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Subject: Reflex volume of 4PI Pro - about 2.5 ft<sup>3</sup> ?  
Posted by [wunhuanglo](#) on Wed, 20 Jul 2005 00:30:00 GMT  
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Curious because it seems so much less than JBL enclosure guide dimensions.

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Subject: Re: Reflex volume of 4PI Pro - about 2.5 ft<sup>3</sup> ?  
Posted by [Wayne Parham](#) on Wed, 20 Jul 2005 02:23:58 GMT  
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is on the small side of this range.

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Subject: Re: Reflex volume of 4PI Pro - about 2.5 ft<sup>3</sup> ?  
Posted by [Manualblock](#) on Thu, 21 Jul 2005 01:03:05 GMT  
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Charley; Do you have a project in mind?

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Subject: Re: Reflex volume of 4PI Pro - about 2.5 ft<sup>3</sup> ?  
Posted by [wunhuanglo](#) on Thu, 21 Jul 2005 02:12:50 GMT  
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Yes, sir. When PE had a deal on JBL2226's I succumbed to my famously poor impulse control and bought a pair. They're going into some form of 4Pi/4430, and I want to get it as right as possible. There's time though; at 95F there's not going to be any more work outside than necessary until it cools off some.

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Subject: Re: Reflex volume of 4PI Pro - about 2.5 ft<sup>3</sup> ?  
Posted by [Manualblock](#) on Thu, 21 Jul 2005 16:53:09 GMT  
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Thats New Orleans Right? It's been 90's and 100% humid here for a week. When you say as right

as possible what do you have in mind?

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Subject: Re: I've been more than pleased with a bigger box

Posted by [BillEpstein](#) on Thu, 21 Jul 2005 19:54:26 GMT

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Inside dim. 4 cu ft with bracing and woof about 3.6 I guess. 2- 4" ports 6" long for about 35 Hz tuning. A bit "ripe" from kick drum on down but still quite tuneful. The 2226 is so taught and low distortion you can get away with a few sins.

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Subject: What Tille said

Posted by [wunhuanglo](#) on Fri, 22 Jul 2005 10:00:37 GMT

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Yes, NOLA (or more properly the greater NOLA area). It's been just wonderful this summer - for some reason it seems particularly oppressive but it's probably just because I'm old. Bill hit on what I mean - I'm not smart enough to know from a plot what the implications for the sound are but I have a feeling 2+ ft<sup>3</sup> is going to be too "dry" for my tastes. The boxes I have the 2225's in now are around 4ft<sup>3</sup> ported at 40Hz per JBL and they seem really great so I'm quite unsure now. I'm certain Wayne's speaker sounds great to the majority of people, but it's way smaller than JBL recommends - hence the quandry.

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Subject: Thanks for the info Bill

Posted by [wunhuanglo](#) on Fri, 22 Jul 2005 10:12:20 GMT

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I was wondering what your boxes were like. I'm curious, did you measure the 35Hz resonance? The reason I'm asking is that at 3.6L it seems to calculate to 43 Hz and almost lays right on top of the boxes I have the 2225's in - as I said to manualblock below, they seem really great so I'm thinking the 4Pi box would be too small for me.

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Subject: Re: What Tille said

Posted by [Manualblock](#) on Fri, 22 Jul 2005 12:00:23 GMT

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I really can't understand how there can be so many optimum possibilities. From 2cu ft to 8cu ft? Which one sounds best? Seems you found it by listening to it. I missed which HF you are using?

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Subject: Re: What Tille said

Posted by [wunhuanglo](#) on Fri, 22 Jul 2005 14:01:47 GMT

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I'm going to use the JBL 2435Be with the P.Audio PH-316

horn. Horn <http://loudspeakersplus.com/product.asp?specific=jojnprg4Driverhttp://www.audioheritage.org/images/misc/2000-tour/northridge/interior04.JPG>

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Subject: Alignments

Posted by [Wayne Parham](#) on Fri, 22 Jul 2005 16:09:19 GMT

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For every driver, there's a continuum of alignments that are possible. There is a reasonably wide range where response is flat and in this range, a larger box just provides deeper bass extension. For an example a JBL 2226 in a 2.0ft<sup>3</sup> box tuned to 50Hz has f<sub>3</sub> of 65Hz, 3.0ft<sup>3</sup>/50Hz has 55Hz f<sub>3</sub> and 4.0ft<sup>3</sup>/50Hz has 50Hz f<sub>3</sub>. Any larger or smaller and response becomes underdamped. Moving the Helmholtz frequency down a little bit shifts the alignment towards an overdamped condition. This has a benefit of being forgiving of certain conditions. Adding series resistance from long wire runs or heated voice coils won't make the box sound boomy. On the other hand, it isn't an alignment that works well in wide open spaces without a sub. A flat or even slightly underdamped alignment sounds better if used in open areas, particularly if no subs are used. When the box is tuned to 40Hz, all box sizes from 2.0ft<sup>3</sup> to 5.0ft<sup>3</sup> work well, having flat response and cutoff somewhere between about 40Hz and 60Hz. They are slightly overdamped, so they are forgiving of high power levels and long wire runs. Larger boxes, up to 5.0ft<sup>3</sup>, yield an EBS alignment that rolls off about 40Hz. There are lots of prosound 15" drivers that have been made to work well in 2.0ft<sup>3</sup> to 5.0ft<sup>3</sup> boxes tuned to 40Hz. That's a standard target, so many manufacturers have made speakers that have suitable electro-mechanical specs for this application. So the difference is largely a matter of bass extension. You have about a half octave span to play with, and about 2x box volume to work with too.

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Subject: Re: Alignments

Posted by [Manualblock](#) on Fri, 22 Jul 2005 16:52:50 GMT

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Thanks Wayne. My Altec 416's sound better tuned to the same F3 but in a bigger box. They breath much better; you can hear it. Is it possible this is what Charley is experiencing with the JBL's?

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Subject: Re: What Tille said  
Posted by [Manualblock](#) on Fri, 22 Jul 2005 16:54:10 GMT  
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Looks good. You like the P audio ehh? They certainly seem to give a lot for the money over there.

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Subject: Re: Alignments  
Posted by [Wayne Parham](#) on Fri, 22 Jul 2005 17:24:07 GMT  
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Sometimes, boxes that are too small will give underdamped alignments. Other times, it's just a matter of extension. Really depends on the electro-mechanical specs of the part.

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Subject: Three reasons for the P.Audio horn  
Posted by [wunhuanglo](#) on Sat, 23 Jul 2005 11:06:01 GMT  
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The first is that the price is right; you can get JBL clones for 1/3 the price of JBL. Second is that there ain't a lot of 1.5" throat horns around, very few actually and P.Audio has most of them. Third reason is that the baby cheek thing seems to work well up close, as opposed to the PA CD types, although the 1.5" P.Audio at 12" X 12" looks more like Jessica Alba's ass than a baby's.

The mold master

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Subject: Re: Three reasons for the P.Audio horn  
Posted by [Manualblock](#) on Sat, 23 Jul 2005 14:11:38 GMT  
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I am afraid I am not familiar with her. I gotta get out more. This looks good it's good to see the wheels turning. The idea of a back loaded horn 12" coaxial sounds nice to me right now also. Have you heard any of the P-audio's?

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Subject: Maybe we should take this out of Wayne's space  
Posted by [wunhuanglo](#) on Sat, 23 Jul 2005 16:27:53 GMT  
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Meet me over there.  
P.Audio Drivers

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