Subject: Polar, not bears.
Posted by Zene Gillette on Thu, 28 Jun 2007 21:17:03 GMT
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Wayne ...What is the standard acceptable polar pattern (horizontal and vertical) for matching speaker crossover points and keeping good dispersion, if there is one? Need the included angle and -dB figures. Also, is there a good article on same? Thanks, Zene

Subject: Re: Polar, not bears.
Posted by Wayne Parham on Thu, 28 Jun 2007 21:51:27 GMT
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You can design a speaker with any directional pattern you like. Prosound speakers tend to be offered with narrower patterns than home hifi speakers. For example, you can find prosound speakers with 90°, 60° and even 40° patterns. Most home hifi speakers have wider patterns than that, since most are direct radiators. They also tend to have non-uniform directivity, since direct radiators begin to focus sound into a narrower spread as frequency rises, then at the crossover points the pattern widens again. I personally don't like the way that sounds, because it makes a non-uniform reverberent field, which sounds unnatural to me. The sound reflected back to you from the environment is tonally off. So I prefer a speaker that radiates uniform energy throughout the angle of coverage, preferably constant or at least uniformly collapsing without abrupt changes through the audio band.Sound System Design Manual, see Chapter 3, "Directivity and Angular Coverage of Loudspeakers"

Subject: Re: Polar, not bears.
Posted by Zene Gillette on Thu, 28 Jun 2007 22:35:42 GMT
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Thanks, will read. Am I looking for -3dB or -6dB points? I was thinking of a goal of 120deg at -3dB down. In other words crossing a given size speaker just as it starts to go non-directional. Realism may enter here.I want to experiment with fairly large speakers (either horns or direct radiators primarily in OB's) that are cut-off lower on the top end to gain as much wide angle response as I can. And of course matching the higher frequencies polar patterns as they will beam more. It could easily become a 5 way system, but with a full two octaves each and a steep crossover (active 4001 Ashly) I think it could be done. I believe this will give me the BIG sound I am looking for. Overall quality, who knows? Zene

Subject: Re: Polar, not bears.
Posted by Wayne Parham on Fri, 29 Jun 2007 18:28:16 GMT
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Use -6dB points when comparing coverage angles. Whatever off-axis angle you measure sound reduced 6dB from the on-axis figure, consider that to be the outside edge of coverage.

Subject: Re: Polar, not bears.
Posted by Zene Gillette on Fri, 29 Jun 2007 21:36:36 GMT
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Thanks again, was hoping it would be -6dB so I can test them myself. -3dB would be a lot harder to pinpoint with my RatShack meter.Zene