JA8008 HES

High-Efficiency Speaker from

Jantzen Audio Denmark

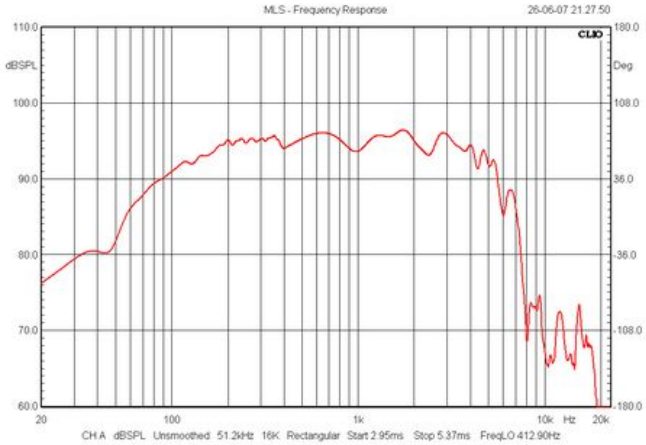
The JA8008 HES driver is a specialty product, designed for people who enjoy low-wattage, high-class valve amplification, but it can obviously be connected to any high-quality system, being valves or solid state. This extended-range 8" driver has numerous applications from high-efficiency 2-way TQWT designs to midrange driver in high-efficiency 3-way systems supplemented by suitable 12-15 inch bass drivers. The full story on the development of the JA8008 driver can be read here: JA8008.

The last ten years has seen an enormous rise is the number of valve amplifier manufacturers, quite remarkable in light of the popularity of compressed MP3 music.
To fully enjoy the qualities of e.g. 2A3 or 300B triodes, high-efficiency speaker systems have to be found and there clearly is a shortage of options available in the loudspeaker market. The JA8008 was designed to provide high sensitivity suitable for these amplifiers.

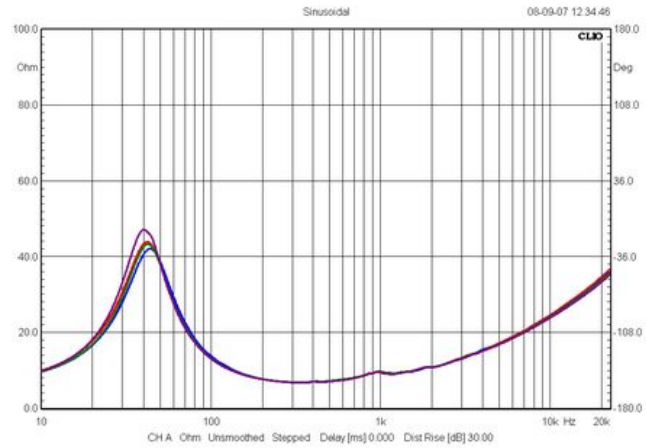
What a high-efficiency driver can offer is unsurpassed transient attack compared to traditional hi-fi drivers utilising low-efficiency, highly damped drivers with high-mass cones in order to provide decent bass from small enclosures.
Any buyer of high-efficiency drivers will have to know about the consequences of going this route. To increase sensitivity of a driver we have to use low-mass cones and powerful magnet systems. To balance these requirements, we have to add carefully selected suspensions for the cone and the voice coil, providing adequate resonance frequency and mechanical damping. It's not enough to get the cone moving, we need it to stop again and regain its rest position with minimum oscillation. To read more about high-efficiency speakers, click here.

With increased sensitivity we need increased cabinet volume; that is if we want these drivers to provide proper bass response. The JA8008 will provide adequate bass response from an e.g. 110 litres TQWT design (TQWT = **t**apered **q**uarter **w**ave **t**ube) design tuned at 94-95 dB sensitivity or from a 55 litres traditionally vented system tuned at ~92 dB sensitivity. More designs are under construction.

The JA8008 driver is fitted with an un-coated paper pulp cone added long cotton fibres, providing an overall smooth response up to 5-6 kHz without any treble lift as is often seen from similar designs. It should be matched with high-efficiency tweeters, like the Jantzen Audio TW034WG design, providing an ideal partner in terms of frequency response overlap, sensitivity and ease of crossover design.



Frequency response of JA8008 from 1 metre distance, 2.8 volts input. Driver mounted on a 32 x 1050 mm baffle. Response merged with nearfield response at 400 Hz.



Free air impedance of four JA8008 samples after burn-in. Like most other high-efficiency drivers the JA8008 requires some 100+ hours before reaching final performance.

TS data: Average of four drivers after full burn-in:
Re: 6.0 ohm, Fs: 42 Hz, Vas: 48.3 litre, Qm: 1.74, Qe: 0.28, Qt: 0.24, Sd: 227 cm^2.

Polepiece thickness = 6 mm. Voice coil diameter = 39 mm. Voice coil height = 12 mm/2 layers.

Be aware that normal vented box-simulations do not apply to this kind of driver.