The most important information about an acoustic device, such as a ‘diffuser’, is how that device affects sound. With technological advances accelerating at a staggering rate, we believed it would be advantageous to compile all of the measurable acoustic parameters of these devices, in order to develop an operating profile for each.

Sound absorption and sound reflection can both be measured with great accuracy; however, in the absence of a universally excepted diffusion standard, Acoustics First is presenting this data in good faith as we believe it represents the best of what is currently available.

Please note that we are using the word “diffusion”, in the broadest possible context as it relates to Diffusion, Diffraction, Scattering and Reflection.

Excerpt from “Diffuse Reflections in Room Acoustics Modelling.” - Heli Nironen. 2004

"In room acoustics the term diffusion denotes two conceptually different things. On one hand diffusion is a property of a sound field. It describes an isotropy of directional uniformity of sound propagation. Secondly, diffusion is an ability of a surface to scatter incident sound into non-specular directions. Although sound field diffusion may be a consequence of diffusely reflecting boundaries, both items must be well distinguished. The term scattering is somewhere used in connection with diffraction and elsewhere in connection with diffuse reflection. Others have considered different concepts used in context of diffuse reflection.

They have defined and grouped applied terms in the following way:

**Diffraction.** In a microscopic wave-theoretical view diffraction is one of the causes of diffuse reflection. In applied acoustics diffraction most often means edge diffraction from reflectors and similar objects.

**Scattering.** Often used in general linear acoustics for the result of diffraction. In applied acoustics this term is used for reflection from a surface with roughness in a more general way.

**Diffuse reflection.** The most appropriate term to describe the process of reflection from a diffusor or from a diffusive surface."
What information is in this document, and how do you read it?

- Name, photograph, description, and materials.
- Summary of Parameters.
- Horizontal and vertical frequency maps.

Sound Absorption Coefficients

**Polar Response - Traditional and Enhanced**

Traditional - Displays the level of reflection at each angle along the horizontal or vertical axis at a specific frequency. Level follows a polar grid in dB - marked from 0 to -40 dB.

Enhanced - Displays the level of reflection at each angle along the horizontal or vertical axis, including adjacent samples, at a specific frequency. Level follows the same color key from above. (0 to -40 dB.)

3D Polar Balloon

This is how a 2000 Hz signal will reflect off of a QuadraPyramid™.

If we could see acoustic energy, this is what it might look like.

Displays full hemispheric acoustic level (dB) response in front of the surface, at specific frequencies. These use 1/3 octave smoothing.
A patented, two dimensional, quadratic, binary array diffuser. This diffuser improves sound clarity and ambience while increasing the overall perceived space of the room. The range of the Model C is extended over other designs by its unique angled end caps to further control specular reflections above 4 kHz.

**Construction:** Class A Thermoformed plastic with natural white finish.

**Nominal Size:** 2’x2’

**Depth:** 4.5”

**Mounting:** Direct mount to wall/ceiling

- OR - Fit into standard T-bar grids.

**Modified 2D Quadratic Diffuser**

**Binary Array / Angled Cap Design**

**Operational Parameters:**

<table>
<thead>
<tr>
<th>Diffusion:</th>
<th>Mid to High band</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary:</td>
<td>1K- 4k (extended to 16+K)</td>
</tr>
<tr>
<td>Hemispheric Pattern: (2D)</td>
<td></td>
</tr>
<tr>
<td>Some Low Frequency Absorption</td>
<td></td>
</tr>
<tr>
<td>Moderate Phase Grating &amp; Scattering</td>
<td></td>
</tr>
</tbody>
</table>

**Ceiling or Wall Mountable**

---

**Sound Absorption Coefficients – Art Diffusor® – Model C Performance**

<table>
<thead>
<tr>
<th>Mounting</th>
<th>125 Hz</th>
<th>250 Hz</th>
<th>500 Hz</th>
<th>1000 Hz</th>
<th>2000 Hz</th>
<th>4000 Hz</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>0.32</td>
<td>0.20</td>
<td>0.10</td>
<td>0.29</td>
<td>0.20</td>
<td>0.16</td>
<td>0.20</td>
</tr>
<tr>
<td>E400</td>
<td>0.20</td>
<td>0.12</td>
<td>0.12</td>
<td>0.31</td>
<td>0.23</td>
<td>0.22</td>
<td>0.20</td>
</tr>
<tr>
<td>Frequency (Hz)</td>
<td>Horizontal Polars – Enhanced/Traditional</td>
<td>Vertical Polars – Enhanced/Traditional</td>
<td>3D Polar Balloon – ¾ View</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------</td>
<td>-------------------------------</td>
<td>--------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10000 Hz</td>
<td><img src="image1" alt="Horizontal Polars" /></td>
<td><img src="image2" alt="Vertical Polars" /></td>
<td><img src="image3" alt="3D Polar Balloon" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8000 Hz</td>
<td><img src="image4" alt="Horizontal Polars" /></td>
<td><img src="image5" alt="Vertical Polars" /></td>
<td><img src="image6" alt="3D Polar Balloon" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000 Hz</td>
<td><img src="image7" alt="Horizontal Polars" /></td>
<td><img src="image8" alt="Vertical Polars" /></td>
<td><img src="image9" alt="3D Polar Balloon" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000 Hz</td>
<td><img src="image10" alt="Horizontal Polars" /></td>
<td><img src="image11" alt="Vertical Polars" /></td>
<td><img src="image12" alt="3D Polar Balloon" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000 Hz</td>
<td><img src="image13" alt="Horizontal Polars" /></td>
<td><img src="image14" alt="Vertical Polars" /></td>
<td><img src="image15" alt="3D Polar Balloon" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The horizontal and vertical polars are displayed in Traditional and Enhanced format; the traditional view shows only the dB at an angle along the axis, the enhanced shows adjacent angles.

Art Diffusor® Model C – © 2015 Acoustics First® Corporation. May be reproduced for Academic or Educational use with proper credit to Acoustics First®.
A patented, two dimensional, organic quadratic diffuser; this diffuser provides an asymmetric diffusion pattern to help you tune your acoustic space. A combination of QRD, Bicubic Interpolation, MLS and Boolean systems went into the unique organic curvature, and wide frequency control of this design.

**Construction:** Class A Thermoformed plastic with natural white finish.

**Nominal Size:** 2’x2’

**Depth:** 4.1”

**Mounting:** Direct mount to wall/ceiling

--- OR -- Fit into standard T-bar grids.

---

<table>
<thead>
<tr>
<th>Test</th>
<th>125 Hz</th>
<th>250 Hz</th>
<th>500 Hz</th>
<th>1000 Hz</th>
<th>2000 Hz</th>
<th>4000 Hz</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>0.23</td>
<td>0.08</td>
<td>0.05</td>
<td>0.19</td>
<td>0.20</td>
<td>0.11</td>
<td>0.15</td>
</tr>
<tr>
<td>E400</td>
<td>0.34</td>
<td>0.14</td>
<td>0.06</td>
<td>0.14</td>
<td>0.14</td>
<td>0.06</td>
<td>0.10</td>
</tr>
</tbody>
</table>
The horizontal and vertical polars are displayed in Traditional and Enhanced format: the traditional view shows only the dB at an angle along the axis, the enhanced shows adjacent angles.
A patented, two dimensional, quadratic, binary array diffuser. This diffuser improves sound clarity through the control of distracting, high-frequency, flutter echoes. The range of the Model F is extended over other designs by its unique angled end caps to further control specular reflections above 8 kHz.

**Construction:** Class A Thermoformed plastic with natural white finish.

**Nominal Size:** 2’x2’

**Depth:** 2’

**Mounting:** Direct mount to wall/ceiling

– OR – Fit into standard T-bar grids.

**Sound Absorption Coefficients – Art Diffusor® – Model F Performance**

<table>
<thead>
<tr>
<th>Mounting</th>
<th>125 Hz</th>
<th>250 Hz</th>
<th>500 Hz</th>
<th>1000 Hz</th>
<th>2000 Hz</th>
<th>4000 Hz</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>0.05</td>
<td>0.60</td>
<td>0.07</td>
<td>0.09</td>
<td>0.07</td>
<td>0.13</td>
<td>0.20</td>
</tr>
<tr>
<td>E400</td>
<td>0.20</td>
<td>0.10</td>
<td>0.06</td>
<td>0.05</td>
<td>0.06</td>
<td>0.14</td>
<td>0.05</td>
</tr>
</tbody>
</table>
The horizontal and vertical polars are displayed in Traditional and Enhanced format. The traditional view shows only the dB at an angle along the axis, the enhanced shows adjacent angles.
Art Diffusor® Model Q Diffusor

A one-dimensional, quadratic, well diffuser. This diffuser improves sound by incorporating quadratic residue number sequences to provide uniform broadband scattering. The range of the Model Q is extended over other designs by its unique angled well bottoms to further control specular reflections.

**Construction:** Class A Thermoformed plastic with natural white finish.

**Nominal Size:** 2’x2’

**Depth:** 4” (Nominal)

**Mounting:** Fit into standard T-bar grids.

--- OR ---

Recessed mount to wall/ceiling

---

**Sound Absorption Coefficients – Art Diffusor® – Model Q Performance**

<table>
<thead>
<tr>
<th>Mounting</th>
<th>125 Hz</th>
<th>250 Hz</th>
<th>500 Hz</th>
<th>1000 Hz</th>
<th>2000 Hz</th>
<th>4000 Hz</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>E400</td>
<td>0.35</td>
<td>0.40</td>
<td>0.45</td>
<td>0.30</td>
<td>0.14</td>
<td>0.19</td>
<td>0.30</td>
</tr>
<tr>
<td>E400 /Insulation</td>
<td>0.38</td>
<td>0.39</td>
<td>0.45</td>
<td>0.31</td>
<td>0.13</td>
<td>0.16</td>
<td>0.30</td>
</tr>
<tr>
<td>Frequency (Hz)</td>
<td>Horizontal Polars – Enhanced/Traditional</td>
<td>Vertical Polars – Enhanced/Traditional</td>
<td>3D Polar Balloon – ¾ View</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------</td>
<td>---------------------------------------</td>
<td>--------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16000 Hz</td>
<td><img src="#" alt="Image of 16000 Hz Horizontal Polars" /></td>
<td><img src="#" alt="Image of 16000 Hz Vertical Polars" /></td>
<td><img src="#" alt="Image of 16000 Hz 3D Balloon" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8000 Hz</td>
<td><img src="#" alt="Image of 8000 Hz Horizontal Polars" /></td>
<td><img src="#" alt="Image of 8000 Hz Vertical Polars" /></td>
<td><img src="#" alt="Image of 8000 Hz 3D Balloon" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000 Hz</td>
<td><img src="#" alt="Image of 4000 Hz Horizontal Polars" /></td>
<td><img src="#" alt="Image of 4000 Hz Vertical Polars" /></td>
<td><img src="#" alt="Image of 4000 Hz 3D Balloon" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000 Hz</td>
<td><img src="#" alt="Image of 2000 Hz Horizontal Polars" /></td>
<td><img src="#" alt="Image of 2000 Hz Vertical Polars" /></td>
<td><img src="#" alt="Image of 2000 Hz 3D Balloon" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000 Hz</td>
<td><img src="#" alt="Image of 1000 Hz Horizontal Polars" /></td>
<td><img src="#" alt="Image of 1000 Hz Vertical Polars" /></td>
<td><img src="#" alt="Image of 1000 Hz 3D Balloon" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The horizontal and vertical polars are displayed in Traditional and Enhanced formats; the traditional view shows only the dB at an angle along the axis, the enhanced shows adjacent angles.
Art Diffusor® Trim – Type A

Art Diffusor® Trim – Type A

A high-frequency, low-profile, quadratic diffuser. It improves sound using quadratic residue number sequences to provide uniform scattering. The range of the Trim is extended over other designs by its unique angled well bottoms to further control specular reflections.

**Construction:** Unfinished Maple. (Other woods and finishes available)

**Nominal Size:** 4” x 48” individual (2’x2’ section tested)

**Thickness:** 1.125” (Nominal)

**Mounting:** Direct mount to wall/ceiling.

<table>
<thead>
<tr>
<th>Full Spectrum Response – Horizontal (180° - Left to Right)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Sound Absorption Coefficients" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Full Spectrum Response – Vertical (180° - Top to Bottom)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Sound Absorption Coefficients" /></td>
</tr>
</tbody>
</table>

**Sound Absorption Coefficients – Art Diffusor® Trim – Type A Performance (Varies*)**

<table>
<thead>
<tr>
<th>Mounting</th>
<th>125 Hz</th>
<th>250 Hz</th>
<th>500 Hz</th>
<th>1000 Hz</th>
<th>2000 Hz</th>
<th>4000 Hz</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Sound Absorption for this product varies depending on many factors (wood species, finish, installation method, fastener type, length, etc.).

- Ceiling or Wall Mountable

Modified 1D Quadratic Diffuser
Prime 7 / Angled Well Design

Operational Parameters:
- Diffusion: Upper Mid - High band
- Primary: 2KHz - 16+KHz
- 180° Scatter Pattern (1D)
- Flutter Echo Control
- Subtle Phase Grating & Scattering
The horizontal and vertical polars are displayed in Traditional and Enhanced format; the traditional view shows only the dB at an angle along the axis, the enhanced shows adjacent angles.
**Art Diffusor® Trim – Type B**

A high-frequency, low-profile, quadratic diffuser. It improves sound using quadratic residue number sequences to provide uniform scattering. The range of the Trim is extended over other designs by its unique organic curve interpolation to further control specular reflections.

**Construction:** Unfinished Maple. (Other woods and finishes available)

**Nominal Size:** 4” x 48” individual (2’x2’ section tested)

**Thickness:** 1.125” (Nominal)

**Mounting:** Direct mount to wall/ceiling.

---

### Construction:
Unfinished Maple. (Other woods and finishes available)

### Nominal Size:
4” x 48” individual (2’x2’ section tested)

### Thickness:
1.125” (Nominal)

### Mounting:
Direct mount to wall/ceiling.

---

<table>
<thead>
<tr>
<th>Mounting</th>
<th>125 Hz</th>
<th>250 Hz</th>
<th>500 Hz</th>
<th>1000 Hz</th>
<th>2000 Hz</th>
<th>4000 Hz</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Sound Absorption for this product varies depending on many factors (wood species, finish, installation method, fastener type, length, etc.).

---

**Modified 1D Quadratic Diffuser**

**Prime 7 / Organic Spline Design**

**Operational Parameters:**
- Diffusion: Upper Mid - High band
- Primary: 2KHz - 16+KHz
- 180° Scatter Pattern (1D)
- Flutter Echo Control
- Subtle Phase Grating & Scattering

**Ceiling or Wall Mountable**
The horizontal and vertical polars are displayed in Traditional and Enhanced format; the traditional view shows only the dB at an angle along the axis, the enhanced shows adjacent angles.
A patent pending, two dimensional, organic quadratic diffuser. Edge height variation is less than the flange width, creating an "implied edge" while maintaining a complete asymmetry which reduces acoustic lobing associated with some symmetrical designs.

**Construction:** Class A Thermoformed plastic with natural white finish.

**Nominal Size:** 2’x2’

**Depth:** 5”

**Mounting:** Direct mount to wall/ceiling
– OR – Fit into standard T-bar grids.

---

**Sound Absorption Coefficients – Aeolian® Performance**

<table>
<thead>
<tr>
<th>Mounting</th>
<th>125 Hz</th>
<th>250 Hz</th>
<th>500 Hz</th>
<th>1000 Hz</th>
<th>2000 Hz</th>
<th>4000 Hz</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>0.55</td>
<td>0.24</td>
<td>0.22</td>
<td>0.16</td>
<td>0.10</td>
<td>0.13</td>
<td>0.20</td>
</tr>
<tr>
<td>E400 (No Insulation)</td>
<td>0.40</td>
<td>0.26</td>
<td>0.26</td>
<td>0.25</td>
<td>0.17</td>
<td>0.15</td>
<td>0.25</td>
</tr>
<tr>
<td>E400 (Insulated)</td>
<td>0.41</td>
<td>0.24</td>
<td>0.25</td>
<td>0.25</td>
<td>0.17</td>
<td>0.15</td>
<td>0.25</td>
</tr>
</tbody>
</table>
The horizontal and vertical polars are displayed in Traditional and Enhanced format; the traditional view shows only the dB at an angle along the axis, the enhanced shows adjacent angles.
**QuadraPyramid™ Diffuser**

A patented, low-profile, geometric array diffuser. This diffuser is a proprietary array of 4 low-profile, offset pyramids, each quadrant rotated 90°. This provides a wide frequency range with a smooth and predictable response – without sacrificing the space of a larger diffuser.

**Construction:** Class A Thermoformed plastic with natural white finish.

**Nominal Size:** 2' x 2'

**Depth:** 2.75”

**Mounting:** Direct mount to wall/ceiling

– OR – Fit into standard T-bar grids.

---

**Sound Absorption Coefficients – QuadraPyramid™ Diffuser Performance**

<table>
<thead>
<tr>
<th>Mounting</th>
<th>125 Hz</th>
<th>250 Hz</th>
<th>500 Hz</th>
<th>1000 Hz</th>
<th>2000 Hz</th>
<th>4000 Hz</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>0.23</td>
<td>0.58</td>
<td>0.05</td>
<td>0.04</td>
<td>0.04</td>
<td>0.11</td>
<td>0.20</td>
</tr>
<tr>
<td>E400</td>
<td>0.28</td>
<td>0.17</td>
<td>0.09</td>
<td>0.07</td>
<td>0.10</td>
<td>0.14</td>
<td>0.10</td>
</tr>
</tbody>
</table>
The horizontal and vertical polars are displayed in Traditional and Enhanced format. The traditional view shows only the dB at an angle along the axis, while the enhanced shows adjacent angles.
Pyramidal diffusers quickly and easily eliminate floor to ceiling standing waves. They reduce flutter echo while maintaining a warm room sound. Molded in a one-piece pyramid shape, their offset apex provides four different angles of reflection.

**Construction:** Class A Thermoformed plastic with natural white finish.
**Nominal Sizes:** 2'x2', 2'x4', 4'x4'
**Depth:** 8” – 13” (nominal)
**Mounting:** L-Bracket for Direct mount to wall/ceiling – OR – Manufactured to Fit into standard T-bar grids.

Internal cavity can be lined with a 1½” thick layer of glass fiber batting to increase absorption and prevent resonance.

### Sound Absorption Coefficients – Standard Pyramidal Diffuser

<table>
<thead>
<tr>
<th>Size</th>
<th>Mounting</th>
<th>Weight</th>
<th>125Hz</th>
<th>250Hz</th>
<th>500Hz</th>
<th>1kHz</th>
<th>2kHz</th>
<th>4kHz</th>
<th>8kHz</th>
<th>16kHz</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2’x2’</td>
<td>D-5</td>
<td>3.58lbs</td>
<td>0.22</td>
<td>0.22</td>
<td>0.17</td>
<td>0.08</td>
<td>0.08</td>
<td>0.06</td>
<td>0.15</td>
<td>0.20</td>
<td></td>
</tr>
<tr>
<td>2’x2’</td>
<td>E-400</td>
<td>3.58lbs</td>
<td>0.24</td>
<td>0.22</td>
<td>0.16</td>
<td>0.11</td>
<td>0.10</td>
<td>0.11</td>
<td>0.15</td>
<td>0.20</td>
<td></td>
</tr>
<tr>
<td>2’x2’ w/insulation</td>
<td>D-5</td>
<td>4.23lbs</td>
<td>0.57</td>
<td>0.41</td>
<td>0.38</td>
<td>0.21</td>
<td>0.16</td>
<td>0.16</td>
<td>0.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2’x2’ w/insulation</td>
<td>E-400</td>
<td>4.23lbs</td>
<td>0.35</td>
<td>0.28</td>
<td>0.23</td>
<td>0.14</td>
<td>0.11</td>
<td>0.16</td>
<td>0.20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The horizontal and vertical polars are displayed in Traditional and Enhanced format. The traditional view shows only the PB at an angle along the axis, the enhanced shows adjacent angles.
Polycylindrical (barrel shaped) diffusers act to scatter sound in any location. Bass absorption will vary with size. A 2' x 4' has maximum absorption at 125 Hz. Increasing size to 4' x 8' lowers the point of maximum absorption to 63 Hz. Mid to high frequency absorption is typically 0.10 to 0.25.

**Construction:** Class A Thermoformed plastic with natural white finish.

**Nominal Sizes:** 2'x2', 2'x4', 4'x4' and '4'x8' (*Molded Fiberglass only).

**Depth:** 7"  
**Mounting:** L-Bracket for direct mount to wall/ceiling  
– OR – Manufactured to fit into standard T-bar grids.

Internal cavity can be lined with a 1½” thick layer of glass fiber batting to increase absorption and prevent resonance.

### Sound Absorption Coefficients – Standard Double Duty™ Diffuser

<table>
<thead>
<tr>
<th>Size</th>
<th>Mounting</th>
<th>Weight</th>
<th>125Hz</th>
<th>250Hz</th>
<th>500Hz</th>
<th>1kHz</th>
<th>2kHz</th>
<th>4kHz</th>
<th>8kHz</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2'x2'</td>
<td>D-5</td>
<td>4 lbs.</td>
<td>0.41</td>
<td>0.22</td>
<td>0.19</td>
<td>0.15</td>
<td>0.12</td>
<td>0.05</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>2'x2'</td>
<td>E-400</td>
<td>4 lbs.</td>
<td>0.33</td>
<td>0.27</td>
<td>0.19</td>
<td>0.15</td>
<td>0.11</td>
<td>0.11</td>
<td>0.20</td>
<td></td>
</tr>
<tr>
<td>2'x2' w/insulation</td>
<td>D-5</td>
<td>4.7 lbs.</td>
<td>0.64</td>
<td>0.28</td>
<td>0.26</td>
<td>0.18</td>
<td>0.11</td>
<td>0.15</td>
<td>0.20</td>
<td></td>
</tr>
<tr>
<td>2'x2' w/insulation</td>
<td>E-400</td>
<td>4.7 lbs.</td>
<td>0.33</td>
<td>0.24</td>
<td>0.21</td>
<td>0.16</td>
<td>0.10</td>
<td>0.15</td>
<td>0.20</td>
<td></td>
</tr>
</tbody>
</table>
The horizontal and vertical polars are displayed in Traditional and Enhanced format; the traditional view shows only the dB at an angle along the axis, the enhanced shows adjacent angles.
The information within this booklet is only part of the data currently available on the materials that were tested. An electronic component is also available upon request. This electronic data allows for access to the raw test results, enabling further refinement, including previously absent data describing the phase of the reflections, attenuation, and directionality with a granularity exceeding all prior published data.

This electronic data has been compiled for Acoustics First by NWAA Labs in Elma, WA.

Acoustics First is offering this data without warranty, upon request, as no universally accepted standard currently exists.

Contact us for more information. Additional test data and product configurations appear on the web site. More information will be added as it becomes available.

Above: Virtual Test Lab developed by Acoustics First using particle modeling to illustrate the scattering of energy after impacting a surface - Inset (top): Real-World test magnitude data for comparison.

Right: Real-world testing rig at NWAA Labs in Elma, WA, which collected much of the data contained in this work.

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