







Loudspeaker Wolf von Langa Black & White A100i SE

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Wolf von Langa's Black & White loudspeakers are timeless designs, with exceptional drivers that bring the past back to the present and allow music to be better understood



The Power of Music

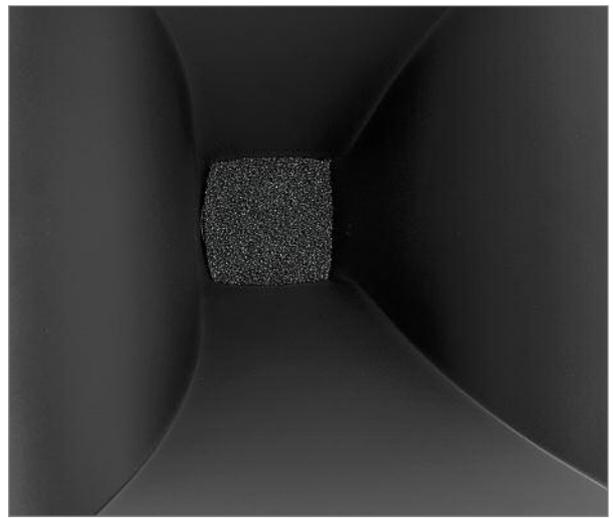
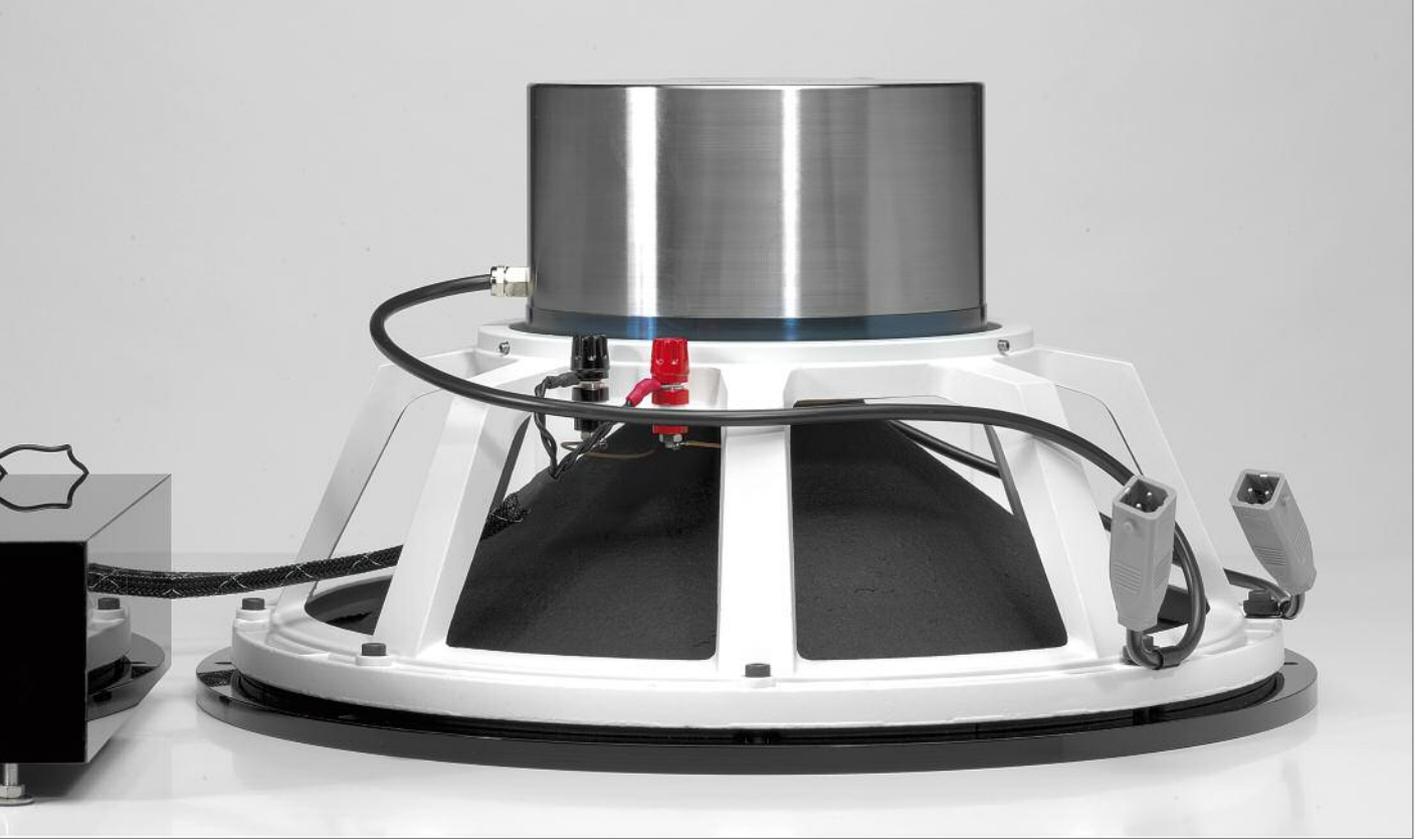
Music plays a very special role in my life. It doesn't make a lot of difference whether I experience it live or from a packaged medium. A particularly memorable experience from my school days may illustrate this. In the tenth grade, six weeks before graduation, I was in a virtually hopeless situation. With six 'unsatisfactory' marks I would've probably been held back, remain in the same grade, and not receive my certification. But then the Kinks' fantastic Rockpalast concert saved me. 'If the old buggers can put on such an awesome show, so can I.' The Kinks' music and their energy actually gave me the strength for my transformation. Even though I am older now than the oldest member of the Kinks at that time, this hasn't changed the influence of music on my life in the least. These pleasant experiences occur entirely on the emotional level. I don't even attempt to put them into the realm of the intellect. When I now write about music reproduction equipment, of course, the really extraordinary doesn't happen every time. With Wolf von Langa loudspeakers, however, these connections have actually been re-established. He delivered the speakers to me personally, set them up, and carried out a function test. After he left, I used his recommended positioning to optimize my room: the baffles about $\frac{1}{4}$ of the room dimension from the rear wall, and the listening position approximately in the middle of the room. For better decoupling from the wood floor, I used the Plexiglas bases which were supplied. Instead of my push-pull amplifier, I connected his single-ended 300B power amplifier. This version of the famous Sun Audio 300B has been precisely optimized by von Langa, with selected components and a vacuum tube assembly different from what is found on other versions of this amplifier, and as good as the others are, and based on my experience, this is certainly one exceptional amplifier, unrivalled among its peers. It is both quiet and capable of reproducing musical nuances, color, dynamics, and finely structured loud music. Alone, this amplifier deserves to have its own story. It made me want to listen to Atahualpa Yupanqui's first CD from the L'Integrate series (Harmonia Mundi). I know Yupanqui's music inside and out. But the feelings that were triggered by his warm, gnarled voice, and the rhythmically unusual

