



Purity meets Performance  
The voice of Avantgarde Acoustic



**avantgarde**  
A C O U S T I C

Heike & Jürgen Schwelm

"In the meantime more often our TV is turned off, so are the lights, and we sit in the dark and listen to music."

"I did not listen to music,  
I was inside the music."

Tobias Heibl

"The DUO gets close to the listener, reaches him entirely and floods the room with music – escape is impossible."

HIFI TEST, V. Frech, Germany

"What was so fascinating?  
...it simply is pure fun being touched by these sounds."

K. Krämer

AUDIO QUARTERLY, C. Beeching, UK

"I would have sworn Joan Armatrading was singing in my living room, but then so was Louis Armstrong, and Pat Metheny...and... and... and the neighbours kept finding excuses to visit"

Ulta Püschel

"A good life is the fulfillment of extraordinary longings!"

"The experience listening to a horn system, simply cannot be described. Everybody who has the chance to audition these speakers, should take the chance. Thereafter nothing is as it was before!!!"

Gregor A. Ingenhoven

"Knowing to own the best gives  
peace of mind! – every day."

Werner Adelsberger

"I am as mesmerized by my Duo as I was on the first day. And the best of it all, it is a fascination which never fades!"

J. Pfeiffer

"The Uno is exciting and intuitive. It lets me forget about the speaker to simply dissolve in the music."

STEREO, M. Eichelsdörfer











## ABOUT US

Behind the voice

A STORY OF SOUND CRAZY PERFECTIONISTS FROM THE HEART OF THE PICTURESQUE ODENWALD IN GERMANY, WHO USE ALL OF THEIR DEDICATION TO DEVELOPE, DESIGN AND BUILD HORN SPEAKERS AND AMPLIFIERS FOR MUSIC LOVERS FROM ALL OVER THIS WORLD.





## ABOUT US

Behind the voice

## WE ARE THE HIGH-END MANUFACTORY FROM GERMANY.

The answer is: "Purity meets Performance."

This is the answer to the question that is likely to arise, after just a glance at the Duo in "Turmaline Vivid Black". Or the Trio together with Basshorns. Or may be after reading the strong convictions held by customers and industry experts alike. And you will marvel at what this is all about. About these speakers which not only look like part of some exciting faraway world; but which seem to catapult their listeners into exactly these new spheres.

As mentioned earlier, we believe the answer is actually quite simple. It originates in the inimitable and unique fusion of "purity and performance". This is the formula which has resulted in Avantgarde Acoustic™ becoming the reference benchmark for audiophile performance. A formula much to be said about. In this brochure we want to start to do so.





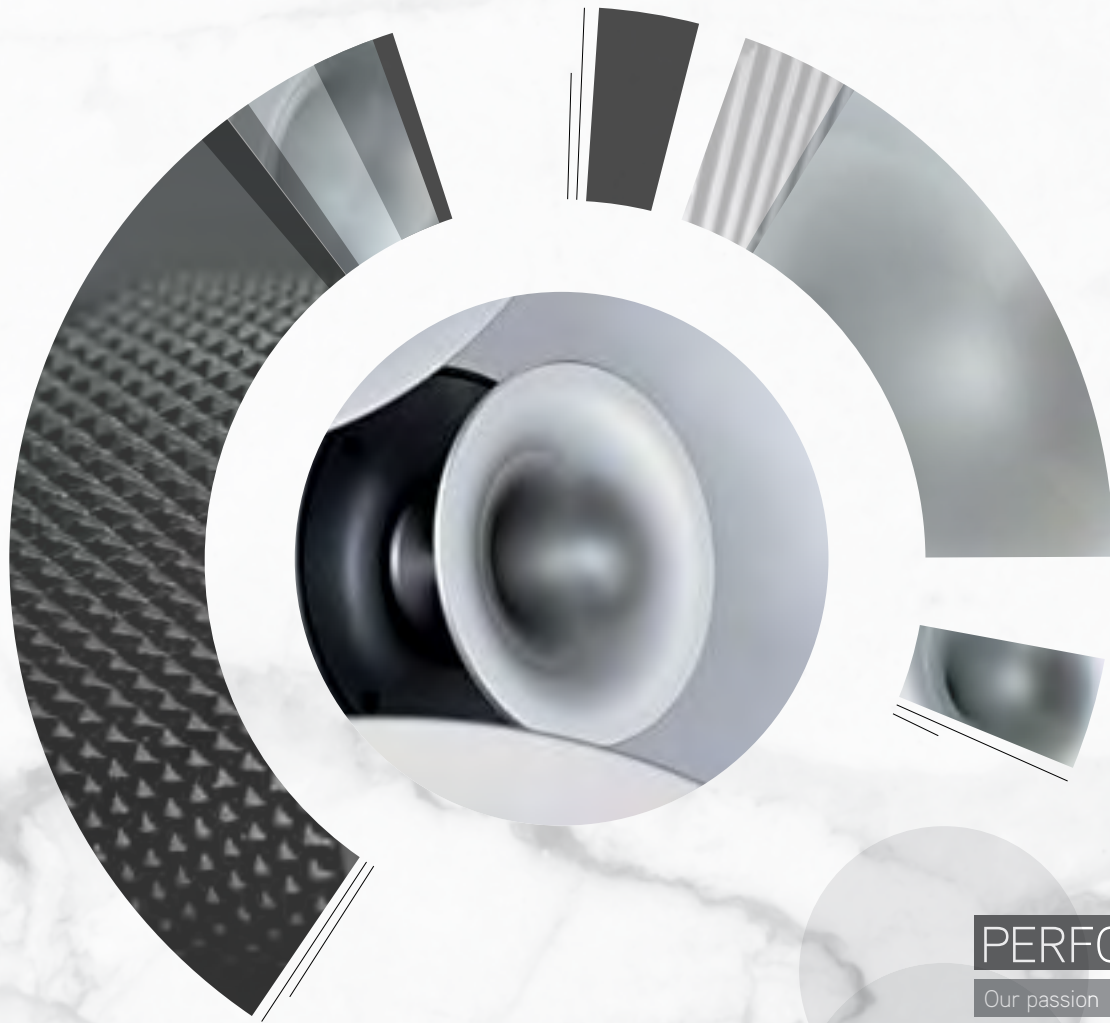


## PURITY

Our mindset

Functional design which arises imperatively from its application. Plain, stringent and without alternatives. Bionically formulated technology, geared to the funnel shaped physics of the human ear, allowing the most ingenious principles of sound transduction to unfold. Enduring, precise and incredibly powerful. And last but not least a listening experience with an originality and neutrality which is utterly faithful to what actually took place in the studio or on the stage. Whether it's a violin sonata in minor or a heavy metal guitar riff.

This is purity.



## PERFORMANCE

Our passion

To build systems which are best in class within the world of Super-Speakers today. To adhere faithfully to natural principles and take them to their limits. To surpass physical restrictions by inventing unexplored electronic circuitries. Unremittingly optimising each and every component and their interactions within the system to all-time perfection. To question part by part. Stripping away as much as possible. And by doing so, gain so much more. In just two decades making the name of Avantgarde Acoustic™ the voice of the audiophile upperclass.

This is performance.





PURITY MEETS PERFORMANCE

*The emergence of a unique voice.*



*Holger Fromme, CEO*

When we speak of our company we are often reminded of a quote from Johann Wolfgang von Goethe: "When all is in agreement it gives us peace of mind, but the contradiction is what makes us productive". In actual fact, we embody key contradictions and opposing characteristics.

This already begins at home. We are located less than an hour away from Frankfurt Airport, the international hub of Germany, yet still in the heart of the scenic, picturesque Odenwald. In our small village of Lautertal with its 7.189 residents, it's old natural beech grove forests, tender grass fields and cultivated acres. In other words exactly in a place where you would least expect to find a high-tech company with international customers from all around the world.

Or lets have a look at the people. The idyllic rural ambience give ease and composure. Both so indispensable to shape and realize great ideas. But at the same time they are gifted with the resoluteness to ignore prevailing opinions and to get them to fight for their convictions.

Not to hide behind the anonymity of the global markets is one of these convictions. We seek for the personal contact to our customers. Ultimately we all have the same passion, which is worth sharing. Our customers should know where and by whom their speakers are built and we respect them for their faith and the trust which they have placed in us. Another conviction is our existence as a 100% family owned company. We would very reluctantly accept being driven by the share value on the stock market. We would rather use all our liberty and independency to enforce our claim: building the best speakers in the world.

Finally we reach the point of transcendence of all contradictions: our speakers. Each of them tells an inspirational story full of fascination. It is a story of the longing for a singular solution. And it is a story about groundbreaking innovations. About the excitement of experiment for the scientist and about the intentional restraint of the minimalist. A story about the goal oriented addiction of the creator and the quest for sustainability of the purist.

From this fertile merging of contradictory claims and desires, our speakers have sprung to life. They are the fascinating outcome of the duality where "Purity meets Performance". They capture all of our commitment, dedication and enthusiasm.

Just as this brochure will hopefully capture your interest in the most ingenious principle of sound transduction.





