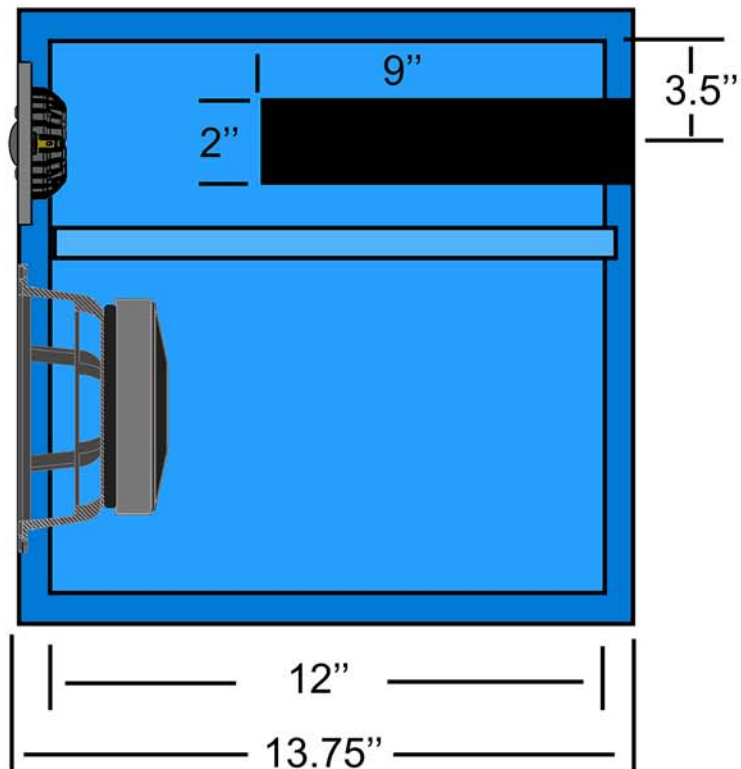
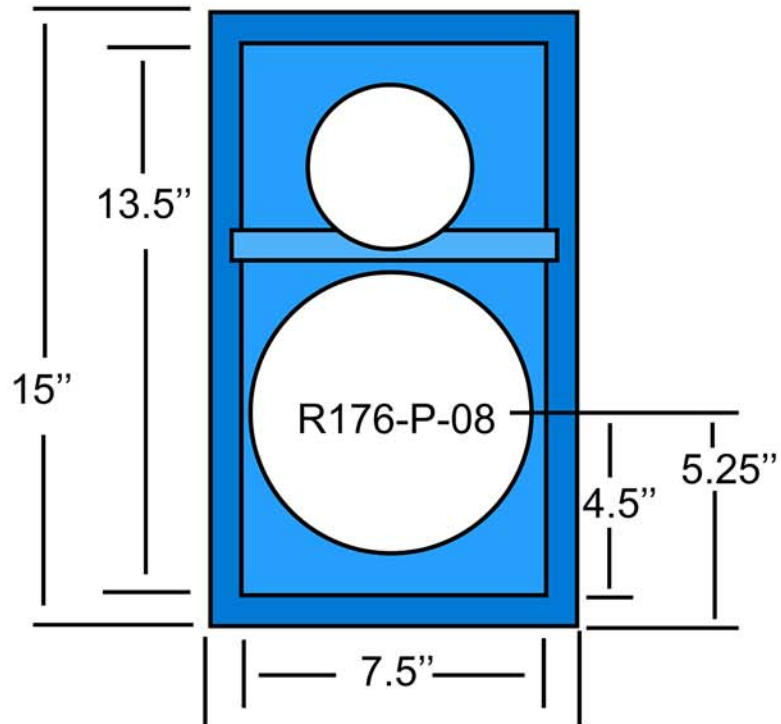


