Subject: Choosing Tweeters
Posted by selahaudio on Fri, 06 Nov 2009 20:24:04 GMT
View Forum Message <> Reply to Message

Here's a good example of buying a tweeter and then finding out how well it performs for an array. I received a Beston RT001A tweeter today for evaluation. Anyone considering it for an array should look elsewhere. This is akin to using a typical inexpensive 3/4" dome - Fs is too high for crossing to an array, even with smaller woofers.

One interesting note is that the impedance was ruler flat giving no indication of what the Fs might be. At that point I ran some swept signals testing for 2nd/3rd harmonic distortion. Huge peak with the second harmonic @3.4K! The quoted 3.5K lowest crossover point is "optimistic" for this tweeter.

Subject: Re: Choosing Tweeters
Posted by Marlboro on Sun, 08 Nov 2009 15:46:23 GMT
View Forum Message <> Reply to Message

Actually there is quite a bit of difference between these ribbon tweeters and a typical inexpensive Dome tweeter.

First of all I'm not really sure what the price of a typical inexpensive dome tweeters is. So I would be looking to find out which tweeter the poster considers typical and cheap, and which one he is thinking of as a comparison.

The Beston is *Power handling: 15 watts RMS/30 watts max *Impedance: 6 ohms *Re: 5.4 ohms *Frequency range: 3,000-40,000 Hz *SPL: 88dB 1W/1m *Minimum recommended crossover frequency: 3,500 Hz *Dimensions: A: 3.4" x 2.13", B: 2" x 1.5", C: 0.125".

and it comes in at $29.

Its hard to find an inexpensive dome tweeter to compare it to that also can allow the domes to be close enough together to avoid comb filter distortion. I looked through everything that both Madisound and PE has to offer and could only find the really really astoundingly cheap dome tweeter that is the ND20FA-6, which comes in at only $6. We know those can be taken down to 2500hz using a lot of them and a 24 db oct crossover, since their FS is only 2005, and that the Beston can't really go any lower than 3500 where their FR falls like a rock, so that can't be the comparison we are looking at.

If you look at the specs on this very very astoundingly cheap dome tweeter Dayton ND20FA-6(15 watts RMS/30 watts max *VCdia: 3/4" *Impedance: 6 ohms *Re: 5.2 ohms *Frequency range: 3,500 - 25,000 Hz *Fs: 2,005 Hz *SPL: 91.5 dB 2.83V/1m, 90 dB 1W/1m *Dimensions: A: 1-3/4", B: 1-5/16", C: 3/4") it has a better SPL too.

On this little item, of which your could buy 5 of them for each Beston. Zaph shows a pretty flat FR from roughly 1700hz out to 25000hz. Clearly not the inexpensive dome tweeter that the poster is

commenting on. And your find exceptionally low harmonic distortion that actually is pretty comparable to many of the typical dome tweeters in the $30 - $90 range of price each. And of course, if you split the sound up so that each one covers onle 3% of the total tweeter sound per channel, everyone know that distortion increases as you increase the volume stress that the tweeter has to put out.

3/4 inch dome tweeters are hard to find, so i have to assume that the poster is actually directing his comparison comments to the Dayton ND20FA which is actually not a typical inexpensive dome tweeter, but a astounding quality dome tweeter in a totally crazy cheap price range.

I wouldn't use the Beston in a line array anyway, and if I was going to use a ribbon I'd go with the B&O Neo which blows away almost all dome tweeters cheap or expensive.

A better comparison would be to compare the Beston with other Ribbon tweeters in the same price line(apple to apples) rather that the comparison of apples to potatoes that is done here.

I know that the poster clearly has a preference for ribbons in line arrays, and often has made it clear that ribbons are way more appropriate. And I sometimes even agree. But I also am always interested in knowing what is being compared to what when one is making comments about how to put things together.

Clearly the compared dome tweeter is not the cheap
Dayton one since that one beats the crap out of the Beston Ribbon in question,but I really don't know which one we might be talking about if its not that one.

Just my two cents.

Marlboro

Subject: Re: Choosing Tweeters
Posted by mcody on Wed, 18 Nov 2009 03:53:43 GMT
View Forum Message <> Reply to Message

Hello all -

As the gent who purchased the Benton ribbon tweets for the line array that Rick measured, I'd like to thank him for helping me avoid making a costly mistake in my design.

I believe the purpose of his post was not to place one tweeter design against another, but to point out that purchasing drivers based on specs and type (i.e. ribbon tweeter with high extended range) can be a poor choice. It doesn't matter if you feel that ribbons or domes are better, it only matters that you get a driver that performs well for the applicaction.

I purchased these drivers from MCM Electronics because they seemed like a good deal. 50% off a ribbon tweeter that seemed (on paper) to meet the specs of the other drivers I bought for my line array project.

However, the reality is that they are not a good choice for a line array and Rick was looking to help others from making the same mistake. I'm sure there are dome tweets that outperform my poor choice just I am sure there are ribbons that outperform this unit. Thank you Rick for posting this so that others don't make the same mistake.

If folks out there have other projects where this ribbon unit might fit, please email me as I have 30 of them for sale at a reasonable price.

Michael

Subject: Re: Choosing Tweeters
Posted by selahaudio on Fri, 20 Nov 2009 08:09:46 GMT
View Forum Message <> Reply to Message

mcody wrote on Tue, 17 November 2009 21:53Hello all -

As the gent who purchased the Benton ribbon tweets for the line array that Rick measured, I'd like to thank him for helping me avoid making a costly mistake in my design.

I believe the purpose of his post was not to place one tweeter design against another, but to point out that purchasing drivers based on specs and type (i.e. ribbon tweeter with high extended range) can be a poor choice. It doesn't matter if you feel that ribbons or domes are better, it only matters that you get a driver that performs well for the applicaction.

I purchased these drivers from MCM Electronics because they seemed like a good deal. 50% off a ribbon tweeter that seemed (on paper) to meet the specs of the other drivers I bought for my line array project.

However, the reality is that they are not a good choice for a line array and Rick was looking to help others from making the same mistake. I'm sure there are dome tweets that outperform my poor choice just I am sure there are ribbons that outperform this unit. Thank you Rick for posting this so that others don't make the same mistake.

If folks out there have other projects where this ribbon unit might fit, please email me as I have 30 of them for sale at a reasonable price.

Michael

Thanks for clarifying what I posted. I'll add that there are very few domes that I would even consider for arrays. You need something with a low Fs (800hz or lower), small flange, and good extension below 2K. The only ones that come close are the Aura 1" and some of the Scan-Speak neo tweeters(insanely expensive for arrays). TangBand or HiVi may have some as well.
