Subject: Re: Learned some more audio truth outdoors
Posted by Wayne Parham on Tue, 05 Sep 2006 20:04:59 GMT
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Pretty much every speaker you've ever seen me do has this as one of its main design objectives. Controlled directivity is part and parcel of the design process. That's why my loudspeakers sound consistent throughout the room, and tonal balance is good even outside the room.A loudspeaker's directivity determines the reverberent field. Uniform directivity along with uniform response makes a uniformly charged reverberent field. If directivity fluxuates up and down, then the reverberent field won't be uniform even if on-axis response is good.Uniform directivity is one reason why the

pattern. Every horn uses a 90° flare. So from the deepest bass (set by the room wall angle) to the midrange (set by its horn flare) to the treble (set by the tweeter's horn flare) - Every sound source radiates a uniform 90°.The bass-reflex boxes use another technique that is good. They are designed for DI matching between bass and treble. This isn't contant directivity, but it is uniform. The midwoofer exhibits collapsing directivity up to the crossover point, where it is equal to the directivity of the horn. That way the transition is smooth, so the reverberent field is smooth. Uniformly collapsing directivity isn't as good as uniformly constant directivity, but it is better than directivity that narrows up to the crossover point and then abrubtly widens back up again, as is common on most direct radiating (non horn loaded) speakers.