

At the top of the ACT line, the A4 uses the best of all the technological developments imagined by BC Acoustique's engineers and still offers a beautiful design.

Quite imposing, the A4 retains the finesse and elegance of other floorstanding speakers of the ACT line. It uses two midrange and an impressive woofer on its side.

Technologically very advanced, the A4 reaches new heights in performances. It will give its best with high end components.

## The ACT line

With the ACT line, BC Acoustique wanted to create speakers with a pure and sharp design using advanced technology.

The ACT speakers are the result of several years of research and development. Looking at their fine design, it is hard to realize the efforts that went in the making of the speakers and the level of technology that can be found inside. The result is quite an achievement.

Three specific technical aspects were particularly studied:

- **Internal resonance modes**
- **Phasing**
- **Distortion level**

These three aspects are often weak points on speakers found on the market, and this for a simple reason: the measuring devices used in the world of electroacoustic do not offer the necessary precision to clearly show some important phenomenon for which the human hear is highly receptive.

With this in mind, BC Acoustique decided to develop its own set of measurement devices and to adapt its manufacturing process and testing facilities to these innovative techniques. These devices give our engineers a higher precision in their work, making this a significant progress in the field of electroacoustic.

These technical evolutions make the ACT line an accomplishment with remarkable sound qualities. No place was left for luck.

But we always kept in mind that the final goal of all these evolutions was to make sure that the listener would forget all the technical aspects and enjoy the best of what music and sound can offer. This is BC Acoustique's philosophy.





## The Tweeter

The A4 is equipped with four drivers. For the treble BC Acoustique chose a BC100 horn tweeter. A common model to all ACT speakers, this tweeter is the result of an important collaboration with Fostex, one of the most prestigious High End drivers' manufacturer.

Compared to a classic dome tweeter, the BC100 brings a remarkable definition of higher frequencies, an incredible clarity, efficiency and good transiency.

Its frequency response chart is regular up to 50 kHz for an ideal transcription of high definition sources (SACD or DVD-Audio) without the inconveniences that can be found with super tweeters.

The BC100 can also reproduce all the dynamic that you can find in music or movies without any loss or distortion.

Titanium **Dome**, rigid and light for a fast step response

Aluminium **horn** with a profile developed to improve frequency response linearity, ease the phase coherency and limit directivity

A Ferrofluidated **moving coil** lowers the resonance frequency and increases power handling

A large **double magnet** gives the motor power and speed

**The compression chamber** optimises the acoustic impedance of the sound wave

## The Midrange

The A4 uses two 18cm polypropylene midrange drivers conceived in cooperation by BC Acoustique and the renown Norwegian drivers manufacturer SEAS.

Cone profile and suspension were specifically designed for a steady frequency response with no accidents. This naturally flat frequency response limits to a minimum the effects of the crossover and to avoid the problems of phase rotation.

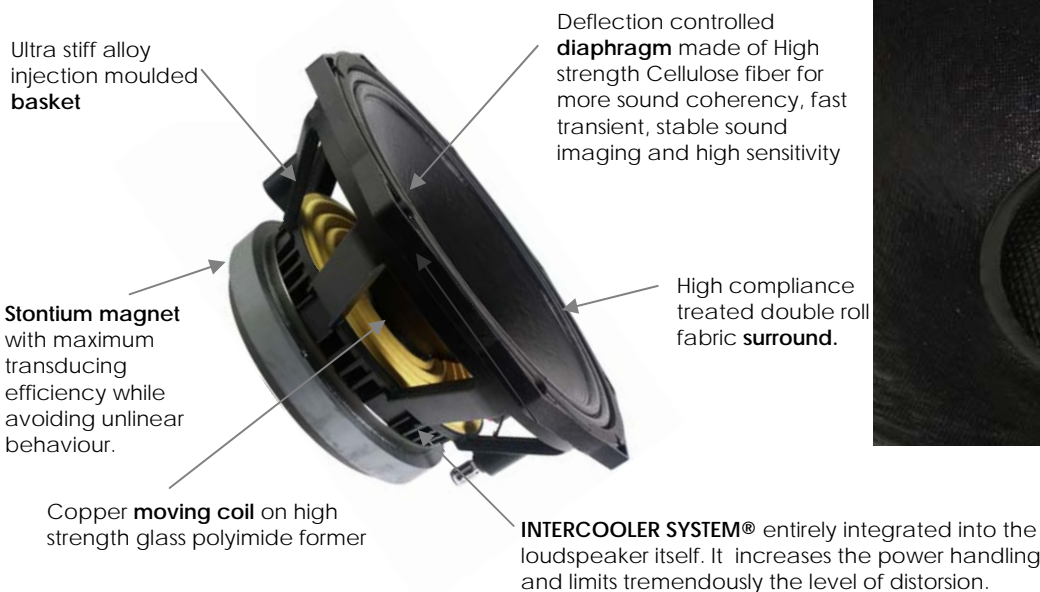
Everything was optimized to make sure that the midrange would be natural and open. With two drivers perfectly matching each other, the A4 offers high precision, fluidity, and an absence of coloration and distortion for the most exciting listening experience.