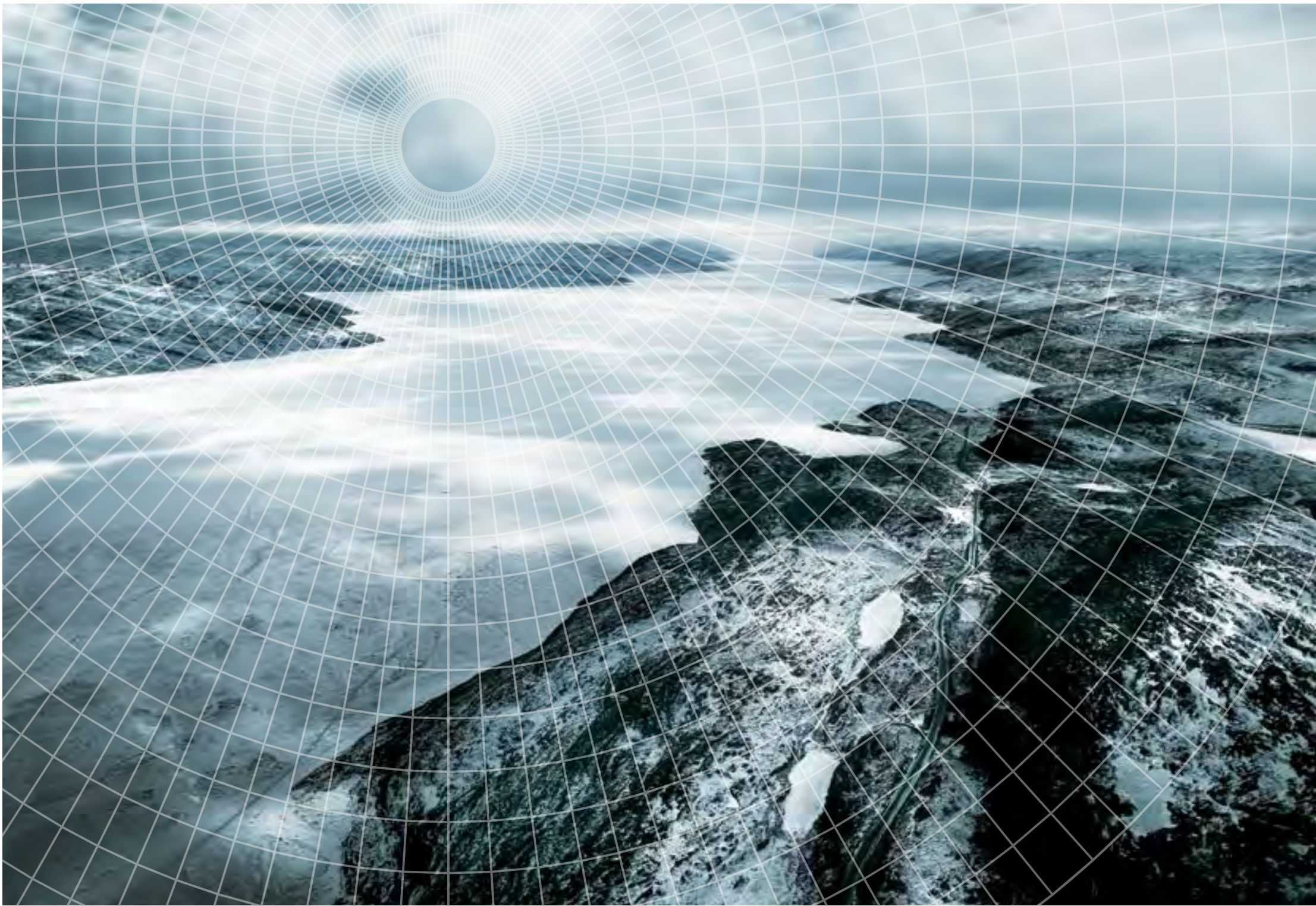


The background is a light-colored, marbled texture. Two overlapping circles, one slightly larger than the other, are positioned on the left side. A horizontal bar, consisting of a thin line and a thicker segment, is located below the circles. The text 'THE HORNTECHNOLOGY' is centered within the thicker segment of the bar.

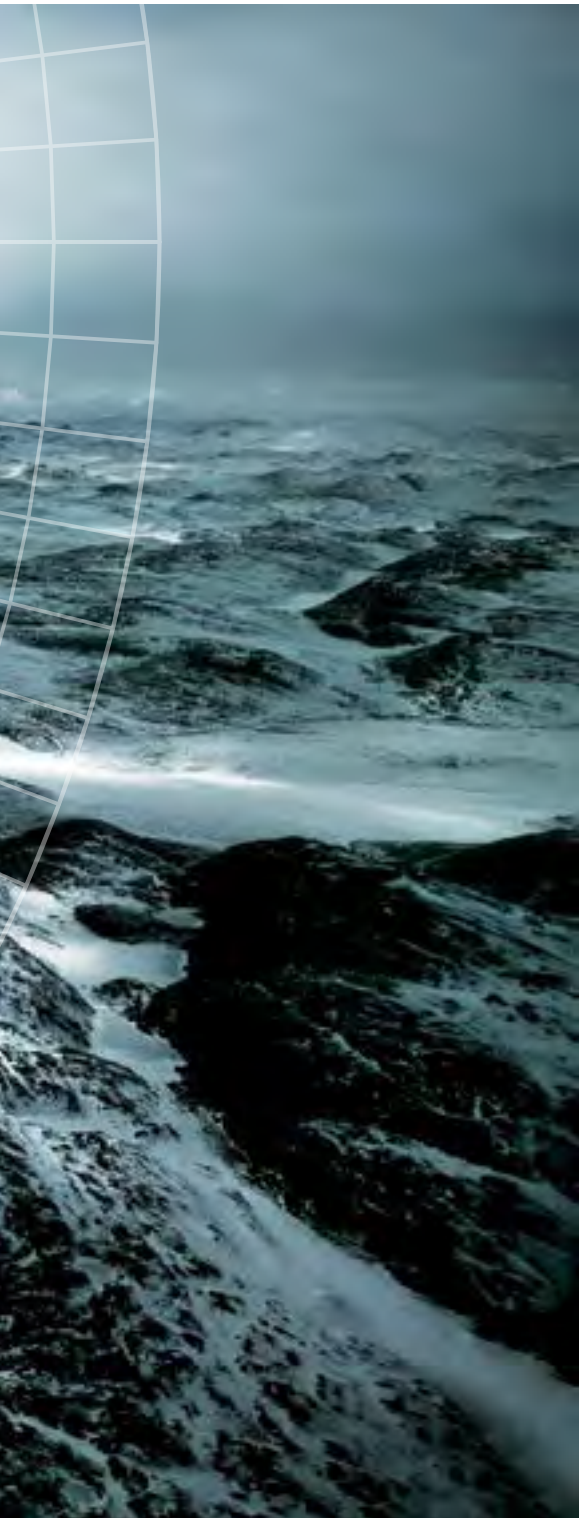
THE HORNTECHNOLOGY

HOW DO YOU PRODUCE A SOUND  
OF UNBELIEVEABLE PURITY AND POWER?









## THE HORNTECHNOLOGY

BY USING PRISTINE NATURAL PRINCIPLES.

"Purity meets performance." Just in case you want to ask us what it takes, to turn a sound experience into a natural force majeure. Or what makes music to cause physical reactions. A violin to touch our heart. A bass line to hit our muscles. Suddenly to hear things we did not suspect. And that in our home new worlds open up.

That will be the answer: Absolute purity combined with maximum power.



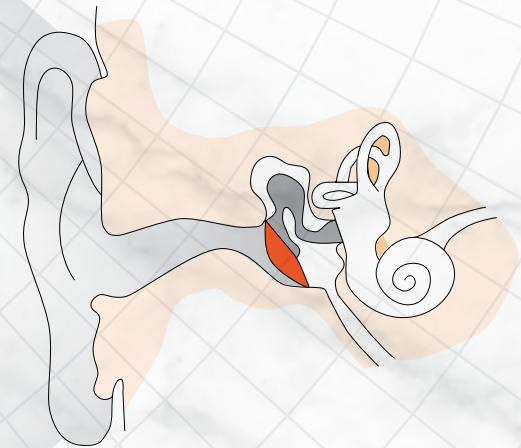
## WHAT IS A HORN?

The horn principle is as old as the universe, maybe even older. Everybody knows the horn! In nature the principle of the horn technology is ubiquitous.

The physiomy of the human ear is based on the acoustical principles of a horn. The ear gradually decreases in diameter via the auditory canal towards the eardrum. The pressure increases accordingly. Thus, by means of this design, we can perceive infinite pressure variations, which enable us to hear well.

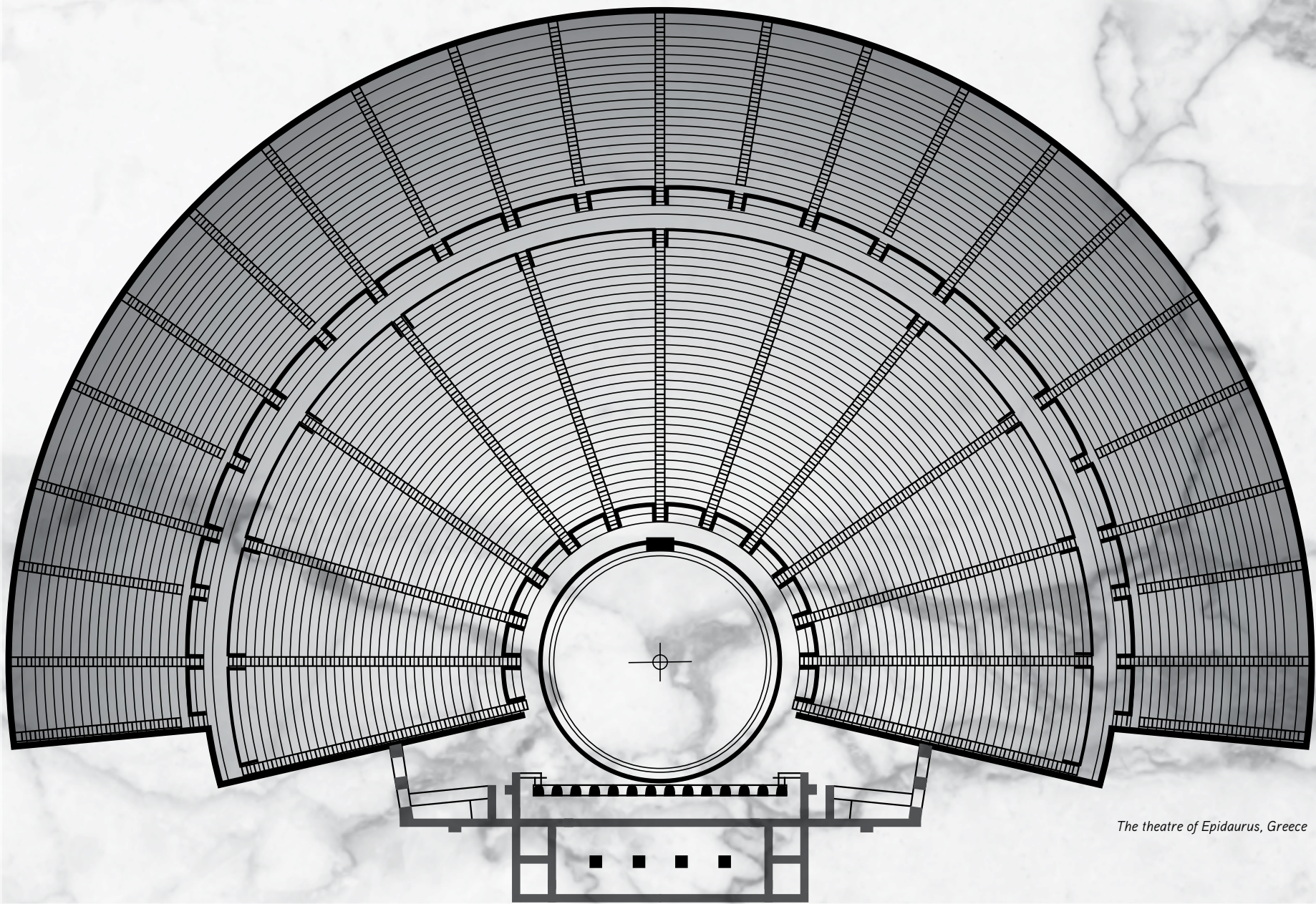
Our mouth is a funnel and we form our hands in the shape of a cuped funnel to amplify our voices and to improve the intelligibility when listening. Even the architectural design of the ancient amphitheater in Epidaurus is based on the acoustical principles of the horn.

