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Subject: 4Pi questions

Posted by [jeenyus](#) on Mon, 10 Oct 2016 14:17:05 GMT

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Hi Wayne, (or anyone else more knowledgeable than myself)

First of all, thank you for the wealth of information you provide to us all... I can't begin to imagine the number of hours you've dedicated to this forum.

I plan on building 4pi's to replace my current LCR speakers. As of now, I have Klipsch RF-82II's with a RC-62II center. I know I've seen people doing a LCR setup with these, but most of the literature I've read in your posts usually show just a left and right speaker. Does a center speaker not work well with this type of speaker? This project will be for 95% home theater listening, very little music. I have always had 3 speakers up front and have almost no experience hearing home theaters with just a left and right, which makes me want to stick with the three. So basically question one is:

1. Can I use three 4pi's up front (LCR) or will this be more trouble than just a L and R?

Secondly, from what I've read, this should be a nice upgrade from my current Klipsch setup, but maybe you can tell me if I'm partially right or partially wrong? I'm almost positive I will see a big upgrade in mid bass, but will there be any other areas in which I may see a decrease in performance or where my RF-82's would be above the 4pi?

2. In what ways, if any, will my RF-82's be better than the 4pi's? (What significant changes can I expect when I switch?)

My Klipsch speakers were the first horn loaded speakers I've owned and while I have often read that people find them a bit too harsh or bright for their liking, even painful to listen to for long periods of time, I personally haven't had a problem with that. I do hear what they are talking about though and if I had the choice, I'd prefer them to be a bit softer. Will I see an improvement in this area with your setup?

3. Are the 4pi's as bright/harsh as the Klipsch's or will they be a bit smoother to the ears?

You seem to recommend toeing the speakers in so that the lines perpendicular to the center of the speakers cross just a bit in front of the listening area. This all makes a ton of sense to me. The question I have is, most of your literature shows them in or close to the corner of the room. Does this recommendation change in very wide rooms? Is this type of speaker well suited for wider rooms? My room is roughly 44 feet wide and about 15 feet deep. My projector screen is almost dead center of the 44 foot wall, with my large sectional sofa about 11-12 feet from the wall, with 3-4 feet open behind it. It's a 125" acoustically transparent screen, with the center speaker on a shelf behind it, roughly at ear level. The left and right speakers are placed at each side of the screen, currently about 150 inches apart. There is a solid 10-12 feet between each speaker and the corner. I hope I'm painting a clear enough picture for you to visualize what I'm talking about. If not, I'd happily draw it out if you're willing to help here. So they wouldn't be able to be anywhere near the corners of the room.

4. Will my performance suffer by not being able to place the 4pi's anywhere near the corners of the room? They would likely need to be about 10-12 feet in from the left and right corners. Will this be acceptable?

Lastly, it'll be about two months before I can get the money ponied up to get everything purchased. I have a week of vacation coming up in about 2 weeks here, so I would like to use that precious free time to get the cabinets built and finished. Do you have plans on the recommended cabinet dimensions, interior bracing, speaker cutouts, ports, and cutout size or template for your waveguide that I could use to begin building? Also, do you recommend a certain type of wood for the cabinet that works better than others? MDF, birch ply, whatever else? Also, should I go 3/4" thick, double layer 3/4", something different? If you say that these work fine with a LCR setup, that's what I'm going to do. I want to use all the upgraded driver options, 2226H, etc. I'm sure I can find the cutout holes for each of those, but if you have plans that already include them it's even easier for me. If not, no big deal. The most important dimensions are the cabinet, port and the hole for the waveguide.

5. I apologize, but I have too many questions in this paragraph to sum up into one line, so whatever help you can give will be appreciated.

Thank you for your help, and everything you've done for the DIY community over the years. Sorry for the long winded post, the science aspect is just a bit over my head yet. I'm extremely excited to get started, and get a build thread started with lots of pictures to show off my (hopefully) well built cabinets.

