

*The First General Purpose QRD® Diffuser
From The Acoustical Industry's Leading Innovator*

The QRD® 734 has proven to be the most popular and versatile diffuser in the RPG® product line. Its wide bandwidth, low cost, and broad selection of finishes make it a logical choice for music education facilities, recording studios, worship spaces, auditoriums, theaters, and performing arts facilities. This one dimensional diffuser is a modular, computer designed phase grating which produces a directional hemidisc polar response that can be oriented in any direction.

Problem and Solution

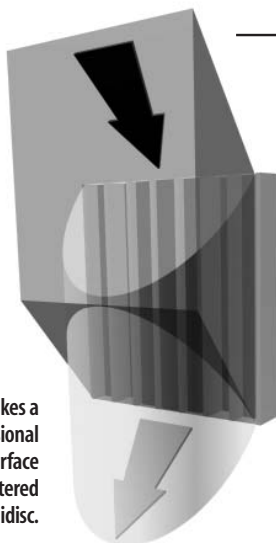
Problem

Interfering reflections that degrade speech intelligibility and music quality can be controlled by absorption and diffusion. Since commercial surfaces that provided uniform diffusion over a wide frequency range and for all angles of incidence were not available, absorption was used solely to control reflections. This approach creates "dead" spaces.

Solution

In 1983, RPG® introduced the first commercial QRD® Diffusor, based on mathematical number theory. Now a predictable diffusive surface treatment is readily available.

Sound strikes a one dimensional diffusing surface and is scattered into a hemidisc.



FEATURES

- QRD® sound diffusion
- Natural wood finish, paint finish, or transparent plexiglass
- Distinctive textured appearance
- Can be surface or flush mounted
- Can be oriented to provide two dimensional diffusion in the far field
- Units join together seamlessly for a continuous appearance

BENEFITS

- Attractive finish allows its use in a variety of decors
- Can be used to control unwanted reflections, without adding additional absorption

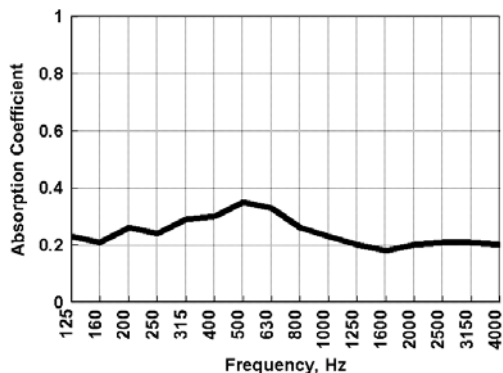
APPLICATIONS

Music education facilities, Band rooms, Recording studios, Post production studios, Home theaters, Worship spaces, Auditoriums, Performing arts centers

SPECIFICATIONS

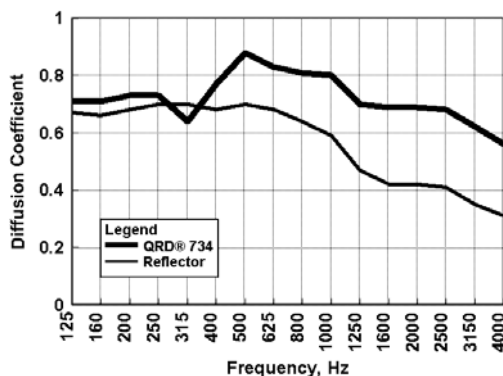
- Sizes and weights:
23-5/8" (H) x 23-5/8" (W) x 9-1/8" (D): 26 lbs.
47-1/4" (H) x 23-5/8" (W) x 9-1/8" (D): 50 lbs.
- Custom sizes available
- Standard finish: Uniform white birch clear coat
- Custom finishes available
- Class A fire rated

Performance Specifications



Absorption

The wooden QRD® 734 or plexiglass Diviewisor™ contribute minimal absorption.

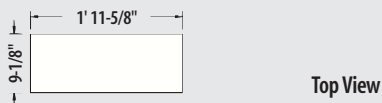


Diffusion

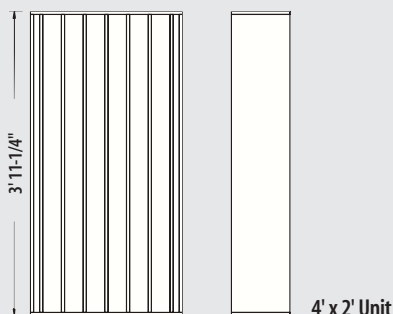
Compared to a flat reflector panel, the QRD® 734 offers significant diffusion above the diffraction limit of 565Hz, which is equal to the speed of sound (1130ft/sec) divided by the 2' dimension of the panel. As the frequency increases above 565Hz, the graph indicates how the reference reflector becomes more and more specular, whereas the QRD® 734 provides uniform diffusivity.

