Subject: Theater series Four Pi
Posted by wasteh202 on Mon, 22 Apr 2002 18:06:50 GMT
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In the Theater series, what is different (from the rest of the series) about the "Four Pi" that makes it tube friendly?

Subject: Re: Theater series Four Pi
Posted by Wayne Parham on Mon, 22 Apr 2002 19:08:16 GMT
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One thing that is very important for good sound on low-power SET amp is how the woofer acts at resonance. All speakers have an impedance peak when driven at their resonant frequency. This condition is also associated with back-EMF and amplifiers with lower damping factor are less able to control the motor; Particularly troublesome are those with greater impedance peaks, which are then creating more back-EMF.When you put a speaker in a cabinet, it changes this peak and makes the speaker have a different impedance curve. Sealed cabinets tend to shift the peak up in frequency. Reflex cabinets create two peaks, both having less impedance than the single free-air peak. Horns and transmission lines create multiple peaks, generally lower in amplitude than the free-air peak, depending on flare shape and rear chamber.Impedance fluxuations cause problems for tube amps, altering their response curve. The speaker impedance forms a voltage divider with the amp's output impedance, and if the ratio of impedances fluxuates, then the power transfer does too. So to make a long story short, if you have a small signal tube amp, you'll want to find a speaker with a low impedance peak at resonance, somtimes referred to as "Zmax."

Subject: Re: Theater series Four Pi
Posted by wasteh202 on Mon, 22 Apr 2002 19:52:36 GMT
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Thanks Wayne; Low impedance being what?

Subject: Re: Theater series Four Pi
Posted by Wayne Parham on Mon, 22 Apr 2002 21:36:51 GMT
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For a reflex box, I'd choose a driver with free-air impedance at Fts under 100 ohms, better if under 50.

Subject: Re: Theater series Four Pi
Posted by wasteh202 on Tue, 23 Apr 2002 01:18:48 GMT
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Wayne --- thanks for trying but I still don't get it... But that's O.K. What I really need to know is that the Four pi (theater) will work for a low-powered tube amp -- Thanks.one more question; I don't suppose there would be much point in bi-amping such a sensitive speaker would there? (for home use)

Subject: Re: Theater series Four Pi
Posted by Wayne Parham on Tue, 23 Apr 2002 02:02:22 GMT
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am always concerned that the crossover be implemented properly - You need an appropriate filter in front of the amps and you need to make sure and remove reactive components after the amps. To find an "appropriate filter" for a preamp-level crossover is not a trivial task because the response curve of the tweeter circuit is somewhat complex. It's not like rocket science or anything, but we do want a response curve that looks exactly like what is shown here:Response

curve required for compression horn tweeters

Subject: Re: Theater series Four Pi
Posted by wasteh202 on Tue, 23 Apr 2002 16:33:51 GMT
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Thanks Wayne, I'll be watching for the XO's your working on to come out. I know that you will be able to recomend the right one for the right speaker.