Subject: Re: Uniform Directivity - How important is it?
Posted by Wayne Parham on Sat, 25 May 2013 15:54:41 GMT
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Yes, of course!

The H290C is the ultimate waveguide for critical studio monitoring, home hifi or home theater applications. Its response curve is as smooth as any horn I've seen, efficiency is high, distortion is low and directivity is constant. I designed it with features that optimize wavefront propogation and smooth response, and the only thing I had to give up in the trade is a smidge of beamwidth narrowing below 2kHz.

And this 1kHz to 2kHz region is blended with the adjacent sound source anyway, the midwoofer in a matched-directivity two-way speaker or the midhorn in a constant directivity cornerhorn. That's where the directivities blend, in the horizontal they're mostly contructive in the pattern, so the sources beamwidths tend to average together, with a little bit of ripple at the edge. In the vertical, they're constructive to the edge of the forward lobe, where the vertical nulls cut in. These features modify the beamwidth of both sources in the 1kHz to 2kHz crossover overlap region.

So the H290C is the perfect set of optimizations that gives up nothing for studio monitoring and high-fidelity applications. It provides high efficiency, smooth response, low distortion and uniform directivity. I'm very proud of it.