

Review by Troels Gravesen (Denmark):

<http://www.troelsgravesen.dk/Viawave-GRT-145-4.htm>

Test Viawave GRT-145-4 ribbon tweeter

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Excerpt from Viawave website:

“Viawave Audio proudly introduces a true world first in the GRT-145; the technology of sealing the air gap between the ribbon and the poles of the magnets.

Developed by Viawave Audio, this technology is called SRT - the sealed ribbon tweeter. In the SRT, the gap between the ribbon and the magnets is covered with a U-shaped mylar suspension.

This dramatically reduces harmonic distortions at low frequencies of the operating range whilst also increasing the sensitivity by 2-3 dB. By combining our SRT technology and a powerful magnetic system, a unique sensitivity was achieved for a ribbon of 7 cm² - 95 dB/W/m in 4 - 18 kHz range.

In a tweeter with a 4-Ohm resistor it corresponds to 98 dB/m at 2,83 V.”

I had a mail from the creator of this ribbon tweeter and based on the information available I requested a pair for evaluation.

Here my measurements and comments:

In terms of overall appearance, these ribbons appear to be very well built with excellent finish.

My primary concern with ribbon tweeters is dispersion, but this tweeter has an excellent horizontal dispersion with very little loss even at 30 deg. off-axis.

Vertical dispersion is surprisingly good, one of ribbons' usual drawbacks, and good dispersion at 20 deg. off-axis is excellent.

Overall frequency response is flat, for my measurements a bit flatter than suggested by Viawave. Measurements suggest 95-97 dB sensitivity in the 1-3 kHz range rising some 100-102 dB sensitivity from 4 kHz to 18 kHz. Quite impressive although I would prefer a higher impedance and lower sensitivity as most speaker constructions rarely require more than 88-92 dB sensitivity. This would also save quite some money in good capacitors for the crossover.

Distortion is very low, even down to 1 kHz @ 2.8V (100 dB) and suggest even an LR2 filter at 2 kHz may be possible, not a common feature of most smaller ribbons.

Impedance is fairly flat and makes crossover work easy. I have simulated the ribbon with four of my constructions and this suggests easy implementation. Due to depth of the ribbon, only modest stepped baffle may be necessary.

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From my first implementation of this ribbon, the [ATiRi](#) I found this ribbon a very good alternative to traditional domes of any kind.

Evaluating the sound of a specific driver is futile without at the same time taking into account the mating driver and crossover implementation. I found this ribbon a worthy partner to the new AudioTechnology mid-bass.



