Application note for
Exotic F8

A High Performance loudspeaker featuring the SEAS Exotic F8 fullrange driver
Designed at the SEAS R&D laboratory.

The Loudspeaker described in this document was designed to give the lovers of dynamic and sensitive fullrange drivers a viable option from the standard multi-driver loudspeaker system. The high sensitivity of this loudspeaker makes it ideal for use with high quality low power valve amplifiers.

The Driver
The Exotic F8 driver is hand-built by highly skilled SEAS employees, using the highest quality materials available. Prior to leaving our factory, the drivers are thoroughly evaluated by a trained laboratory technician, and individually measured in our anechoic chamber.

Amplifier recommendation
The Exotic F8 presents a relatively easy load to the power amplifier, allowing a wide variety of designs to be used. A high quality amplifier of moderate power, exhibiting low distortion and noise at very low power levels is highly recommended. Both solid state and vacuum tube amplifiers can be used successfully.

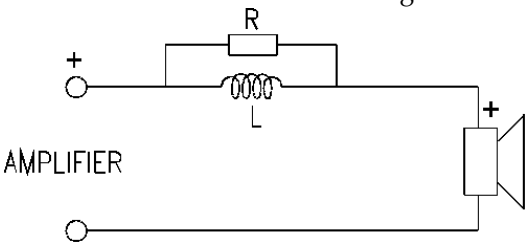
Enclosure recommendation
We recommend using a sealed enclosure of approximately 60 litres net volume. With no damping material, the resulting resonance frequency and Q should be 56Hz and 0.8 respectively. With suitable damping of the standing waves inside the cabinet, a Butterworth response with a resonance frequency of approx. 48 Hz may be obtained. Traditional glass fibre insulation material is well suited for damping, but precautions should be taken to avoid health risks. Excellent results may also be obtained with polyester fill, long hair wool, etc.

Other constructions, such as bass reflex, rear loaded horns, open baffle, etc. may also produce good results. We encourage experimentation with these designs. However, we urge caution against exceeding the maximum excursion limits of the driver in enclosure designs that do not provide a high degree of rear loading at bass frequencies.

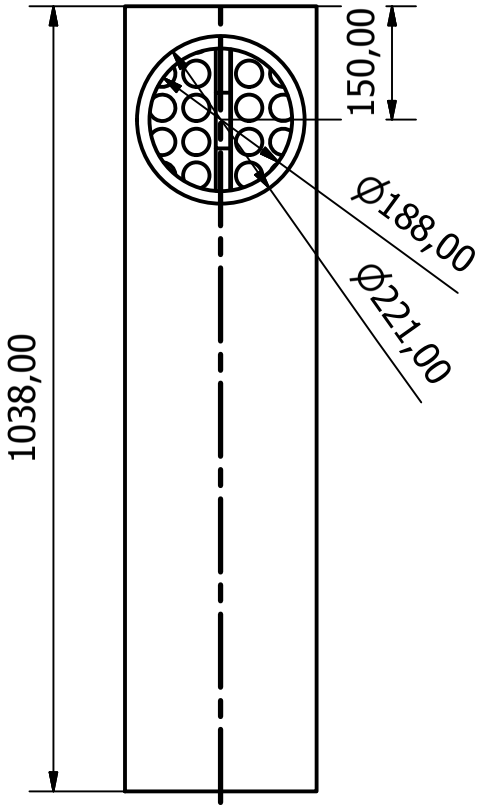
Listening room and placement
Even if your listening room is good and large enough, it is important to determine those positions where the loudspeakers can perform at their best. Placing the cabinets close to the walls or corners will result in more powerful bass, but may also bring about response irregularities in the bass/midrange area. Some experimentation is recommended in order to find cabinet positions that result in a good tonal balance and freedom from coloration.