guitar confused me this time. I got the impression that the old man was sitting directly in front of me in the room. He sang to me, and it seemed as if I should understand his Spanish, although I don't speak Spanish. I got goose bumps, and at the same time and for the first time became consciously and unequivocally aware that Yupanqui's guitar was wound with nylon strings. Their buzzing and pulsating were very clearly audible. But this didn't distract me from the music; it pulled me deeper into it. So natural, so immediate and believable. How did this happen? What's going on? Is it just possible that you can build a better loudspeaker with field coil drivers?

To get back to so-called reality, I wanted to begin by collecting the facts and information from the Black & White's developer. Wolf von Langa is the son of an engineer, who began building loudspeakers in his youth. An early pair of his 'loudspeakers' – as the only designation they had at the time – even landed with a well-known local dealer, where they were presented as a reference. The dealer eventually returned the 'loudspeakers' to the 16 year old von Langa, because nameless creations do not sell. Some detours and decades later – with the enjoyment of music, its reproduction, and loudspeakers remaining alive – this 'sympathetic Franconian' decided to indulge his passion, and to bring his



own driver designs to market. For seven years he conducted extensive materials and foundational research; and finally – and beginning in 2009 – Wolf von Langa drivers and loudspeaker systems have been for sale ever since. The Black & White is his smallest finished loudspeaker. It is formally based on the well-known SFB/3 baffle designs of Gilbert Briggs – Wharfedale – who stood among peers as a godfather from the year 1956 on. Peter Walker with his Quad ESL57, and a prototypical baffle design for wide bandwidth developed in Japan, both achieved similarly coherent performance, as confirmed in measurements. In the latest SE Black & White version, a polymer plate limits the radiation angle of the bass driver, and breaks up possible reflections. Foam pads perform the same function for the mid-HF driver. Von Langa manufactures all drivers by hand – in the case of the





