KINETICS

BRINGING **ACOUSTICS** HOME

HighTones2 Diffuser

USES

- Improves tonality & clarity
- Improves soundstage, air & spatial imaging
- Controls 1st order reflections

HighTones2 Diffusers can easily be mounted on walls or ceilings. They can be concealed under a stretch fabric system, painted or displayed in many beautiful hardwood finishes. Stand-alone units also fit into standard drop-ceiling systems. HighTones2 are available as single 2'x2' units to tame first order reflections, or as monolithic coverings to add more aural "openness" to the space.

Most commonly, HighTones 2 are used to enhance surround sound speakers in the rear of the room, but can also used in place of absorption when reverberation times are low.

Four Models

- Stand-alone Square MDF
- Stand-alone Square Hardwood
- Plank MDF
- Plank Harwood
- **MADE IN USA**

Hardwoods

Many hardwood species and finishes are available, as well as unfinished MDF that can be painted or fabric covered.

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Phone 614-889-0480
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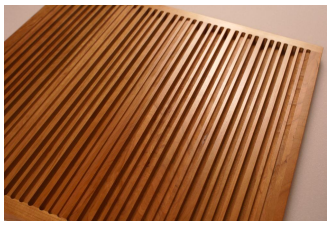
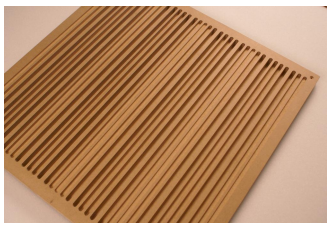
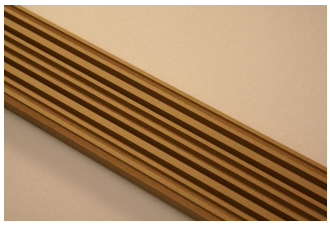
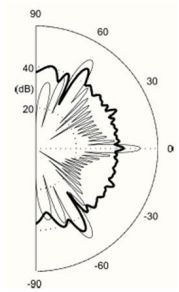






- New 11-period well sequence offers smoother diffusion and scattering performance
- Available as stand-alone 2'x2'x1" unit incorporating Barker code for reduced lobing characteristics
- Stand-alone also fits standard ceiling grids
- Planks (5-9/16"W,1"D, 24-96"H) can be installed adjacent to others for continuous sequencing
- Planks can incorporate custom Barker code in the field
- New design offers cost-saving solutions with MDF and plank options

Using Manfred Schroeder's diffraction number theory, our new HighTones2 Diffuser design offers improved "equal energy" diffusion. This is accomplished via two design methods: a higher order well sequence, offering more available well depths for smoother diffusion; and Barker code implementation, offering reduced lobing that results from repeated sequencing (Fig. 2).



Benefit of Barker Code

Lobing polar response from a group of like panels (light trace) versus that from a group that is modulated with inverse panels (dark trace).

Fig. 2

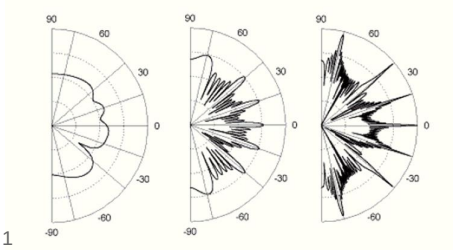


Fig. 1

- The HighTones2 Diffuser can be oriented horizontally or vertically, or in combinations to achieve the desired diffusion characteristics.
- Low frequency limit around 2,500 Hz.
- High frequency limit is 17,200 Hz. at 0° incident and 8,600 Hz. at 60° off-axis.
- Minimum seating distance is only 7"

Multiple Panels - Multiple 11-well sequences are required for the QRD to achieve equal energy lobes (four or more are recommended). However, as the number of sequnces is increased, reinforcement leads to narrower and stronger lobes (Fig. 1). Incorporating a Barker code breaks up the modulus lobing (Fig. 2).

Schroeder diffusers: Plane waves are reflected back from the bottom of the well and eventually re-radiated into the space. The pressure point external to the diffuser is determined by the interference between the radiating waves from each well. All these waves have the same magnitude, but a different phase due to the time it takes to travel down and back up the different well depths. Therefore, polar distribution of the reflected pressure from the whole surface is determined by choice of well depths. By choosing a quadratic residue sequence, the energy reflected into each diffraction lobe direction is the same.