

Sennheiser HD 579 Owner's Report

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Summary: The HD 579 is currently de-listed on the Sennheiser web site, so is likely no longer in production. If you're reading this you're likely looking at a used pair. This is an excellent budget headphone — especially if you're willing to use a bit of EQ, and if you can get it at the right price. It's light-weight and very comfortable with roomy ear pads. I bought my pair three years ago at \$75US on sale new. Try to get a used pair at that price or less.

Released in 2016, the HD 579 was part of Sennheiser's refresh of their budget audiophile line-up, the HD 5-series. In particular, it fits between the HD 559 at the low end and the HD 599 at the high end of the HD 5-series open-back models. More recently, Sennheiser launched the HD 560S as the new top of the 5-series line-up. The 579 is the only 5-series model I have experience with, so I won't be making more than theoretical comparisons.

The HD 579 is built around a traditional dynamic cone driver of the type everyone is familiar with from their use in everything from laptops to ultra-expensive floor-stander loudspeakers. It aims to provide more bass than is typical of open-back headphones.

Physical considerations

This is an over-ear, open-back headphone with dynamic drivers.

- **Over-ear** means the ear cups surround the ears rather than resting upon them or in them.
- **Open-back** means sound is vented to deliberately leak sound to the world surrounding the wearer. But in this case what the wearer hears as a roar when listening to the HD 579's, others hear as more like a whisper. Conversely, sounds from the outside world leak into the headphones and do so much more clearly. These headphones are designed for quiet-environment listening, not recording sessions or commutes.
- **Dynamic drivers** means the sound producers inside each ear cup use the same cone plus voice coil technology that loudspeakers commonly use.
- The HD 579s have a **sensitivity** (loudness) of 106 dB per 1 volt, an **efficiency** of 93 mW and an impedance of 50 Ohms.

HD 579 PRO Owner's Report

Translation: most, but not necessarily all, smartphones, laptops and desktop computers from the past five to ten years will have enough power to drive the HD 579 to a (literally) deafening loudness. My iPhone 6S and aging laptop certainly do. Nevertheless, the 579's sound will improve given the extra power and control provided by a dedicated headphone amplifier.

Build, fit and comfort

As a physical object, this headphone seems reasonably well designed. Its 250 grams (9 ounces) of weight makes it one of the lighter full-size headphones available, which eliminates a source of discomfort or fatigue during extended listening sessions. However, the HD 579 has somewhat limited ear cup swivel plus a non-re-shapeable headband, so a good fit and seal is by no means guaranteed, depending on your head shape and size. The headband is very flexible and well-padded, but those with large heads may well find it stretched tight even at maximum extension.

The ear cups are large, oval and of medium depth, about 1 inch or 2½ cm. The HD 579 come with large but not deep velour, non-memory-foam replaceable ear pads. Many prefer velour to leather or leather-like ear pads as being softer and cooler. Critically, they are porous, which means they are relatively insensitive to whether you achieve a snug fit to your head. So glasses wearers should not experience a loss of bass loudness.

Provided accessories

The HD 579 comes with a single detachable 3 meter (9.8 foot) long, straight cable. The ear cup connector is a 1/16th inch jack with a locking prong. The other end terminates in a 6.3 mm (1/4 inch) jack and comes with the 2.35 cm (1/8 inch) termination adapter. This is a dangerous combination. The extra, non-flexible length of the jack plus adapter can easily damage the socket's solder joint if torque is accidentally applied to it. I speak from experience. I purchased an inexpensive New Fantasia replacement cable with a 1/8 inch termination. But New Fantasia cables are stiff and have lots of memory so are not ideal either. (Also note: New Fantasia cables have a metal spring strain relief before the source jack. This spring has a sharp, unprotected end that can easily snag on clothing or similar and scratch. I wrap the spring with electrical tape.)

Reliability

Given the use of plastic in the 579's build we might expect a potential for breakage. But this model is a typical member of the 5-series which has been around for over twenty years and has a sterling reputation for reliability. This is not to say indestructible, but given a modicum of care in handling it's going to last a lifetime. The weak point I know about is that the headband is covered with a thin soft plastic skin that is fairly easily pierced or torn (at least by squirrel claws).

