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Test Børresen 01: Compact loudspeakers from another star

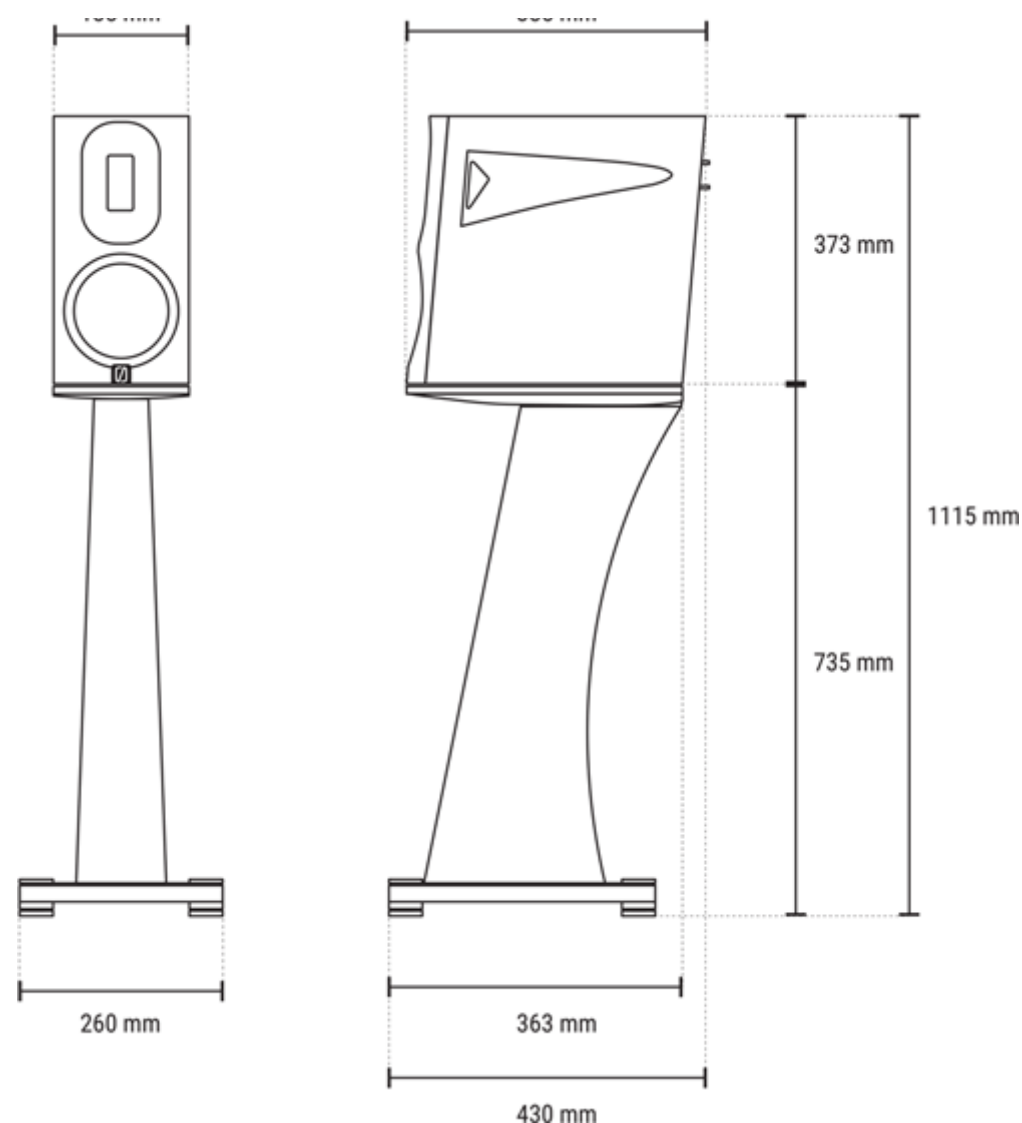
February 2, 2019 was the day when my HiFi-world began to turn upside down. It was a Saturday, and as I strolled along the aisles of the Holiday Inn Hotel in Hamburg, which was hosting the Norddeutsche HiFi-Tage 2019, I was looking around for interesting novelties. And indeed, I made a particularly exciting find on that day – something I had not been fully aware of until then. I discovered the brand Børresen from Denmark. More precisely, the compact loudspeakers Børresen 01. Only a few beats coming from the loudspeakers were enough to captivate me for a few hours. What followed then is what I have already told to some extent in my Børresen visiting report in April. However, I could hardly wait to listen to the ‘little ones’ as test loudspeakers at my place. But - after all - good things will take some time. It was not until June that a pallet arrived with the Børresen 01 loudspeakers packed in three boxes. The party could begin.



The Børresen 01 has a cabinet inspired by Sonus faber and utilizes the concept of minimum mass. The attractive compact loudspeakers weigh just about 11.5 kg each. (photo: Børresen)

The price for a pair of Børresen loudspeakers 01 starts at 25,000 euros, contingent upon the configuration with the matching ‘Darkz Resonance Control’. Three of them belong under each of the loudspeakers and couple them with the loudspeaker stands. I’ll come back to this later. With the Darkz, the price can increase to over 30,000 euros.

Such a high price for such ‘small loudspeakers’ of course will have a deterring effect and limits the number of potential buyers enormously. However, as it turns out, the price is not without reason. But, first things first.



The stands are an integral component of the sound concept and a perfect optical fit. It is important to note that the loudspeakers are not being sold without stands. (drawing: Børresen)

In addition, floor-standing loudspeakers are currently also available - the 02, 03 and 05 - which are all markedly even more expensive. Their list prices extend into the 6-figure region, which puts the Danish manufacturer on the same level as Magico, Wilson Audio, TAD, Estelon and other manufacturers of exotic super loudspeakers.