A horn funnel effectively guides the motion of sound waves and thus substantially increases the sensitivity and effectiveness of sound radiations. A horn is the most natural and powerful way to amplify sound.



*The anatomy of the human ear*





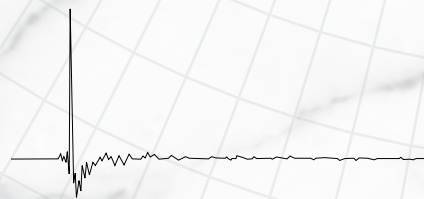
*The theatre of Epidaurus, Greece*



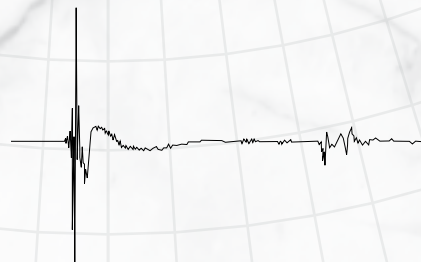
## THE TECHNICAL ADVANTAGES OF THE SPHERICAL AVANTGARDE HORNS ARE SCIENTIFICALLY PROVEN.

A horn funnel connected to the front of a speaker driver is the most efficient way to amplify the sound and to increase the efficiency of a speaker. The actual moving parts of a transducer - voice coils and membranes - can be designed much smaller. Smaller moving parts means less weight. This reduction of the inertia of the moving masses will increase the responsiveness of the system. A horn speaker will accelerate much faster and at the same time will come to an immediate stop of motion if induced by the audio signal.

The reduction in the dimensions of the membrane area adds to the mechanical stability of the assembly. This higher sturdiness of the membranes and the reduced amplitude of the driver movement in a horn system will significantly reduce distortions.



*Impulse response of a horn speaker*



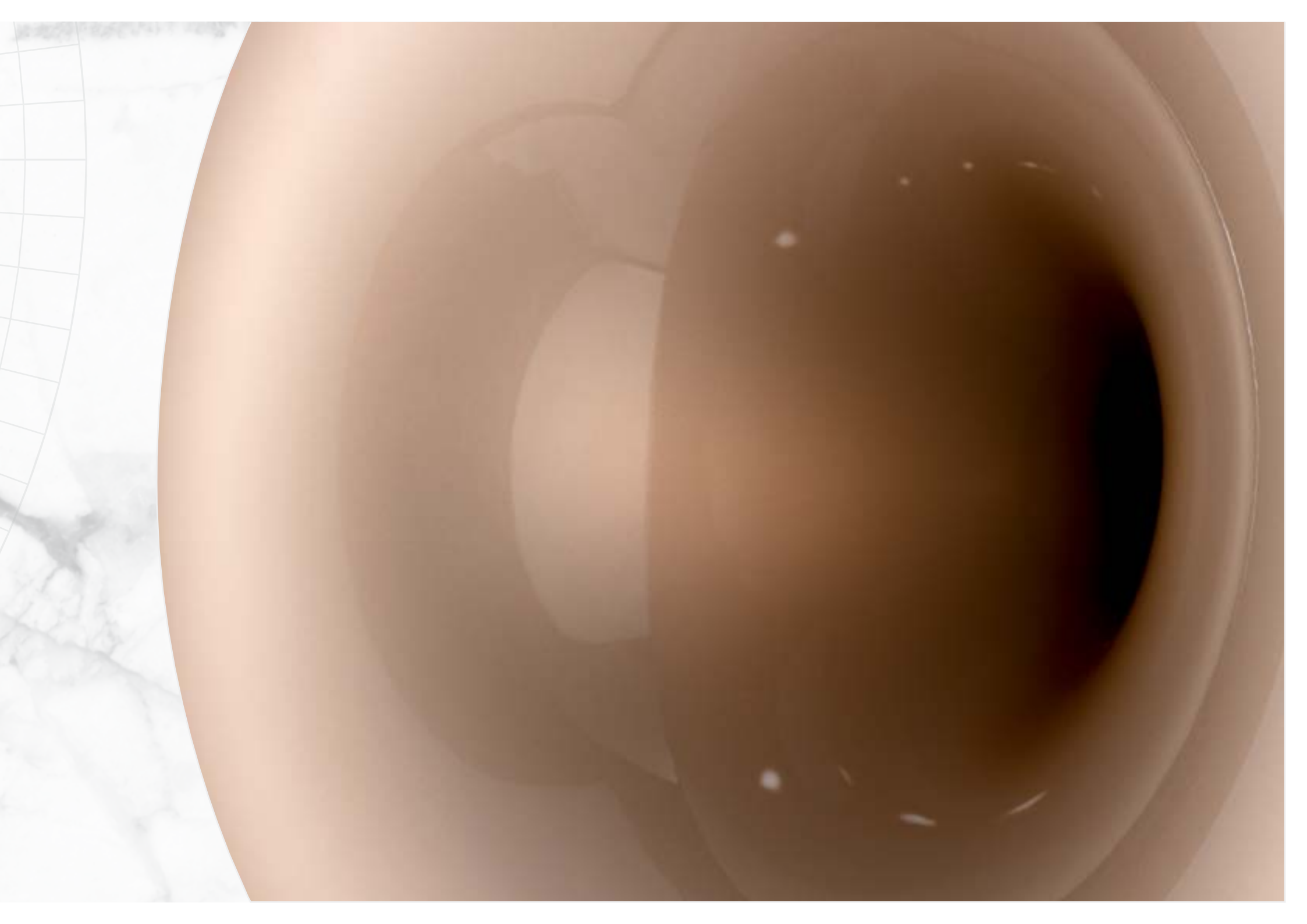
*Impulse response of a conventional speaker*

Laboratory measurements of our horn drivers with and without the horns executed by Prof. Dr. Anselm Goertz at the University of Aachen impressively endorse the advantages of the Avantgarde spherical horn technology:

- 8 x 8 x times higher dynamic bandwidth
- 90% 90% less distortions
- 10 x 10 x times more details

This means that the usable range from the most silent to the loudest tones is increased by 8 x times. At the same time the Avantgarde Acoustic horn systems have much less distortions and are thus capable of reproducing details which are 10 x times smaller than with conventional box speakers in the box-design.





## SOUNDWISE THE AVANTGARDE HORNS SET BENCHMARKS.

It is practically impossible to describe the sound of our horn speakers with words. This experience everybody must make by himself. But nevertheless we want to try and explain what can be expected. The horn technology has some incredible technologic advantages. How does this translate into benefits to the listener?

First of all with an Avantgarde horns system you can listen very loud. You can turn up the volume even more and the sound does not get harsh or aggressive. Even at extreme volumes everything remains clear, pure and totally undistorted. The typical buzzing in one's ears – you get when playing too high – does not occur. On the contrary: you will find yourself cranking up more often than you used to, because it is simply so much more fun with an Avantgarde Acoustic system.

Secondly you have to envisage that a speaker like – for example the TRIO – is extremely fast. To be precise: in 0,0000125 seconds from 0 to 130dB. That is to say that within a fraction of a blink of an eye air molecules are set into motion with an incredible force. This is an unbelievable acceleration! Every microscopical detail is being reproduced instantly with no lag whatsoever. There is no compression. Zero point zero. No detail is being lost. You will hear details which you have never heard before.

And there is another thing you need to know: in the reverse direction it's the same. I.e. from 130 to 0dB the speakers needs as well only 0,0000125 seconds. An Avantgarde system gets immediately quiet when the music falls silent. No delay, no post-pulse oscillation, nothing! For this reason our horn systems are louder and at the same time more quiet – an incredible experience.

All Avantgarde spherical horns systems are designed with a mass-spring voice coil system which is optimized for high forces at low amplitudes. I.e. even at low and very low volumes every microscopic oscillation of the membrane is translated into clean sound.

Just imagine you are doing a meditation or yoga and in the background you have some mantra music playing softly. With the horns you will not hear a sound mush which ripples from far away. You will hear every single tone with a crystalline clarity and power that is capable to penetrate every cell of your body. Amazing.









THE IMPLEMENTATION

HOW TO BUILD HORN SPEAKERS  
OF INCREDIBLE PURITY AND POWER.







## THE IMPLEMENTATION

### IF THE HORN TECHNOLOGY IS AS GOOD, WHY DOES NOT EVERYBODY BUILD HORNS?

The advantages of our horn technology are unambiguous. But why is this superior horn technology then not being utilized more often? One reason might be its voluminous size which is opposing the trend for small “invisible” audio systems.

But the actual reason is to be found in the extremely complex horn technology itself. Already in 1928 the sound pioneer Harry F. Olson stated: “The design of a horn loudspeaker is a long and tedious task”. By having 8 times more dynamic range at 90% less distortions, our spherical horns systems behave like a relentlessly revealing acoustical magnifying glass. Every little mistake would be amplified by multiples and thus become immediately audible. Having so little distortions, the noise floor to hide imperfections is much smaller. I.e. with our horns there is no way to hide and you will hear everything!

At first this implies that within the R&D process we have to precisely compute every little detail and to accurately balance the interaction of all components of the system. And it postulates as well that in the execution we need to apply extreme accuracy during the production and quality control processes.