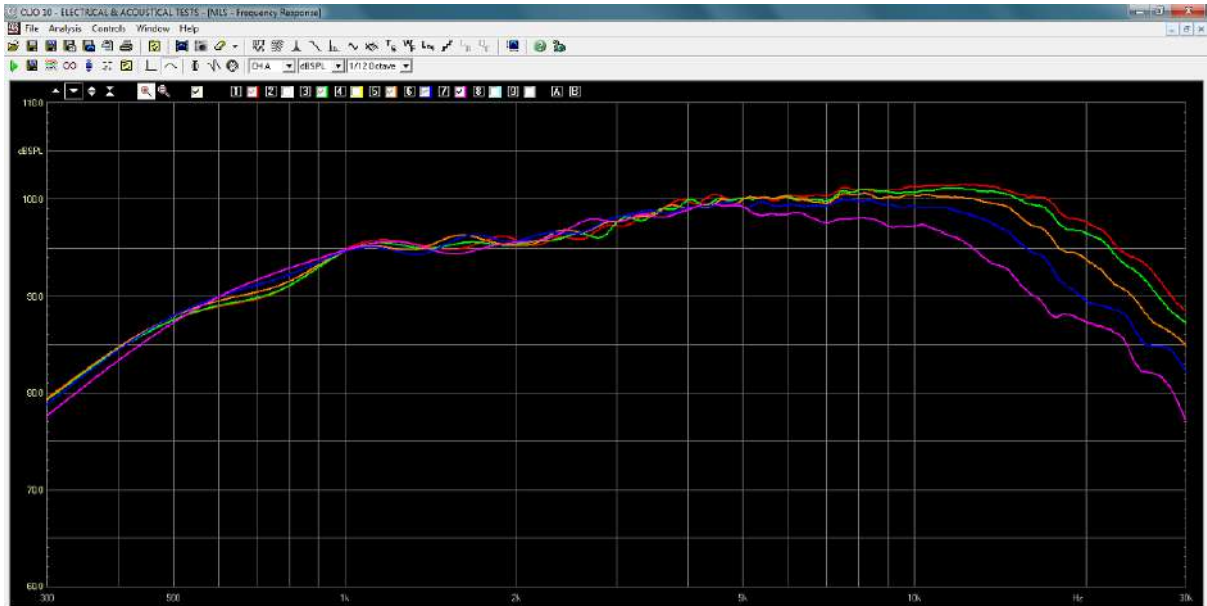
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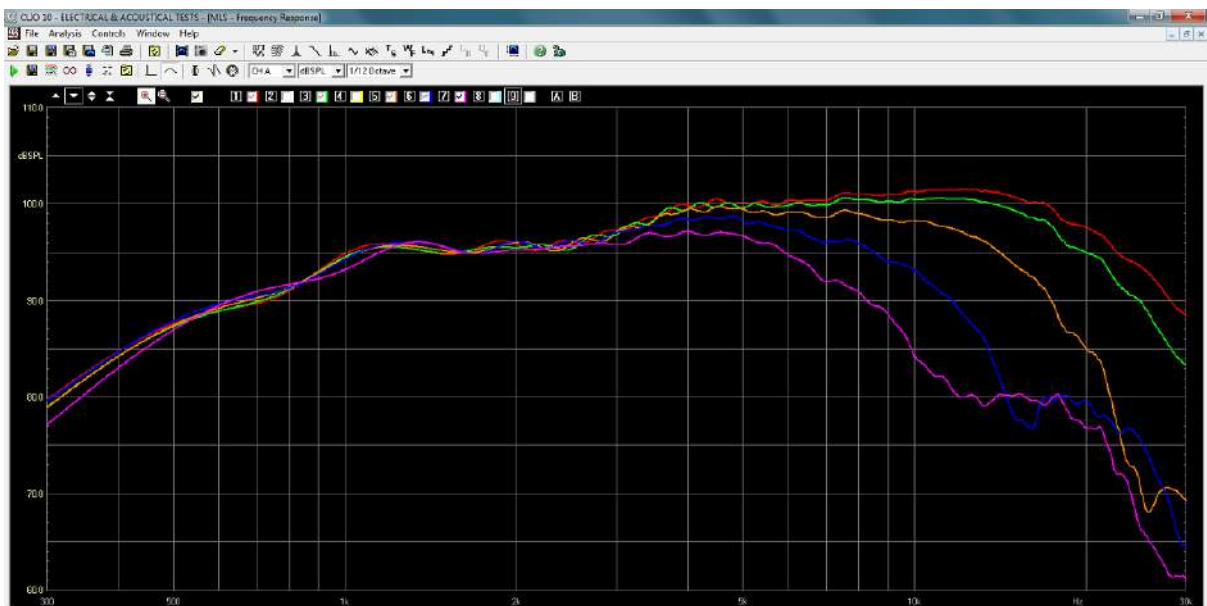
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Measurements

All measurements were done with a 82 uF capacitor in line with the tweeters. Ribbon tweeter flush-mounted on a 60 x 100 cm baffle.



Horizontal dispersion at 0, 10, 20, 30 and 40 deg. off-axis. Measurements equivalent to 2.8V/1 meter. Overall sensitivity is 95-102 dB from 1-20 kHz.



Vertical dispersion at 0, 10, 20, 30 and 40 deg. off-axis.

