Subject: Room corner characteristics
Posted by Wayne Parham on Wed, 07 Jan 2004 11:32:06 GMT
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A cornerhorn is loaded from the apex of the floor/wall corner junction, but at very low frequencies (below 35Hz for 8 foot ceilings), the ceiling becomes a loading boundary too. Above 35Hz, the apex expansion is eighth-space but below 35Hz is it greater than eighth-space. There's actually a sort of transition region between 35Hz and 70Hz where it is increasing above eighth-space, so for most of the bass region, it is greater than eighth-space and steadily increasing as frequency drops.Another way to look at it is that the corner forms a three-sided pyramid-shaped conical horn having an expansion equivalent to a four-sided horn with 70o wall angles. It's sort of like a giant 70o CD horn. But below 35Hz, the wavelength is long enough that the entire height of the wall/corner junction comes into play, not just the expansion from the floor apex. At very low frequencies the launch corner isn't a three-sided pyramid but rather it is a four sided boundary having horizontal flare of 90o and parallel vertical sides. This is a different spatial orientation than the corner apex triangular pyramid, and has a different expansion rate. It acts like a tightly constrained space with increasing directivity as frequency drops.To illustrate, see the following charts: