Subject: Re: What measurements matter to audibility?
Posted by Bob Brines on Tue, 20 Dec 2005 15:17:40 GMT
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First to answer your original question: An FR plot (at least 0,15,30 and 45 degrees off axis) and an impedance plot will give you the information to tweak a speaker. To set up equalization in the listening room, the mic has to be where your head will be.No back-loaded cabinet can improve the dynamics of a driver. Sorry, that's just the way it is. You can do different things with back loading, but the dynamics of the speaker are determined solely by the efficiency of the driver and its available excursion. If you want to increase the dynamics of a driver, that is the effective efficiency, you have to use FRONT loading. I direct you to Wayne's two-way speakers with horn mids -- very efficient, very dynamic, front loaded.What you do with a back-loaded speaker is shape bass output below the point where the driver can radiate directly. The back-loading has no effect on efficiency above a few hundred Hz. In my opinion, A BL will give you the smoothest FR in the bass, a MLTL will go deepest with acceptable smoothness, and BLH will potentially allow you to correct for baffle step acoustically at the expense of bandwidth.High BL, low Qts drivers will tend to have a rising response. I believe that this can be controlled acoustically in a BLH, although I plead innocent of any real knowledge about BLH's. You will have to treat the rising response electrically in BR's/MLTL's. You may have difficulty fitting a low-Q driver into the very small box required, and the F3 may be unacceptably high.The way you stated the problem, cross-over 80-90 HZ, I don't think you will hear a difference between the various back-loading techniques. Go with a BR if your driver is suitable.Bob