The setting-up of the Børresen 01

The setting-up of the Børresen 01 is very easy because they are pretty light – which for loudspeakers of that category is completely unusual. The same goes for the stands. Each of them weighs only 6.5 kg on the scales. In addition, the stands are pre-assembled. Carefully remove them from the packaging, place them at their designated spot, and done. There are no spikes or the like that need to be mounted since the 01-stands, along with all other Børresen floor-standing loudspeakers, have four flat and floor-protecting feet that can be adjusted to eliminate any wobbling and/or tilting.



The stands of the 01 appear discreet and with their 6.5 kg, they are an unusually light construction in this class of loudspeakers. (photo: F. Borowski)



Even from below, everything is clean and perfectly shaped. (photo: F. Borowski)



The back of the stalls: The perspective could be deceiving. The stands are not open to the rear, but closed with a concave counterpart to the outer shape. (Photo: F. Borowski)

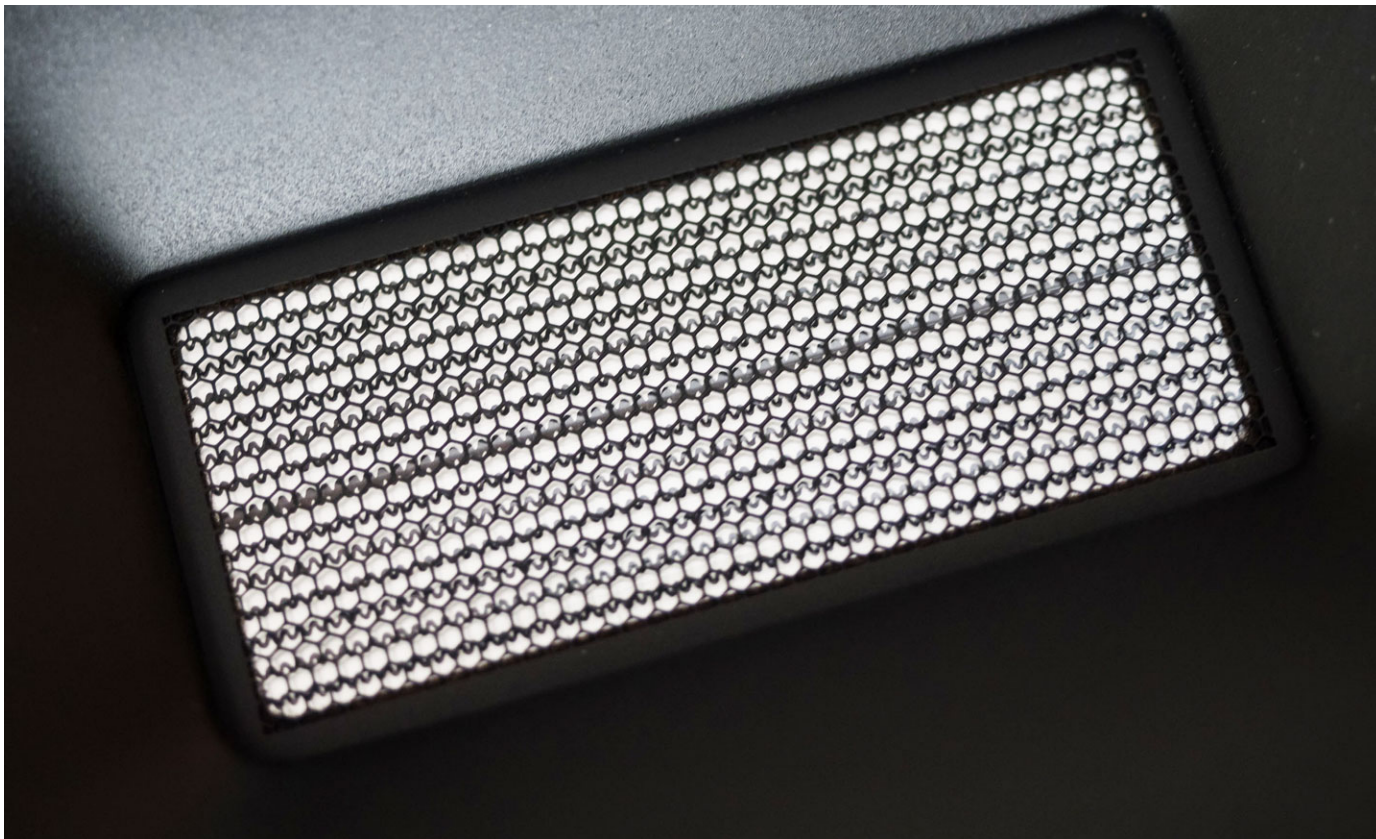


On illustrations of the rear end of the loudspeakers, you have presumably also noticed the aluminum parts that look like bottle openers. They serve as diffusers to avoid flow noise of the bass-reflex ports. Of course, these aluminum parts are also specifically made and meticulously processed down to the most minute detail.

The entire construction, loudspeaker and support feet are almost completely screwless. Neither the attachment of the cabinet, nor the screws on the rear of the loudspeaker are visible – not even screws on the loudspeakers' stands. Only the four feet have three small screw openings each, with Allen grub screws for fixation. The look of the loudspeakers has an unmistakable Scandinavian flair. They look slim, graceful, noble and valuable without obtrusively crying all this out to the rest of the world. To me, this is pure elegance.

The technology of the Børresen 01 – Here, nothing is normal

With a membrane weight of less than 0.01 g, the closed magnetostatically working tweeter is ultra-light. Conceivably, only the electric arch of ion tweeters have even a lower mass. But, when compared to those, the Børresen tweeter has a many-times larger membrane area. Extremely strong Neodym-magnets are used as driver.