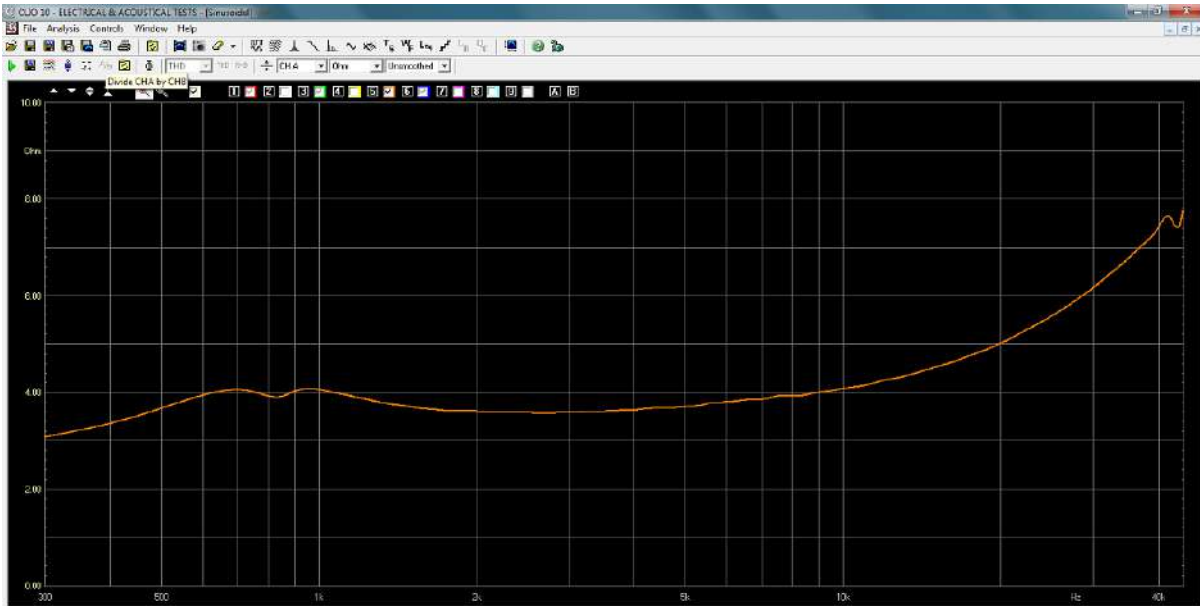
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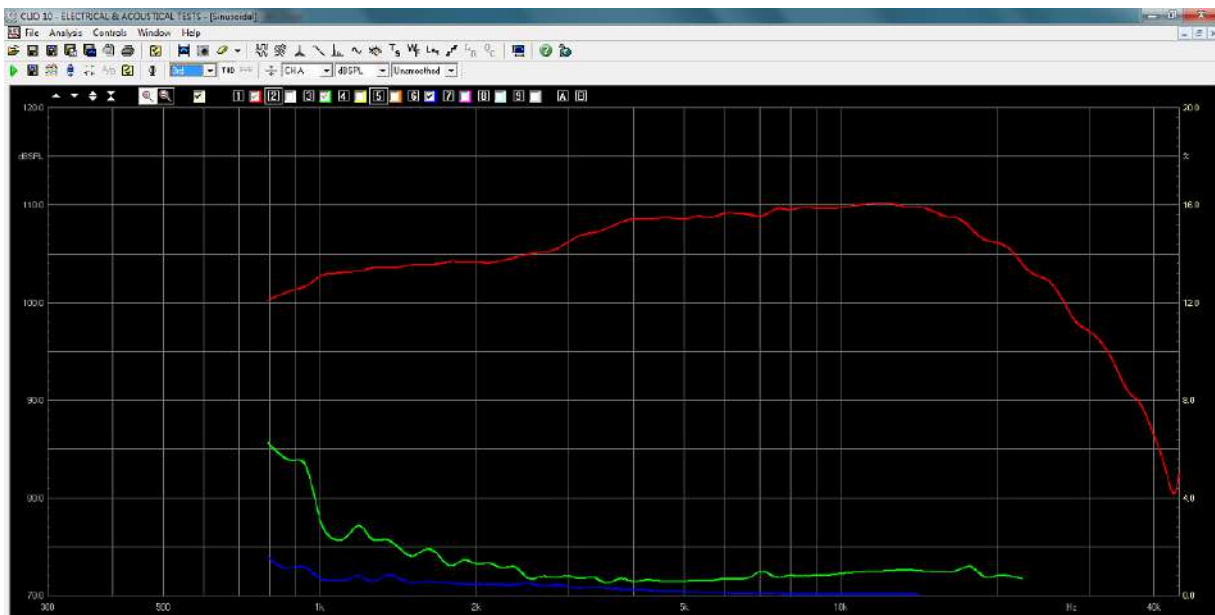
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Measurements

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Impedance. Basically a 4 Ohms driver.



