

A High Performance loudspeaker system featuring the SEAS Exotic W8 Woofer and T35 Tweeter

Designed by Bjørn Borja and Håvard Sollien at the SEAS R&D laboratory.

The Loudspeaker System described in this document was designed in parallel with the development of the SEAS Exotic W8 woofer and T35 tweeter. The goal was to develop a two-way loudspeaker using drivers with matching sensitivity and distortion, that would provide a smooth and extended frequency response in a cabinet of moderate size. The sensitivity of this system is higher than many systems of comparable configuration and size, making it ideal for use with low power valve amplifiers.

Drive units

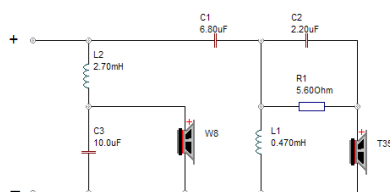
This system uses the Exotic W8 woofer and T35 tweeter. A full description and technical specifications for these drivers available at the website www.seas.no.

The Enclosure

This system uses a vented cabinet with a net volume of 34 litres, and with a port tuning frequency of 40 Hz. It should be made from high quality MDF (medium density fibreboard). It is important that the cabinet sides are accurately cut, so they may be precisely joined together. Internal bracing and damping of structural resonances of the cabinet walls is also recommended. Details are provided in the cabinet drawing.

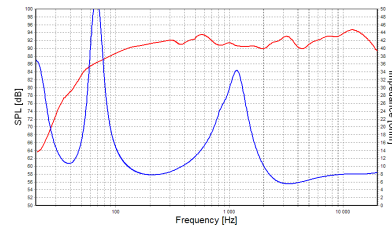
The Crossover

The crossover network is a 2nd order parallel network with a band limited attenuation of the tweeter. High quality components should be used to obtain an optimal result. Air core inductors with low DC resistance and high quality film capacitors are recommended. The crossover frequency is 2.1 kHz, and only a slight attenuation of the tweeter has been necessary to match the woofer sensitivity. Please see the crossover schematic for complete details. For highest reliability, we recommend you solder all connections within the cabinet; both at the crossover network and at the driver terminals.



Measurement Results

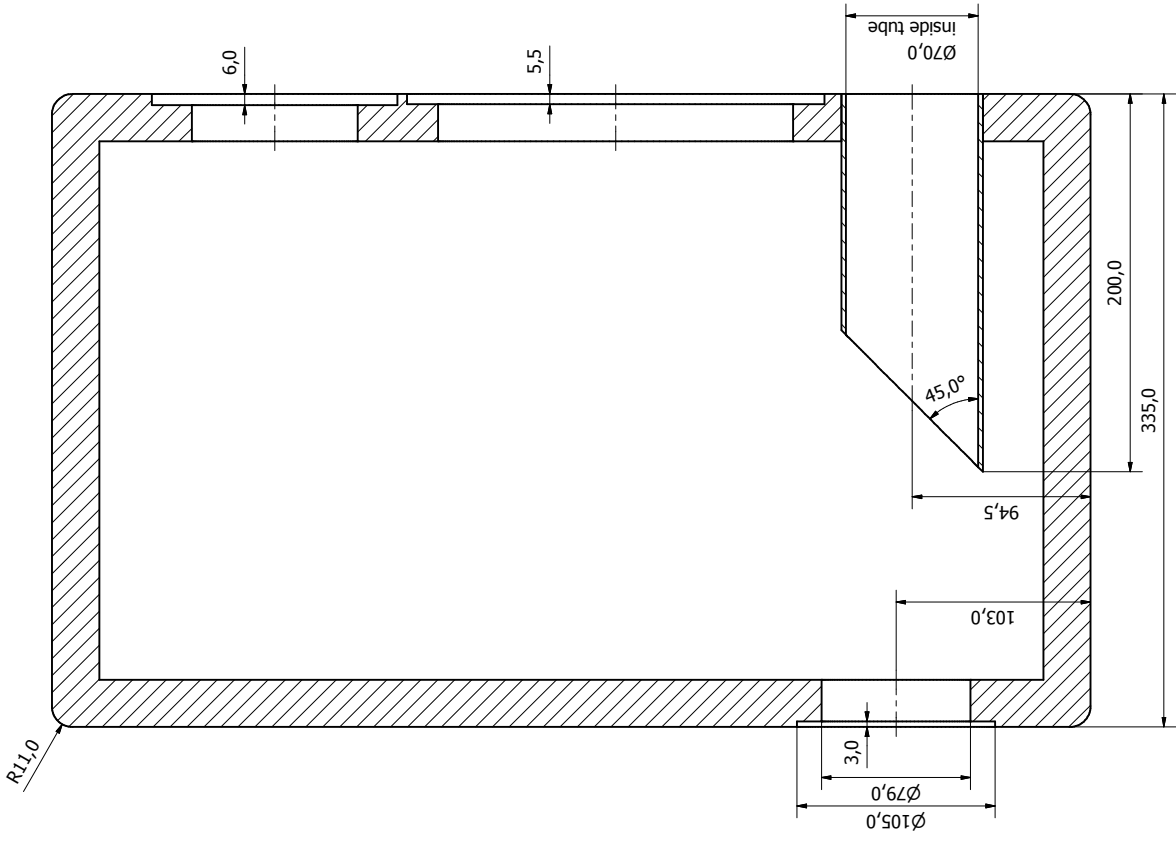
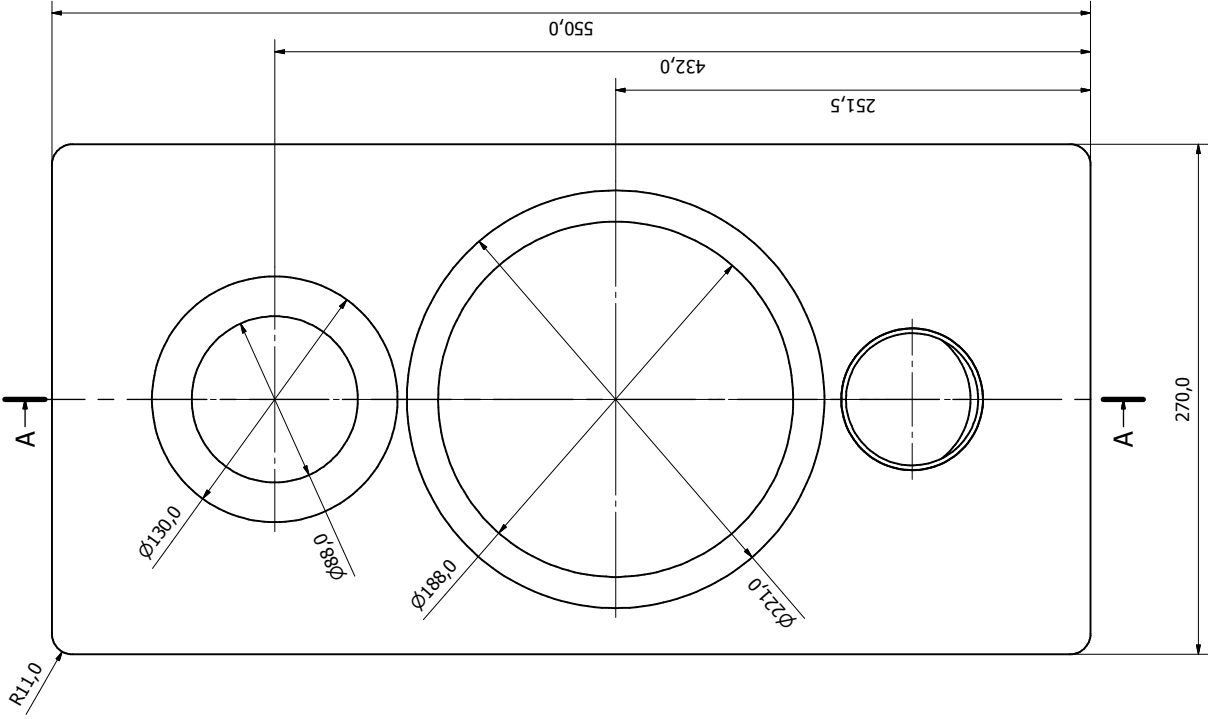
A sound pressure frequency response measured in our large anechoic chamber is shown. The sound pressure is a healthy 92 dB SPL for 2.83 Volts/1 metre. (1 Watt nominal input). From 120 Hz downwards, the response shows a moderate roll-off. In a typical listening room, this roll-off may be compensated since the room will store more sound energy toward lower frequencies.



Listening Room and Placement


High quality stands should be used to bring the tweeter approximately to ear level or slightly above. 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 which result in a good tonal balance and freedom from coloration.

The tweeter diaphragm is relatively large for sensitivity reasons. Consequently, the dispersion at the highest frequencies is limited, making it worthwhile to experiment with toe-in of the enclosures towards the listening position.



Material: 25mm MDF

This drawing is SEAS property.
 Any duplicating, utilization
 or reference to a third party
 is punishable - according to law.

Designed by terje	Checked by	Approved by	Date 18.09.2008
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K0224		Edition	
CABINET EXOTIC		Scale 1:2	