The ribbon tweeter offers a large membrane space and is ultra-light. (photo: F. Borowski)

What is really extraordinary, is the magnet system of the bass/mid-range unit. It is the first electromagnetic loudspeaker driver since its invention about more than 100 years ago, and it is completely iron-free. This is significant, because among other things, iron adversely influences the electrical parameters of the voice coil. And, on top of this, it does so in a constantly varying way contingent upon the voice coil position in the magnetic gap. This will create distortions.



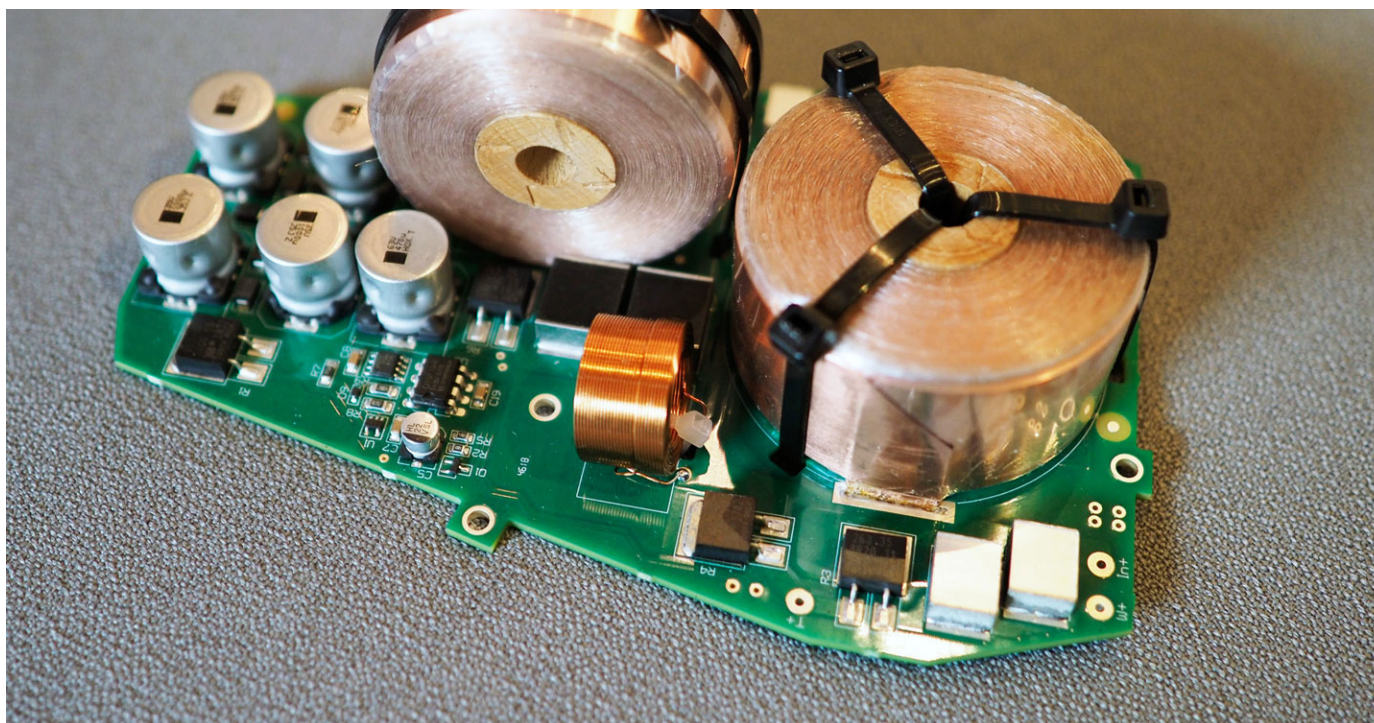
The membranes of the 15 cm deep bass/mid-range speaker consist of two layers of wafer-thin carbon applied on both sides of a Nomax honeycomb core. It weighs only 5.5 g. Unlike with many other bass/mid-range speakers, there is no dustcap. The speaker basket is covered by the mounted baffle. (photo: Børresen)



In the rear view it can be seen that the magnetic gap is completely open to the rear. This also reduces compression effects (Photo: Frank Borowski)

The Børresen driver consists of four neodym ring magnets which are located opposite each other. They squeeze the magnetic flux line together and push them over two solid copper rings that act here as poles (and at the same time as heatsinks). The copper rings also reduce voice coil inductance to 0.04 mH, which, according to Børresen, is less than 10% of that of conventional standard drivers. This lower inductance ensures a much faster driver and a delay-free acceleration, which has a corresponding effect on both acoustic performance and resolution. In addition, it also means less phase rotation and less impedance variations for the driving amplifier.

Last but not least, these electrical peculiarities also cause a weakening of the typical impedance rise in the lower frequency range as result of the tuning holes (which Børresen deliberately does not call 'bass reflex'). By the way, Børresen uses Titanium as carrier material for the voice coils which is not only very light and rigid but also avoids the Hysteresis effect – an effect that is caused in the magnetic gap when aluminum is used as carrier material.



The crossover fitted with unrivalled, state-of-the-art innovative technology is also a reflection of the high Børresen standards. (photo: F. Borowski)

The Darkz resonance feet ...

