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Subject: What are the effects of cabinet volume on sensitivity??

Posted by [Robert Hamel](#) on Thu, 16 May 2002 13:54:01 GMT

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I have been measuring the sensitivity of my home builds and they are lower than I expected them to be. I am using a 10" in a small volume sub enclosure. Can the loading of the subenclosure raise the sensitivity of the midrange driver and can the box size effect the woofer???

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Subject: Re: What are the effects of cabinet volume on sensitivity??

Posted by [Wayne Parham](#) on Thu, 16 May 2002 16:01:52 GMT

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Neither vented or sealed boxes raise the average efficiency of the driver. An underdamped alignment will increase bass output over a narrow range, but that creates a peak that is generally undesirable. The main objective of the cabinet is to provide a nice, flat response curve down to the cutoff point.

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Subject: Thanks Wayne that's what I thought. Hey Sam P. 2035 users.

Posted by [Robert Hamel](#) on Thu, 16 May 2002 20:34:11 GMT

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A little off topic but Help!! I am running 2035's and using L/R at 250hz. What is really strange is I am only getting about 93/94 db out of them in that passband????? That is very contrary to the numbers Sam P posted about them. I know a L/R is 6db down at crossover but I should be seeing a spike from say 40-150 Hz and its not there???What's up??? Are the slopes on a L/R much broader than I think they are?? Can't seem to find a graph to see what the story is 1/2 octave from X-over. Jbl rates sensitivity from 100 to 500hz so I am at the edge of this band and the drivers don't get active in their midband. But it seems strange, they are 4-5 db down from published numbers. Or is it just the way I am using them? Everything is up finished and working. They sound very nice but this really puzzles me. Thanks Rob

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Subject: Measurement tolerance

Posted by [Wayne Parham](#) on Thu, 16 May 2002 20:50:19 GMT

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How and where did you measure these? Was it done in half-space outdoors, maybe on the ground pointed up? What measuring system did you use? I ask all these things, because there are a lot of places for ambiguity to creep in. If measured indoors, you can expect 6dB difference in average output just from moving speakers around in the room. I suggest a fairly good amount of tolerance should be considered if consistent references and calibrations aren't in place.

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Subject: Good point they are relative to other speakers.

Posted by [Robert Hamel](#) on Fri, 17 May 2002 01:09:01 GMT

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What I did was use an 87Db speaker as a reference with pink noise and then compared the level to the home builds which were 6db hotter. I used a speaker of higher sensitivity rated at 100db and it was 4db hotter so you are correct that the absolute is not right. 93 from the lower measurement and 96 from the higher. That comes out to a 3db error between measurements. I am at 95 which gets me within a 3DB window if I split the two. You are good!!! I did not look at it that way before. Thanks for your help.

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Subject: some more 2035 data, and NEW jbl link

Posted by [Sam P.](#) on Fri, 17 May 2002 10:03:47 GMT

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that appears to show what Robert is seeing. When I first was playing and testing, I hooked up the 2035's to my amp, no xover, just wired the v.c. direct. Input was 2.83 volts. (1 meter, on axis w/ the woofer I think) 100 100dB150 99.5dB200 98 dB300 96 dB400 98 dB500 102dB So there was a slight dip around 300Hz. In box measurements after port tubes and stuffing and

xovers resulted in slightly different results in this region. These were not measured at 2.83 volts, just started at 80dB/100Hz. 100 80dB 82dB 200 81dB 79dB 300 80dB 82dB 400 79dB 78dB 500 81dB 82dB These were done at about 2 meters, mike in line between the "ears" and center of the baffle. Match between left and right would be hard to improve, this was measured "as listened to" in the room. The last jbl info posted, detailing the 3677 system, calls the 2035 a 99dB driver. BTW, they use a 3rd order filter at 1.2kHz. with this woofer. I believe the SINGLE 2035 has close to, or slightly MORE output across the board than a PAIR of 2226J's (97dB per jbl).

Am I correct you are using the 2035's from 250Hz. AND DOWN. Below 80 Hz. they soon start their slow rolloff at the bottom. Raw data showed F10 at 60 or 70 Hz? Another issue you may want to consider, the z plot shows this driver is only 6 ohms at 200 Hz. By 100Hz, near 10 ohms. Peak at Fh(80Hz.) was 20.5ohms. Z at Fb was 6.3ohms around 48Hz. Not sure how that might be affecting your xover. Like Wayne advised, in room measurements need to be taken with a grain of salt. You said they sound good, and that is the most important thing. Mine, in spite of the low end measurements, produce EXCESSIVE bass when I switch in EQ of +6dB@50Hz. Also, all measurements "in room" have my enclosures front baffle 3 feet in front of the rear wall...I am getting much less bass reinforcement from the walls. That reminds me, the distance away from the wall I just mentioned can create a DIP in response when it is 1/2 wavelength, I'll try to find the reference url and post it later. Sam in case anyone missed it, JBL has more tech data posted online at [www.jblproservice.com/support\\_info.htm](http://www.jblproservice.com/support_info.htm) word of CAUTION, I saw the same xover schematic used in different systems whose HF drivers were different Z's, so verify component values to determine "if they make sense" before implementing the diagrams with "blind faith".

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Subject: Thanks Sam!!

Posted by [Robert Hamel](#) on Fri, 17 May 2002 11:30:44 GMT

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I know what you mean about the bass response. You are correct from 250hz and below. I have one very good position in my room I use for measurements. I have an idea from previous measurements on other speakers what the room is doing but like you said they are references and not absolutes. I always use another speaker as a reference tool from the same position in the room. I just swap them out to make the measurements. The driver spec. sheet calls it 98 and 2 give you 100db in the 4638??? So there are 3 different apparent ratings for the same driver?? We have 97 +3 in the 4638, 98 On the driver sheet and 99 in the 3677. What I am getting appears flat just below what I expected. You are right if it sounds good "Don't worry about it" Just trying to understand what is happening. Thanks for your help.