Kling & Freitag Passio

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Kling & Freitag is an old hand in the sound system business. For example, the CA 106 has been developed over the years to become an industrial standard for certain sounding tasks. In summer 2012 we visited Kling & Freitag in Hannover, with the opportunity to have a closer on-site look at the Passio system which had already been presented on the Prolight & Sound 2011.

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Kling & Freitag is producing speakers for over 20 years and the products are designed and produced directly in Hannover. The drivers are produced by subcontractors according to the special requirements for Kling & Freitag and then mounted in Hannover.

Concept

After this short introduction, let's pass over directly to the product Passio. It has to be stressed that the Passio is an entirely new design, although experiences with CA 106 have been used for the system concept. Passio has been designed in cooperation with Neumann & Müller who were in particular responsible for the outside design. By the way, in October 2012, the Passio has been awarded at the occasion of the international design price Baden-Württemberg with the "Focus in Silver", allocated by the Design Center in Stuttgart.

Lars Heinrich explained us in Hannover: "Our aim was to tune the box in such way that it sounds as natural and as neutral as possible. Only if I've got a speaker sounding neutral I will be able to adapt it to the room. If the system itself needs to be rectified, there will be also problems to adapt this system perfectly to the room."

Passio is a very compact, passive sound system in form of a bass reflex system, equipped with two 5 inch chassis which are already employed in the Sona 5. By the use of the two 5'' drivers, an effective membrane surface is obtained which is larger than one single 6,5'' driver as employed in the CA 106, permitting a deeper tuning of the system.

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The tweeter has been designed with a 1 inch high frequency tweeter and CD horn, located in the middle of the front between the two woofer drivers. The load capacity of the tweeter has been increased by a ferrofluid filling in the air clearance, permitting an improved thermal transmission from the voice coil to the magnet. The Passio box may be operated vertically or horizontally because due to the horn the tweeter is providing nearly symmetrical covering angles of 70x60 degrees. Also, a high directivity is achieved, and the sensitivity for the mid-range frequencies has been increased by the waveguide.

The crossover is passive (2nd order filter) and thanks to the perfect tuning with the drivers, only five elements are needed for this very minimalistic solution. Also must be mentioned that both woofers are offset a bit to the rear side in order to avoid a running time difference between high and low frequencies.

The geometry of the enclosure in hard integral foam (flame retardant) permits to position it with a monitor angle of 25 or 55 degrees. The surface has been covered with black or white structure paint. But special paints in RAL colors are available upon request. The front grille is easily exchangeable in case of need. The grille is backed up by black acoustic foam. By its design with many smooth surfaces and the plugs integrated in the rear side, the speaker itself seems optically eclipse into the background. Bottom and top surfaces are inclined by five degrees so that the speaker is reducing towards the back side. That's all, talking about the mechanical composition and design.

Suspension

Kling & Freitag has developed a particular fastening system, among others for the

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Passio. The VariPoint is a fastening option with M10 female thread or by simple mounting with a ball lock bolt or a ball support eye, mounting may be realized without tool.



The loudspeaker may be equipped rapidly with an eyebolt or mounted for fixed installation with the M10 threading. Beside the pivoting speaker mount, accessories are the stand socket and the tube clamp as well as a mini TV spigot and a pin joint adapter, e.g. for the fastening of a crossbar. Neumann & Müller designed a different solution for its own application which is available especially for Neumann & Müller.

Subwoofer

Complementary to Passio, Kling & Freitag provides as subwoofer the Nomos LS (565x435x510mm, 25kg) which we would like to describe briefly. It is a single 15'' chassis with double centered 75mm voice coil. Kling & Freitag mentions 100Hz as take over frequency and 40Hz as lower limit frequency (-3dB). The power load capacity is 400W (nominal) or 800W (program).