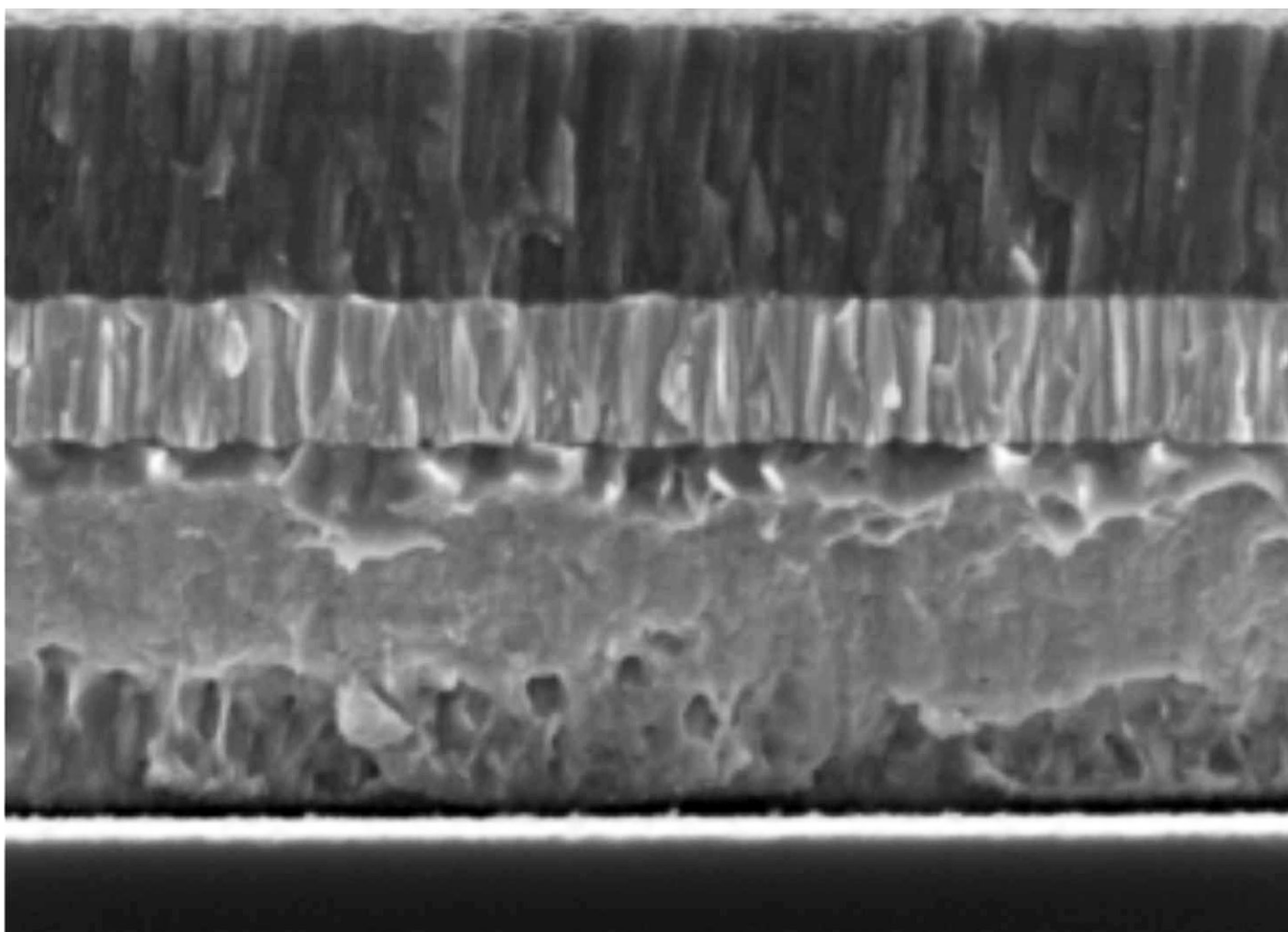
... are also an important part of the overall loudspeaker concept. What is even more, this is something the customer can influence himself. The structure of the Darkz is comparatively simple. Three metal discs are held at a distance with three balls between each disc. A central screw ensures that the discs do not fall apart and the balls do not get lost for ever behind the sofa in the sitting room. But the screw does not fasten the three discs with pressure on the balls – everything remains flexible in itself. The pressure should be generated solely by the component that is placed on the Darkz. Børresen also recommends to put Darkz under the individual audio component of the music system and uses them under the Ansuz Titanium Rack as well. Ansuz is a Børresen brand (to which the Darkz also belong).

The Darkz are not about shock buffering effects, like it is intended by the use of soft materials or springs. The Darkz provide a ‘mechanical grounding’ or in other words, serve for a targeted dissipation and redirection of vibrations which are inevitably generated by all audio components and which diffuse parasitically. Resonances primarily emanate not only from loudspeakers but also from all electronic music components, power supply units, power strips, and cables (there are also Darkz cable holders available).

What makes the Darkz so special is their respective combination of materials, the surface quality of the various models and its ensuing impact on sound quality. For these Darkz, Børresen makes such an enormous effort, which under a financial point of view seems to be totally irrational. This eventually accounts for the enormous price of up to 920 euros each. A further reason for this enormous effort is that the Darkz technology is – so to say – not rooted in exact science. There is at least no research base that would allow with the help of mathematical formulas and a PC- program to determine which material combinations would deliver the best results for the respective sound environment. All of this has to be tried out in an endless series of experiments by listening and in a try-and-error procedure. And this takes time.

But I wish to state this: It really is amazing that each of the currently available Darkz versions create delicate but clearly audible sound differences. No matter if they are placed under the loudspeakers or the electronic components.

Of course, I could not listen to all potential combinations but for test purpose, I had the standard Darkz labelled C2t and the current top model T2Supreme available. The former consists of aluminum and a hardening that penetrates deep into the surface, as well as Titanium balls. The discs of the T2Supreme are made of Titanium. They are deep-coated with the help of a particle accelerator. The in-depth coating consists of various elements like zirconium and tungsten. Børresen gave me an elaborate description of all this by the responsible scientist in the University of Aarhus. It meticulously describes all of the above in great detail including a quality control. Børresen really goes to great length here.



