



BRECKLAND AUDIO

HECO

HOME AUDIO 2011





Heco — HIGH END LOUDSPEAKERS SINCE 1949



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Heco – tradition in loudspeakers since 1949

Heco has been committed to the philosophy of high quality music reproduction in the home since the day the company was founded almost 6 decades ago. In addition to the constant evolution of its already tried and tested technologies, Heco has always seen itself as an innovative leader in the development of new concepts.

As a pioneer of many widely accepted design innovations, such as dome tweeters and long throw rubber surrounds, Heco's image was forged by several legendary loudspeakers designs.

The Activ 2000K studio monitor, the first B 130 compact speaker and the physically commanding high end speaker, Concerto Grosso each represent a milestone in loudspeaker engineering.

All Heco loudspeakers are developed at the company's laboratory in Pulheim near Cologne. This ultra modern facility; fully equipped with state of the art measuring and acoustic simulation hardware, including the laser supported Klippel ® system, provides Heco's experienced engineers With the perfect environment to work on continuously improving the company's loudspeaker technology.



Heco TECHNOLOGY - Tradition and High -Tech

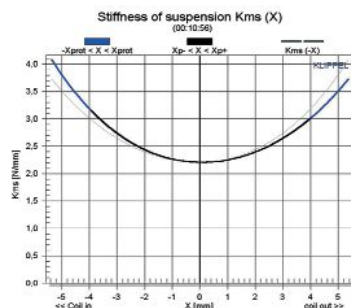
Alnico midrange driver

The midrange is the crucial region in realizing the goal of a natural sounding loudspeaker. The reason for this is the high degree of sensitivity of human ear, particularly in the vocal range. The finest solution here is the combination of a high quality paper cone with an Alnico magnets. Alnico (Aluminium – Nickel – Cobalt) is a material that can absorb extremely high magnetic field strengths and has high temperature stability. Music lovers especially appreciate the repeatedly referred to acoustic advantages in terms of dynamics and resolution. However, the extremely high price and in particular, the difficulties inherent in the production of Alnico have been responsible for it not being widely used these days.

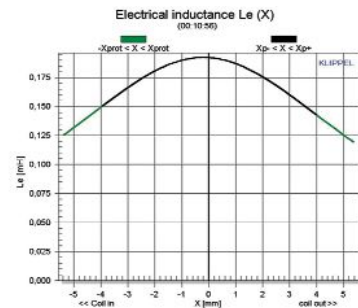
After considerable research over a prolonged period of time, Heco engineers have now managed to develop an Alnico drive unit which, with the help of modern laser technology (Klippel System™) and the “Finite Element Method” has resulted in a loudspeaker that works symmetrically with regard to its magnetic field, suspension and inductivity. This results in a remarkably low level of distortion and an amazingly natural reproduction of the midrange tone.



Measurement of stiffness



Measurement of magnetic field



Measurement of voice coil inductance



Kraft® paper cone

The high tech cone of the Heco midrange speakers and woofers must satisfy the most extreme of acoustic demands. Music lovers often prefer the particularly natural sound produced by high quality paper based cones. Indeed, many of the legendary cinema and high-end loudspeakers of the past used paper cones for that very reason. It's perhaps explained by the particularly good ratio between low weight and high self damping. The cones are made from the best material available, known as "Kraft paper" under the DIN 6730 specification. The standard stipulates at least 90% long-fibre "Kraft pulp" to meet the highest requirements demanded in terms of tensile strength and extreme pressure resistance (DIN 53141). Specific types of wood are pre-selected to provide this high quality pulp. Only Nordic pine timber has the required strong fibres. Other woods and cheaper waste paper are excluded because of their low strength. The pulp is then mixed with the addition of 5% German produced wool fibres (6 – 12mm long). During this process all of the fibres interlock to form a densely conjoined weave. This material is then pressed evenly into the conical form of the cone under high pressure. The result of this is a loudspeaker diaphragm with the desired acoustic properties for high mechanical loading. These positive attributes mean that the Kraft paper cone is used in practically all of Heco's loudspeakers. The long throw surround, highly durable voice coil and linearised magnet system combine to guarantee maximum contrast and precision.