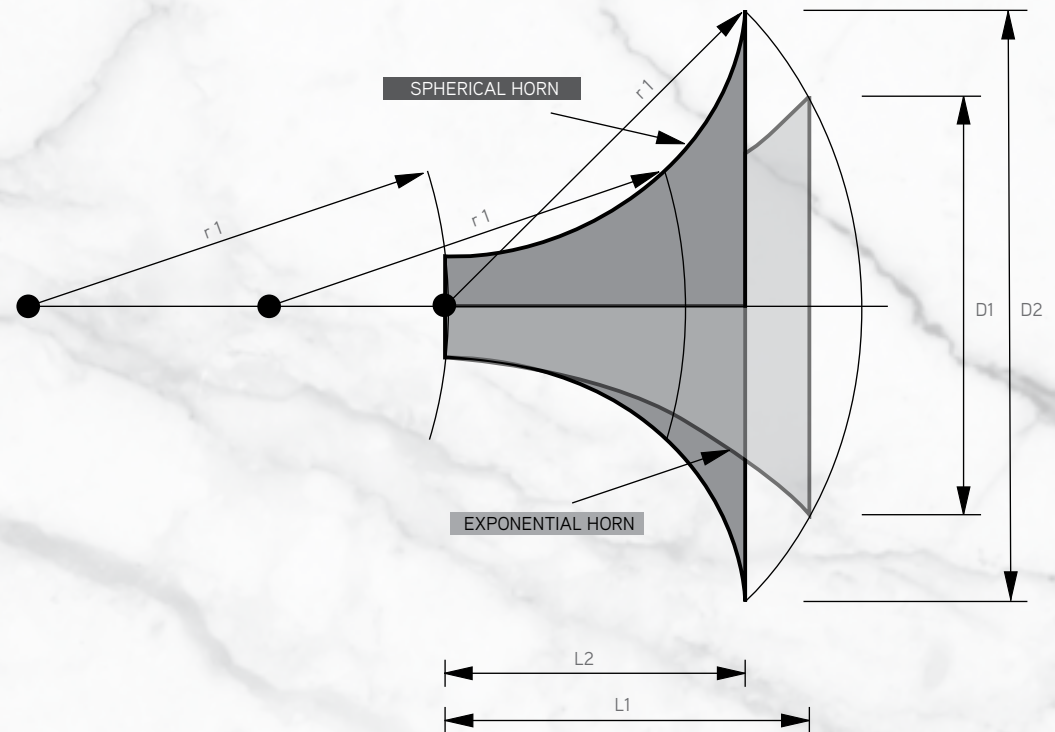
We focus on the fascinating horn technology with all of our heart and soul now for more than 25 years. We put all of our energy into R&D. We accumulated an extensive know how and developed some unique processes and technologies. On the following pages we want to share some of these aspects with you.



## THE IMPLEMENTATION

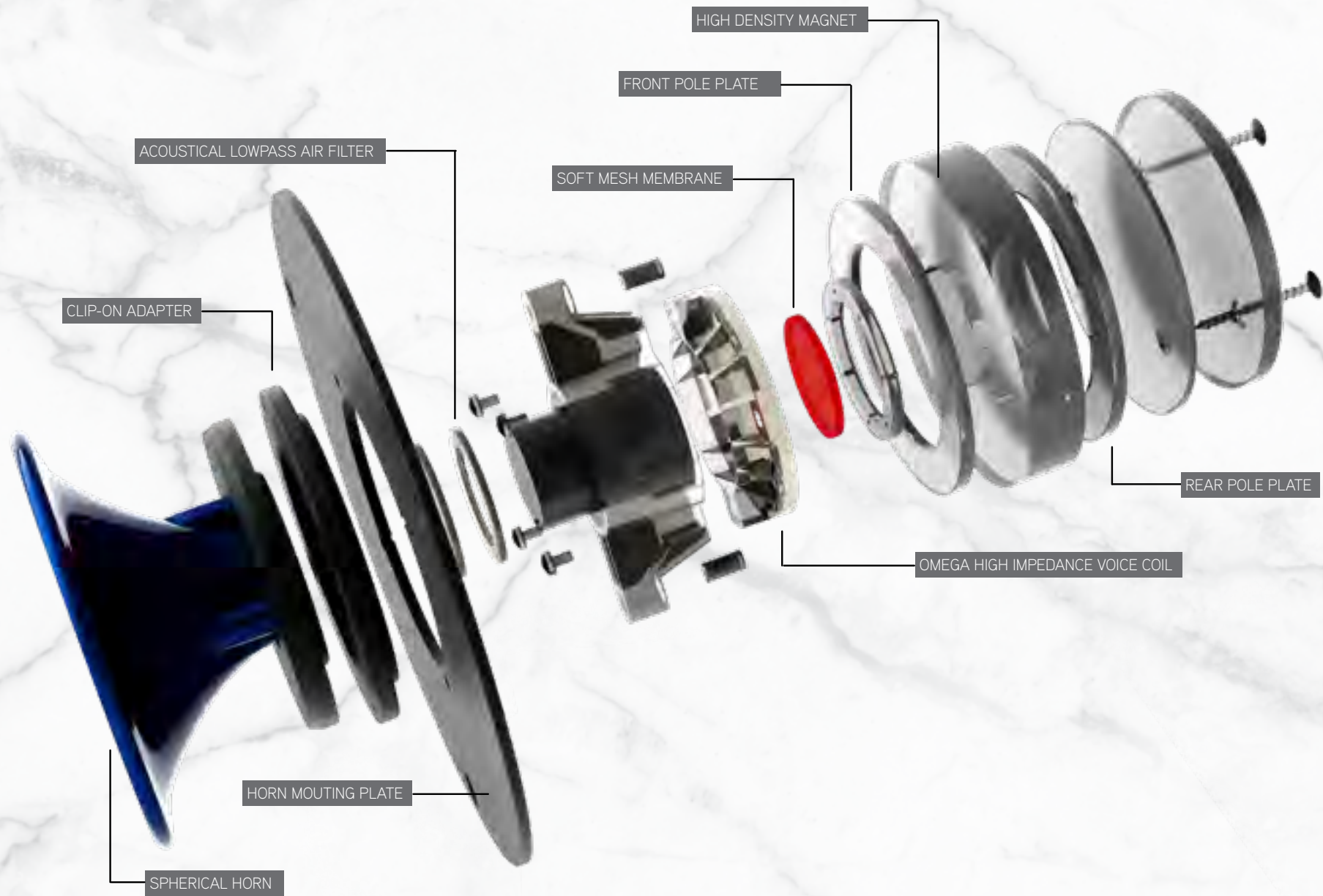
### THE MOST PRECISE HORNS IN THE WORLD.

The spherical horn curvature is precisely calculated with complex mathematical algorithms. The horns are being produced with an elaborate injection moulding technology. Under a pressure of 2,500 tons a molten ABS resin is injected into a steel mold. These steel molds are manufactured to a precision of  $\pm 0.05$  mm – likely the highest accuracy of any spherical horns ever being produced to date. This guarantees a precise propagation of the sound waves within the horn and ensures a stable product continuity during the production process. One horn resembles each other. Left & right channel are always 100% identical.



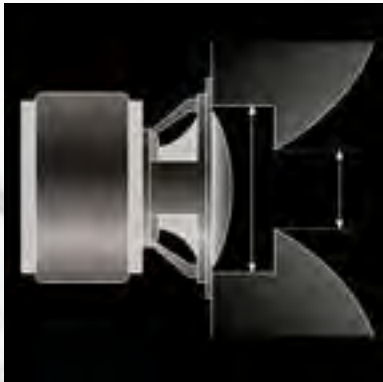






## THE IMPLEMENTATION

### GROUNDBREAKING ENGINEERING.



#### NO COMPRESSION.

Our horn drivers are designed in-house and feature a mass-spring voice coil system which is optimized for high forces at low amplitudes. For quality reasons we do not use compression loading in our midrange systems. I.e. the size and shape of the membrane is precisely aligned 1:1 to the throat of the horn. Instead of using compression chambers we rather achieve our high sensitivity with strong magnets and a minimized air gap for the voice coils.



#### NO COMPONENTS IN THE SIGNAL PATH.

By accurate computation we enhance the functionality of the spherical horns to work as a crossover filter. This super-crossover has no components and solely works with the medium air. Thus it is totally lossless and free of any artifacts. By defining the horn mouth area we cut low frequencies with 18 dB and with an air volume in front of the horn throat we cut high frequencies with 12 dB. This way we manage to avoid any passive filter components in the signal path – routing the music signal directly to the voice coil of the driver. Less components, less interactions, less friction ensuring more detail. Perfect!



#### OMEGA TECHNOLOGY.

With our Omega-technology we improve the interaction of the speakers with the connected amplifiers and cables. The high impedance of the Omega voice coils increases the damping factor of the system. The amplifier can better control the movement of the drivers.

The authority of the amplifier is increased by 450%. The negative effects of long speaker cables is reduced by 80%.



#### SOFT MESH MEMBRANE.

We are very proud of our newest development – the “Soft-Mesh-Compound” membrane. It uses a stable grid carcass as its structural foundation. The microscopic apertures of the grid are sealed with a proprietary elastic Elastomere-coating. 100% of the additional weight of the sealing is being used to absorb resonances. A special membrane with phenomenal low distortions – a technology breakthrough and for our horns a perfect match.





## THE IMPLEMENTATION

### GROUNDBREAKING ENGINEERING.



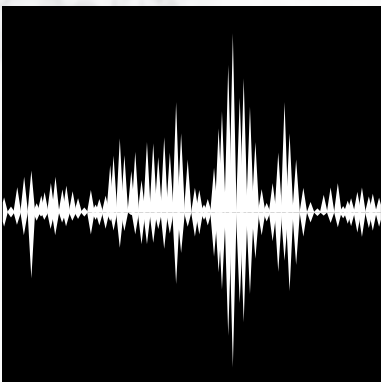
#### SPHERICAL DOME SHAPE

The geometry of our loudspeaker calottes is precisely adapted to the radiation characteristics of the spherical midrange horns. This way we achieve a phase-coherent radiation into the horn and ensure that no sound waves are reflected back into the funnel.



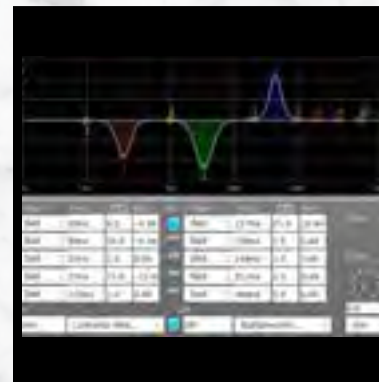
#### INTEGRATED BASS AMPLIFICATION.