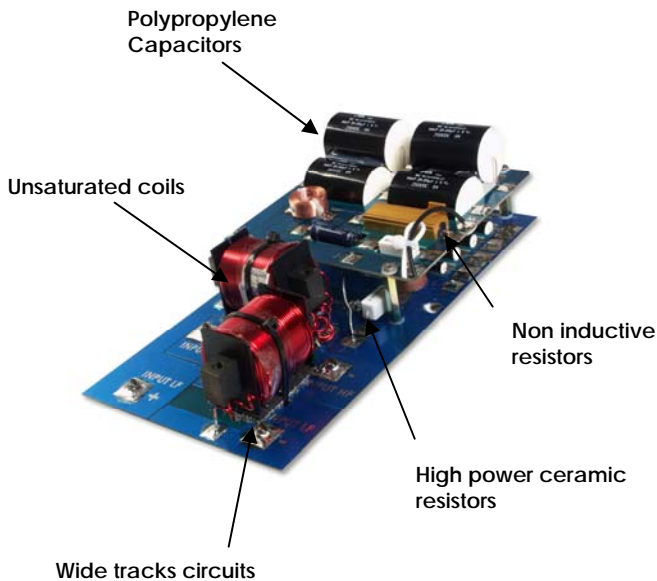
## The Woofer

The woofer of the A4 is a remarkable very high performance driver. Based on an original concept of professional studio monitor woofer, it went through a lot of evolutions to be adapted to the home Hifi and A/V world.

The cone is made of high strength cellulose fiber impregnated and coated on both sides with damped resins. Fitted with central carbon fiber dome. This 30cm driver can get enough energy to offer an ultra high speed bass, deep and linear. It also inherits the qualities of a high end professional driver with extremely high dynamic and very low distortion.







## Le Filtrage

The crossover of the A4 was designed with components selected for their top quality. The state of the art connectors come from WBT renown for their mechanical and electrical performances. The terminal allows bi-wiring. Internal cables all come from Tara Labs, a leader in cable technology.

The crossover is using only a fairly slow first order slope of 6dB/Octave for the midrange. This solution preserves the phase of the drivers on the most audible frequencies. This keeps the homogeneity and coherence of sound while the stereophonic scene is perfectly stable, deep and wide.

To make the ACT line easy to adapt to a room, the use of a number of specific resistors allow the auditor to change the level of the tweeter. 5 positions are available to increase or reduce the tweeter level by up to 3dB. It will be simpler to adapt the speakers to the listening conditions of the room and to the other components of the Hifi/AV system.



## Those small details...

The front grilles are made with removable fabric that can be changed. A completely invisible magnetic system of fixing uses powerful neodymes magnets inserted inside the cabinet and the grille. Thus the fitting is always perfect. The use of magnets has absolutely no effect on sound.

On the contrary this solution does not use the usual plastic pins that create problems of reflections and disturbances on the frequency response.

The A4 are delivered with specific feet to obtain a perfect stability and a mechanical decoupling to isolate the speaker from the floor and eliminate vibrations.



## The Woodwork

The impressive weight of the A4 gives an idea of the high quality of the cabinet. The woodwork is made out of high density 40mm thick MDF. All wood panels are veneered on both sides to counter balance mechanical pressure and avoid any risk of bending of the wood on the long term.

The internal architecture is quite complex, using diffusors and 3 resonators, inclined panels and stiffening pieces for the cabinet. These different devices eliminates all risks of coloration and resonances for a more neutral and natural sound.

