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Subject: Need a bit of help with cab volume  
Posted by [djn](#) on Tue, 08 Aug 2006 14:08:32 GMT  
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Hi All, I am not a regular visitor to this forum so HI! Last night one of my daughters and I finished a folded voight with 1354 drivers and they sound great. They will go in her dorm. I got the plans for Bill Fiz.... TLAH and bought all the drivers. What I figured out building the folded Horns is that I am a terrible woodworker and the TLAH is WAAAAAY out of my league. So.....I would just rather build a box for all those drivers but don't know the volume I need. Can anyone help? Cheers.

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Subject: Re: Need a bit of help with cab volume  
Posted by [Jim Griffin](#) on Tue, 08 Aug 2006 14:19:52 GMT  
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djn, What drivers did you purchase? If you use multiple drivers per in the enclosure then the total volume would be multiplied by the number of drivers. The volume of the box would be dependent upon the specific parameters for those drivers and whether you want a vented or sealed box. Jim

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Subject: Re: Need a bit of help with cab volume  
Posted by [djn](#) on Tue, 08 Aug 2006 17:29:35 GMT  
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Hi Jim, here are the drivers I have. I have sixteen of both. The drivers I have are: the Onkyo tweeter from PE: 3/8" Mylar tweeter with neodymium magnet mounted on a pole piece. Originally designed to be mounted on the pole piece of a driver to create a coaxial speaker. Tweeter can be removed from pole mount, but only with great difficulty. Limited quantities. Specifications: \*Power Handling: 20 watts RMS/40 watts max \*VC dia: 3/8" \*Znom: 6 ohms Re: 4.00 ohms \*Frequency range: 6,000-20,000 Hz \*Fs: 4,200 Hz \*SPL: 87 dB 2.83V/1m \*Tweeter Dimensions: Overall Diameter: 1-3/8", Cutout Diameter: 1", Mounting Depth: 1/2". And the Pioneer mid from PE: This lovely 4" driver is an all-around great performer that offers excellent full-range performance in a small, fully-shielded package. These drivers are great for many different types of designs, from dipole surround speakers to center channels, and are even perfect for line arrays! Driver features: 3/4" V.C. on paper former, large flat spider, paper cone, rubber surround, and a paper dustcap. Specifications: \*Power Handling: 5 watts RMS/10 watts max \*VC dia: 3/4" \*Le: .60 mH \*Znom: 8 ohms \*Re: 7.50 ohms \*Frequency range: 75-15,000 Hz \*Fs: 105 Hz \*SPL: 86 dB 2.83V/1m \*Vas: .08 cu. ft. \*Qms: 5.0 \*Qes: .90 \*Qts: .76 \*Xmax: 1 mm \*Driver Dimensions: Overall Diameter: 4", Cutout Diameter: 3-11/16", Mounting Depth: 2-1/4".

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Subject: Re: Need a bit of help with cab volume  
Posted by [Jim Griffin](#) on Tue, 08 Aug 2006 20:39:47 GMT  
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Dennis, Let me throw out a couple of options on woofer volume per some Bass Box calculations (I'm assuming minimal fill for each of these two configurations). The drivers are connected series parallel so they can be either 4 ohms or 16 ohms overall array impedance. First, a closed box with volume of 0.375 cu. ft. per each of 8 woofers. That is a 3 cu. ft. sized box. The Qtc computes to be 0.73 and the f3 point is 112 Hz. Second, is a vented box that is 0.5 cu. ft. per woofer or 4 cu. ft. for the array of 8. This yields a box tuning of 62 Hz and a f3 point of 54 Hz. This box uses 4 separate 4" diameter ports that are 3.25" long. I personally prefer the sealed box better than the vented design even though it does not tune as low. This is because the vented box exhibits too much stress on the driver as the Xmax is excessive below 100 watts, the power handling is too low (limits the SPL), and the group delay is too excessive in the below 100 Hz area. My point is that you will need a sub woofer for lower end coverage with either design and you'll be safer with the sealed box than the vented box. A infinite number of design options exist if you don't like these but this is a good starting point. Jim

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Subject: Re: Need a bit of help with cab volume  
Posted by [djn](#) on Wed, 09 Aug 2006 01:12:47 GMT  
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Hi Jim, the sealed box is the one for me. I have a KLH sub she can take with her. Thanks for all your help. I will post pics as soon as they are done. Cheers.

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Subject: Re: Need a bit of help with cab volume  
Posted by [djn](#) on Wed, 09 Aug 2006 01:14:40 GMT  
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One more question. What polyfill requirements are there? Cheers.

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Subject: Re: Need a bit of help with cab volume  
Posted by [Tom R.](#) on Wed, 09 Aug 2006 02:18:30 GMT  
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Just out of curiosity, what volume will you calculate for a sealed enclosure with the following parameters?  $V_{as} = 0.702 \text{ ft}^3$ ,  $f_s = 44 \text{ Hz}$ ,  $Q_{ts} = .279$ ,  $Q_{tc} = .707$  I calculated a volume of  $0.13 \text{ ft}^3$  I used

the online web site: [http://www.lalena.com/audio/calculator/box/Does your program come close? I am just about to start construction a quasi-array with 8 Focal 5-1/4" per side, and a single point source tweeter](http://www.lalena.com/audio/calculator/box/Does%20your%20program%20come%20close%3F%20I%20am%20just%20about%20to%20start%20construction%20a%20quasi-array%20with%208%20Focal%205-1%2F4%20per%20side,%20and%20a%20single%20point%20source%20tweeter)Just checking....Tom R

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