RAD

RHYTHM AUDIO DESIGN

Rival Acoustics

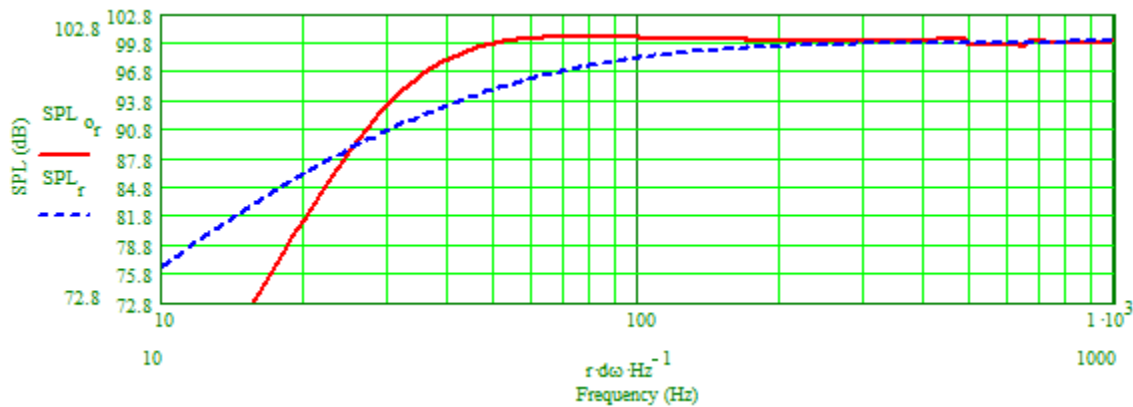
R176-P-08



Enclosure optimization by Paul Kittinger

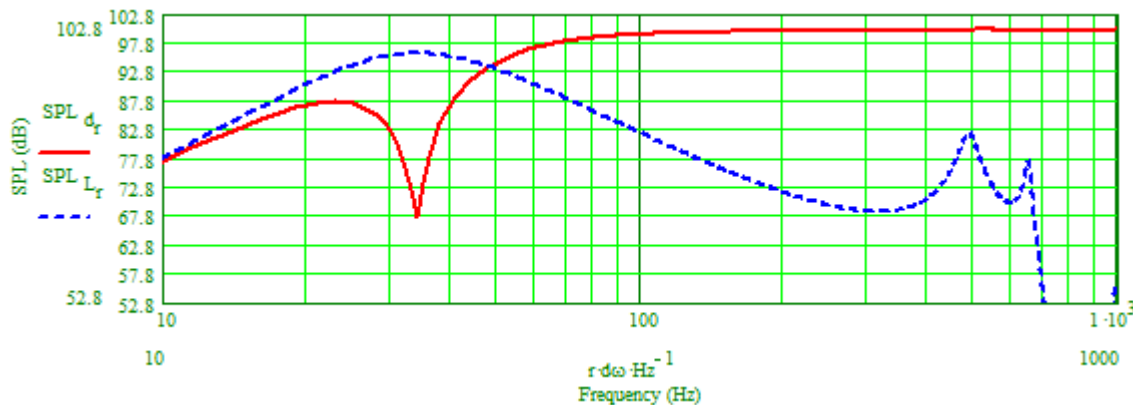
The box has an internal depth of 12" to go along with a width of 7.5" and a height of 13.5". The non-flared port has a 2" diameter and 9" length, with its center located 3.5" below the internal top (and woofer's center located 4.5" above the internal bottom). I modeled with an internal width of 7" to give you ~80 in³ of compensating volume. The following graphs show the predicted performance for an input of 22w/1m into a nominal impedance of 7 ohms. I modeled with 0.5 ohms added in series with the woofer and the system tuning frequency is ~34 Hz.

System anechoic bass response (red line):



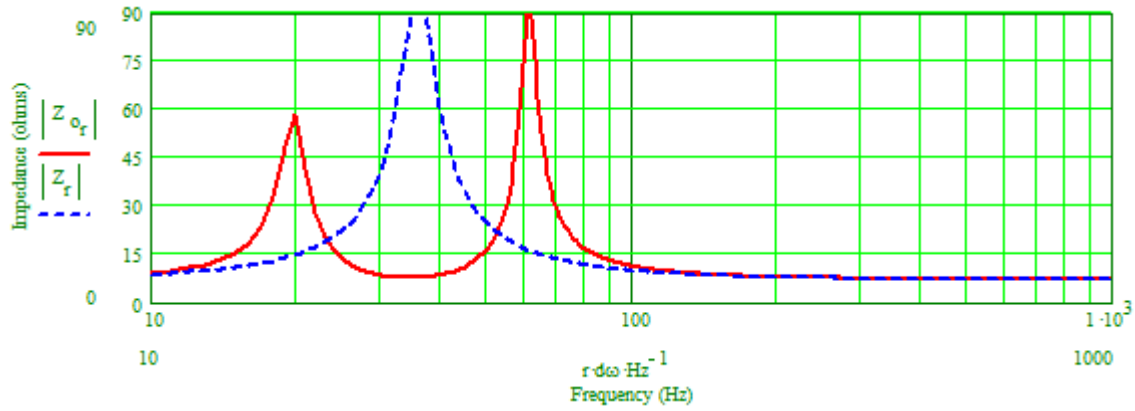
f₃ is ~36 Hz, f₆ is 30 Hz and f₁₀ is ~27 Hz. The SPL output of almost 100 dB will be reduced by BSC.

