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NEUMANN NDH 30



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OPEN AND HONEST

NEUMANN NDH 30 OPEN-BACK HEADPHONES

Three years ago, Neumann surprised us with the first pair of headphones in the company's almost 100-year history. Although the market for closed headphones seemed already saturated, the NDH 20 developed into a veritable top seller. Now Neumann is expanding its headphone portfolio with the NDH 30, which promises even higher fidelity and resolution due to its open-back design. We were able to get our hands on one of the first specimens a few weeks before the official sales launch.

Text & Photos: Dr. Andreas Hau

➔ The Neumann NDH 30 retains the eye-catching look of the NDH 20 – and why not? With its aluminum surfaces in satin silver, the NDH 20 makes a visual statement. People like to be photographed with it; recently, it even popped up in prime time car commercials. The headband design was adopted 1:1 for the NDH 30, as were the extravagant single-sided earcup suspensions. Metal surfaces give the NDH 30 an “expensive” appearance, which is underscored by the engraved Neumann diamond.

The most noticeable difference to the NDH 20 are the earcup covers. With open-back headphones, these must be acoustically transparent so that the transducer inside can emit sound unhindered in both directions. The NDH 30's earcup covers are made of perforated metal in black with a finely perforated honeycomb structure, pressed into a shape reminiscent of the woofer covers of the Neumann KH 80 and KH 120 loudspeakers. The ear pads have also been redesigned. They are larger in diameter than those of the NDH 20 and protrude slightly over the edge of the cups. Also, the black fabric cover is a bit fluffier. As with the NDH 20, an inner driver cover in orange sets a visual accent. Behind the fabric is an interesting detail: The transducers are installed at an angle, so that they hit the ear from a similar angle as speakers in an optimal stereo triangle. This idea is not entirely new and was also implemented by other manufacturers in the premium segment. The goal is to make the reproduction more natural through involvement of the pinnae. In this way,

the headphone-typical in-head localization of the stereo center is somewhat mitigated.

Like the NDH 20, the NDH 30 uses 38 mm dynamic drivers with neodymium magnets – though not the same types, but newly developed ones. Therefore, the technical specifications are not identical. At 104 dB SPL for 1 V_{rms}, the NDH 30 has a slightly lower sensitivity, but its impedance is lower, too: 120 ohms instead of 150 ohms. All in all, this largely balances out; the NDH 30 is hardly quieter than the NDH 20. Even on mobile devices, the achievable volume is more than sufficient. Although the manufacturer recommends a headphone amplifier with lowest possible output impedance, the NDH 30 sounded excellent on all outputs tested, even on my Drawmer MC2.1 monitor controller with an impedance of over 100 ohms.

A technical highlight are the distortion values. The NDH 20 is already characterized by low distortion, which manifests itself in a value of 0.10% THD (for 100 dB SPL at 1 kHz). The NDH 30 achieves an outstanding 0.03%.

MYSTERIOUS CABLE The three-meter-long cable with braided coating is plugged in on one side via a locking 2.5 mm jack. Not on the left earcup, as would be usual, but on the right earcup, as is the case with the NDH 20

Manufacturer

Georg Neumann GmbH

UvP

649,- Euro

Internet

www.neumann.com

Our opinion

- +++ Very linear frequency response
- +++ Excellent spatial resolution
- +++ Sound compatible with Neumann loudspeakers
- +++ High wearing comfort

and some Sennheiser headphones. Unlike the closed-back NDH 20, the open-back NDH 30 is supplied with only a straight cable. The additional coiled cable is omitted. However, the new cable has been technically improved; it is – according to the product literature – “internally balanced.” What does that mean? Unlike the balanced wiring of microphones and line sources, this is not a matter of suppressing electromagnetic interference. Due to their low impedance, headphone connections are not very susceptible to electromagnetic fields anyway. With headphones, balanced connections serve to improve channel separation. Which is often surprisingly poor! You can easily check this by feeding a signal to only one channel. On the unused headphone cup, you can usually still hear a quiet signal. The reason for this is the common ground return path for both channels. In the hi-end hi-fi segment, headphone amplifiers with balanced outputs have therefore become well established, often in the form of a four-pin XLR connector. In the studio sector, however, balanced headphone outputs are uncommon. That’s why the NDH 30 uses an “internally balanced” cable, i.e. with separate ground return paths for both earcups, which only converge at the jack plug.

This also improves channel separation.

Since I own an NDH 20 and its cable is mechanically compatible, I was able to verify that the internally

balanced cable of the NDH 30 actually makes an audible difference – not voodoo, but electrical engineering! Channel separation and thus the resolution of the stereo panorama is significantly improved. Incidentally, the internally balanced cable of the NDH 30 also works with the same effect on the NDH 20, whose connector at the earcup is already prepared for a four-pin plug. Neumann is therefore planning to offer the internally balanced cable as an accessory.