The subwoofers of all Avantgarde speakers are powered by integrated bass power amps. These integrated active modules combine digital crossovers and powerful power amplifiers. Each bass driver is driven by a separate power amplifier, providing for ample headroom even in complex EQ settings. The power modules can be remotely switched on/off using the 12V trigger signal.



#### VERY HIGH SENSITIVITY.

Efficiency is the ratio of supplied electrical energy to emitted sound pressure level. The greater the efficiency, the more effectively the electrical energy is converted 1:1 into sound. The Avantgarde horns significantly increase the acceleration and at the same time reduce the amplitudes of the post oscillations of any driver. Critical deformations of the membrane and cone break-up are effectively suppressed. Distortions are significantly reduced and dynamic compression does not occur.



#### DIGITAL SIGNALPROCESSING.

The subwoofer amplifiers are equipped with an advanced digital sound processor. With a precision and bit accuracy unattainable using analogue technology, the digital crossover network eliminates all the passive filter elements in the signal path of the subwoofer. Volume settings, delay time, high pass & low pass filters and up to 10 parametric equalizers are programmable. This way it is possible to adjust the sound to individual preferences and to allow for a seamless integration of the system in different rooms.



## THE IMPLEMENTATION



## ROOM FITTING BY AVANTGARDE.

You probably know this when buying new shoes: too tight at the front and too wide at the back. And unfortunately the dream shoes are not available as bespoke custom made items.

Same when purchasing loudspeakers. . . Wouldn't it be nice if a sound engineer comes to your home and tunes the sound perfectly to your room?

We meticulously dealt with this issue of „room fitting“ and as a result developed the probably most ambitious concept in the audio industry.

A certified Avantgarde service partner will come to your house and execute acoustical measurements using our calibrated measuring equipment. These files are transferred via the web to our laboratory computers. With this high-resolution data, the sound engineers now have a precise digital fingerprint of your room and your audio system. The experts in our laboratory in Lautertal analyze the data, carry out a complex variance analysis and determine the perfect settings for your loudspeaker in your room.

Room-Fitting by Avantgarde is the state-of-the-art studio mixing console that comes to your home. Operated by the best sound engineers- no matter where in the world you are at home.









## THE IMPLEMENTATION

### HAND-BUILT WITH LOVE IN GERMANY.

Our claim is simple: building the best loudspeakers available today. To drive the ingenious natural horn principle to its limits - to question every detail, to optimize each and every component and to bring the interaction of the analog elements of the transducer/horn assembly to a unique level of performance.

We have been doing this now with all of our heart and soul for more than 25 years. And we take very much care. Same as on the first day.

Our desire has always been to design speakers which will move people visually in a similar way that they are moved when they listen to music through them. Speakers that will unleash emotions and memories even when standing silently in the room.

In short, speakers that are loved.



*Avantgarde headquarter in Reichenbach, Germany*









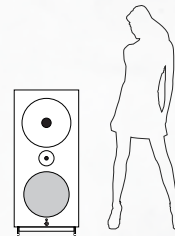
THE PRODUCTS

POWER AND PURITY IN DIFFERENT EXPRESSIONS,  
BUT ALWAYS WITH THE SAME DNA.





# ZERO 1



## FULLY ACTIVE PLUG & PLAY SYSTEM

*104 dB sensitivity  
400 mm spherical midrange horn  
130 mm spherical tweeter horn  
12 inch bass driver  
6 channel, 66 Bit FPGA signal processing  
Digital & analog inputs  
2 x 50 watt and 1 x 400 watt amplifiers*

The ZERO 1 is a fully active all-in-one system. All of an audiophile stereo system's components – digital processors, analogue-to-digital converters, power amplifiers and the loudspeakers – are integrated in the system. Moreover, they are all of elaborate high-end quality that is unprecedented in its class.

The loudspeakers communicate with each other via a radio link. They only need to be connected to the mains plus the digital input of the master loudspeaker to the music signal (e.g. wireless receiver or directly via USB, Toslink, SPDIF or the AES/EBU interface). That's it.

And being a full-fledged spherical wave horn system, the ZERO 1 has all the tonal advantages provided by the horn technology – the most original and natural acoustic transducer principle. This results in a sound characterized above all by its effortless, absence of distortion and explosive vitality – with a phenomenal efficiency of 104 dB.

However, what actually makes the ZERO 1 fascinating is that it combines the ingenuity of the horn with the possibilities of digital sound processing. The ZERO 1 succeeds in processing digital signals without compromising sound quality and transmitting them directly to the drivers without loss-making detours via passive filters. As a result, the horns receive a perfectly processed and amplified music signal. The digital filters are fully programmable to fine control the sound to the customer's taste and to the acoustics of the room.

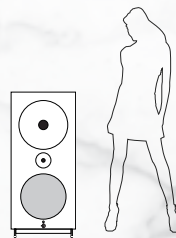
The 50 watts midrange and tweeter amplifiers of the XA-Series is almost exclusively working in pure class A mode and is operated in Zero-Feedback mode. A massive power amplifier with a rated output of 400 watts ensures that ample power is on tap for bass duties—naturally running in the energy-efficient Class D mode.



## ZERO TA

### SEMI-ACTIVE HORNSYSTEM

*104 dB sensitivity  
400 mm spherical midrange horn  
130 mm spherical tweeter horn  
12 inch bass driver  
Midrange without passive frequency crossover  
500 watt subwoofer amplifier  
Digital sound processor with parametric EQ*



The ZERO TA is the spherical horn unit of the awarded ZERO body in a combination of passive midrange/tweeter horn section and DSP controlled active subwoofer. Designed for customers who like to operate the minimalist design concept of the ZERO with analog sources and their own amplifiers. For vinyl and tube lovers a perfect entry into the world of semi-active horn systems.

The 400mm spherical midrange horn has a wide bandwidth down to 250 Hz. The frequency range of the horns thus covers a range of 6 octaves. With a sensitivity of 104 dB a perfect match for low powered tube amplifiers.

The active bassreflex subwoofer supplements the balance between spherical horn performance and low frequency reproduction. It is actuated by a 12 inch long-excursion driver powered by an integrated 500 watt amplifier.

Frequency control in the low frequencies is managed by an advanced digital sound processor. The digitally controlled frequency crossover ensure a seamless integration of the bass response to the spherical horns. The DSP is equipped with 10 parametric equalizers to fine control the sound to the customer's taste and to the acoustics of the room.



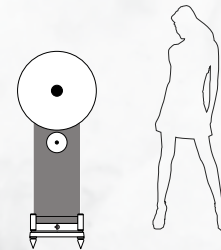








## UNO FINO edition



### SEMI-ACTIVE HORNSYSTEM

*107 dB sensitivity  
18 ohm Omega midrange driver  
500 mm spherical midrange horn  
Soft mesh membran  
Midrange without passive freq. crossover  
100V CPC freq. crossover (patent pend.)  
1 x 10 inch bass driver in bassreflex configuration  
500 Watt subwoofer amplifier  
Digital sound processor with EQ*

Introducing the UNO fino edition, the new entry-level speaker concept by Avantgarde Acoustic. Bringing the virtues of the UNO XD to a smaller cabinet, by adapted driver technologies, and by a redeveloped active subwoofer design. Opening new opportunities to those who are seeking for a “classical” Avantgarde look at a more affordable price point.

Already the UNO XD clearly outlines what is achievable with using Avantgarde’s spherical horn technology from 290 Hz and up: a finely contoured, crisp and open sound, with rich voices and instruments, presented with a unique life-like easiness and authority.

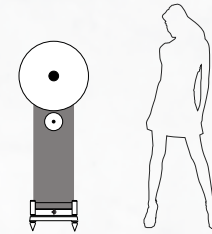
The UNO fino edition now conveys these virtues, effectively trickling the essential technologies of the UNO XD down to a more compact and more affordable package. Still full-range (30-20000 Hz), still extremely efficient (107 dB/W/m), still “true to life” when it comes to dynamic musical challenges. A worthy addition to the UNO line of products by Avantgarde Acoustic, and another horn speaker statement in sound quality.







## UNO



### SEMI-ACTIVE HORNSYSTEM

*107 dB sensitivity  
18 ohm Omega midrange driver  
500 mm spherical midrange horn  
Soft mesh membran  
Midrange without passive freq. crossover  
100V CPC freq. crossover (patent pend.)  
2 x 10 inch bass driver  
1.000 Watt subwoofer amplifier  
Digital sound processor with EQ*

The UNO is a scaled-down version of the classical DUO system. The objective was to accomplish the clarity and power of its “bigger” brother in a significantly reduced enclosure. By employing smaller 10 inch bass drivers and by integrating the horns as part of the speaker body, we managed to reduce the cabinet structure considerably.

The 500mm spherical midrange horn covers a wide bandwidth down to 300 Hz. Midrange and tweeter drivers are equipped with Omega voice coils. With this high impedance technology we improve the interaction of membrane movement and amplifier signal. The result is 18 ohms impedance combined with 107 dB system sensitivity.

Using Avantgarde Acoustic’s CDC-technology, we precisely align the frequency response, sensitivity of the driver, the geometry of the membrane and the air chamber at the horn throat to the response curve of the spherical midrange horn. This way the midrange driver has no passive filter components in the signal path – routing the music signal directly to the voice coil of the driver engine. Less components, less interactions, less friction ensuring more detail.

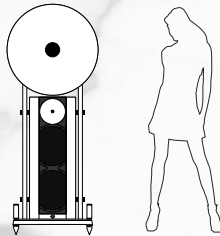
The tweeter of the UNO is equipped with the patent pending Capacitor-Polarization-Circuit to bypass the structural limitations of capacitors. By applying a polarization voltage to the conductors of a custom designed capacitor, we managed to eliminate the physical phenomenon known as “dielectric memory effect”.

The active subwoofer SUB225 supplements the balance between spherical horn performance and low frequency reproduction. It is actuated by two 10 inch long-excursion drivers powered by a 1.000 Watt amplifier.

Frequency control in the low frequencies is managed by an advanced digital sound processor. The digitally controlled frequency crossover ensure a seamless integration of the bass response to the spherical horns. The DSP is equipped with 10 parametric equalizers to fine control the sound to the customers taste and to the acoustics of the room.



