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MATC

Mecanum Acoustic Test Cabin

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

ISO 15186 Transmission loss tests adapted for small cabins*

* Frequency Range: 250 - 10 000 Hz

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.

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SPECIFICATIONS

Test Cabin

- Dimensions & Weight
  - Interior: 2.53 m × 1.34 m × 1.66 m (5.62 m^3)
  - Exterior: 2.8 m × 1.7 m × 2.1 m
  - Weight: 1200 kg
- Absorption test samples: 0.36 m^2 up to 1.3 m^2*
- Transmission samples: 61 cm x 61 cm x 10 cm max.
- 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
- 2 Mecanum ENVIRO weather stations

Alpha-X Software

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

TL-X Software

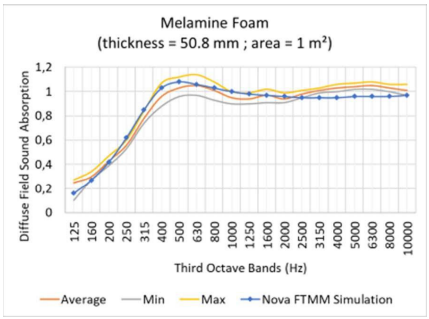
- Automatically controls the measurement sequence following ISO 15186 procedure
- Calculation of diffuse field transmission loss
- Estimated STC & Rw index**
- Report generation

MEASURING RANGE

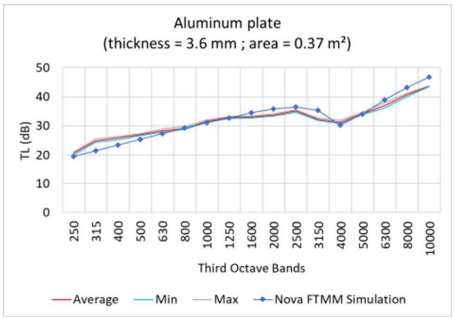
- Frequency Range: 250 Hz to 10 kHz ⅓ octave frequency band. Octave and narrow bands are available.
- Maximum sound level: 110 dB
- Maximum eSTC & eRw: 45

VALIDATION CASES

- Same melamine foam of 1 m x 1 m x 0.05 m 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.



* Depends on material sound absorption coefficient (recommended: 1 m^2).

** Extrapolated values below 250 Hz.

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

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