This is a cross section of a Darkz showing the different layers of different materials that are bonded with the carrier material at the atomic level by means of a particle accelerator. (photo: Børresen/University Aarhus)

Of course, one may wonder if the high effort and the gain in sound quality actually justify the costs or if it isn't possible to achieve similarly good results with less production-related efforts. What can I say? In the Darkz combination that I tested under the loudspeakers, the T2Supreme Darkz sound was clearly superior. But that was no reason to leave the C2t Darkz unemployed. They brought a further improvement in sound quality under both the Exogal Ion PowerDAC and Auralic Streamer. When I was visiting Børresen, we also made a series of tests and the results were always similar and very comprehensible.

Burn-in and positioning

The Børresen 01 is very sensitive to the way they are set up, a key reason for this might be rooted in its sound-wise extremely focused character. There should be at least a 50 cm distance from the back wall (measured from the rear end of the loudspeakers). The lateral wall distances are less critical. As a matter of fact, Børresen even recommends to set up the loudspeakers with a maximum possible base width whereby the lateral wall distance could be lower. In that case, the loudspeakers should be relatively strongly angled in to such an extent that from the listening point, one can just see the inner lateral sides of the loudspeakers.

Within the first 2 to 3 days, the burn-in process of the brand-new loudspeakers was accompanied with significant changes – almost dramatic changes. Those who still claim that there is no such thing as a burn-in period, will only get a compassionate smile from me as a response. Over the course of the next week, the sound quality continued to develop even further, albeit in more subtle shades.

I used the time for second burn-in phase to locate the ideal position of the Børresen 01 in my relatively small audio room (20 sqm). This ended up in a high precision work. Thanks to the light weight and the flat feet of the loudspeakers stands, I could easily slide them back and forth. Eventually, I ended up with a 63 cm distance to the back wall and about 50 cm distance from the lateral walls. The base width is 2.30 meter, the listening distance to each loudspeaker is 2.0 meter. This is pretty much in line with my listening habits. I refer to this as semi-near field. Even when it comes to the angling in of the loudspeakers, I eventually ended up exactly at the recommendations given in the instructions.

When compared to the KEF Reference 1, the Børresen 01 loudspeakers stand about 30 cm more apart (respectively closer to the sidewalls) and 25 cm further away from the back wall. My attempt to find the best position for the loudspeakers is intended as an encouragement to experiment with the position of your own loudspeakers at home. There is always more acoustic improvement to it than one might think...

It is one thing to listen to a loudspeaker at a fair or in the audio rooms of the manufacturer or dealer; but quite another, however, to listen to the loudspeakers within your own four walls in the most familiar acoustic environment and with the necessary time and leisure. My digital reference combination Exogal Comet and Ion PowerDAC (in addition to this my follow-up test for Hyperdrive-Upgrade) - my greatest discovery of last year - served me at the front end. The Auralic Aries G1 Streaming Server (test is scheduled for the near future) provided the music feed. All in all, the costs of the above-mentioned sound system amount to approximately a third of the loudspeakers, the system is, however, in terms of sound as well as performance absolutely adequate – although the Børresen loudspeakers are likely to unmistakably reveal any further improvement.



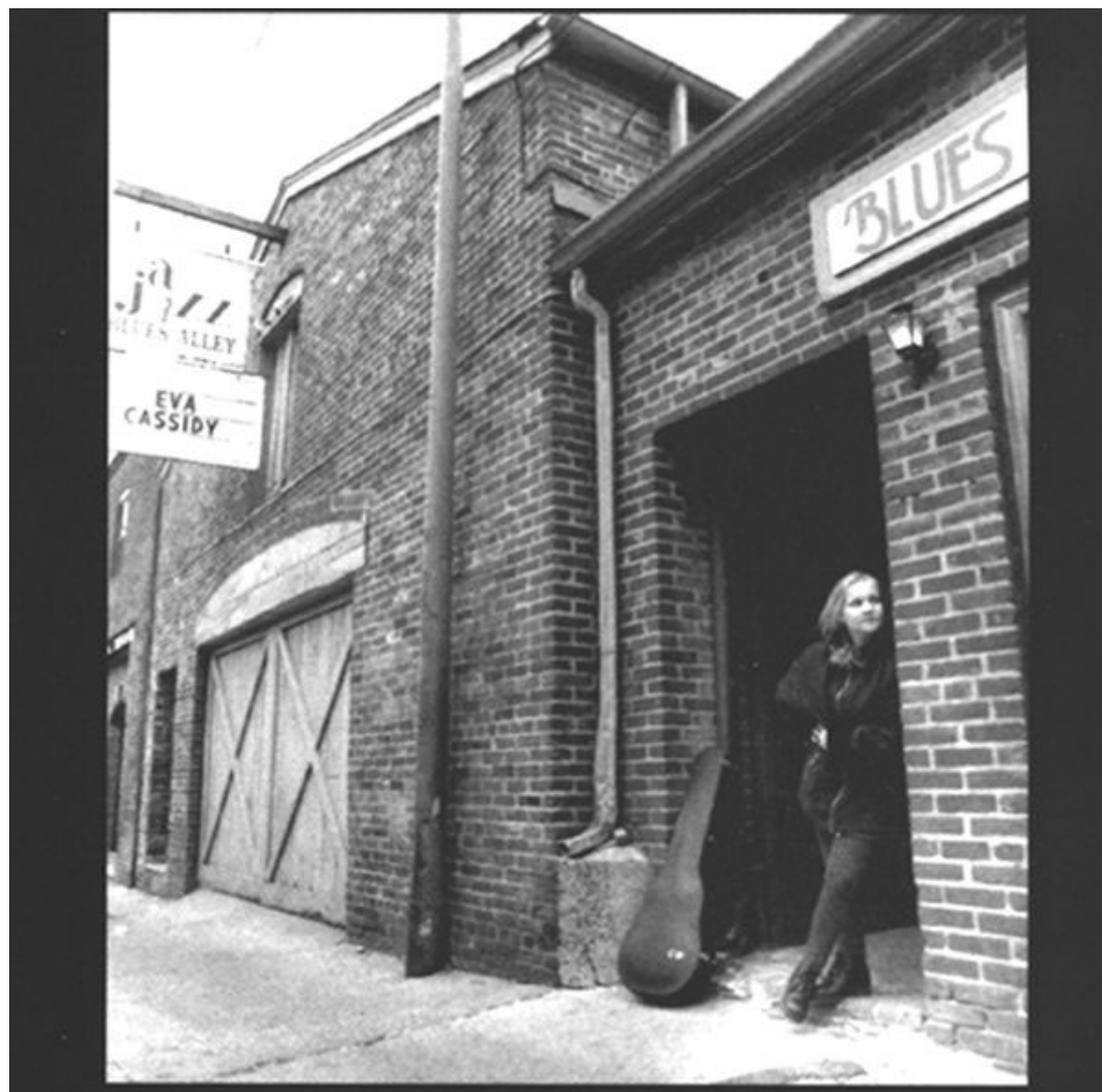
This is how I conceive of an ultra high-end music system for the 2020s: Instead of loudspeakers the size of a telephone booth and monstrous amplifiers, smart space-saving digital technology and discreet passive loudspeakers that need no DSP corrections to sound phenomenal. (photo: F. Borowski)