The A4 uses a bass reflex solution. The tuned vent, whose position on the back of the cabinet was carefully studied, is used to increase the energy level but also to get rid of one of the resonating frequency inside the cabinet.

Different damping materials are used in strategic places to damp internal waves without affecting micro information.

The drivers are mounted in a very specific way to conciliate acoustic and mechanical benefits while preserving the unique aesthetic of the speaker's front panel.

No screw is seen from the outside on the front panel as the drivers are held from the inside. The outer aluminium ring allows a very tight and homogenous fixing of the basket. It facilitates the flow of unwanted vibrations and its curved profile limits the creation of reflections on the outer rim of the basket.



### Diffusors

Located on the sides of the tweeter/midrange compartment, they break the sound waves to avoid any echoing inside the cabinet. These do not affect all micro information.

### Inclined panels

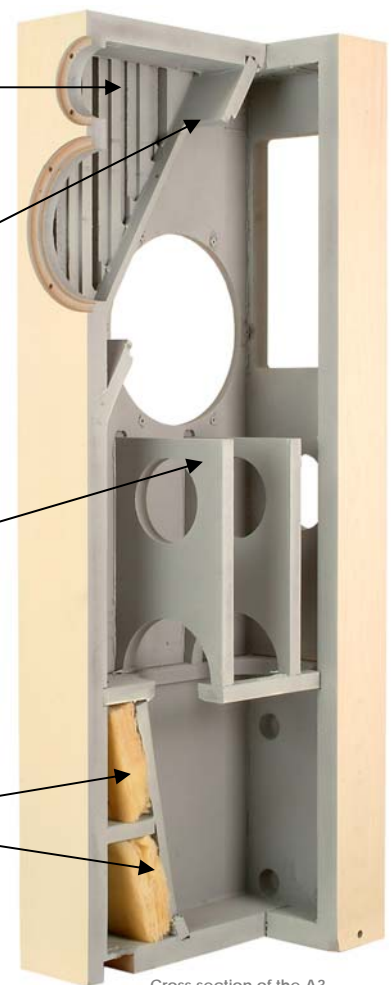
Limit the stationary waves.

### Stiffening pieces

Bring more rigidity to the cabinet and suppress stationary waves. Thorough studies were done to find the best setting in the speaker for these elements.

### Resonators

This independent compartment was designed to absorb unwanted frequencies  
The A4 is equipped with 3 with an efficiency of 40dB on 1/48<sup>th</sup> of an octave!



Cross section of the A3





## Quality Control

The A4s are carefully hand made in BC Acoustique's factory. All drivers are tested, selected, ran in and paired.

Crossover is set precisely to compensate potential variations in one or more components. Each crossover is thoroughly tested and measured. It is then compared to the standard measurements.

All these information are recorded and stored in our data base to guarantee the quality of technical service for each speaker that we produce.

## Finish and Accessories

The A4 are available with 4 different finish :  
Wengé, Amarante, Maple, Cherry (from left to right).

They are delivered with a box of accessories including handling gloves, a soft rag, a bottle of cleaning lotion, a test CD that will allow you to set your installation and improve the run in of your speakers.

The A4 as well as all BC Acoustique's speakers have a lifetime warranty (see conditions).



### Drivers

<b>Tweeter</b>	Horn BC100
<b>Midrange</b>	2x18 cm polypropylene
<b>Woofer</b>	30 cm Carbon/Paper
<b>Terminals</b>	WBT - Bi-wiring
<b>Crossover</b>	6/18 dB at 3,5kHz 6/6 dB at 150Hz

### Performances

<b>Frequency Range (+/-3dB)</b>	25Hz - 50kHz
<b>Distorsion</b>	<0,2%
<b>Maximum long term power</b>	400 Watts
<b>Maximum short term power</b>	1500 Watts
<b>Sensitivity (2,83v/1m)</b>	92 dB
<b>Nominal Impedance</b>	4 Ohms
<b>Minimum Impedance</b>	3,6 Ohms

### Specifications

<b>Type</b>	Bass-Reflex Floor Standing
<b>Dimensions (HxWxD)</b>	130 x 24 x 50 cm
<b>Weight</b>	80 Kg
<b>Cabinet</b>	MDF HD 40mm
<b>Diffusors</b>	YES
<b>Resonators</b>	YES - 3