Above: The Black & White baffle in all its splendor. Compression driver and horn, the 38 cm bass driver, and the passive crossover with customization options

Left side: clockwise from bottom left. The compression driver for mid and high frequencies, with a short cast aluminum horn. Overwhelmingly massive at a weight of 15kg, mainly due to the use of a substantial amount of pure iron for the rear pot assembly. The CD (constant directivity) horn exhibits minimal beaming, and can effectively be fine-tuned with foam. Fine wire mesh makes a difference, since field coil drivers heat up and need ventilation

Black & White both individual drivers have been optimized specifically for this particular loudspeaker system. The bass driver's rear pot assembly is made of one large piece of pure iron. A 'pocket' is milled to accommodate the finely adjusted field coil with its flat aluminum ribbon windings and pure iron core. Additionally in its production the pure iron is degassed in a vacuum, thereby increasing its conductivity and reducing the internal resistance to the micro-Ohm range. The moving mass of a paper cone and voice coil assembly is a very light 43 grams, for a 38 cm speaker frame. The mid-HF driver is a 1.4 inch aluminum compression driver with a copper field coil, and an aluminum-titanium diaphragm. As mentioned before, the highs can be tuned



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with a foam pad and attenuated in 2 dB increments with a switch. The cast aluminum constant directivity (CD) horn, which was an Electro Voice invention from 1975, exhibits very minimal beaming. The baffles themselves are made of plywood, then doubled in thickness with a layer of high density fiberboard (HDF). A relief pattern is fashioned out of this layer by a special CNC milling machine, for acoustic reasons. This relief is reminiscent of the external design of JBL studio monitors, where it is used to diffuse and break up room reflections that bounce back to the speaker's surface. This all works superbly well. The Black & White's sound is extremely clean and undistorted. 'Clean' in

this case does not mean sterile or austere, but as already indicated, quite the opposite. I can now listen, for example, to Damon Albarn's solo album on vinyl, 'Everyday Robots, (Parlophone / 2-LP + CD) as if it were a new album. Albarn's wonderfully mature voice, its fractures, its Northern Soul, as well as the feathery wind, the subtle electric elements of the recording – everything flows. Although not uniformly; but



with its music and dynamics, rhythmic, agile, and to the point. And this brings me to the heart of the Black & White, namely the field coil drivers, which have been von Langa's focus and specialization. Field coil – or 'independently excited' – drivers are products from a seemingly bygone era. Following is a short history of the loudspeakers: Werner von Siemens developed the basics for electrodynamic loudspeakers in 1878. The model for modern speakers, however, was envisioned by Rice and Kellogg for Western Electric in 1925, with a prototype that had a moving voice coil connected to a cone diaphragm. This results in attraction and repulsion, and movement, in relation to the AC flowing through the magnetic field surrounding the coil. Because of the lack of strong permanent magnets, active field coils were used at the time. The first permanent magnet loudspeakers on the market were designs by Paul G.A.H Voigt for his company, Lowther Voigt, in 1936. And since the 1950s essentially only permanent magnets have been used. The beautiful irony of the story is that Wolf von Langa's first field coil driver which he purchased in 1990 was a wide bandwidth Voigt. This is where he perhaps passed through his last musical door. 'Why does the drummer play against the bass line, and why do the musicians play together at all?' After asking himself, he understood at once. Just as I do now. In fact there's a bit of black magic, when I, for example, play Captain Beefhearts' album 'Trout Mask Replica' (Straight Records two record set) in its full depth and its absolute originality, and for the first time am not tired after a short while or find I've had enough. It was this experience and others like it that made it especially clear to von Langa that reproduction quality had something to do with the fact that the drive system must be constantly 'fed.' The modulation of the magnetic field through the voice coil had apparently assumed much greater significance for the sound than ever before. With permanent magnets there is a duration to the movement of the mass, therefore these magnets tend to constantly slow down and accelerate again. Thus the mu-