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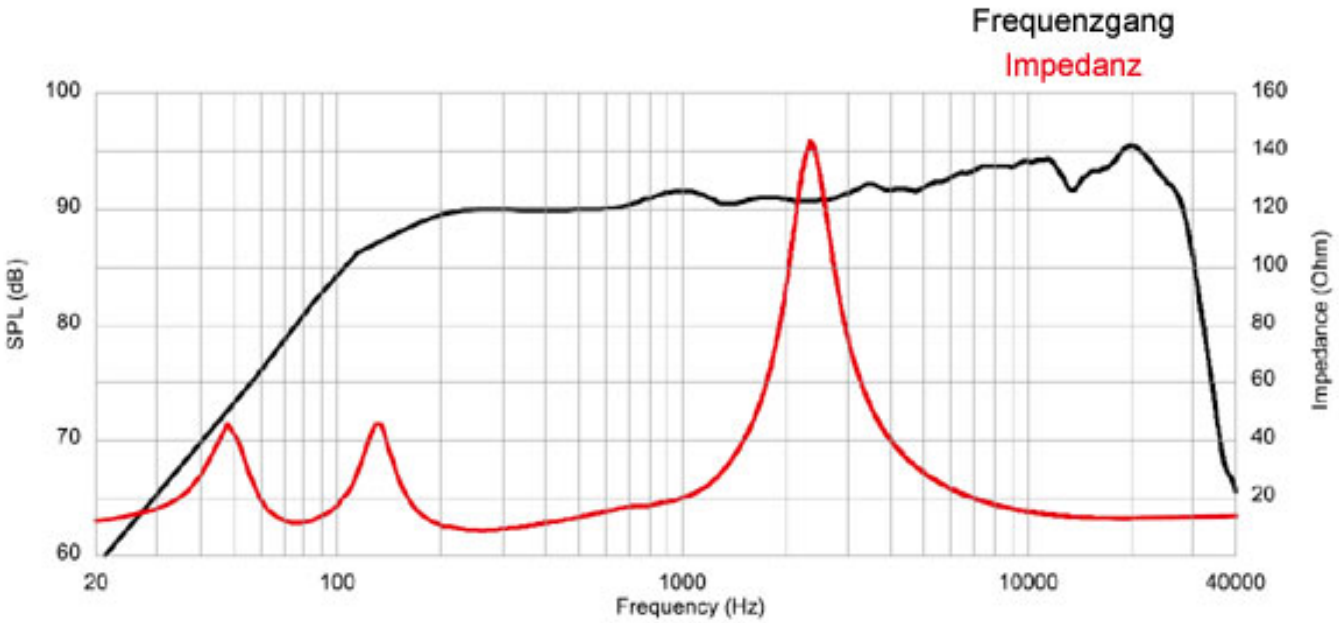


Lars Heinrich: "When designing the Nomos LS, we wanted to obtain basses with musical qualities. A light membrane is employed which does not require a high driving energy. For this reason, the membrane is reacting very quickly, and thus there is less interference in the chassis. Thus, the basses have a very precise sound reproduction."