Woofer (red line) and port (blue line) responses:

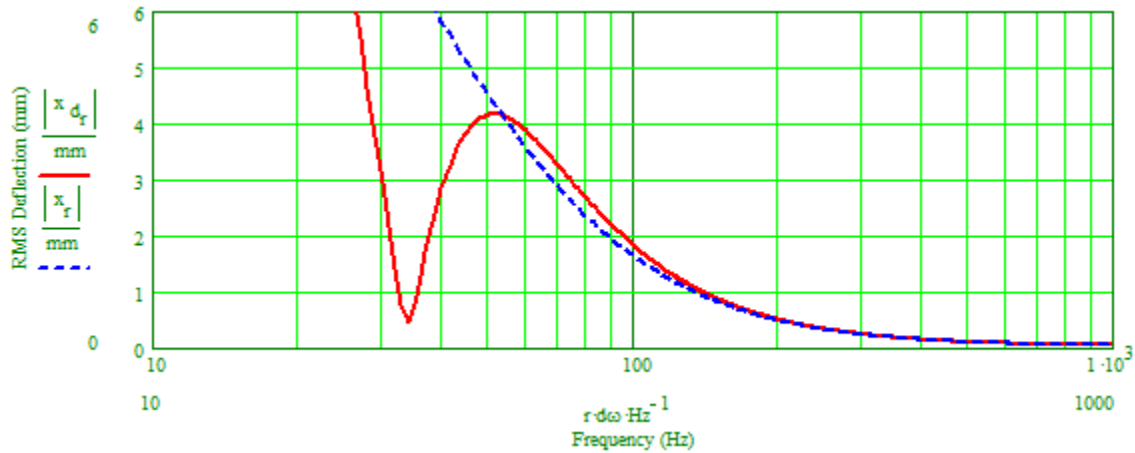


Impedance characteristic (red line):

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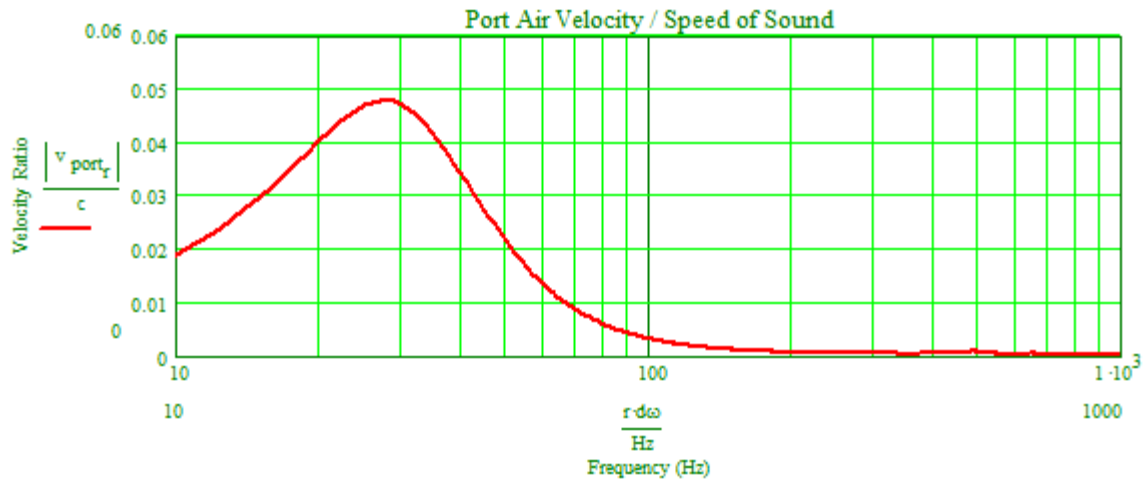
Woofer excursion (red line):



The Xmax of 6 mm Peak equals 4.2 mm RMS and that's first reached at ~51 Hz, again at ~29 Hz, then exceeded at all lower frequencies.

Port air velocity:

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The peak velocity of ~4.8% of the speed of sound, or 16.5 m/s, occurs at ~28 Hz.