Distortion measured at 0.25 m distance and input equal to ~95 dB/1 meter (4-17 kHz range).
Green = 2nd harm., blue = 3rd harm.

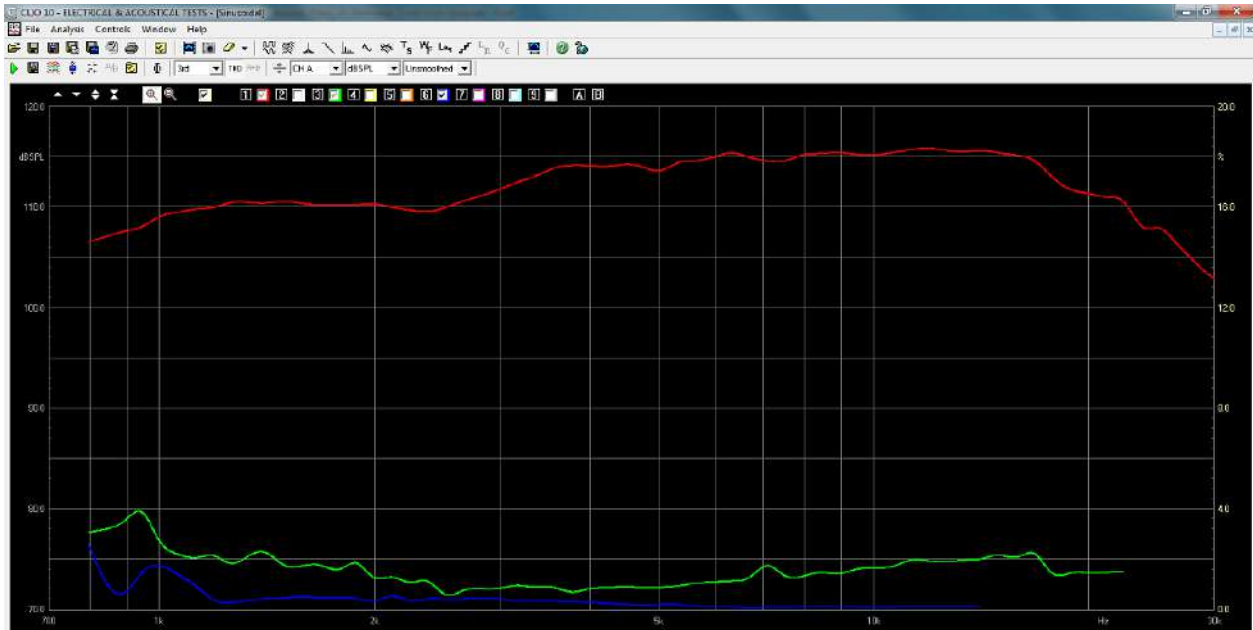
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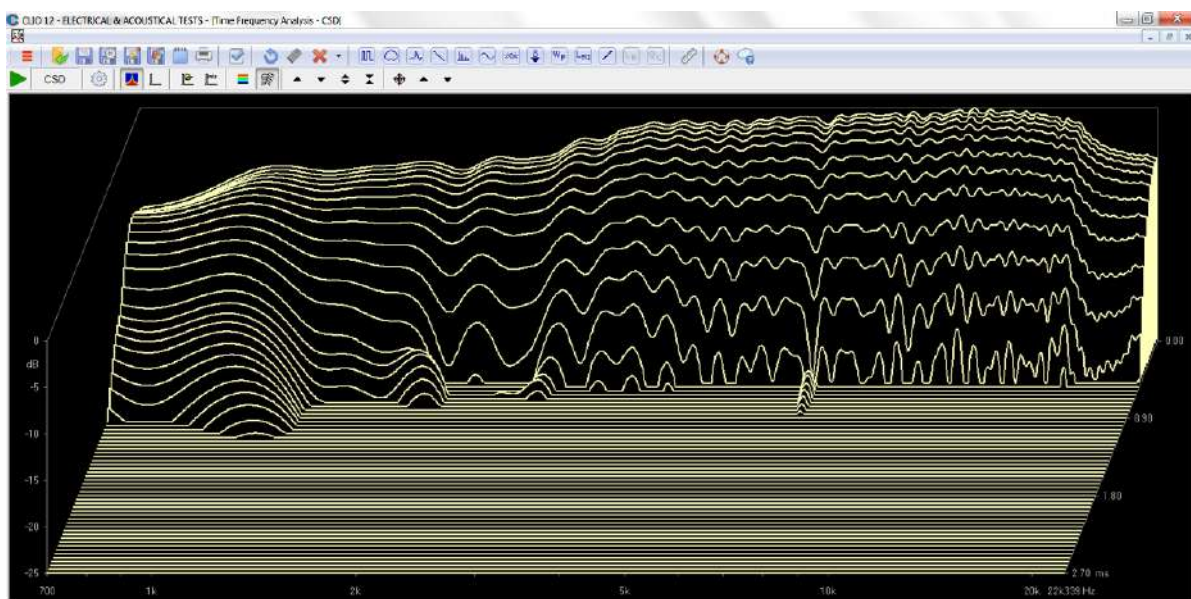
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Distortion measured at 0.25 m distance and input equal to ~100 dB/1 meter (4-17 kHz range). 2.8 volts applied. Green = 2nd harm., blue = 3rd harm. This doesn't change the picture at all. Impressive low level down to 1 kHz.



