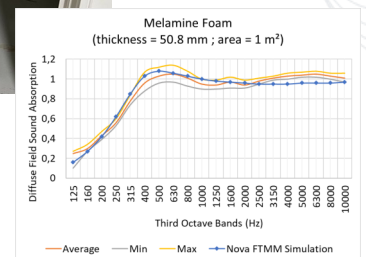
**extrapolated values bellow 315 Hz

Measurement range

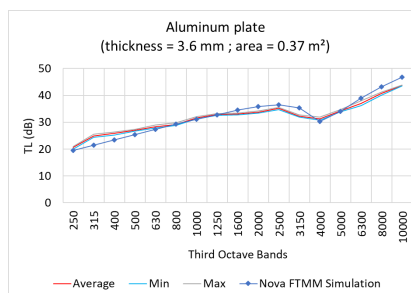
- Frequency Range: 315 Hz to 10 kHz third octave frequency band. Octave and narrow bands are available.
- Maximum sound level: 110 dB
- Maximum eSTC & eR_w: 45 without tunnel, 55 with tunnel

Validation Cases

- Same Melamine foam of 1 m x 1 m x 0.01 measured on 5 different locations compared to a NOVA FTMM simulation.



- Same aluminum plate of 3.6 mm measured 5 times compared to a NOVA FTMM simulations.



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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