



# Modex™ Module



Bass Management Tool

*The First Membrane Wall and Ceiling Bass Trap From The Acoustical Industry's Leading Innovator.*

Home Theaters and Dedicated Listening Rooms often exhibit poor low frequency response with significant emphasis at modal resonances. This is especially true when they are sonically well isolated, due to massive boundary construction. Porous surface absorption is ineffective at these modal frequencies, because the air motion near walls and in corners is essentially zero for these long wavelengths, resulting in very low absorption efficiency. RPG® solved this dilemma by developing a unique membrane system that converts the high sound pressure fluctuations typically found where room surfaces meet into selective absorption in the modal frequency range. The wall and ceiling application also makes it ideal for use behind stretch fabric and integrated into soffited areas.

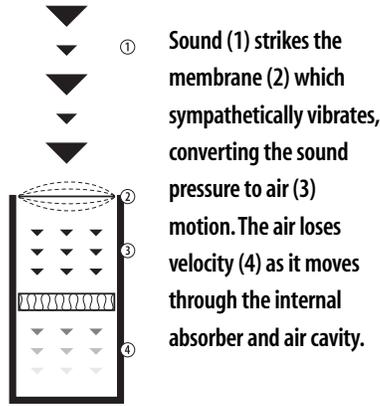
# Problem and Solution

## Problem

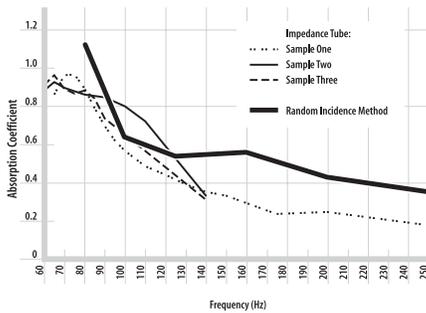
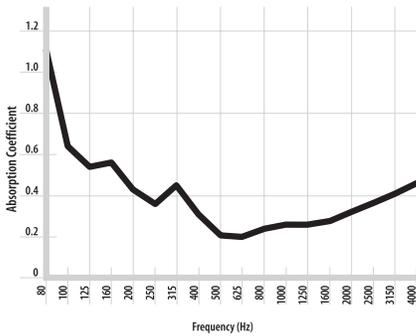
Small rooms like Home Theaters and Dedicated Listening Rooms often suffer from low frequency modal problems. Absorption at these frequencies requires a high absorption efficiency and significant surface area. Since small rooms do not offer the needed space, the absorption efficiency must be optimized.

## Solution

RPG® solved this problem by optimizing the absorption efficiency, using a unique internally damped membrane absorber that provides ideal absorption in the modal frequency range. Now you can absorb more bass in less space!



# Performance Specifications



## ◀ Absorption

Surface or corner applied porous materials lose efficiency at low frequencies, because the particle velocity or air movement associated with these long wavelengths is low. The sound pressure, conversely, is at its maximum. The internally damped membrane in the Modex Module exploits this high pressure by converting the pressure fluctuations into air motion. As the membrane sympathetically vibrates over a selective low frequency range, determined by its mass and stiffness, it pushes air through an internal porous layer producing low frequency absorption. This innovative approach makes it possible for the Modex Module to attenuate low frequency modes that are often problematic in small rooms. The graphs illustrate random-incidence (top) and normal-incidence impedance tube testing (bottom) for the 80 Hz model.

## Impedance Tube Testing ▲

Random Incidence absorption coefficient testing has been standardized by ASTM using the C423 reverberation room method. The frequency range is 125 Hz to 4,000 Hz. In the United States, most NVLAP certified reverberation chambers are not accurate below 100 Hz. Therefore, RPG® also measures its bass traps in compliance with ASTM C384, using its 7-ton, 24' long, 2' x 2' impedance tube which is accurate down to 20 Hz. The graph illustrates the plane wave impedance tube absorption coefficients for three different samples of the Modex Module. The random incidence absorption coefficient for 72ft<sup>2</sup> or 18 Modex Module bass traps in a Type A mounting on the floor of the chamber is also shown. The compliance (reciprocal of stiffness) of each Modex Module membrane is deliberately made slightly different to randomly distribute the resonance frequency over roughly a 10 Hz frequency range. This is evident in the graph by the fact that Sample 1 is about 7 Hz higher than Samples 2 and 3. The plane wave impedance tube data support the general low frequency absorption characteristic of the random incidence data and also indicate the resonance maximum.

# Installation

The Modex Module can be mounted on any available wall or ceiling area. It can be attached directly to the surfaces by fastening through the side flanges.

## FEATURES

- Pressure zone membrane absorber
- Wall and Ceiling mounting
- High bass absorption efficiency
- Modular
- 40, 50, 63, 80 and 100Hz models available

## BENEFITS

- The proprietary internally damped membrane converts any available corner into a highly absorptive low frequency absorber
- The Modex Module provides useful low frequency absorption for wall and ceiling applications behind stretch fabric or in soffited areas.

## APPLICATIONS

All critical listening rooms, including recording studios, broadcast studios, vocal booths, home theaters, dedicated listening rooms, quality control rooms, CD mastering, film mix and dubbing stages, and music practice rooms

## SPECIFICATIONS

- Size:
  - 40, 63, 80Hz Units:  
23-5/8" (H) x 23-5/8" (W) x 7" (D)
  - 50, 100Hz Units:  
23-5/8" (H) x 23-5/8" (W) x 5" (D)
- Weight: 15 lbs.
- Shipping weight: 20 lbs.
- Standard fabric: Guilford of Maine FR701 #298
- Custom fabrics available