
Subject: 4 pi speaker options

Posted by [dwhistance](#) on Mon, 26 Mar 2007 19:08:42 GMT

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Hello, I am new to this site so please forgive me if I ask some questions that have been asked before. I have been looking for some smaller speakers to use with my SET amps (low power Supratech Merlots) following a change (hopefully temporary) to a smaller house. I had been considering making some clones of one of the Altec designs when I came across Pi. Having read through the site I suspect that the 4 pi's will suit me very well however I have a few questions relating to these speakers:1 There seem to be two box sizes for the 4 pi's, 36"x24"x18" for the Theatre's and 26"x18"x14" for all of the others. Am I right in assuming that all of the smaller boxes are the same other than the drivers used? Are all of the boxes similar to build? Wayne, would you send me the plans for these so I can compare them please?2 What is the approximate weight of the two box sizes - this is relevant as I will probably move them before/after use? I would like to build them from birch ply. What thickness should I use?3 I am tempted by the smaller boxes and indeed by the full JBL driver setup. Are these compatible with SET amps? Is the JBL compression driver worth the extra money? How does it change the sound? Which driver/box choice would be best for a "free space" set up (I know that the bass will be much reduced)? 4 Lastly I would like to use a wooden tweeter horn (I want to try Dieter Ennemoser's C37 Lacquer and think a wooden horn will work better than plastic/metal). I see you have them for sale on the site, albeit to a new design. How do they sound compared to the previous designs? Will this horn work with either of the kit compression drivers, or with Altec's? Presumably it would have to be mounted on top of the cabinet, what are its dimensions? Would the internal size of the main cabinet have to be changed if I go down this route? Also does the cost vary with finish/wood choice?My apologies for the many questions.Thanks in advance for any help you can give me.David Whistance

Subject: Re: 4 pi speaker options

Posted by [Wayne Parham](#) on Tue, 27 Mar 2007 01:59:06 GMT

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Each series has a different size cabinet, with exception of the Stage and Professional Series, which are the same. In those designs, the electro-mechanical specs of the drivers used makes cabinet tuning similar.I am really fond of the Professional Series speakers, but this is not surprising as they have more expensive drivers. I have always been partial to the JBL Professional Series drivers used in them. However, the Eminence drivers used in the other lines sound very nice too. I picked the ones I liked the best, so they're my favorites.I have worked a

a nice curve in the top and bottom flares which provides the right contour to reduce mouth reflections. At the edge nearest the mouth, it is curved like a tractrix flare. At the throat, it is radiused to match the entry angle with the rest of the flare. The side panels are radiused to match the throat using a smooth transition. The wall angle is 90°, providing constant directivity in the vertical plane. Like the top and bottom walls, the side walls are flared out at the edge to reduce mouth reflections.Not only is the horn shape superior acoustically, but it is more attractive

tweeter is contoured on the outside with a curve that matches the inner flare. In my opinion, it just looks stunning, having a fluid contour that matches its acoustic beauty. The basic horn is made using common woods like Eucalyptus or Poplar and costs \$400.00. More expensive hardwoods, modeled woods or figured woods will be available at additional cost. I encourage you to come see

Subject: Re: 4 pi speaker options
Posted by [dB](#) on Tue, 27 Mar 2007 08:42:23 GMT
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Subject: Re: 4 pi speaker options
Posted by [dwhistance](#) on Tue, 27 Mar 2007 11:48:23 GMT
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Wayne, thanks for your reply to my message. I have a few more questions I'm afraid:1 What are the dimensions of the wood horn? As I'm in the UK I won't be able to see it before I order.2 Will the basic 4 pi cabinet dimensions need to be altered if I use the wood horn on the top of the cabinet rather than the standard one inside?3 What thickness of ply do you recommend for the cabinets?RegardsDavid Whistance

Subject: Re: 4 pi speaker options
Posted by [Wayne Parham](#) on Tue, 27 Mar 2007 14:58:41 GMT
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Recommended cabinet thickness is shown on the plans. It is 18mm, 5/8" or 3/4", depending on

the midwoofer upwards to maintain the same distance between drivers. There is no need to compensate for volume difference because the H290 displaces very little volume. In the case of

Subject: Re: 4 pi speaker options
Posted by [dwhistance](#) on Tue, 27 Mar 2007 14:59:37 GMT
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Wayne, a PS - would you send me the plans for the 4 pi Professional models please.RegardsDavid Whistance

Subject: You've got mail!
Posted by [Wayne Parham](#) on Tue, 27 Mar 2007 15:05:53 GMT
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Subject: Re: 4 pi speaker options
Posted by [dwhistance](#) on Tue, 27 Mar 2007 15:52:15 GMT
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Hello Wayne, thanks for the extra info and the plans. When moving the woofer up how critical is the positioning of the port? Without measuring anything it looks as if the cabinet could simply be turned upside down for use with the wood horn, thereby retaining the distance between the drivers. However the vertical port then looks strange. Could it be placed horizontally in the centre, keeping its centre a similar distance from the woofer centre as it is on the plans?David

Subject: Re: 4 pi speaker options
Posted by [Wayne Parham](#) on Tue, 27 Mar 2007 16:42:12 GMT
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wherever you want. I personally like the look of opposing diagonal corners in stereo pairs, but many people have placed them in the center, below the woofer. That looks good too.
