

Sound Perfected

Sennheiser presents its new top-of-the-range HD 800 headphones

Las Vegas, 7 January 2009 – Sound that is as natural as possible and true in every detail: that has always been the vision of all audio developers. With its new HD 800, Sennheiser has now come closer to this target than any other headphones manufacturer has ever done. The new top-of-the-range model from the audio specialist features a completely novel type of transducer and an innovative ear cup design. The key component of the stereo headphones is a 56 mm sound transducer – currently the largest that can be found in dynamic headphones. With the new headphones, Sennheiser is following the tradition set by the legendary Orpheus and has developed a set of high-end headphones that offers the ultimate in reproduction precision and unique spatiality. The exceptional headphones with their breathtaking sound will be shown for the first time at the Consumer Electronics Show in Las Vegas.



Sennheiser is presenting its new top-of-the-range HD 800 headphones aimed at highly discerning audiophiles who are looking for the ultimate in sound reproduction. With their completely open design, the dynamic stereo headphones combine innovative technology with carefully selected materials and the highest quality

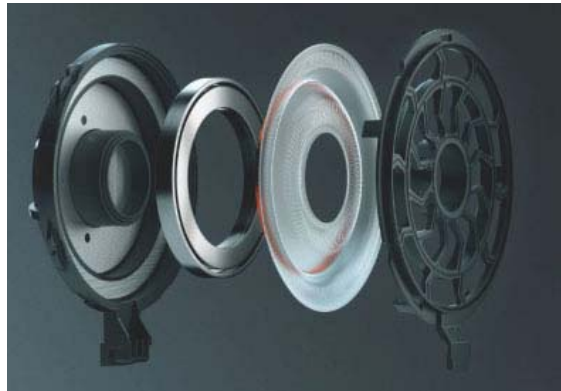
workmanship. The result is a level of performance, quality and attention to detail that is clearly audible. The headphones offer an outstanding frequency response of 6 to 51,000 Hz, a brilliant sound image and impressive spatiality. The appearance of the HD 800 is also in keeping with its exceptional sound performance: a puristic design language and a black/silver finish give the headphones a look of exclusive elegance. “We allowed ourselves a lot of time to perfect the HD 800,” explained Maurice Quarré, Product Manager Home Audio at Sennheiser. “Not only to develop the technical intricacies but also to select the finest materials – in other words, we took the time

that was necessary to make it perfect in every detail. After all, the sound properties of headphones ultimately depend on the interaction between all the individual components.”

Sound reproduction that is true in every detail: the patented transducer principle

Measuring 56 mm, the transducer in the HD 800 is the largest that can currently be found in dynamic headphones. A completely new design principle allows the purest possible sound reproduction in exceptional detail. The vibrating part of the diaphragm is not a circular surface area but a ring. This ring is able to set the entire air volume over the transducer into motion, generating the full-bodied sound of the HD 800.

The annular design patented by Sennheiser solves the problems relating to the dynamic transducer principle for the first time: “The more transducer surface area is caused to vibrate, the purer the headphone sound becomes at low frequencies. However, transducers with a large surface area have the



disadvantage that, at high frequencies, undesired resonances known as eigenforms occur at the diaphragm. This results in distortions in sound reproduction that even high-quality Duofol laminations are not able to completely eliminate,” explained Axel Grell, acoustics developer at Sennheiser. “This is precisely the dilemma that we have resolved in the HD 800. The ring design minimises the distortion of the sound image, even with a transducer as large as 56 mm.” The result is impressive: with total harmonic distortion of less than 0.02 percent (at 1 kHz and 100 dB sound pressure level), the HD 800 has brilliant trebles, precise bass reproduction and a much clearer sound image.

Natural listening experience: the new ear cup design

In the development of the HD 800, special attention was also paid to the design of the ear cups. These are designed in such a way that the sound waves are directed to the ear at a slight angle. This produces an impressively natural listening experience. “We

perceive acoustic signals to be natural when we experience them with a spatial extension," is how Axel Grell describes the basic idea. "Today, most music is made to be reproduced by two loudspeakers, which form an equal-sided triangle together with



the listener. This results in a sound field close to the ears that is at a slight angle to the head. When the sound field reaches the ears, the sound is reflected into the ear canal and to the ear drum by the structures of the external ear with slight time differences. It is precisely these differences that are a

key factor in spatial hearing and in the localisation of the sound event outside the head. With its large, inclined transducers, the HD 800 generates a sound field that corresponds to the listening experience with loudspeakers, but far exceeds loudspeakers in the purity of the sound reproduction."

The ultimate in sound reproduction and wearing comfort: top-quality materials and finish

The exceptional sound properties of the HD 800 are supported by selected materials and a top-quality finish. To ensure that the acoustic properties of the headphones are not impaired by any partial vibrations, the transducer is mounted in a specially produced high-precision gauze made of stainless steel. The ear cups are made of high-quality plastic with particularly good attenuation characteristics. What is more, there is no covering at all for the ear cups, as less material means that there is less opportunity for partial vibrations to occur. For the same reason, a special headband was developed for the HD 800. A patented multi-layer design consisting of metal and high-quality plastic attenuates all of the vibrations of the headband, thus effectively eliminating any dips in sound pressure level at low frequencies.



The cables have also been developed especially for these headphones. The four-strand high-performance wires made of silver-plated, low-oxygen copper are specially shielded against electromagnetic disturbance. The two high-precision plugs and the ¼" (6.3 mm) jack plug are gold plated for optimum contact.

The outstanding sound quality is accompanied by excellent wearing comfort. To guarantee optimum fit on the head, the ear cups are suspended on one side only. High-quality plastic material developed for the aviation and aerospace industries ensure maximum stability. With their circumaural design, the ear cups fit precisely round the ears without pressure and are still comfortable to wear even after hours of music enjoyment. The material used for the ear pads is Japanese Alcantara, which is particularly friendly to the skin and easy to clean.

Audio specialist Sennheiser: for the ultimate in headphones

The name Sennheiser has been synonymous with the ultimate in sound quality for many years. The audio specialist already impressed music lovers with successful headphone models such as the HD 580 or the HD 650. Now, the new HD 800 is expanding the top segment of Sennheiser headphones with the addition of an audiophile model that will remind high-end enthusiasts of the legendary Orpheus. The HD 800 was developed and designed at Sennheiser's corporate headquarters in Wedemark, Germany. And the new headphones will be produced there too – with the usual meticulous attention to detail.

The Sennheiser Group, with its headquarters in Wedemark near Hanover, Germany, is one of the world's leading manufacturers of microphones, headphones and wireless transmission systems. The family-owned company, which was established in 1945, recorded sales of over €395 million in 2007, 83% of which were generated abroad. Sennheiser employs almost 2,000 people worldwide, around 55% of whom are in Germany. Sennheiser has manufacturing plants in Germany, Ireland and the USA, and is represented worldwide by subsidiaries in France, Great Britain, Belgium, the Netherlands, Germany, Denmark (Nordic), Russia, Hong Kong, India, Singapore, Japan, China, Canada, Mexico and the USA, as well as by long-term trading partners in many other countries. Also part of the Sennheiser Group are Georg Neumann GmbH, Berlin (studio microphones), K + H Vertriebs- und Entwicklungsgesellschaft mbH (Klein + Hummel studio monitors, installed sound) and the joint venture Sennheiser Communications A/S (headsets for PCs, offices and call centres).

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