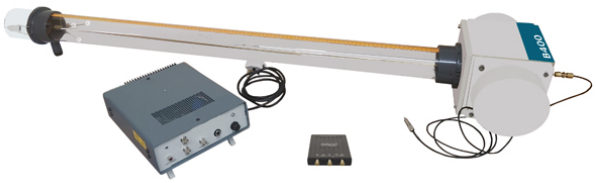
ACOUSTIC IMPEDANCE TUBE/INSULATION TEST APPARATUS

B400



Year 1 study	**5** participants	**2 hours** duration	Space required **5 metres**	**Acoustics** modules

Features

- Clearly demonstrates acoustic attenuation of a range of common building materials (carpet, cork and fibre board).
- Oscilloscope enables students to visually see immediate changes to acoustic attenuation
- Safe for use without ear protection as noise source is enclosed.
- A Low cost alternative to the well-known Laboratory Standard Acoustic Impedance tube.

Description

The B400 consists of a transparent plastic tube fitted at one end with a glass reinforced plastic enclosure containing two loudspeakers and at the other with a heavy sample holder. A small microphone may be moved axially along the tube and its position measured. The loudspeakers are fed with a common pure tone from a function generator and the sound waves pass along the tube to the sample. Dependent upon the type of material and the tone frequency, a portion of the sound energy is absorbed and the remainder is reflected back along the tube. The portion absorbed being converted into heat by the viscous action of the airborne wave as it passes through the absorber. Interference between the incident sound waves and those reflected result in a standing wave field whose amplitude varies along the length of the tube. With the aid of the included B400 instrumentation package, the amplitude of the maximum and minimum signals received by the travelling microphone may be measured and from these values the Sound Absorption Coefficient at the test frequency may be measured.

Related Laws/Applications

- Sound and Vibration Engineering.
- Mechanical Engineering.
- Aeronautical Engineering.
- Civil Engineering.
- Architecture.
- Building Services.
- Plant Engineering
- Health and Safety

Learning capabilities

- Determine the Sound Absorption Coefficient for many of the normal building lining materials such as carpet, cork, fibre board and many of the better acoustic attenuating materials.
- Determine the Sound Absorption Coefficient of these and some poor absorbers at a range of frequencies between approximately 300 and 4000Hz.
- Determine the speed of sound in air at ambient temperature and comparison of this with the calculated value.
- With the Digital Function Generator/Oscilloscope unit. The Amplitude of the maximum and minimum signals received by the travelling microphone may be measured. The Sound Absorption Coefficient at the test frequency may be measured.

Technical Specification

- Tube Clear rigid plastic, internal diameter Ø69mm x 1200mm long.
- 2 x Loudspeaker housed in a G.R.P. enclosure.
- Sample Holder: Dense ‘Tufnol’ plug on which samples are mounted. Fitted with quick release catches.
- Amplifier Unit To amplify loudspeaker and microphone signals.
- Digital Function Generator/Oscilloscope unit. Technical Specification A square, triangle and sine wave generator having adjustable frequency output. Frequency ranges between 1Hz and 1MHz. Dual trace allows investigation of input frequency magnitude relative to reflected standing wave amplitude. All required connecting leads supplied.

What’s in the Box?

- 1 x B400
- 1 x Amplifier Console
- 1 x Set of test samples
- 3 x BNC leads
- Instruction manual
- Digital Function Generator/Oscilloscope, Cables, and Downloadable Software.
- Packing list
- Test sheet
- Spares

Weights & Dimensions

- Weight: 9 kg
- Length: 1500mm
- Width: 500mm
- Height: 200mm

Essential Services

- 300W 220/240 Volts, 50Hz. (With earth/ground).
- 300W 110/120 Volts, 60Hz. (With earth/ground).

Ordering information

To order this product, please call PA Hilton quoting the following codes:
B400/230
B400/115

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS