**Category**

sound diffuser

**Description**

BAD panel

**Part Code**

GRG360 – GRG410

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**BAD PANEL ACOUSTIC DIFFUSER**

has been developed to aid well balanced acoustic design. It provides simultaneous, uniform sound diffusion at high and mid-band frequencies, which crosses over to pure absorption below the diffusive cut-off. The energy that is not diffused is absorbed.

The BAD panel is a planar 2-dimensional binary reflection amplitude grating consisting of a 31 x 33 element array of absorptive and reflective areas.

The panel consists of a binary mask attached to the face of a semi-rigid fibreglass panel which is upholstered in a decorative architectural fabric.

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**Advantages**

- Easy installation
- Various mounting/fixing options
- Standard and custom sizes
- Class 0 fire rated core
- Wide colour range
- 25mm–100mm thick
- Simultaneous diffusive and absorptive sound control in a thin, decorative, cost-effective panel

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**Applications**

- Recording studios
- Post-production studios
- Practice rooms
- Home theatres
- Mastering studios

The BAD panel is ideal for any facility that needs reflection control from a decorative, upholstered, thin and cost-effective wall or ceiling panel.

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**Why BAD Panel?**

Traditional fabric-wrapped panels offer a cost-effective, low profile aesthetic approach to providing reflection and reverberation control. However, such panels offer little sound diffusion and large area application may lead to an acoustically ‘dead’ space. Variable impedance arrays offer some help, but cannot provide high and mid-frequency diffusion.

The BAD panel is an innovative, variable impedance fabric-wrapped acoustic panel with a binary template consisting of reflective areas and holes over a semi-rigid fibreglass panel; this provides high and mid-frequency diffusion and low-frequency absorption.

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**Installation**

See our website for information relating to installation:

http://www.customaudiodesigns.co.uk/diffusers/baddiff.htm

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**Part Code**

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Size</th>
<th>Coverage</th>
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<tbody>
<tr>
<td>GRG360</td>
<td>1200mm x 600mm x 25mm</td>
<td>0.72m²</td>
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<tr>
<td>GRG390</td>
<td>1200mm x 600mm x 50mm</td>
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<td>GRG370</td>
<td>1200mm x 1200mm x 25mm</td>
<td>1.44m²</td>
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<td>GRG400</td>
<td>1200mm x 1200mm x 50mm</td>
<td>1.44m²</td>
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<tr>
<td>GRG380</td>
<td>1200mm x 2400mm x 25mm</td>
<td>2.88m²</td>
</tr>
<tr>
<td>GRG410</td>
<td>1200mm x 2400mm x 50mm</td>
<td>2.88m²</td>
</tr>
</tbody>
</table>

- Wide range of fabric colours
- Split batten for wall mount secret fixing
- ‘z’ bars for ceiling mount
- Custom sizes available to special order
- Spike ‘impaling’ clips for wall mount

All available – please discuss when ordering. Additional cost may be involved.

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**NOW ALSO AVAILABLE ►**

BAD ARC with curved form panel for extra diffusion

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**The BAD Panel extends the acoustic performance of traditional absorptive fabric-wrapped panels and allows wide area coverage without excessive deadening.**

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**binary amplitude diffuser/absorber**
Acoustic Performance

**Diffusion**

The performance of a scattering surface is characterised by the diffusion coefficient, which is the standard deviation of the 1/3 octave angular response, shown in the graph to the left at 12.5 kHz. The graph illustrates how uniformly the BAD Panel scatters sound across the frequency spectrum, compared to a reflective panel, for normal incidence.

**Absorption**

The graph to the left illustrates how the BAD Panels can offer an increase in bass absorption over a standard upholstered 1” (2.54cm) panel below 1000 Hz, and a decreased absorption above this frequency. The binary template allows the sound above 1000 Hz to be uniformly diffused providing reflection control without destroying the room’s ambiance.

**Angular scattering response**

For normally incident sound, the graph illustrates the angular response at 12.5 kHz. The flat reflector scatters sound primarily into the 90° specular direction. The wall mounted absorptive panel has similar response, only attenuated. The BAD Panel decreases specular scattering and more closely approaches the uniform ideal diffusion line.
Guidance for BAD Panel from Custom Audio Designs Ltd

More about BAD Panel:

Performance:
A variable impedance panel, produced by fabric wrapping a resorptive binary template consisting of reflective areas and holes over a semi rigid fibreglass panel. The resulting Binary Amplitude Diffisorbor™ Panel provides mid and high frequency diffusion and low frequency absorption.

Features:
Simultaneous diffusive and absorptive sound control in a thin, decorative, cost effective panel.
Optimal binary reflection amplitude grating containing resorptive elements.
Acoustical functionality concealed with decorative upholstered fabrics or commercial stretch fabric.

Edge detail:
Flat.
Bevelled.
Radius.

Installation:
Construction adhesive.
Hook and loop fasteners.
Impaling clips.
T-bar grid system.
Z-clips for wall mounting.
Rotafast fixing system
low profile aluminium battens.
Timber split battens
Magnetic.

NBS
- Manufacturer: Custom Audio Designs Ltd
- Web: www.customaudiodesigns.co.uk
- Tel: +44 (0) 1730 269572

- Size: [??? x ??? mm]. Any size up to 3000 x 1200mm
- Thickness: [25, 50, 75 or 100 mm].
- Fabric/colour: [Cara EJ___].
- Mounting: [Surface mount using a wooden frame].
  [Surface mount using spikes].
  [Surface mount using adhesive].
  [Z bar ceiling fixings].
  [Ceiling cloud rings].
  [Magnetic].
  [Timber split battens].
  [Metal AliBatts].
  [Ceiling wires].
- Edge detail: [Square].
  [Bevelled].