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AKG K280 Headphones Review



AKG K280

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The AKG K280 "Parabolic" headphones appear to be a conventional dynamic circumaural headset with open-air ear-cups that vent the

rear of the diaphragm to the room. That description could apply to a number of headphones, from AKG and most other manufacturers. Like many other AKG headphones, the K280 has a self-adjusting headband with a soft plastic strap and soft, foam-filled ear cushions that fully enclose the wearer's ears. A straight 10-foot cord emerges from the left ear-cup and is terminated in a standard quarter-inch stereo phone plug.

There is, however, much more to the K280 than meets the eye. Each earcup contains two dynamic drivers, one above the other, angled toward the center of the ear. A deflector molded into each earcup, just forward of the diaphragms, also directs the sound into the ear. According to AKG, the two diaphragms are tangent to a parabolic surface whose focus is at the entrance to the ear canal. This arrangement forms an acoustic lens that directs the sound into the ear, presumably with a minimum of modification by the shape of the pinna (outer ear). Computer-aided design was used to minimize the interference patterns between the identical signals radiated by the two angled diaphragms and to optimize the overall transient response of the system.

According to AKG, the parabolic design gives the K280 a "surround-sound" quality that more accurately conveys the perspective of a concert hall than conventional phones. The dual drivers increase power-handling ability and reduce distortion compared with a single-driver design. Moreover, they reduce the headset's impedance to 75 ohms- somewhat less than that of most high-quality stereo phones.

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The K280 headphones weigh 250 grams (about 8-3/4 ounces) without the cord and exert a pressure of about 350 grams on the wearer's head. Their rated power-handling capability is 200 milliwatts. The rated frequency response is 20 to 20,000 Hz, and the rated sound-pressure level (SPL) is 94 dB. **Price:** \$195.

Lab Tests

We tested the AKG K280 phones on an ANSI standard coupler. The frequency response was very flat (± 1.5 dB) from below 100 Hz to 1,000 Hz, falling off at lower frequencies to - 9 dB at 20 Hz. The output dipped to about - 5 dB between 1,000 and 4,000 Hz, rising to + 2 dB at 10,000 Hz before dropping to - 6 dB at 18,000 Hz. At a drive level corresponding to a 94-dB SPL, the total harmonic distortion plus noise was just over 3 percent from 100 to 300 Hz and rose at lower frequencies to 8 percent at 30 Hz.

The impedance (per channel) varied between 70 and 83 ohms from 20 to 13,000 Hz. A slight impedance glitch at 4,000 Hz may have been caused by a diaphragm or structural resonance, but there was no evidence of this in the frequency-response measurements. While frequency-response measurements on headphones are reasonably reliable at low and middle frequencies, the resonances in the cavity between the headphone and microphone diaphragms make the response jagged and

unpredictable above a couple of kilohertz. Our response measurements, made with the Audio Precision System One, were taken at thirty frequencies across the spectrum (at approximately one-third-octave spacing) and smoothed once by averaging each reading with the ones immediately above and below its frequency.

Comments

Because of the interaction between the acoustic structure of an ear-cup and the specific shape and size of a given listener's outer ears- to say nothing of his internal auditory system-judging the sound of headphones from measurements is even less meaningful than judging loudspeaker sound by measured output. In addition, there are great differences between a listener's interpretation of headphone sound and his response to the same program material heard from a pair of loudspeakers.

In general, headphones put mono (in-phase) sounds in the middle of the listener's head. Left- or right-channel information appears, of course, only in the corresponding ear and seems to originate from that side. A full stereo program can produce a very listenable spatial effect, which is nevertheless quite unlike that

heard in a normal room. Binaural recordings, made with closely spaced microphones and meant to be heard through headphones, create the closest approach to a "you are there" sense of reality, with one glaring exception: While they can produce an amazingly lifelike effect around perhaps a 270-degree angle, including the sides and behind the listener, they are typically unable to make a sound appear to be coming from in front of the listener.

Although AKG makes no claim to have solved this problem, the attribution to the K280 of "surround-sound" listening was intriguing. I listened to a number of CD's through these phones, including binaural recordings as well as ordinary stereo ones. The results were somewhat inconclusive.

As might be expected, binaural programs were reproduced with great realism, though at no time did the source appear to be in front of me. As a speaker on the record walked from side to side in front of the dummy head containing the microphones, he seemed to travel over or through my head.

Stereo recordings were another matter. The sound of the K280 phones was quite unlike that of the AKG K340 (<http://www.hifi-review.com/153640-akg-k340.html>), which has been one of my favorite headphones for some years. On the whole, it was much more speaker-like in character, with the well-knit coverage of the spectrum that is achieved only by high-quality speakers. Although the K280's extreme highs were not quite as strong as those of the K340, its bass was much more like that of some of the better speakers we have tested recently. Still, however, as much as I tried to hear a "surround sound" effect, I could not convince myself of its presence. That was

not surprising, since in the days of quadraphonic sound many headphone designers tried with no success to develop four-channel phones.

Although the K280 does not quite surround you with sound, it is definitely the most speaker-like headphone I have heard. Its frequency balance, and especially the quality of the midrange and bass, came closer to matching that of good speakers than other headphones—even the finest ones, whose sound quality can far surpass that of any speaker in some respects. Apparently the balance is a result of the focused sound field of the headphones, although the exact details of the process are not explained. The excellent bass performance of the K280 even led me to pair it with a powered subwoofer; the result was at least as effective as with speakers while retaining most of the private-listening aspect of headphone use.

Whether or not the sound of the AKG K280 has surround qualities, it is an excellent headphone that might be a good choice for someone who doesn't like "headphone sound" but has to keep a low sonic profile. It is the nearest thing I've found to wearing a pair of good speakers that have been miraculously miniaturized.



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