



finite elemente



finite elemente modul LS



Concept

- 1) **Modular cabinet design**
 - woofer cabinet
 - midrange/tweeter cabinet
 - base

- 2) **Optimised resonance behaviour with**
 - mechanically separated cabinet modules
 - ceramic ball coupling technology
 - high-quality material selection

- 3) **Bass active modular speaker concept**
 - control electronics (active equalization with Pole-Shift filter)
 - two ICEpower 500W Class D amplifiers per channel (total 1000 W per channel)
 - midrange/tweeter crossover (passive)



Design

re 1) Mechanically separate cabinets to prevent reciprocal influence

Minimised sound panel by positioning the woofer driver units at the side to minimize edge reflections (sound propagation in the bass range almost spherical).

Bass reproduction across 4 driver units, as the room is excited at several points. Large membrane surface for very deep and extremely low distortion bass reproduction (low stroke, as distortion increases in line with the stroke).

High maximum sound pressure (110 dB at 50 Hz)

Asymmetrical arrangement in left and right speaker to prevent sound radiation to centrally positioned objects (e.g. rack or furnishings) and negative resonance transfer to music sources.

Active equalization with Pole-Shift-Filter technology allows the use of extremely small woofer cabinets. Characteristic feature of the pole-shift-filter according to Siegfried Linkwitz is the generation of a linear frequency range by increasing the amplitude values as the frequency reduces in accordance with the measured behaviour of the woofer driver unit when installed. The Thiele-Small parameters measured in the installed woofer driver unit (including parameter Q_{ts} , i.e. the relationship of amplitude to frequency bandwidth and the resonant frequency) can be converted to almost every set of parameters to calculate the pole-shift filter.

Woofer cabinet made of heavy 30 mm Multiplex panel with frame-type struts and rearside chamber for the control and amplifier electronics.

Midrange/tweeter cabinet made of lightweight composite board with punctiform reinforcing struts.

Base with 8-fold screw connections for effective resonance dissipation and acceptance of the special Cerabase interfaces.

re 2) Separate cabinets with different natural resonances to prevent reciprocal influence.

Woofer cabinet with natural resonance above the operating range, fitted with various damping materials (felt and convoluted foam).

Midrange/tweeter cabinet with natural resonance below the operating range, fitted with various damping materials (felt and polyester padding).

Coupling of the separate cabinets using ceramic ball system within aluminium panels for defined resonance transfer (resonance filter through various natural resonance frequencies). finite element holds the patent for this unique feature.

Coupling of the loudspeaker to the floor using ceramic ball interfaces of type Cerabase for defined resonance transfer and a sound footing.

re 3) Modular design of amplifier and control electronics on aluminium rear panel for optimum cooling and simple servicing.

Amplifiers in Class D design with extremely small dimensions and low waste heat at very high efficiency, per woofer driver unit one 500 W-amplifier module (1000 W per loudspeaker) with integrated switching network component.

Switching network components with selectable mains frequency for simple worldwide use in all mains voltages/frequencies (100-240 Volts / 45-65 Hz); integrated into the amplifier modules.

Crossover with select and highest quality components as independent module; installed in the midrange/tweeter cabinet.

Adjusting to room acoustics using remote control electronics.

Cable remote control with display to easily adapt both loudspeakers to the listening room or to listening preferences.

The following can be adjusted:

- Volume level (-6 dB to +6 dB)
- Room size (1 to 8)
- Room hardness (1 to 8)
- Phase (180° switchable)
- Subsonic filter 35 Hz/-24 dB (switchable)
to be used in big rooms and/or with higher volume levels

finite elemente modul LS / Specifications

Manufacturer:	finite elemente
Model:	modul LS
Height:	1100 mm
Width:	200 mm (with base 265 mm)
Depth:	565 mm (with front cover 595 mm)
Weight:	58 kg per speaker
Recommended amplifier power:	20 –250 W
Active bass module power:	1000 W (ICEpower Class D)
Power consumption:	1000 W
Impedance:	4 Ohms
Frequency range:	15 Hz –22 kHz
Sensitivity:	90 dB (2.83 V/1m)
Max. sound pressure:	110 dB / 50 Hz
Special features:	Separate cabinet modules with patented ceramic ball coupling system, base with Cerabase adjustable feet, active equalization, room adjustable by remote control, switchable subsonic filter (35 Hz / -24 dB)
Drive units:	Woofer: ScanSpeak (2x 260 mm, metal cone) Midrange: ScanSpeak (1x 180 mm, paper cone) Tweeter: ScanSpeak (1x 25 mm, metal dome)
Cabinet finishes:	Matt or high-gloss lacquer Wood veneers matt or high-gloss lacquer
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finite element modul LS / Ceramic ball coupling technology (patented)