The passive crossover with a component complement
selected exclusively on sonic criteria



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sic signal itself is quite strongly modulated. The 'active' field coil compensates for this modulation by keeping the current constant. As a result, it is much easier for the driver to follow all of the musical information. Another indispensable component of Langa's solution is supplying the field coil driver with a current source. This is not done in most independently driven designs, because there is a cost attached to the use of a current source: transformers, rectifiers, and capacitors for filtering, then with more costly solutions there is additional filtering, coils, and inductors. But the current flow always remains variable. Von Langa adds, 'the field coil heats up (and this definitely happens), which increases the electrical resistance while the current decreases at a constant voltage until stasis occurs. So the magnetic flux density changes. This is largely due to the field coil's resistance, which affects the speaker's overall

Left: Intricately made laboratory power supply for the field coils, tuned by the von Langa company

Right: Separate bass and mid high frequency speakers are connected in series

quality; and all related parameters change unintentionally.

Only with a regulated, and readjusting current source does the field remain constant. This is achieved by the use of a von Langa modified laboratory power supply from the Far East. In the future he will have his own power supply, which will be manufactured in Germany. Currently the company offers a power supply upgrade, a constant current unit called the FCA. My goose bumps tell me that I don't necessarily need it.

Like most readers, until I had the opportunity to audition the Black & White, I had little practical experience with loudspeakers utilizing field coil drivers. And I thought maybe it's just one more of many technical assertions, or even a marketing ploy. Particularly if the technology wasn't immediately able to prove itself in terms of musicality. Describing sound is always a subtle task. Many terms are not real-

ly meaningful to me until I can experience and listen for myself. The term 'colored bass' is a case in point. I grew up with 'boomy', 'dull', or 'hollow' bass. My childhood friend and I spent a lot of time listening to loudspeakers from a well-known German manufacturer. Whenever my friend would leave the room, I'd stuff socks in the bass reflex tubes, and as a result the low end became more precise. You don't have to worry about that with the Black & White. I now finally understand what 'color' associated with bass response means – in this case precise, agile, and multi-layered. Bass like I have never heard before. As if performing on a long rubber rope, it follows the music alertly and with elasticity, always in the moment, always in the here and now, and ready

Associated components

Turntable: Lenco PTP/Lenco GL-59 **Tonearms:** Schick, Denon DA-305, Alphason Opal **Cartridges:** Zyx R100 Yatra H cartridge, Decca Super Gold with Paratrace stylus **CD-drive:** Philips CDM 4/19 CD-drive in ebony housing. **DAC:** Modified Tobian DAC **Step-up Transformers:** Croft Micro 25 R preamp. Silvercore MC-Pro and beyerdynamic **Power amplifiers:** Wolf von Langa modified Sun Audio SV-300 BE and Easter Electric Minimax **Loudspeakers:** Tobian 12 and Tobian 10 **Cables:** Belden 9497 LS, Audio Consulting Copper NF, and Jupiter Silver NF **Power:** Kreder Audio Tuning