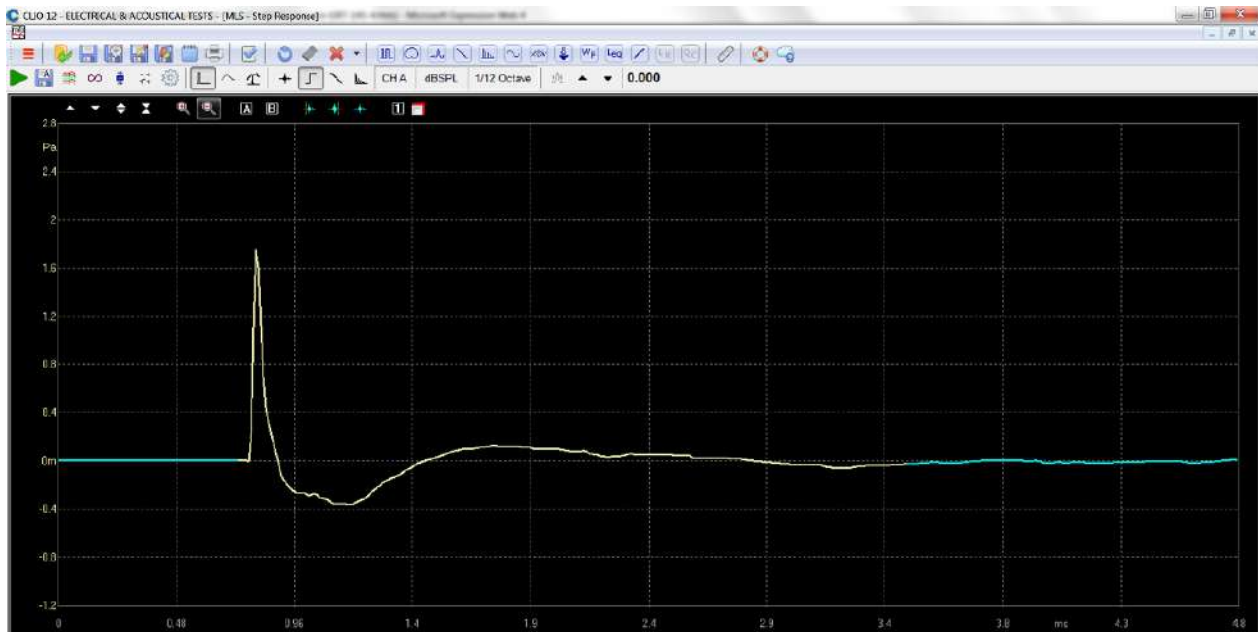
Here the cumulative spectral decay. Clean!

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Step response.