After a few minor detours as a result of both the burn-in and setting-up process, the sound experience with the Børresen 01 turned into a revelation. To describe the basic character of the loudspeakers: Do you have some experience with absolute top class headphones? If so, then imagine the sound experience with one of the top class headphones like Focal Utopia or, even better, Sonoma One but without their headphone peculiarities such as the inevitable ‘in-head’ feeling. This gives you some idea of what a 01 is able to accomplish.

Of course, with loudspeakers a certain influence of the acoustic environment is unavoidable as long as one does not live in a sound-proof room or outdoors in a wide field. Nevertheless, the headphone comparison is not at all too far-fetched, so fantastically precise and clear is the sound of the Børresen 01 direct and three dimensional but, at the same time, consistent in musicality. And they are, by no means, anything like a One-Trick-Pony which can only master one thing well.

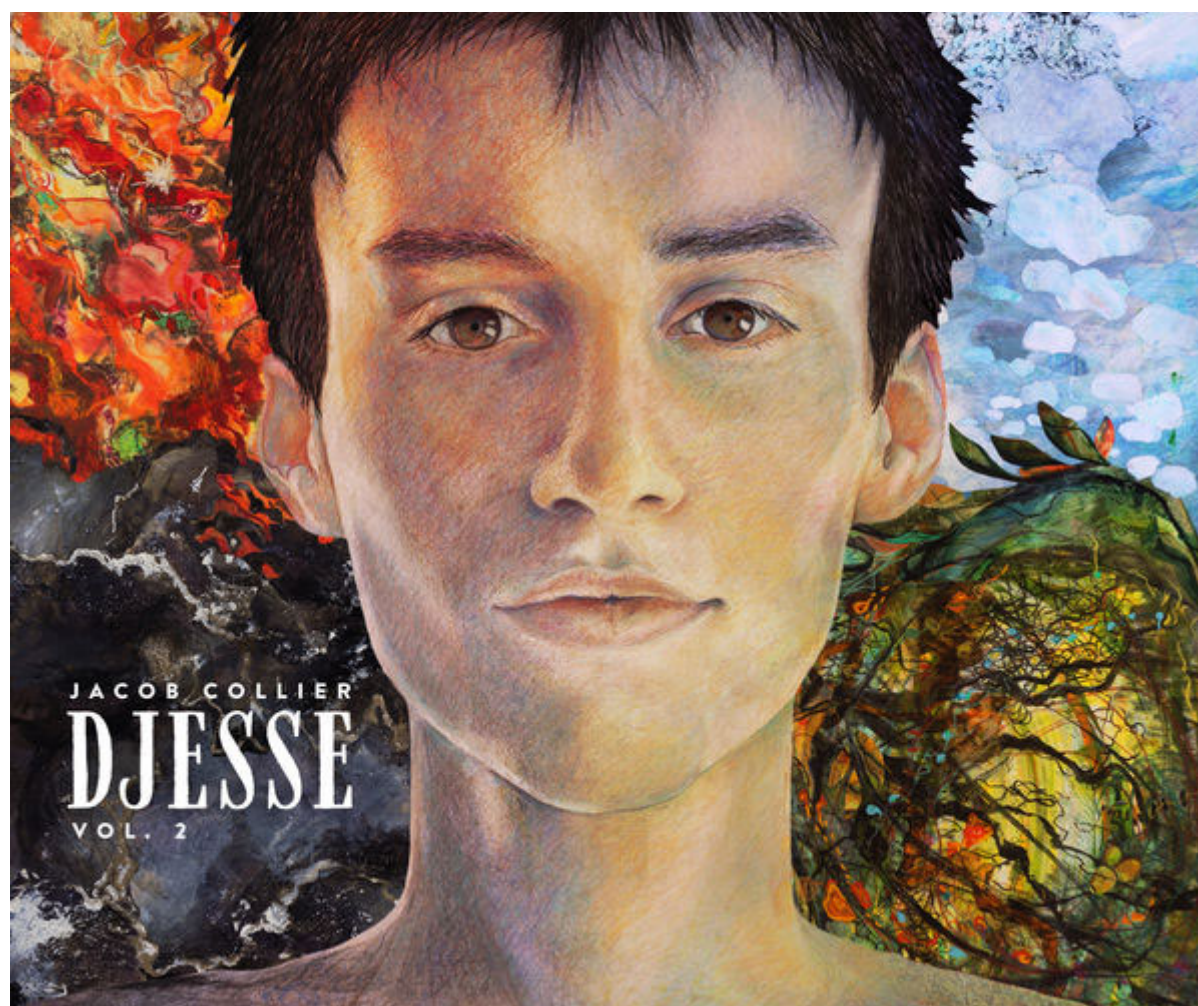
An absolute highlight in this context is the ribbon tweeter. Never before, have I heard loudspeakers with such natural, stress-free and, at the same time, delicately detailed and finely resolved high ranges. No matter if at very high or barely perceivable sound levels. Wherever virtually any dome in the world begins to prick the eardrums, or simply absorb some of the details, the advantage of the Børresen tweeter makes an enormous and noticeable difference here. May that be high female voices, trumpets, forceful strikes of percussion instruments, bagpipe music, piano ... you name it.