DUO



#### SEMI-ACTIVE HORNSYSTEM

*107 dB sensitivity  
18 ohm Omega midrange driver  
670 mm spherical midrange horn  
Soft mesh membrane  
Midrange without passive freq. crossover  
100V CPC freq. crossover (patent pend.)  
2 x 12 inch bass driver  
1.000 Watt subwoofer amplifier  
Digital sound processor with EQ*

Powered by its impressive 27 inch spherical horn, the DUO is the epitome of performance and dynamic beauty. Because in the captivating world of horns, size matters: the bigger the dimensions of the horns, the more extended the bandwidth becomes, and the more the listener takes advantage of the incredible performance of the horn technology.

That is why our engineers focused all of their expertise on developing a set of unique enlarged spherical horns with an extended frequency range of one more full octave – compared to the UNO.

Great spherical horns need great drivers – it is the heart of any high-performance system. The M2 Omega is a 170 mm midrange horn driver optimized for large, linear excursion. Its new “Soft-Mesh-Compound” membrane uses a stable grid carcass as its structural foundation. The microscopic apertures of the grid are sealed with a proprietary synthetic elastomer coating. The combination of a stable grid structure with a flexible lining effectively reduces partial resonances of the dome itself and absorbs high frequency distortions.

The DUO uses the same H3 Omega tweeter, as being used in our TRIO flagship system. The driver alone is an impressive 3 kg. The power of its magnetic field and its ultra light diaphragm combines smoothness and finesse with the authority of a powerful 1 inch horn driver. The result is a stunning 18 ohms impedance combined with a staggering 107 dB system sensitivity – likely the highest figures in any production speaker on this planet.

The DUO is combined with the significantly more powerful SUB231 subwoofer module. By utilizing two powerful 12 inch drivers, the dynamic headroom of the bass has been practically doubled, compared to the UNO.

The XD-1000 bass amplifier of the DUO has 1.000 watts and is equipped with an advanced digital sound processor. This way it is possible to adjust the sound to individual preferences and to allow for a seamless integration of the system in different rooms.





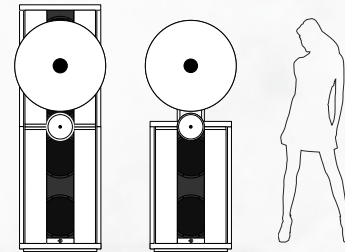






## DUO MEZZO / PRIMO

\* DUO PRIMO  
with 2 x short Basshorns



### SEMI-ACTIVE HORNSYSTEM

107 dB sensitivity  
18 ohm Omega midrange driver  
670 mm spherical midrange horn  
Soft mesh membrane  
Midrange without passive freq. crossover  
100V CPC freq. crossover (patent pend.)  
2 x 12 inch bass driver  
1.000 Watt subwoofer amplifier  
Digital sound processor with EQ

Taking advantage of the unrivaled performance of the horn principle by consequentially extending it to the lower octaves, the new DUO MEZZO & PRIMO are the first spherical full range horn systems in the DUO product line. An utterly thrilling way to experience the magic of the ultimate spherical full-range horn principle.

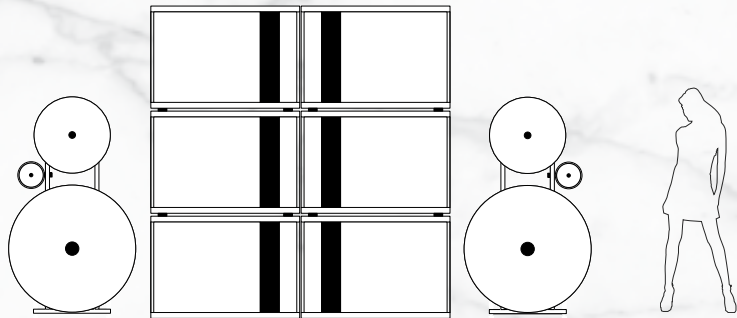
That's why the DUO MEZZO & PRIMO are one of the most exciting products for us. The spherical horns of the DUO series are here combined with two or four 12 inch bass drivers, radiating the sound waves through a short horn flare into the room. This increases the radiation impedance of the drivers above 60 Hz. Not only does this make the bass response very fast and crisp, but as well amazingly clean, refined and rich, flooding the room with luscious big sounds even at very low volumes.

Another significant advantage of the horn support is the seamless integration of subwoofer and midrange. The upper bass response has exactly the same speed and clarity and the transition to the midrange melts into one homogeneous entity. Listen to voices and instruments and you will immediately understand what this is all about.

Tall, purposeful and elegant, the DUO MEZZO & PRIMO communicate performance and agility. Perfect proportions with a sophisticated and desirable proposition. It simply is the most personal and intense form of the unforgettable DUO experience.



# TRIO



## SEMI-ACTIVE HORNSYSTEM

*109 dB sensitivity  
27 Ohm Omega midrange driver  
950 mm spherical low-midrange horn  
570 mm spherical midrange horn  
180 mm spherical tweeter horn  
100V CPC freq. crossover (patent pend.)*

### *Optional subwoofer modules:*

- BASSHORN (2, 4 or 6 modules)*
- SHORT BASSHORN*
- SUB231*

Have a seat. Relax. Smile. And enjoy . . .

Welcome to the audiophile nirvana. Welcome to the most exhilarating, uncompromising, consequent, natural and outstanding speaker system in the world. Welcome to the TRIO. The one and only TRIO. The ultimate dream system with no contenders.

Let's face it: the TRIO is unique. Unique in its artistic design. Unique in its craftsmanship. Unique in its State-of-the-Art technology. Unique in its condensed-to-the-max spherical horn architecture. And last but not least: unique in a performance that is impossible to describe. As the proverb says: all good things come in three's. TRIO. That's all that needs to be said.

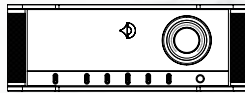
To put it simply, the Trio is the best speaker available from Avantgarde Acoustic! Here we consolidated in all of our know how, technologies, experience and enthusiasm. Or to put it to the point: here we have our dreams become a reality. And let us be honest: the Trio is not necessarily prudential. But in man's quest for the ultimate in performance, always the most fascinating things arise. The Trio is such a landmark - in respect to technology and in respect to sound. And that's why it exists.







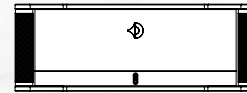
## XA AMPLIFIERS



### XA PRE AMPLIFIER

*DC-Flow circuit (patent pend.)  
48 Step volume attenuator (patent pend.)  
Single Ended Pure Class A output stage  
Zero Feedback  
5 x 2.300 mAh battery power supply*

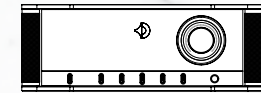
*18,5 kg outer unibody alu-chassis  
10,5 kg inner unibody alu-chassis  
41,0 kg total weight*



### XA POWER AMPLIFIER

*2 x 150 Watt Zero Feedback  
500 VA toroidal power transformer  
240.000 µF filter capacitors  
Primary DC-offset filter  
Primary and secondary LC filter stage  
Active electronic voltage regulation secondary*

*18,5 kg outer unibody alu-chassis  
9,8 kg inner unibody alu-chassis  
42,5 kg total weight*



### XA INTEGRATED AMPLIFIER

*2 x 150 Watt Zero Feedback  
350 VA toroidal power transformer  
Conductive 3 channel thinfilm potentiometer  
Primary DC-offset filter  
Primary and secondary LC filter stage  
Active electronic secondary voltage regulation*

*18,5 kg outer unibody alu-chassis  
9,8 kg inner unibody alu-chassis  
42,5 kg total weight*

To build very good amplifiers for the operation with conventional box speakers is state of the technology. But amplifiers specialized for hornspeakers are a very different challenge. The requirements in respect to freedom from distortions, linearity at microscopic output levels and dynamic headroom are significantly more complex. We know and understand these requirements. Reason enough for us to develop a series of amplifier which are optimized for our horn systems.

It is not the ambition that makes the XA amplifiers so unique. It is the radical approach taken to fulfill it. A no-compromise attitude that only those who are familiar with our background can comprehend. We have been researching, developing and advancing the most natural and pure form of acoustic transduction for over twenty years. Therefore, the benchmark to which we aspire to was obvious from the beginning: We strive for building an amplifier that was as pure and flawless as our horn speakers.



*XA preamplifier with silver anodized aluminium and black anodized front panel*





The background is a light-colored, marbled texture with grey veins. Two overlapping circles, one slightly larger than the other, are positioned on the left side. A horizontal bar with a white vertical line is centered over the text.

## FEEDBACK & DESIGN

OPINIONS OF THE EXPERTS ABOUT  
THE SOUND AND THE DESIGN.



IMAGE  
HOME ENTERTAINMENT

UltimateAUDI▶

Enjoy the Music.com®

STEREO  
A VIDEO

inner ear

analog

hi-fi+

AUDIO  
VIDEO

stereoplay

hifi-tunes

HAUTE FIDELITE

AUDIO

Audio Emporium

STEREO

AUDIO

PRESTIGE  
AUDIO VIDEO

Stereo

MARQUES  
of DISTINCTION

GROOVENOISE.COM

6  
six moons.com

THE LISTENER

АудиоМарафон

image hifi

Stereo & Image

HÖRERLEBNIS  
Das Magazin für High Fidelity

Audio  
video

HiFi  
Test  
TV - VIDEO

Audio  
REVIEWS

@<sup>2</sup>  
AudioAsylum

HITECH

IAR  
AUDIO

WIDESCREEN  
REVIEW

Hi-FiNews

LD living  
digital

HI-FI HI-END KINO DOMOV  
AUDIO

Audio

M. MOMENTUM  
A MAGAZINE WORTH LISTENING TO

HEIMKINO

audio vision

INXOS  
BANK

AUDIO CINEMA  
EMCASA

dq

オーディオアクセサリー  
**Audio Accessory**

**Stereo Sound**

**stereophile**

音響技術  
**AUDIOTECHNIQUE**

**F1**

**音響論壇**

**SoundStage!**

WHAT HI\*FI?  
SOUND AND VISION

**phile**  
DAS HIGH END MAGAZIN

## THE AUDIO MAGAZINES

*"They are easily the fastest and most realistically dynamic loudspeakers I've heard. They can shade dynamics as Sinatra can shade a lyric, eliciting the most subtle emotional nuances from music. I can think of no higher praise."*

(STEREOPHILE, A. Kay, USA)

## REVIEWS FROM ALL OVER THE WORLD.

The best reviewers from the most prestigious magazines all around the world have put our speakers through their paces. In the past 25 years more than 300 reviews of the Avantgarde horn systems have been published.

