

## SB412C Cardioid Woofer Surface Array



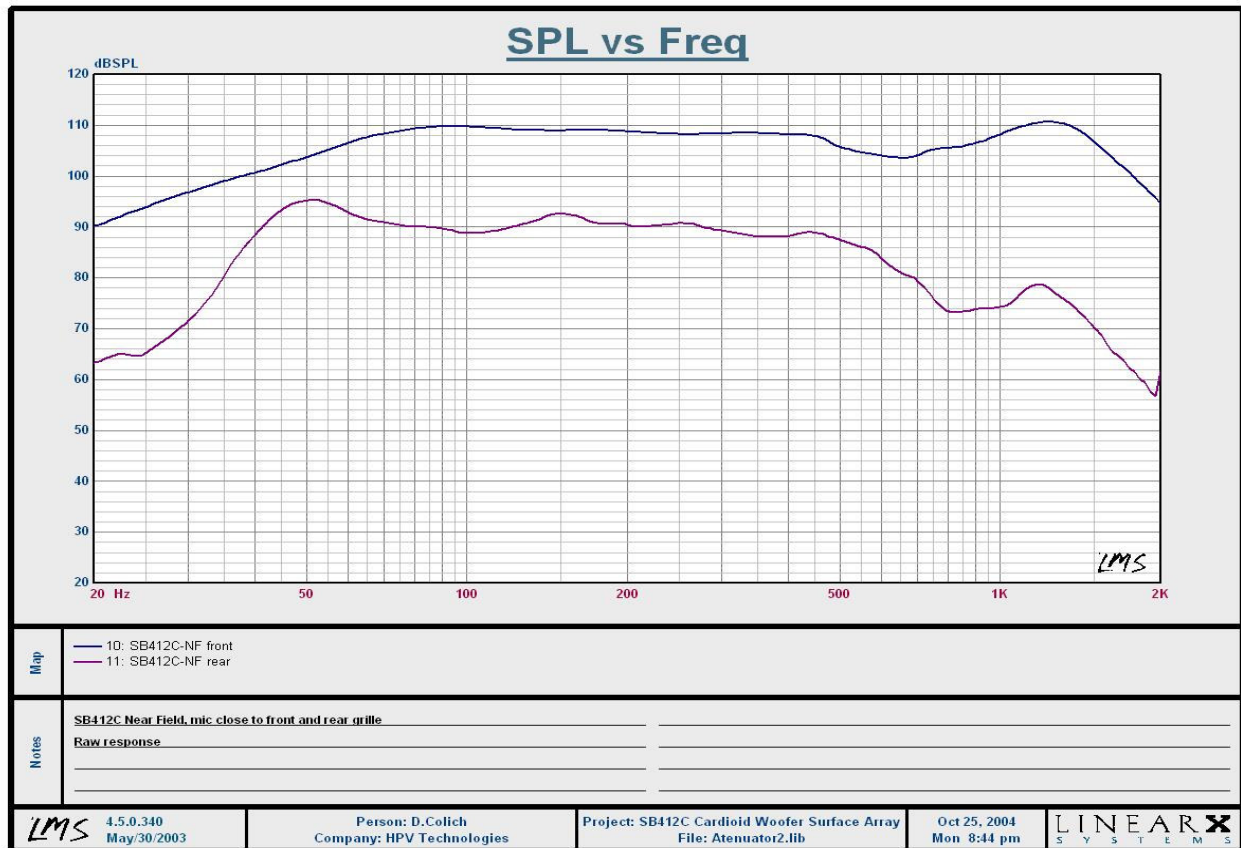
**4 x SB412C Cardioid Woofer Surface Array**

## MAD's Cardioid Bass Enclosure

As a cone transducer moves back and forth, it creates sound on both sides of the diaphragm with equal intensity...but opposite phase. Sound waves from the front and rear excursions that meet at the sides of the transducer and are cancel out. This creates a typical dipole or figure-of-eight dispersion pattern.

This property can be manipulate in applications where sound is not desired on the sides or rear of the speaker. If a dipole transducer is mounted in a closed cabinet, it becomes monopole and radiates only from the front. In the low frequency range, a monopole becomes omni-directional (i.e., radiates sound all around the speaker with equal intensity). This may produce an excessive amount of energy at the sides or rear of the speaker. However, if an open enclosure is used and the rear waves are absorbed, the transducer becomes cardioid. Cardioid dispersion keeps sound cancellation on its sides with greatly reduced rear radiation.

The following graph illustrates the SPL attenuation verses frequency on the SB412C cardioid bass cabinet. The top graph is the frequency response measured at the front of the cabinet and the bottom graph is the response measured from the cabinet's back. Notice that between 60 and 500 Hz. the volume at the back of the cabinet is 16 dB to 21 dB lower than at the front. In a concert setting, this attenuation can dramatically reduce the volume of low frequency energy which would typically wash over a stage or performance area.



### Volume variance on SB412C between front and rear of cabinet

## SB412C Cardioid Woofer Surface Array Specifications

Configuration: Cardioid passive system, minimum 4 rows, 4 drivers per row;

Drivers: 12" very long-throw, low distortion woofers

Incorporated rigging, certified to international safety standards

Horizontal dispersion: 90° @ 100Hz

Vertical dispersion: 4 rows - 90° @ 100Hz; 8 rows - 60° @ 100Hz; 12 rows - 40° @ 100Hz; 16 rows - 30° @ 100Hz

Power handling per row: 1000 watts RMS

Useful frequency response: 30 HZ to 300HZ +/- 3dB (equalized)

Sensitivity 100dB, 1 watt, scaled to 1 meter (4 rows)

Maximum output 133dB @ 10 meters (33 ft), 4 rows

Recommended crossover: 100—250Hz, 24dB L/R

Recommended high-pass filter: 30-50Hz, 24dB per octave

Nominal Impedance: 4 ohms per row

True Cardioid Dispersion Pattern, More than 20 dB sound attenuation on the rear, on the side of the Array, top or bottom of the Array

Rows can be wired in parallel with optional jumpers

Weight 1 row: 150 lbs

Dimensions per row: L-53.4 x W-21 x H-14.3 inches

Flying grid and ground support foot available