Practical Experience

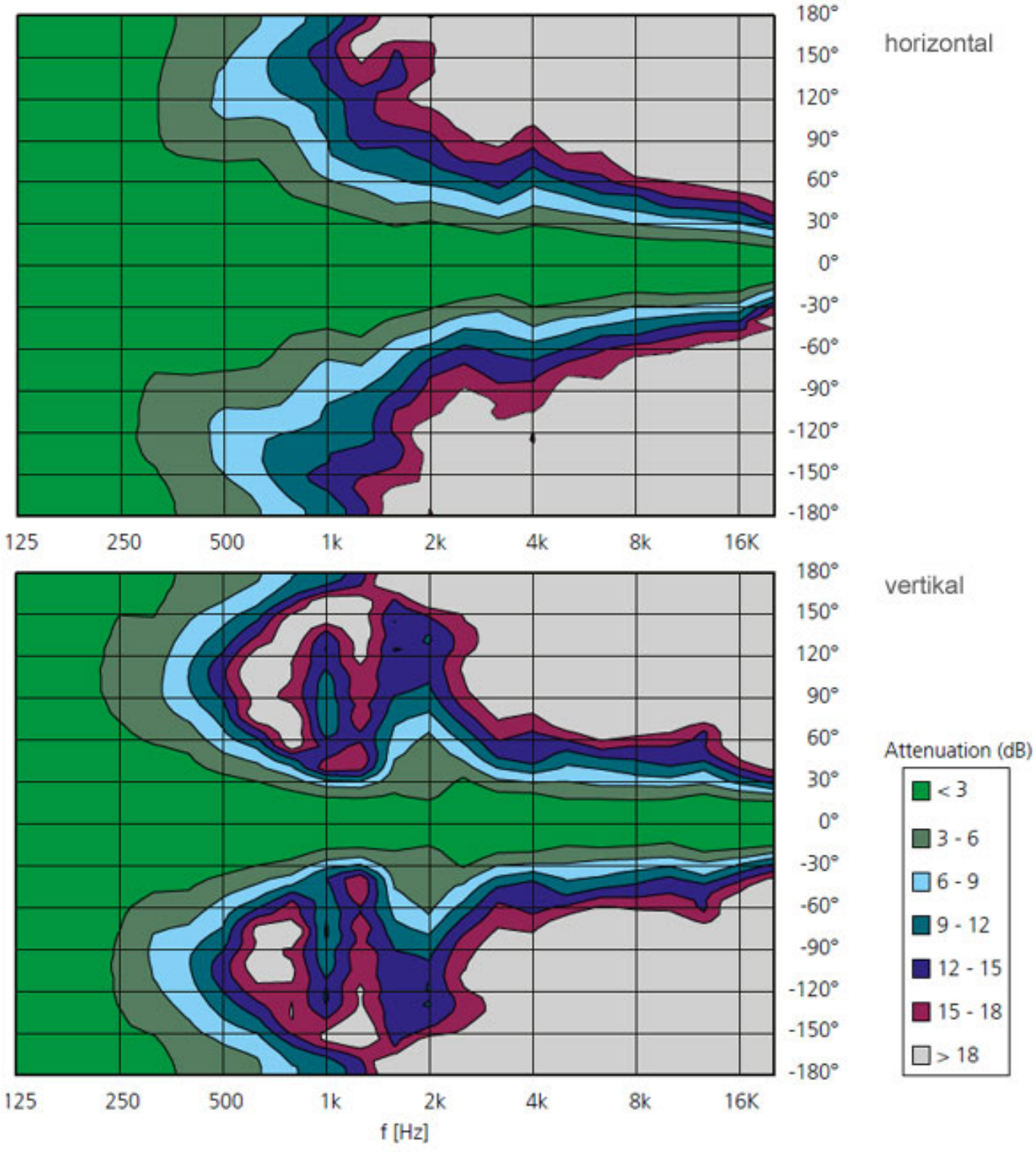
The chart of the frequency response shows between 200Hz and 5kHz only a slight waviness of one decibel. The manufacturer indicates the frequency range (+/- 3dB) with 110Hz to 28kHz.

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Here are the vertical and horizontal coverage diagrams (measured by manufacturer):

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During the hearing tests, Passio showed a high neutrality which was striking immediately. In a general way, Passio leaves an acoustic overall impression which is in many items similar to typical high quality studio monitors. We want to mention in particular the high precision and the reproduction of the offset in basses. A small tribute to the high neutrality of Passio is that for music with much basses the support by a subwoofer is absolutely recommendable. We have also heard the

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system with Nomos LS, which is also very convincing and fitting very well with Passio. Nomos LS as well is particularly neutral, clear and does not overdraw as many subwoofers do unfortunately, and which are even modifying partially the sound of instruments.

In the practical experience there are many positive details. Often they are only small details, but in practice of high importance such like the geometry with its different possibilities of positioning, and also the enclosure width of 180mm. This width permits for example the installation of Passio into a stair because it is fitting in cross position on a standard stair step (see DIN 18065). Last but not least the well-designed suspension possibilities with accessories for more flexibility deserve mentioning.

Conclusion

Passio has already been used for several projects: Beside others, the opera Hannover, the Oper am Dom in Cologne, the Bühnen Köln (Cologne) as well as the VIP Lounge of the Mercedes Benz Arena. The system pleases by its compacity, the low weight in spite of its high power output and sound pressure level. Regarding the sound, its high neutrality is convincing, and together with the Nomos LS it is a perfect sound system solution.

Technical Data

frequency range
 +/- 3dB: 110Hz - 28kHz
0/-10dB: 75Hz...31kHz
angle
 horiz.: 70deg.
 vert.: 60deg
power
 nom.: 200W (pink noise 40Hz-5kHz)
 programm: 400W (pink noise with 50% duty cycle)
SPL: 92,5dBL (@1W/1m)
max. SPL: 121,5dB (@1m)
impedance nom.: 12ohm
impedance min.: 8ohm
connectors: 2xSpeakon NL4MP (In/Out)
size: 180x515x173mm (BxHxT)
weight: 5,2kg

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