When, for instance, Eva Cassidy who, sadly enough, died much too soon, is belting out at the top of her voice to the climax of the song ‘Oh, Had I A Golden Thread’ (album Live at Blues Alley), with most loudspeakers it



Eva Cassidy Live at Blues Alley (Cover: Amazon)

But this is only one aspect of this fantastic tweeter. Another one is its resolution capacity which unlocks details and finest transients which other tweeters (and even most of the headphones) simply iron out. A nice find, for instance, was the recently released album Djesse Vol. 2 by Jacob Collier (available on Qobuz in a 24bit/96kHz HiRes version), which offers some very intense vocal and sound elements. After listening to it, I could hardly get rid of the goosebumps on my skin. Surely, so refined, authentic and emotional can voices only be experienced with very, very few loudspeakers on this planet.



Jacob Collier Djesse Vol. 2 (Cover: Amazon)

These breathtaking loudspeaker qualities, by far, do not restrict themselves only to the highest pitches. Eventually, the voice reproduction largely takes place in the mid-range frequencies. The low-/mid-range speaker with its driver, which can definitely be considered as revolutionary, is also a masterpiece. In its speed, the membranes act solid as a foil but, at the same time, with a rigidity and control of the best cone-membranes.

In line with the successful coupling to the tweeter, the Børresen 01 inspires enthusiasm with its phenomenal speed, accuracy and realistic sound stage performance for which the somewhat worn-out term holographic hardly suffices to describe it. Somehow, one conceives holographic images as something that is spooky and semi-transparent. That is definitely not the case here. The sound staging of the Børresen 01 rather has a spaceship Enterprise holodeck quality where scenes are being created with such a palpable presence that they are hardly distinguishable from reality. As a result, both amazement and astonishment are pre-programmed.

The amazement does not cease, the more the frequencies approach the infrasound. All right, in terms of measurement from approx. 50 Hz onwards, there is not too much happening anymore which for a loudspeaker of this size remains still very respectable. But you would be totally wrong to believe that the loudspeakers somehow lack bass or are dynamically limited. The Børresen 01 will bring the deepest sounds so effortlessly (and again) ultra-precisely to your sense of hearing that the uninitiated will spontaneously look out for a subwoofer that must be hidden somewhere. Only with the driving power in the very low bass segment, there is a point when it comes to an end. And sometimes the easygoing punch is simply missing a little, which, however, can only be generated by a lot of membrane area.



Small loudspeaker – big concert. The dynamic features of the Børresen 01 are phenomenal. (photo: F. Borowski)

And yet, when it comes to dynamism, many of the highly touted floor-standing speakers pale against the Børresen 01. The drivers are astonishingly robust with almost no distortion. Even at very high volume settings, the bass/mid-range speaker does not get out of step. And in case of great orchestral dynamics, this bass/mid-range speaker still can magically resolve most fragile details from the orchestral sound. There are indeed not many loudspeakers that can combine both sound stage liveliness and fine resolution so harmoniously.

Of course, there are limits. This is exactly why Børresen also has much larger loudspeakers with much more membrane area on offer. They are all based on the same technology. But for smaller listening rooms and shorter listening distances (as in my case), the 01 and perhaps, even the 02, are more suitable.

There is another big plus factor: Even at very low volumes, the 01 loses absolutely nothing of its fascination. For instance, on the weekend, when I am sitting relaxed in my audio chair, reading something, and listening on the side to some quiet music, I am, time and again, spellbound by the Børresen 01, and I am amazed at listening to the one or the other sound title which has never sounded so beautiful before. Therefore, it does not necessarily take one of the best audiophile recordings in high resolution. Even when I listen to the compressed web-radio, the Børresen 01 casts its magic spell. Unless the recordings are really so abysmally poor that there is by no means anything like good sound. Even the Børresen loudspeakers cannot turn water into wine.

In all this, I do not wish to conceal that the full magic of these Børresen loudspeakers will only unfold itself unmitigatedly in the Sweet Spot of the stereo triangle. This may also be true for most of the direct-beam stereo front speakers but with their laser-like precision (in an absolutely most positive sense), this is all the more true for the BØRRESEN 01. They are loudspeakers for genuine pleasure and enjoyment to which you ought to abandon yourself entirely, with your 'skin and hair'.

