Subject: Double checking C5 and R3 values
Posted by Norbert on Tue, 18 Jul 2006 22:55:20 GMT
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I am looking at the C5 and R3 values for Stage 4 Omega 15 driver.According to Wayne's crossover table C5 and R3 ahould be 60 uF and 8 Ohms respectively...Now even if I factor in 25% variation for the Zobel circuit allowance I don't even come cross the values Wayne has for C5. So why the discrepancy?Omega Pro 15:Re= 5.28 ohmsLe= 1.04 mHR3 = 1.25 * 5.28 = 6.6 + 25% = 8.25 Ohms > OKC3 = Le/Re squared = 1.04 x exp-3/5.28 squared = 37.3 uF +25% = 46.6 uF which is short of 60 uFNorbert

Subject: Re: Double checking C5 and R3 values
Posted by Wayne Parham on Wed, 19 Jul 2006 03:26:34 GMT
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The Omega 15 driver had different specs when I designed the crossover, making the larger Zobel a better deal. But your math is right, so the 40uF cap would work just fine. The 60uF cap will do nicely too, just be five bucks more expensive. Zobels values aren't very critical.

Subject: Re: Double checking C5 and R3 values
Posted by Matts on Wed, 19 Jul 2006 13:24:40 GMT
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I just looked up the specs on the new model, called "Omega Pro 15A" and saw they also lowered the Fs to 33 Hz, but now list the Usable Frequency Range as 51-1.7k Hz, instead of 35-2k Hz. Is there any practical difference here? Looks like the efficiency is still about the same.

Subject: Re: Double checking C5 and R3 values
Posted by Wayne Parham on Wed, 19 Jul 2006 13:37:08 GMT
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Eminence does this every couple of years. They change materials or manufacturing processes and the electro-mechanical parameters shift slightly. I've often wished they would chage part numbers or at least provide a version number to indicate changes but they won't even consider this. But they're pretty good about keeping the specs in a compatible range so the driver acts the same. Fortunately, I've not seen them change the diaphragm during these incremental changes, because different cone flex and breakup modes might make the tonal character of the speaker

more different than slight T/S changes.