Die-cast aluminium chassis

The multi-ventilated die-cast aluminium chassis have extremely well controlled resonance characteristics and as a result provide the utmost stability. They genuinely offer the best possible foundation upon which the powerful magnets and paper cones can perform. However in a purely aesthetic sense the aluminium baskets also exude precision with their diamond polished surfaces hinting at the purity of sound the speakers can deliver as a complete system.



Nanoparticle technology

If the woofer provides the power behind convincing sound reproduction then the tweeter in a modern high end speaker provides the speed and finesse. Its diaphragm has to move backward and forward cleanly at frequencies in excess of 20,000 times per second. While doing this, the dome should not deform, as this can cause audible distortion. However, simply increasing the weight or thickness would make it less responsive and less capable of tracking those high frequency impulses. Engineers have been searching for the ideal material for tweeter diaphragms since the very beginning of loudspeaker development. Heco first incorporated its revolutionary nanotechnology in the legendary Celan series. Nanoparticles are simply material whose particle size is less than 100 nanometres. (1 nanometre is 1 billionth of a metre). The effect of such small particles is that their properties can differ from the properties of the material itself. For example, metal nanoparticles can have the properties of a fluid. The fabric dome, with its coating of carbon based nanoparticles, has been optimised to ensure maximum stability. In contrast to conventional dome materials such as titanium or other metals, the nanoparticles remain flexible when applied conferring excellent damping properties to the fabric without adding excess mass. This results in a linear frequency response that exceeds our auditory threshold without the usual problem of ultrasonic dome resonance affecting the reproduction of lower frequencies. The tweeter is acoustically brilliant, with spectacular resolution of the finest detail.

The treble level can also be optionally increased by 2dB at the elaborately crafted rear terminal panel. The extra large gold plated binding posts may be configured for bi-wired or bi-amped operation and will accommodate the use of the heavier gauge cables. The music signal arriving here is relayed to the drive units via elegantly assembled and individually tailored crossover filters.



Cabinet

The perfect loudspeaker cabinet should contribute the least possible resonance. This is why Heco uses high quality MDF instead of cheaper chipboard. An asymmetric cabinet profile also reduces unwanted internal standing waves. All of the cabinets feature extensive multiple bracing to reduce panel resonance. To ensure perfect and secure location on differing floor types, all of the free standing speakers are supplied with height adjustable spikes and rubber feet.





CELAN XT



Heco CELAN XT – Reference bound

The legendary Heco Celan series truly deserves its Reference status based on a wide range of convincing test victories earned over the past few years. When the Celan series was originally conceived, the Heco design team focussed on the reintroduction of traditional materials such as Kraft paper cones and solid aluminium die cast chassis but combined with state of the art technology.

The overwhelming International success of these products has ensured the Celan series its place as the reference range of loudspeakers in its class.

Far from resting on their laurels, the Heco design team has now redefined the term “reference” with the new Celan-XT series. Heco introduces this range as a legitimate successor to the original Celan models for that title. All of the original components have been re-examined, optimised, re-designed and where necessary replaced, with newly created elements right down to the smallest detail.

All drivers feature the sturdy diecast aluminium basket with a linearized magnet system.



The speaker stands on solid height adjustable metal spikes. This ensures the housings are decoupled from the ground.



The distinctively asymmetric shape of the Celan series has been retained although the upper face has been modified with an angled front baffle.



Specially optimised to give a long stroke – woofer with Kraft paper cone, huge dust cap, long throw surround and 32mm voice coil.

Tweeter with nanoparticle coated 1" dome tweeter, aluminium front plate with short horn, newly developed neodymium drive.

Newly developed and optimised mid range with Kraft paper cone, light paper dust cap, coated woven cone and 25mm voice coil.



The 25mm fabric dome tweeter based on the original Celan unit is still coated with nano particles but features a new, extra powerful neodymium magnet system which is second to none. The dome is mounted in a machined aluminium flange incorporating horn loading for improved acoustic coupling. This tweeter comes into effect at around 3.4 KHz and it effortlessly reproduces high frequency information up to and over 50 KHz

A dedicated midrange driver, newly developed for optimal wide bandwidth playback, based on a 25mm voice coil and equipped with the Kraft paper cone, a coated fabric surround and a light paper dust cap operates at frequencies below 3.4 kHz in the Celan models 901 and 701. This ensures an extremely natural tonally accurate, midrange portrayal. In the other models a 170mm bass midrange driver with a long throw surround caters for the mid and Lower frequency range.