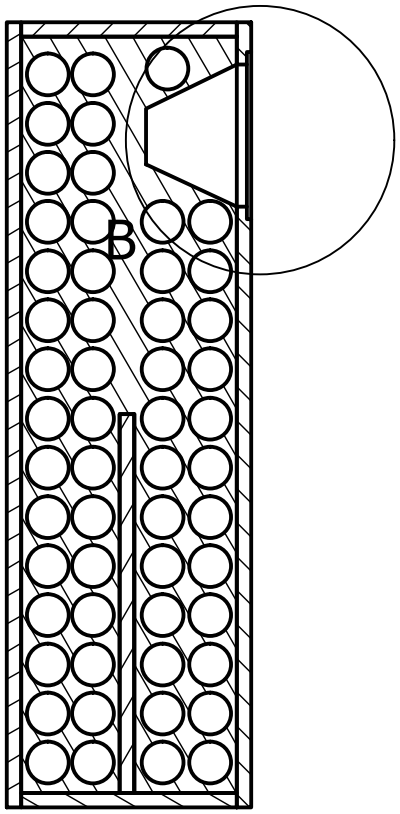
Pointing the driver axes towards the listening position in a classical stereophonic setup may result in an overly bright tonal balance. A good solution may be to further turn the cabinets so that the driver axes cross slightly in front of the listening position (toe-in). This may result in the desired tonal balance and at the same time a slightly wider listening zone.

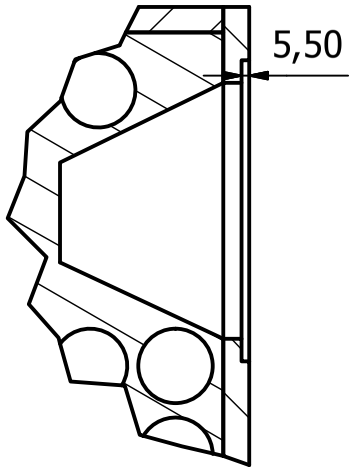
Response adjustment
In an acoustically live listening room, it may be desirable to attenuate the high frequency output from the loudspeaker. This can be done very simply, by placing a correction circuit as in the diagram below.

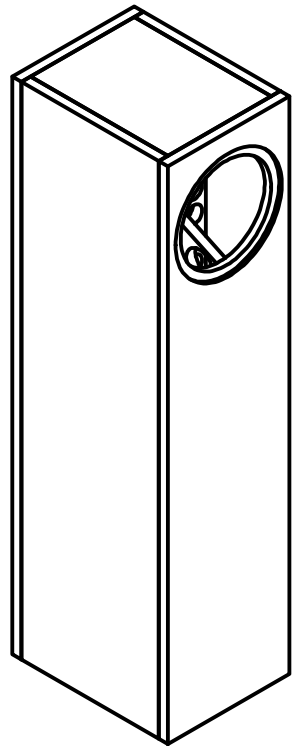


A 0.5 mH inductor (L) will start rolling off from approx. 2 kHz. A larger inductor will be effective at a lower frequency. Use a high quality air core inductor with low DC resistance. The parallel resistor (R) controls the high frequency attenuation. A larger resistance results in more attenuation. Resistors between 1 and 5 Ohms should cover most needs, but other values can be tried without risk of damage. A metal film resistor of 5 watts or higher is recommended.









Material: 19mm MDF

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Exotic 60L enclosure	Edition	Sheet
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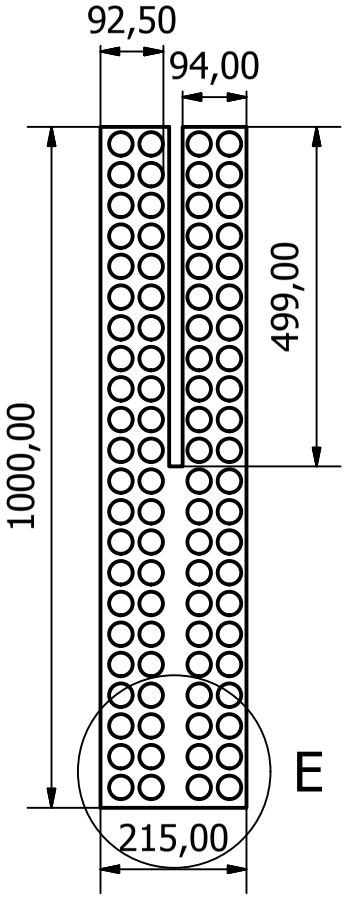

