Subject: Re: My 4 Pi Build
Posted by Wayne Parham on Sun, 06 Jul 2025 22:39:02 GMT
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Oooh, very nice!

Looks great!

On the woofer being 1/8" shy of flush - That's a total "don't worry about it" thing.

These speakers are purpose-designed to have a forward lobe that's pretty tall. The drivers are in-phase between the vertical nulls, where they become out-of-phase. And those vertical nulls occur above and below the speaker +/-20°. So fore/aft offsets of either woofer or tweeter simply shift the forward axis vertically. And when it's a small offset like that, we're talking about a very small angular difference.

You could calculate the shift made by moving the woofer forward 1/8" if you wanted, but I'm going to give a seat-of-the-pants guess of 0.25° to 0.5°, something like that. Tiny.

With a 40° vertical pattern, I don't mind vertical shifts of even a few degrees. I recommend stands with 3° to 5° tilt-back, to help cradle the speaker against the backrest, which is actually more of a lip than a rest. But my point is those stands shift the verticals to from about +22° to -18° to about +25° to -15°, all of which is great too.

While you're measuring stuff, find those vertical nulls. Put the microphone straight in front of the speakers, and then move the mic above and below the speakers 'til you find a sharp notch in the crossover region. Those are the vertical nulls.

To me, the biggest thing that makes imaging great is the horizontal toe-in. Cross the forward axes of the speakers just ahead of the listening area. When you do that, the "sweet spot" becomes "anywhere between the two speakers." Imaging is great throughout a fairly wide area.