Above little quote from Alan Kay of the Stereophile Magazine in the USA is just one example of many. More you will find on our website.

Enjoy the reading.



## THE DESIGN

### FORM FOLLOWS FUNCTION MADE IN GERMANY.

We take very much care for every little detail and for the perfect interaction of all components to a whole. That's why we are very proud that after 25 years Avantgarde Acoustic has become one of the highest awarded brands in the audio industry.

In addition to the many prestigious prizes, we are particularly very happy to have been appointed for an active membership in the German Design Council in 2015. In the past two years consecutively Avantgarde Acoustic has been awarded by the Rat für Formgebung with the German Brand Award in Gold.

Member of  **Rat für Formgebung**  
German Design Council





*Plus X Award ceremony 2016 in the Plenary Hall of the German Bundestag in Bonn;  
ltr. Olaf Sturm, Peter Gabriel, Armin Krauss, Holger Fromme, Beate Fromme*





## THE DESIGN

### THE HORN COLORS.

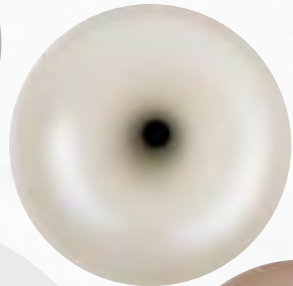
Our speakers have never tried to modestly hide or conceal themselves. They take the space they need, to make the sound that has been dream't about. But our speakers should not be loved for their audio performance alone. We rather wish that the unique experience of an Avantgarde Acoustic™ system continues after the last strains of music have faded away and the eyes open.

For this reason our customers can freely choose the color of the horns. A selection of eleven colors are available. All inspired by the pristine hues of mother nature. Whether it's a Jewel, which seemed to have waited for millions of years to endow us with its gleam of light. Or a miniscule grain of sand – which on its own appeared to be colorless – but which in caribbean aggregations create this irresistible warm creme color gradation we've named Saona Beach Creme.

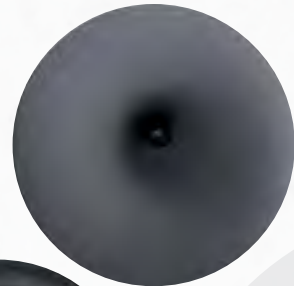
Diamond Crystal Silver



Akoya Pearl White



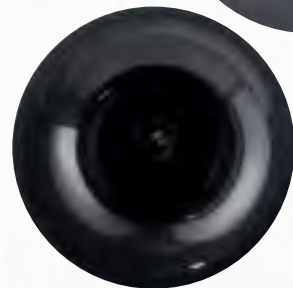
Stealth Nocturne Grey



Light Amber Bronze



Turmaline Vivid Black



# HORNS

*11 colors inspired by the pristine hues of mother nature*

Saona Beach Cream



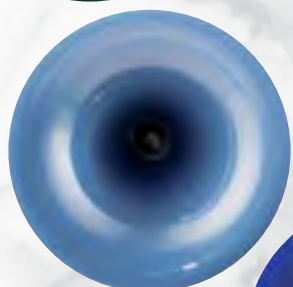
Smaragd Pearl Green



Shiny Citrine Orange \*



Light Topaz Blue



Ruby Brilliant Red



Sapphire Burma Blue

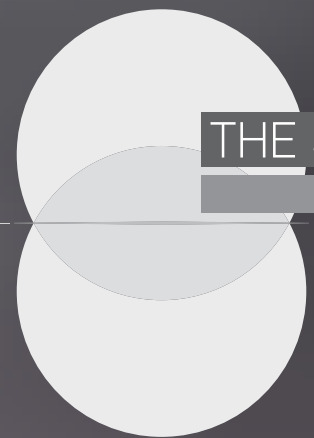


\* optional customized color



An aerial photograph of a waterfall with vibrant turquoise water cascading over a dark, rocky ledge. The water is captured in motion, creating a misty spray at the base. The surrounding landscape is dark and rugged, with some greenery visible in the distance.

NATURAL.  
POWERFUL.



THE SOUND



## THE MOMENT

### ARE YOU READY?

This brochure can answer some questions. It can explain what we envision by our claim „Purity meets Performance“. It can provide facts about the superiority of the horn principle. Or it can explain why we at Avantgarde Acoustic strongly believe being the best speaker manufactory in the world.

But the ultimate question you have to answer by yourself: are you ready for the most natural and evolving of all sound experiences? If so, we are very much looking forward to meeting you.

#### TRADE SHOWS & EVENTS

Check on our website all trade shows and events at [avantgarde-acoustic.de/en/events](http://avantgarde-acoustic.de/en/events)

#### DEALERS & DISTRIBUTORS

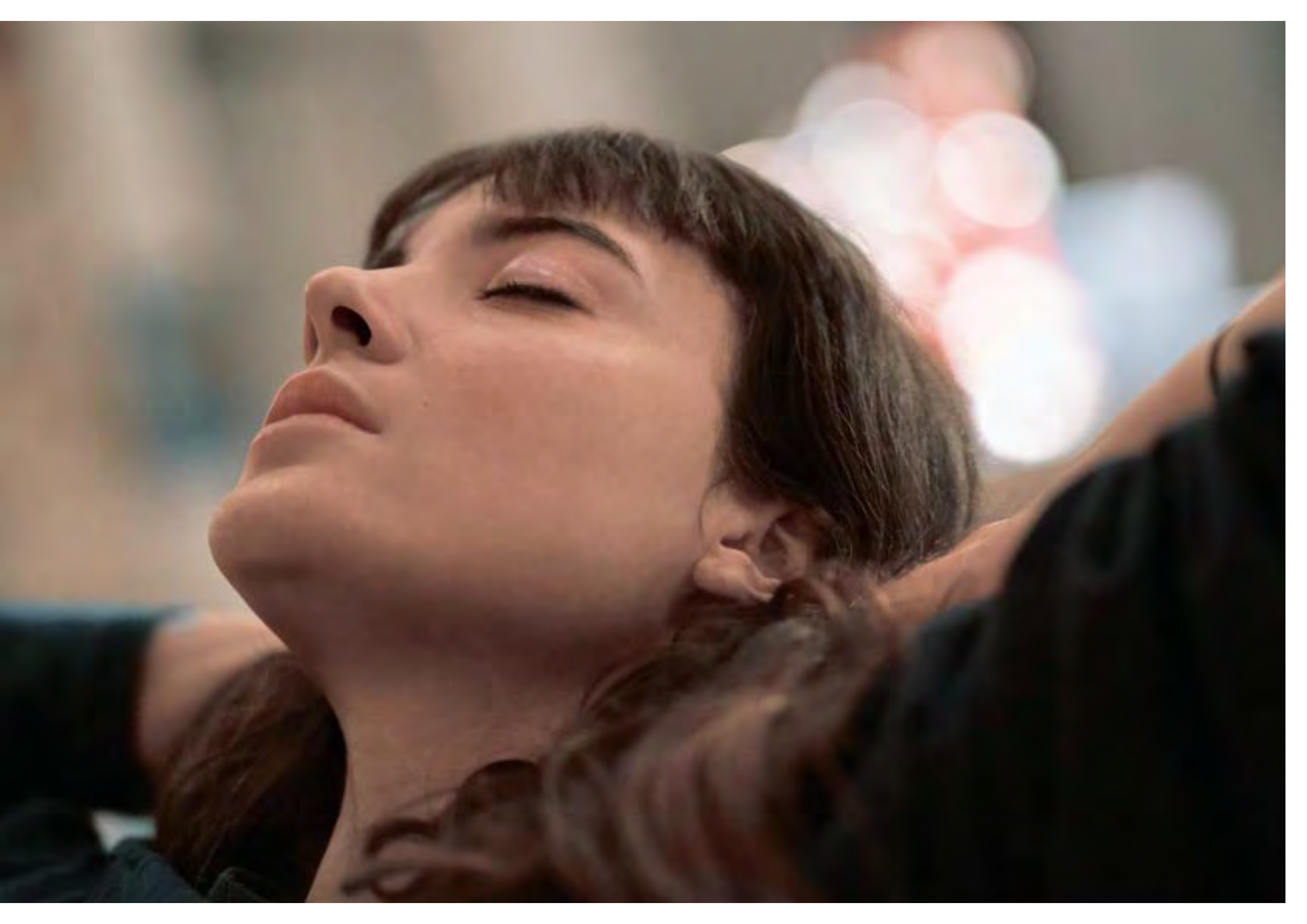
Register on our website to get in touch with the Avantgarde distributor in your country [avantgarde-acoustic.de/en/contact](http://avantgarde-acoustic.de/en/contact)

#### MASTER SHOWROOM

Visit the biggest horn speaker showroom in the world here in Lautertal, Germany  
Book your personal appointment at [avantgarde-acoustic.de/en/contact](http://avantgarde-acoustic.de/en/contact)



*Avantgarde master showroom in Reichenbach, Germany*









THE FACTS

SOMETIMES NUMBERS SAY MORE  
THAN A THOUSAND WORDS.



# SPECIFICATIONS

## SYSTEM DATA

Frequency response satellite  
subwoofer

Power capacity

Sensitivity (1 Watt / 1 m)

Crossover frequencies

Nominal impedance

Recommended amplification

Recommended room size

Omega voice coils

Frequency crossover with air-lowpass filter

CPC crossover (patent pend.)