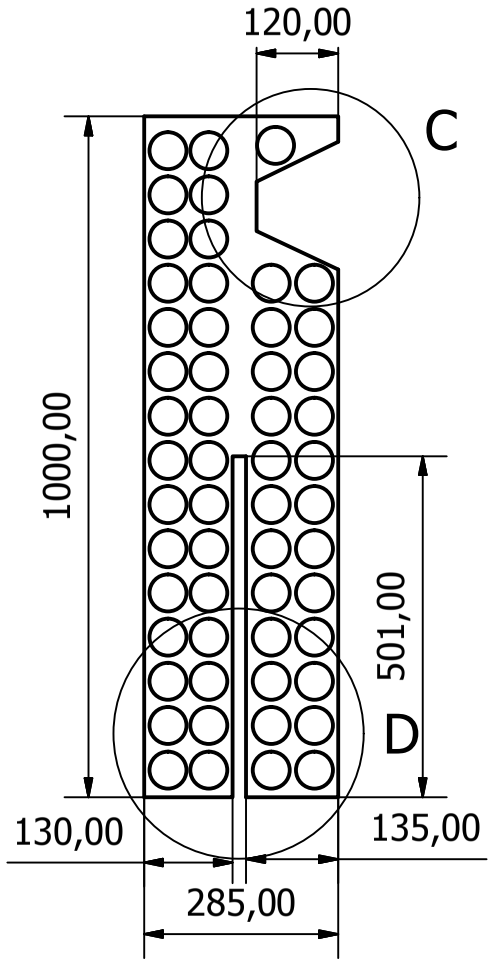

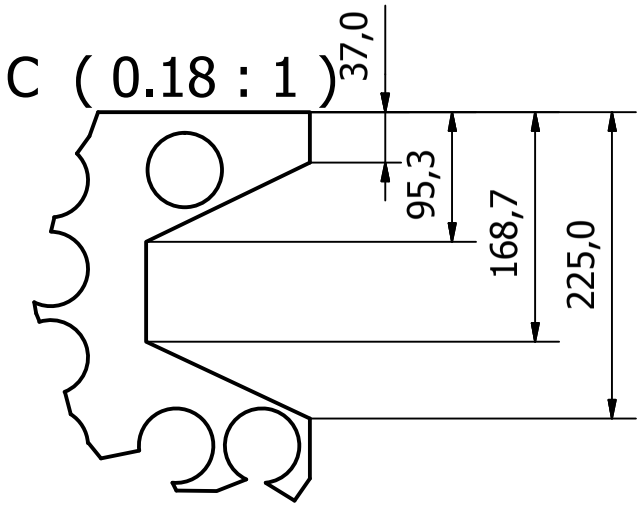

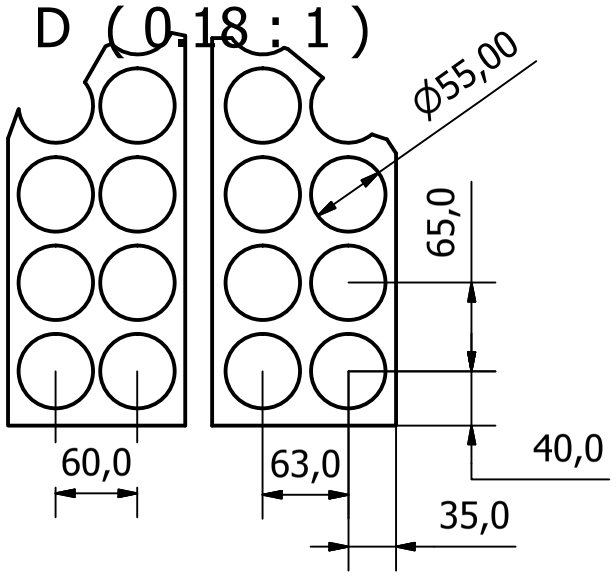

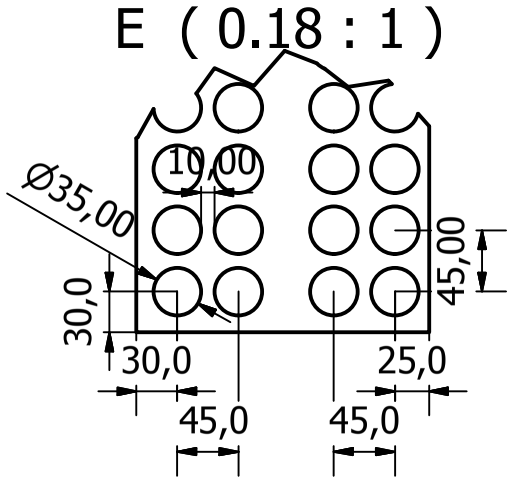

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