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Subject: 3 Pi or similar for Small room - Near field listening?

Posted by [rongon](#) on Fri, 01 Sep 2023 12:25:27 GMT

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Hi, first post here...

I'm curious what the thinking is about speaker size as it relates to room size and volume levels. The background is:

- 1) I live in an apartment and I can't play music very loud (neighbors). I do love music, though. I was a working musician in my younger days, so I know what live acoustic music sounds like.
- 2) My living room (listening room) is about 12 feet wide by 24 feet long, with the usual nearly 8 foot ceiling. (Roughly 3.6 m W x 7.3 m L x 2.4 m H)
- 3) I value midrange clarity and treble 'sweetness' (lack of sibilance or harshness) above frequency extension. I can't hear above about 12kHz, and I don't need (or even want) very low bass response. It only upsets the neighbors. -3dB at 50Hz would work fine for me.
- 4) I sit only 4 feet from the speakers when listening. That's close to nearfield usage.
- 5) I would like to use low power vacuum tube amplifiers to drive the speakers. Maybe even single-ended. That means about 5W per channel of power (push-pull EL84-triode or 2A3, most likely).

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I like the results I get with controlled directivity waveguide-equipped speakers. I bought a pair of JBL LSR305P speakers as an experiment and am very favorably impressed with the results, especially for the money. The waveguide/controlled-directivity concept works!

Previously, I was very happy with an old pair of Snell E-III 8" two-way floorstanders. The JBL 305Ps beat them for clarity, though.

I'd like to upgrade from the 305Ps -- significantly.

My questions:

- 1) Would the 3 Pi speaker be inappropriate for a 4 foot (1.2 meter) listening distance?
- 2) Does the 1 Pi speaker have a comparable off-axis dispersion characteristic to the 3 Pi's? Or is the dome tweeter much less controlled than the 3 Pi's horn in that parameter?

I don't have a firm bias for/against waveguides vs. dome tweeters, but now that I've experienced what uniform frequency dispersion does in my listening room, I want to preserve that and move up to a lower distortion speaker.

Opinions welcome and any advice would be much appreciated. Thanks in advance.

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Subject: Re: 3 Pi or similar for Small room - Near field listening?

Posted by [Wayne Parham](#) on Fri, 01 Sep 2023 16:46:16 GMT

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All models of Pi speakers offer high-efficiency and smooth response. They are an easy load for tube amps.

The one Pi and two Pi models do not offer uniform directivity. They sound great for what they are, and are suitable for surround speakers or casual-listening mains. But they are traditional direct-radiating "cone/dome" speakers so they cannot provide uniform directivity.

Both the three Pi and four Pi models can be used in much smaller rooms than one might imagine. Every time we demo at the Lone Star Audiofest, we're setup with speakers barely eight feet apart. They can be used in rooms the size of yours.

three Pi loudspeakers in a small room

The thing is you want to set them up such that they are angled-in 45° towards each other, and the listening area must be behind where their axes cross. So what that means is if they can be set eight feet apart, the listening area should be at least four feet back. The spectral balance is uniform when seated anywhere between the speakers, so that example would give a good experience for anyone sitting along an eight-foot wide area of the room. If you can't go that wide, maybe have them six feet apart and have listeners at least three feet back.

The reason you want this setup arrangement is shown pretty well in a diagram on page 7 of the document below. It's actually showing coverage of constant-directivity cornerhorns - which naturally have the 45° toe-in - but this has the same coverage pattern and stereo-image self-balancing characteristic provided by three Pi or four Pi speakers, when setup with 45° toe-in.

High-Fidelity Uniform-Directivity Loudspeakers

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