## HORN

Horn type

Horn dispersion type

Horn mouth area low mid range  
mid range  
high range

## HORN DRIVERS

Diameter low mid range  
mid range  
high range

## BASS AMPLIFICATION

Amplifier output power (RMS)

Digital crossover

Parametric equalizer

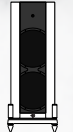
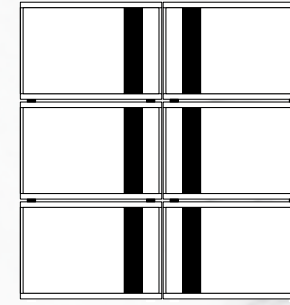
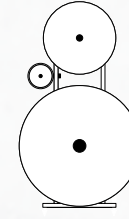
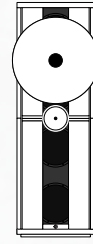
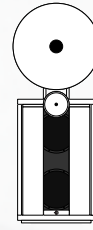
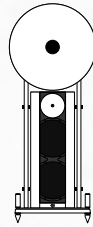
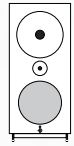
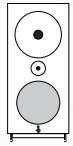
Digital room correction

Inputs

## DIMENSIONS/WEIGHT

Dimensions width  
depth  
height (+/- 15 mm)

Weight



ZERO 1

ZERO TA

UNO FINO

UNO

DUO

DUO MEZZO

DUO PRIMO

TRIO

BASSHORN - 6 MODULE

SHORT BASSH.

SUB231

250 – 20.000 Hz  
30 – 350 Hz  
2 x 50 Watt active  
> 104 dB  
250/2.000 Hz  
8 Ohm  
n/a  
> 130 sqft / 12 sqm

250 – 20.000 Hz  
30 – 500 Hz  
50 Watt  
> 104 dB  
250/2.000 Hz  
8 Ohm  
> 10 Watt  
> 130 sqft / 12 sqm

290 – 20.000 Hz  
30 – 500 Hz  
50 Watt  
> 107 dB  
290/3.000 Hz  
18 Ohm  
> 10 Watt  
> 130 sqft / 12 sqm

290 – 20.000 Hz  
18 – 500 Hz  
50 Watt  
> 107 dB  
290/3.000 Hz  
18 Ohm  
> 10 Watt  
> 130 sqft / 12 sqm

170 – 20.000 Hz  
18 – 500 Hz  
100 Watt  
> 107 dB  
170/2.000 Hz  
18 Ohm  
> 10 Watt  
> 170 sqft / 16 sqm

170 – 20.000 Hz  
18 – 500 Hz  
100 Watt  
> 107 dB  
170/2.000 Hz  
18 Ohm  
> 10 Watt  
> 200 sqft / 20 sqm

170 – 20.000 Hz  
18 – 500 Hz  
100 Watt  
> 107 dB  
170/2.000 Hz  
18 Ohm  
> 10 Watt  
> 200 sqft / 20 sqm

100 – 20.000 Hz  
n/a  
150 Watt  
> 109 dB  
100/600/4.000 Hz  
19 Ohm  
> 2 Watt  
> 250 sqft / 25 sqm

n/a  
18 - 500 Hz  
n/a; aktives System  
n/a; aktives System  
variabel; 40-500 Hz  
n/a  
n/a; aktives System  
> 250 sqft / 25 sqm

n/a  
18 - 500 Hz  
n/a; aktives System  
n/a; aktives System  
variabel; 40-500 Hz  
n/a  
n/a; aktives System  
> 200 sqft / 20 sqm

n/a  
18 - 500 Hz  
n/a; aktives System  
n/a; aktives System  
variabel; 40-500 Hz  
n/a  
n/a; aktives System  
> 200 sqft / 20 sqm

No  
Yes  
n/a (FPGA)

No  
Yes  
Yes

Yes  
Yes  
Yes

Yes  
Yes  
Yes

Yes  
Yes  
Yes

Yes  
Yes  
Yes

Yes  
Yes  
Yes

Yes  
Yes  
Yes

n/a  
n/a  
n/a

n/a  
n/a  
n/a

n/a  
n/a  
n/a

Spherical horn  
180 degree

Spherical horn  
180 degree

Spherical horn  
180 degree

Spherical horn  
180 degree

Spherical horn  
180 degree

Spherical horn  
180 degree

Spherical horn  
180 degree

Spherical horn  
180 degree

Expo-Spherical horn  
180 degree

Expo-Spherical horn  
180 degree

n/a

n/a  
Ø 400 mm  
Ø 130 mm

n/a  
Ø 400 mm  
Ø 130 mm

n/a  
Ø 500 mm  
Ø 130 mm

n/a  
Ø 500 mm  
Ø 130 mm

n/a  
Ø 670 mm  
Ø 180 mm

0,470 qm  
Ø 670 mm  
Ø 180 mm

0,940 qm  
Ø 670 mm  
Ø 180 mm

Ø 950 mm  
Ø 570 mm  
Ø 180 mm

6 x 0,850 qm  
n/a  
n/a

0,470 qm  
n/a  
n/a

n/a  
n/a  
n/a

1 x 12 in / 300 mm  
1 x 5 in / 125 mm  
1 x 1 in / 25 mm

1 x 12 in / 300 mm  
1 x 5 in / 125 mm  
1 x 1 in / 25 mm

1 x 10 in / 250 mm  
1 x 5 in / 130 mm  
1 x 1 in / 25 mm

2 x 10 in / 250 mm  
1 x 5 in / 130 mm  
1 x 1 in / 25 mm

2 x 12 in / 300 mm  
1 x 7 in / 170 mm  
1 x 1 in / 25 mm

2 x 12 in / 300 mm  
1 x 7 in / 170 mm  
1 x 1 in / 25 mm

4 x 12 in / 300 mm  
1 x 7 in / 170 mm  
1 x 1 in / 25 mm

1 x 8 in / 200 mm  
1 x 2 in / 50 mm  
1 x 1 in / 25 mm

12 x 12 in / 300 mm  
n/a  
n/a

2 x 12 in / 300 mm  
n/a  
n/a

2 x 12 in / 300 mm  
n/a  
n/a

400 Watt Class D  
Yes (FPGA)  
Yes (FPGA)  
Yes (FPGA)

500 Watt Class D  
Yes (DSP)  
10-Band EQ (DSP)  
Yes (DSP)

500 Watt Class D  
Yes (DSP)  
10-Band EQ (DSP)  
Yes (DSP)

1.000 Watt Class D  
Yes (DSP)  
10-Band EQ (DSP)  
Yes (DSP)

1.000 Watt Class D  
Yes (DSP)  
10-Band EQ (DSP)  
Yes (DSP)

1.000 Watt Class D  
Yes (DSP)  
10-Band EQ (DSP)  
Yes (DSP)

2.000 Watt Class D  
Yes (DSP)  
10-Band EQ (DSP)  
Yes (DSP)

n/a  
n/a  
n/a  
n/a

6 x 1.000 Watt Class D  
Yes (DSP)  
10-Band EQ (DSP)  
Yes (DSP)

1.000 Watt Class D  
Yes (DSP)  
10-Band EQ (DSP)  
Yes (DSP)

1.000 Watt Class D  
Yes (DSP)  
10-Band EQ (DSP)  
Yes (DSP)

USB, 2 x SPDIF  
TOSLINK, AES  
XLR Analog

1 x SPKR Input  
1 x XLR Line Input

1 x SPKR Input  
1 x XLR Line Input

1 x SPKR Input  
1 x XLR Line Input

1 x SPKR Input  
1 x XLR Line Input

1 x SPKR Input  
1 x XLR Line Input

1 x SPKR Input  
1 x XLR Line Input

n/a

1 x SPKR Input  
1 x XLR Line Input

1 x SPKR Input  
1 x XLR Line Input

1 x SPKR Input  
1 x XLR Line Input

19.3 in / 490 mm  
12.5 in / 318 mm  
41.0 in / 1.040 mm (fix)

19.3 in / 490 mm  
12.5 in / 318 mm  
41.0 in / 1.040 mm (fix)

19.7 in / 500 mm  
23.2 in / 590 mm  
49.4 in / 1.255 mm

19.7 in / 500 mm  
23.2 in / 590 mm  
53.9 in / 1.370 mm

26.4 in / 670 mm  
23.6 in / 600 mm  
66.7 in / 1.695 mm

26.4 in / 670 mm  
25.6 in / 650 mm  
67.1 in / 1.705 mm (fix)

26.4 in / 670 mm  
25.6 in / 650 mm  
71.6 in / 1.820 mm (fix)

37.4 in / 950 mm  
32.7 in / 830 mm  
65.7 in / 1.670 mm

80.7 in / 2.050 mm  
41.7 in / 1.060 mm  
87.5 in / 2.222 mm (fix)

23.6 in / 600 mm  
25.6 in / 650 mm  
37.8 in / 960 mm (fix)

13.4 in / 340 mm  
17.1 in / 435 mm  
35.8 in / 910 mm

86 lbs / 39 kg

86 lbs / 39 kg

123 lbs / 56 kg

176 lbs / 80 kg

209 lbs / 95 kg

243 lbs / 110 kg

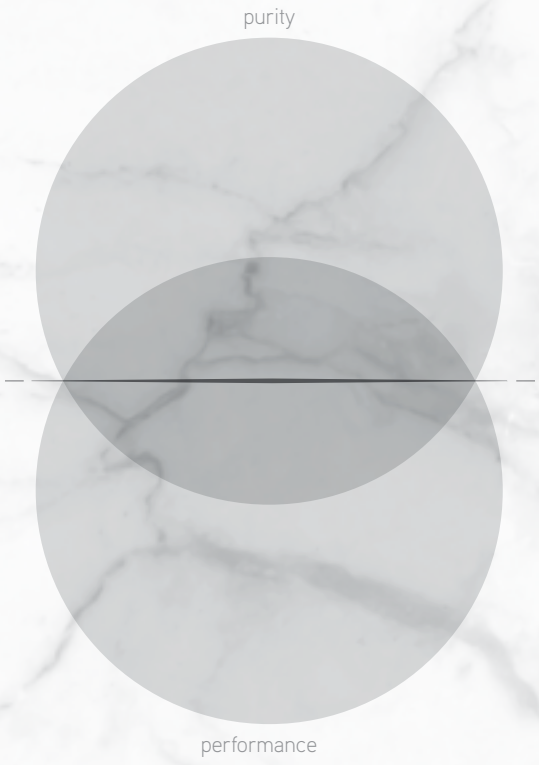
390 lbs / 177 kg

123 lbs / 56 kg

6 x 212 lbs / 96 kg

176.4 lbs / 80 kg

143.3 lbs / 65 kg



**avantgarde**  
ACOUSTIC

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D-64686 Lautertal  
Germany

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email: [info@avantgarde-acoustic.de](mailto:info@avantgarde-acoustic.de)  
[www.avantgarde-acoustic.de](http://www.avantgarde-acoustic.de)