Subject: Large mid-high horns with an exponential flare
Posted by Peter Krojgaard on Sun, 15 May 2005 12:17:34 GMT
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Hi,I am very attracted to the idea of making a large mid-high horn for a BMS 4592 ND in order to cover the frequency range between 300-20,000 Hz with ONE high quality (coax) driver(for home use, not PA).In order to do so I need a horn that:- has a cut-off about one octave below the crossover frequency, that is, about 150 Hz- has a “quick” expansion rate (and hence a big mouth) in order to have as little distortion at the throat as possible (I will happily sacrifice some efficiency for lower distortion:-)Now, if I try to calculate the contour of such a horn using the exponential calculator on the Melhuish website, I get a horn with Length = 98 cm and Mouth size = 4352 cm2However, if I look at well-respected exponential horns (TAD or Bill Martinelli’s) they seem to have a MUCH larger mouth relative to their length compared to the horns I get using the calculater at the Melhuish site.Since, I believe that I really need a large mouth in order to make the horn work from 300-20,000 Hz, I would like to change the “expansion rate” of the horn. I consider a horn about 110 cm long and with a mouth size of 7200 cm2 (120 cm wide [app 4 feet] and 60 cm high [app 2 feet])So, my question is:Can that be done by inserting a "constant" in the exponential contour formula, or..?Any advice is more than welcome! Thanks!
RegardsPeter