Specially developed woofers built on substantial 32mm voice coils and again featuring Kraft paper cones, large dust caps and long throw surrounds deliver the lower frequencies in the free standing speakers. Indeed, the top model in the range, the Celan XT 901 features a pair of massive 200mm woofers to deliver deep, powerful bass with real texture and scale.

Regardless of application, each driver features a sturdy die-cast aluminium chassis and a carefully linearised magnet system to allow the moving parts to accurately track the incoming signal.

Elaborately designed and immensely strong MDF cabinets provide a solid foundation for each driver. The distinctive asymmetric shape of the Celan series has been retained although the upper face has been modified with an angled front baffle. This ensures that internal reflections are effectively reduced while strengthening the cabinet in this key area. The cabinet also has interior bracing at multiple locations.

The speaker range is now available in high gloss silver, cherry wood veneer and the new finishes of high gloss black or high quality walnut veneer. They also have solid height adjustable, metal spikes (or optional rubber feet). this ensures the cabinets can be effectively decoupled from the surface on which they stand.

All of the speakers in the range, which now includes three free-standing models and a bookshelf design operate with the tried and tested bass reflex principle. the bass reflex ports, like the driver chassis, are also manufactured from cast aluminium and are bolted securely to the rear of each cabinet.

A large metal terminal panel is also located at the rear in the distinctive Heco style. The heavy duty terminals are gold plated to ensure a durable, good quality connection and are encapsulated in acrylic. They allow very secure connections to be made even when attaching very heavy gauge loudspeaker cable. The terminals allow both bi-wiring and bi-amped operation.

The treble level can also be adjusted at this point with “linear” and “+2 dB” settings to allow the speakers to best match the acoustics of the room in which they are placed. A precisely engineered crossover filter relays the appropriate portion of the music signal to each driver. All of the components used are of high quality and tightly toleranced to allow the complete system to meet the exacting requirements of the Heco design team.

The Celan series will have to stand aside in the roll call of legendary and internationally renowned speakers but only for the new Celan XT!



The 25 mm fabric dome tweeter has been coated with nanoparticles and has a newly developed, extra tough neodymium drive, which is second to none.



The high quality and Generously dimensioned connecting terminal is located at the rear in a Distinctive Heco design.



New cabinet surface - walnut real wood veneer



The bass reflex ports are also manufactured from cast aluminium and are bolted securely to the rear of each cabinet.



Celan XT 901



Celan XT 701

Principle:	3 way bass reflex bookshelf speaker	3 way bass reflex bookshelf speaker
Equipment:	2 x 200mm W / 170mm MW, 25mm T	2 x 170mm W / 170mm MW, 25mm T
Power Handling (RMS/max):	280/450 Watts	220/350 Watts
Impedance:	4 – 8 ohms	4 – 8 ohms
Frequency response:	20 – 52,000 Hz	22 – 52,000 Hz
Crossover frequencies:	250 / 3,400Hz	280 / 3,400Hz
Sensitivity:	92 dB	92 dB
Cabinet surface:	Cherry, walnut, high gloss painted black or silver	Cherry, walnut, high gloss painted black or silver
Dimensions (W x H x D):	288 x 1205 x 418 mm	240 x 1135 x 368 mm



Black / Front grill black



Silver / Front grill black



Cherry / Front grill black



Walnut / Front grill black



Celan XT 501

2 ½ way bass reflex floorstanding speaker
 170mm W / 170mm MW/ 25mmT
 180/300 Watts
 4 – 8 ohms
 24 – 52,000 Hz
 300 / 3,400Hz
 91 dB
 Cherry, walnut, high gloss painted black
 or silver
 240 x 1055 x 368 mm



Celan XT 301

2 way bass reflex bookshelf speaker
 1 x 170mm MW, 25mm T
 100/160 Watts
 4 – 8 ohms
 30 – 52,000 Hz
 3,400Hz
 90 dB
 Cherry, walnut, high gloss painted black
 or silver
 235 x 375 x 330 mm

Other Products



Pure Sound A30 amplifier



Pure Sound A8000 CD Player



L300 Pre-amplifier



Revolver Replay

Demonstrations by appointment only

Telephone: +44 (0)1842 755170

Email: info@brecklandaudio.co.uk

Website www.brecklandaudio.co.uk

CELAN XT