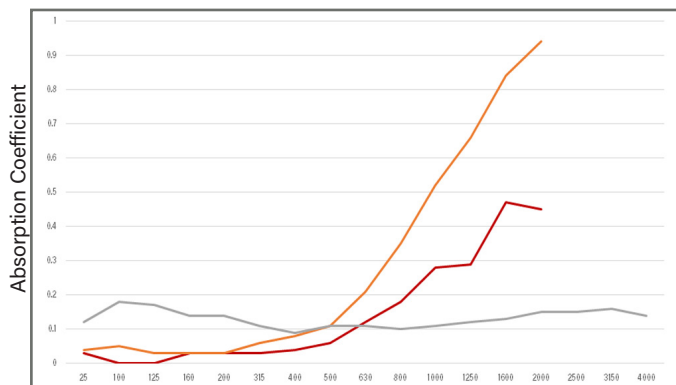
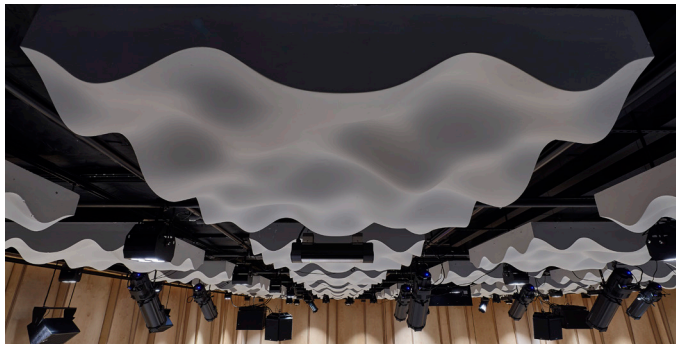


# Waveform Bicubic



Frequency	Diffusion	Scattering (ISO)	Absorption
100	0	0.05	0.18
125	0	0.03	0.17
160	0.03	0.03	0.14
200	0.03	0.03	0.14
25	0.03	0.04	0.12
315	0.03	0.06	0.11
400	0.04	0.08	0.09
500	0.06	0.11	0.11
630	0.12	0.21	0.11
800	0.18	0.35	0.1
1000	0.28	0.52	0.11
1250	0.29	0.66	0.12
1600	0.47	0.84	0.13
2000	0.45	0.94	0.15
2500			0.15
3150			0.16
4000			0.14

Overhead canopy arrays are used in auditoriums and worship spaces to blend the direct and early reflected sound, increasing speech intelligibility and enhancing musical clarity and intimacy. Traditionally, non-optimized, periodic flat panels and arcs have been used. These arrays can give rise to non-uniform coverage, due to array gaps, non-optimal shaping, and periodicity effects. RPG has developed an optimization algorithm called the Shape Optimizer, to provide optimal shaping and tilting, offering omnidirectional scattering. RPG's patent pending aperiodic modulation of a single asymmetric base shape minimizes periodicity arraying effects and provides uniform coverage. Unlimited shapes are possible with different tiling patterns. Several depths are available in Class A Glass Reinforced Gypsum.

The Waveform Bicubic offers a level of performance and aesthetics formerly not available in commercial canopies.

**Aperiodic Modulation of a Single Asymmetric Base Shape**  
RPG's patented Aperiodic Modulation of a Single Asymmetric Base Shape allows the creation of wide area coverage with a single asymmetric base shape (top), thus minimizing periodicity effects. This is possible, because the asymmetric central shape, determined by the architect or acoustician, morphs to identical sides, which have a zero gradient, allowing adjacent tiles to transition without discontinuity in any orientation (middle) forming a larger aperiodic array (bottom 4x4 array). Thus, with an optimized aperiodic array, canopy performance can finally be mathematically determined and evaluated. The performance of the aperiodic array is similar to that of one of the acoustically optimized canopy elements.

## Installation

The Waveform Bicubic can be used as an overhead canopy and also in a wall mounting, using a wood cleat as shown. Overhead mounting is accomplished by bolting adjacent modules together and suspending from integral hairpin hanging loops with supplied engineered cables. Wall mounting is accomplished by attaching through the sides into cleats mounted to the substrate.