IN PRACTICE The wearing comfort of the NDH 30 is excellent. Very large ear cushions provide more than sufficient room, even for XL size ears. Interestingly,



The cable of the NDH 30 is internally balanced, i.e. it has separate ground leads for the left and right earcups, which improves channel separation audibly.

Neumann does not use memory foam for the NDH 30. As Neumann's portfolio manager, Sebastian Schmitz, explained to me, this is for acoustic reasons: In the careful sonic tuning, memory foam turned out to be too dense a material for the open-back system. But even without memory foam, the cushions are so soft that you hardly feel any pressure. In addition, the fabric cover is very pleasant on the skin. The pressure is just right, not too tight, but not too loose either. You can wear the NDH 30 effortlessly for several hours. Its weight of 352 g (without cable) is optimally distributed; you hardly feel the NDH 30.

Contributing to the high wearing comfort is the relaxed sound image. Open-back headphones generally have an advantage in this respect because the sound transducers work as acoustic dipoles, which is pretty much their ideal state in terms of transient response and clarity. Even though closed-back headphones have made enormous progress in recent years, there are still sonic spheres that only open-back headphones can reach. Provided they have been carefully designed down to the last detail. And this is clearly the case with the NDH 30. If you like the Sennheiser HD 650, you'll love the NDH 30, because it sounds basically similar, but is better in all parameters. The sound image seems even more balanced and detailed and is free of any overemphasis. The bass response extends into the sub range and appears beautifully dry and punchy. The mids are reproduced with wonderful naturalness and free of annoying resonances. The highs sound airy and completely unstrained – yet not due to a treble boost as with many other headphones! The NDH 30 appears incredibly clean and linear across the entire audio spectrum.

The manufacturer advertises the NDH 30 as “compatible with a perfectly calibrated Neumann loudspeaker system.” As a professional audio snob, I can easily verify this because for several years I have been spoiling my ears with a setup consisting of two KH 310s, which were later joined by a KH 750 DSP subwoofer. The latter not only provides bass extension (which the KH 310s hardly need), but also the DSP engine for room adjustment of the entire system via Neumann's MA 1 Automatic Monitor Alignment. Although my listening environment is acoustically treated, this provided another a massive improvement.

The NDH 30 sounds very similar to my Neumann loudspeaker setup indeed. The finely balanced frequency balance is just as good. I could always start a mix on the NDH 30 and continue seamlessly using speakers without ever wanting to reverse my mix decisions. So

there really is sound compatibility. Differences exist, as might be expected, in stereo imaging. Headphones naturally have a wider panorama. The NDH 30 doesn't even try to conceal this. On the contrary, the strict channel separation is cultivated with the internally balanced cable. This makes perfect sense, because today headphones are an important, perhaps the decisive monitoring system on the customer end. So checking every track for headphone compatibility is mandatory these days.

The NDH 30's stereo image is significantly wider than the NDH 20's. Also, the important area around the stereo center is resolved much more precisely. Localization is razor-sharp across the entire panorama. This makes binaural recordings a lot of fun, as they seem particularly vivid and three-dimensional with the NDH 30. But even “normal” stereo mixes gain an almost immersive quality: High resolution, both on a tonal and spatial level, means you are literally drawn into the action. Although the NDH 30 is very well suited to analytical tasks, it's also great fun for enjoying to your favorite music. A highly cultivated headphone indeed! **FAZIT** Neumann has done it once again. The NDH 30 is without question one of the best dynamic headphones I have ever used. The sound reproduction is very clean, linear, and detailed across the entire audio spectrum. Its high spatial resolution





A special feature of the NDH 30 is its high compatibility with Neumann studio monitors.

is also remarkable. A big plus in terms of workflow is its sound compatibility with Neumann studio monitors. Basically, the latter is also true of the closed-back NDH 20, but the open-back NDH 30 comes a good deal closer to the ideal that Neumann loudspeakers also aspire to: coloration-free 1:1 signal reproduction. What the NDH 30 cannot offer, due to its open-back design, is sound isolation. So the tasks are clearly distributed: The closed-back NDH 20 is recommended for all those who work in noisy environments or, conversely, do not want to disturb their immediate surroundings. The NDH 20 also offers advantages in minimizing spill in recording situations. The open-back NDH 30, however, should be the first choice for mixing and mastering. It is a great addition to a good loudspeaker setup, but can also be used as an alternative when studio monitors are too expensive, too loud or unavailable for logistical reasons. Personal testing is highly recommended! However, you better check your bank balance beforehand because there's a good chance you'll find it hard to take the NDH 30 off again. I'm speaking from experience. ←

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