Conclusion: Børresen 01

The experience with the small Børresen has brought me to a bitter realization: Apparently, I have for years been more or less treading water in my own high-fidelity audio development. Clearly, time and again, there were improvements and progress to be recorded but nothing that was so groundbreaking as these remarkable sound converters.

Have I found here the perfect loudspeakers, now? Certainly not. For one, there is no such thing as perfection, and for another, these dream loudspeakers, of course, have their limits as outlined above. Nevertheless, I can't help but state here absolutely dispassionately that the 01 is the best compact loudspeaker that I have ever heard, and the word 'compact' could also be deleted for many of those aspects relevant for loudspeakers.



Michael Børresen, posing here with the model 03, can rightly be proud of his creations. (photo: F. Borowski)

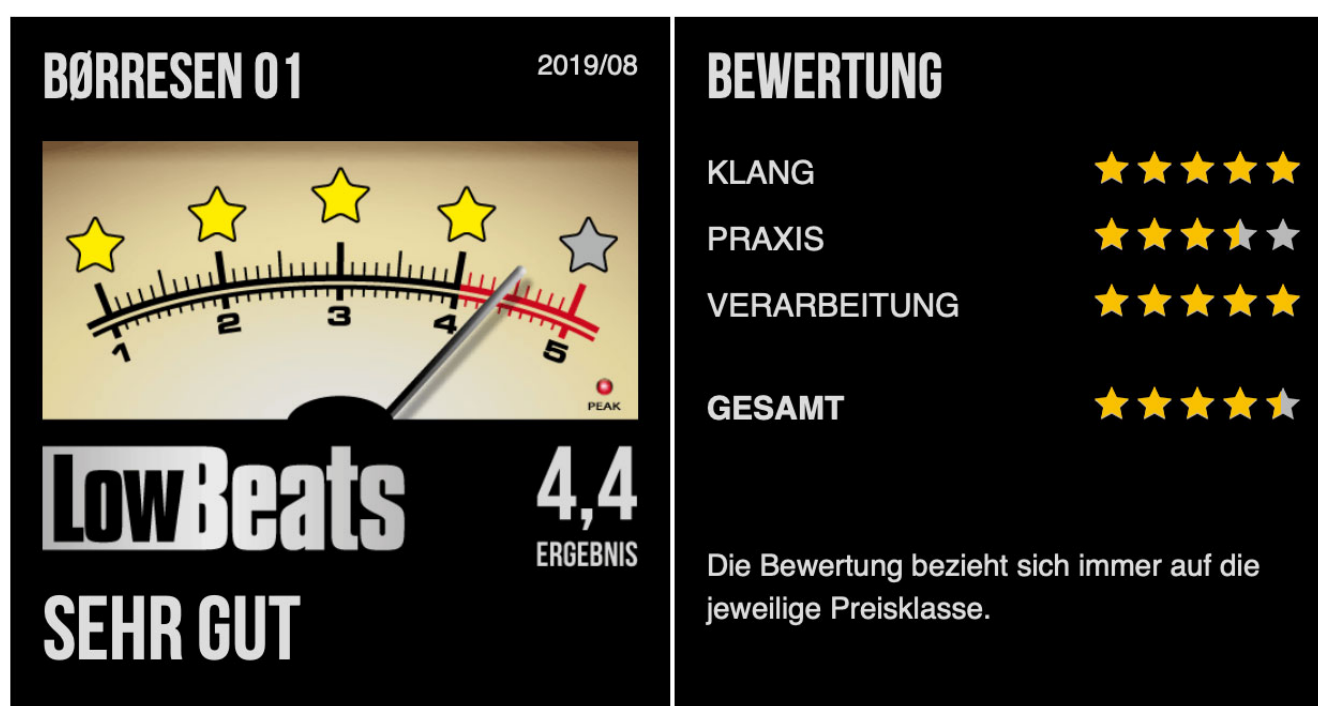
According to my opinion, the driver technology represents one of the largest technological advances that have taken place in the development of loudspeakers over the last years. Both the Børresen closed ribbon

the most attractive Børresen loudspeakers for small and medium-sized rooms.

Despite of all this, however, the high price cannot be ignored. For recommended retail prices of around 25,000 to over 30,000 euros (depending on the equipment with Darkz) one can definitely get loudspeakers with more level reserves, deep bass, and more material input. But this does not turn them automatically into better loudspeakers. The performance of the Børresen loudspeakers (under optimal conditions) puts the price tag more into perspective.

Now, I am stuck between a rock and a hard place. Actually, I do not want to go back to the KEF, which are indeed superb loudspeakers, since they suddenly seem to be - drawing on a quotation by Karajan which refers to the introduction of the CD - almost like gaslight. The Børresen are simply the better measuring instruments for my job, and by far the more satisfying stimulant for my hi-fi soul. On the other hand, I had not actually intended to invest into loudspeakers any amount above the 10,000 euro mark. ... Alas!

It is not going to be easy for all those who want to understand why I am raving so much about these loudspeakers: There is still only a rather thin dealer network for Børresen in Germany. They plan to have, at the end, established a handful of distribution partners located in different parts of Germany. Currently, HiFi Studio Bramfeld in Hamburg and HiFi Eins in Cologne are the first points of contact.



- + Klingt unglaublich musikalisch, feinauflösend
- + Exzellente Abbildung
- + Perfektes Design und Verarbeitung
- Auch preislich highendig

Paarpreis (Hersteller-Empfehlung)
Børresen 01 (inkl. Ständer): ab 25.500 Euro

Vertrieb:
Børresen Acoustics Aps
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9000 Aalborg, Denmark
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Ed.: Above is published with the courtesy of LowBeats Magazine and the author Frank Borowski. Translating the review from German language to english, we have chosen not to translate the final "grade scale" for the sake of the authenticity of the article.