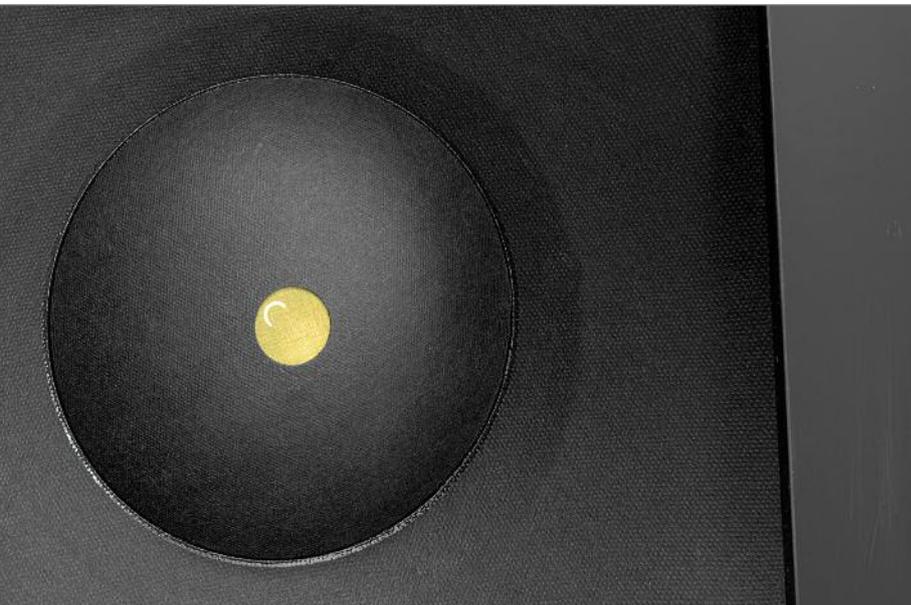


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to move in the right direction and thus be able to represent all of the colors of the bass palette. Now I also understand more clearly why Focal's largest Utopia models (Grande Utopia EM/ Stella Utopia / the Utopia Sub) utilize independently driven woofers. Another example: I was recently able to see jazz bassist Buster Williams in a live performance, and experienced the most imaginative and appealing acoustic double bass I've ever encountered in my over thirty years of going to jazz concerts. I put on Phillippe Sarde's soundtrack from one of my favorite films, *Le Choix des armes – 'Wahl der Waffen'* (General Music / LP), because on it Buster Williams plays with Ron Carter and the London Symphony Orchestra. The LP itself is not all that well recorded, but the aura of the film and its music, as well as my concert impression, provided an immediate recognition. The bass attack and decay, the painting of the strings, the wood tone of the body – were so immediate on the Black & White, so delicate and nuanced, that I didn't have to even give thought to a possible 'live feeling.' And because I was in such a 'live' mood, I put Herbie Hancock's live album 'VSOP' and the selection, 'Hang Up Your

Hangups' (CBS / LP) on the turntable. This lesson in jazz funk sent me on a journey through time to the best acoustic stage performance I've ever heard in all my concert going life – Lee 'Scratch' Perry in Amsterdam's Westergasfabriek. At this appearance he stacked and layered instrument to instrument, location to location, one to the other. All clearly retained their uniqueness – the guitar riffs, the tight, not at all boomy bass, the different drum sounds, the rhythm, the interplay, and the breaks. So it was with Herbie Hancock's intricate music. His electric bassist, Paul Jackson, brought me to dance in my listening room with his heavy grooves. I don't suggest that an open baffle is a PA or pro sound system. And do not be fooled by the conservatively specified 45 Hz as the lower limit. The Black & White's bass is truly palpable. The LF driver and lightning fast mid-HF horn play together organically as a team, with never a perceptible discontinuity. Wolf von Langa has done everything right with his surprisingly high crossover frequency of 1500 Hz. The fundamental character of the Black & White incidentally remains the same with other amplifiers as well, like my Eastern Electric or a recently modified Quad 33. However Wolf von Langa's 300B provides spectacular acoustic highlights in terms of homogeneity, finesse, and structure.

Did I find anything about these speakers to criticize? Quite honestly, no. And by 'honestly' I mean this very seriously. I found absolutely nothing. Wolf von Langa, with the Black & White, has brought historical techno-



The fine paper cone for the LF driver. Ventilated, light, and stiff. Delivers bass that is very precise and agile

logy up to date. Its transducers drove me – and never has the term been so true for me – to the heart of the music. They convert sound to emotion, they are involving, they preserve delicate relationships, and they allowed me to better understand the music. A great example, perhaps, of the Power of Music.

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Operating principle: 2-way open baffle design **Nominal impedance:** 6 Ohms **Frequency response:** 45 – 20k Hz **Sensitivity:** 96 dB (1 W/1 m, 30 V rms) **Dimensions:** 80 cm W, 108 cm H, 28 cm D **Weight:** 38 kg **Distinctive features:** field coil transducers with external power supply **Options:** Wolf von Langa SV-300BE power amplifier with NOS BSN7, Kron KR 300B and WE274B tubes for an additional 4900 EURO **Warranty:** 2 years **Suggested retail:** 18,400 EURO/pair (including power supply)



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