Installation

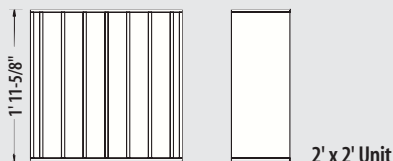
The QRD® 734 is typically mounted on a cleat and secured. For installations that require a flush mount the units are framed out much like an opening for a window.



Top View



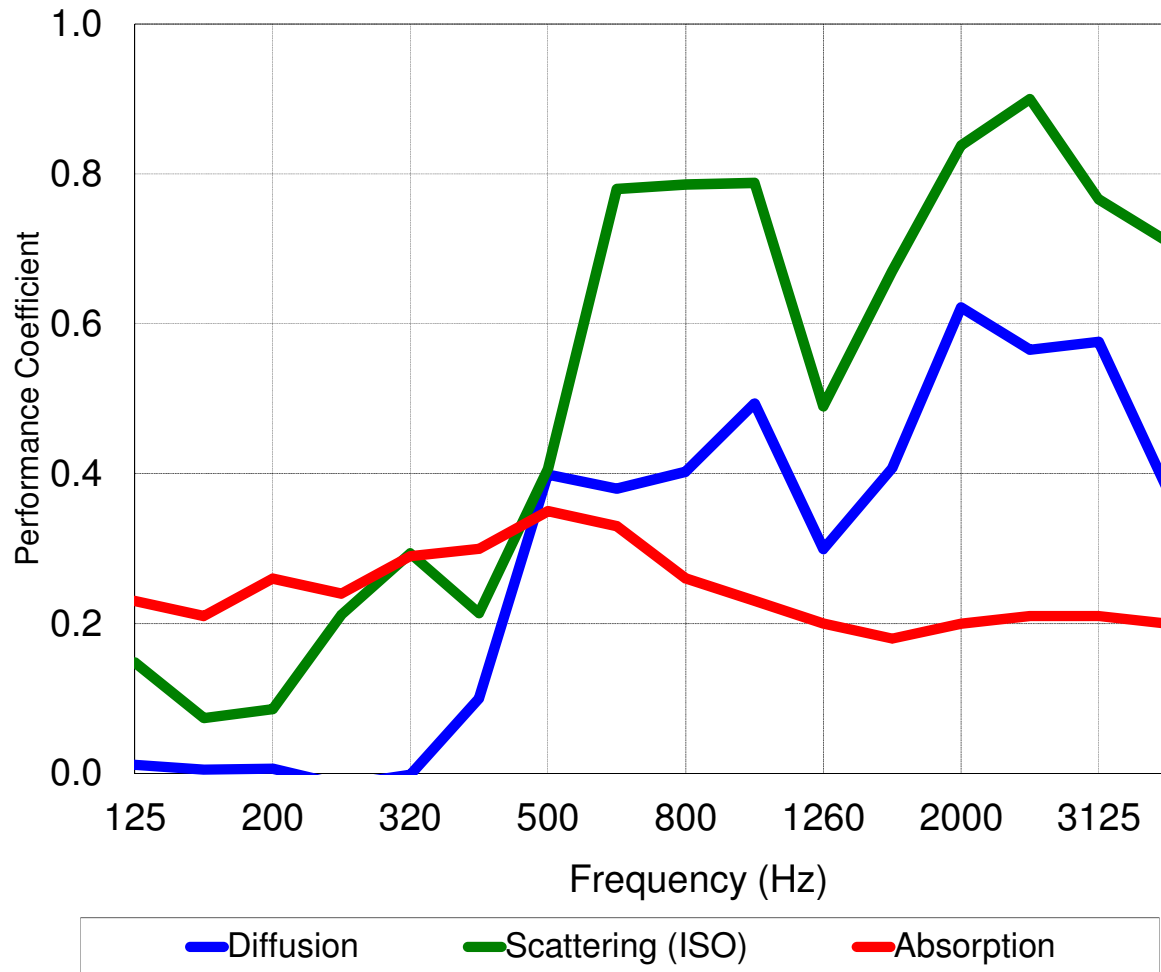
4' x 2' Unit



2' x 2' Unit



QRD® 734 Random Incidence Performance Data



Chesapeake
Acoustic Research
Institute, LLC



f (Hz)	Diffusion	Scattering (ISO)	Absorption
125	0.01	0.15	0.23
160	0.01	0.07	0.21
200	0.01	0.09	0.26
250	-0.02	0.21	0.24
320	0.00	0.29	0.29
400	0.10	0.21	0.30
500	0.40	0.41	0.35
630	0.38	0.78	0.33
800	0.40	0.79	0.26
1000	0.49	0.79	0.23
1260	0.30	0.49	0.20
1600	0.41	0.67	0.18
2000	0.62	0.84	0.20
2500	0.57	0.90	0.21
3125	0.58	0.77	0.21
4000	0.38	0.71	0.20