Jesse

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Subject: Re: 4Pi answers  
Posted by [Wayne Parham](#) on Mon, 10 Oct 2016 20:04:43 GMT  
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I'll embed my answers, interleaved in your questions:

jeenyus wrote on Mon, 10 October 2016 09:17I plan on building 4pi's to replace my current LCR speakers. As of now, I have Klipsch RF-82II's with a RC-62II center. I know I've seen people doing a LCR setup with these, but most of the literature I've read in your posts usually show just a left and right speaker. Does a center speaker not work well with this type of speaker? This project will be for 95% home theater listening, very little music. I have always had 3 speakers up front and have almost no experience hearing home theaters with just a left and right, which makes me want to stick with the three. So basically question one is:

1. Can I use three 4pi's up front (LCR) or will this be more trouble than just a L and R?

right and center. See the link below for some examples. If you have an acoustically transparent screen, then putting the center channel behind it is perfect. Search results for "4Pi LCR" The problem that presents itself most often is large flat-panel televisions. Naturally, they're not acoustically transparent, so the speakers can't be placed behind the screen. And these speakers

are too large to sit below the screen. So people in this situation usually run a phantom center. Imaging is excellent though, so that works very well.

jeenyus wrote on Mon, 10 October 2016 09:17 Secondly, from what I've read, this should be a nice upgrade from my current Klipsch setup, but maybe you can tell me if I'm partially right or partially wrong? I'm almost positive I will see a big upgrade in mid bass, but will there be any other areas in which I may see a decrease in performance or where my RF-82's would be above the 4pi's?

2. In what ways, if any, will my RF-82's be better than the 4pi's? (What significant changes can I expect when I switch?)

I don't think it would be appropriate for me to give you an opinion about how I think my speakers compare with yours. I'll say this though: I'd stop making speakers if I thought I could buy some

discusses various things that will probably give you an idea what to expect. In particular, see the sections called "General Information" and "Models, Upgrades and Driver Characteristics."

jeenyus wrote on Mon, 10 October 2016 09:17 My Klipsch speakers were the first horn loaded speakers I've owned and while I have often read that people find them a bit too harsh or bright for their liking, even painful to listen to for long periods of time, I personally haven't had a problem with that. I do hear what they are talking about though and if I had the choice, I'd prefer them to be a bit softer. Will I see an improvement in this area with your setup?

3. Are the 4pi's as bright/harsh as the Klipsch's or will they be a bit smoother to the ears?

This is a lot like your second question. Again, I'll direct you to the FAQ, but this time look at the section called "Horn / Waveguide information" and in particular, study the thread on the H290C waveguide.

jeenyus wrote on Mon, 10 October 2016 09:17 You seem to recommend toeing the speakers in so that the lines perpendicular to the center of the speakers cross just a bit in front of the listening area. This all makes a ton of sense to me. The question I have is, most of your literature shows them in or close to the corner of the room. Does this recommendation change in very wide rooms? Is this type of speaker well suited for wider rooms? My room is roughly 44 feet wide and about 15 feet deep. My projector screen is almost dead center of the 44 foot wall, with my large sectional sofa about 11-12 feet from the wall, with 3-4 feet open behind it. It's a 125" acoustically transparent screen, with the center speaker on a shelf behind it, roughly at ear level. The left and right speakers are placed at each side of the screen, currently about 150 inches apart. There is a solid 10-12 feet between each speaker and the corner. I hope I'm painting a clear enough picture for you to visualize what I'm talking about. If not, I'd happily draw it out if you're willing to help here. So they wouldn't be able to be anywhere near the corners of the room.

4. Will my performance suffer by not being able to place the 4pi's anywhere near the corners of the room? They would likely need to be about 10-12 feet in from the left and right corners. Will this be acceptable?

The only speakers we offer that are designed to be placed in corners are our constant directivity

They are designed to be used with flanking subs instead. See the FAQ, and pay attention to the concepts in the section called "Room Effects and Loudspeaker Interactions."

jeenyus wrote on Mon, 10 October 2016 09:17: Lastly, it'll be about two months before I can get the money ponied up to get everything purchased. I have a week of vacation coming up in about 2 weeks here, so I would like to use that precious free time to get the cabinets built and finished. Do you have plans on the recommended cabinet dimensions, interior bracing, speaker cutouts, ports, and cutout size or template for your waveguide that I could use to begin building? Also, do you recommend a certain type of wood for the cabinet that works better than others? MDF, birch ply, whatever else? Also, should I go 3/4" thick, double layer 3/4", something different? If you say that these work fine with a LCR setup, that's what I'm going to do. I want to use all the upgraded driver options, 2226H, etc. I'm sure I can find the cutout holes for each of those, but if you have plans that already include them it's even easier for me. If not, no big deal. The most important dimensions are the cabinet, port and the hole for the waveguide.

5. I apologize, but I have too many questions in this paragraph to sum up into one line, so whatever help you can give will be appreciated.  
I'll send plans via email.

You can build the cabinets using MDF or baltic birch plywood. Don't use solid hardwood or other kinds of plywood. I personally prefer MDF if the speakers will be used indoors and rarely moved. I like to use Baltic Birch for speakers that will be transported often or if they will be in humid environments.