Sound considerations

Frequency response / tonality

Typically, an open-back headphone like the 579 will be bass-neutral to bass light. The HD 579 has a moderate mid-bass and upper-bass elevation with relatively little sub-bass recession that only starts at around 40 Hz. The problem is that the bass elevation doesn't finish tapering off until well into the lower mid-range where male vocals live:

HD 579 PRO Owner's Report

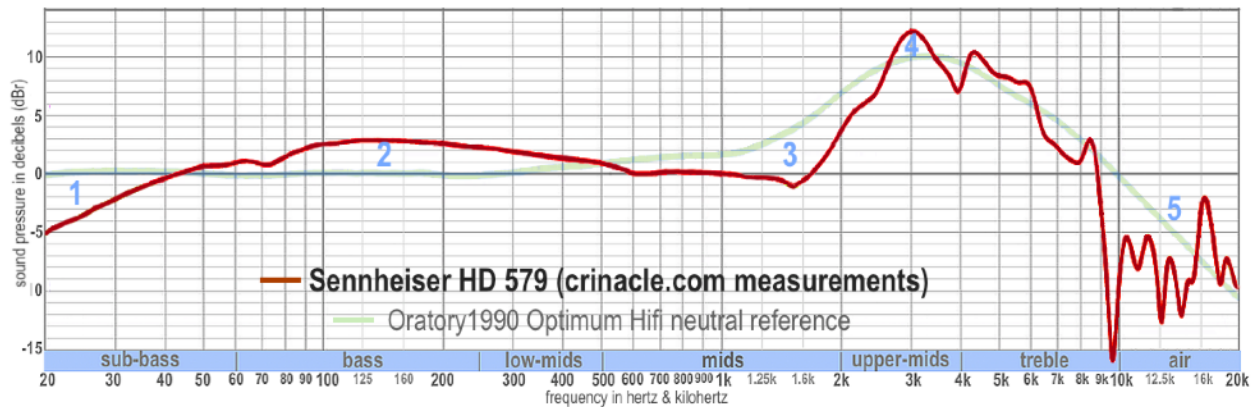


Fig. 1: HD 579 frequency response (source: crinacle.com)

Fig. 1 is a frequency response measurement graph for the HD 579. The measurements were made using professional-grade equipment. I can vouch for its accuracy in matching my own HD 579 within the limits of normal unit variation.

Don't be put off if Fig. 1 makes you want to run for cover. I'll explain everything you need to know. The vertical axis in Fig. 1 is loudness, the horizontal axis is frequency (lower/deeper pitches on the left to higher pitches on the right). The pale green line is the hypothetically accurate response for an over-ear headphone. The red line is how the HD 579 measures. As you can see the red line departs from the green line in several places that I've numbered in pale blue. Let's examine each of them in turn:

1. This sub-bass loudness roll-off looks serious but will only affect a small percentage of recorded music, since no human voices and very few musical instruments produce sound in this range.
2. Most people will welcome the moderate mid-bass elevation, although it is a departure from a strictly accurate reproduction of the recorded sound. However, the continuation of the mid-bass elevation into the low mid-range (past 250 hertz) combined with the slight depression of the middle mid-range creates a sonic haziness or thickness.
3. Worse, the middle-mids recession only worsens as frequency rises. The result is a very evident recession of the entire mid-range, which is where the bulk of music is made.
4. This moderate elevation right at the peak of the ear drum's amplification rise will annoy a certain percentage of listeners who are either treble sensitive, or listening at too loud a volume — or who are listening to piercing electric guitar riffs or synth. You should actually welcome this feature as a warning of over-loud listening levels, grin. The subsequent up-then-down between 4 and 5 is too slight to affect most people.
5. Spikes in this region will actually vary so significantly depending on a given individual's ear anatomy, that it's essentially meaningless to focus on what the measurement rig shows here. Your own ears will very likely hear something entirely different.

Diagnosis: EQ is clearly indicated for anyone paying attention to vocals or acoustic instrumentals.

While frequency is arguably the single most important aspect of sound reproduction, other factors also make a big difference:

Noise and distortion

Another potential problem area having to do with frequency reproduction is measured as *total harmonic distortion plus noise* (roughly, any unwanted variation from the original signal). No graphs for this for the HD 579 are available. But Fig. 2 is the graph for the HD 569. All the graphs for the other HD 5-series THD+N are very similar, so this likely gives us a good idea:

HD 579 PRO Owner's Report

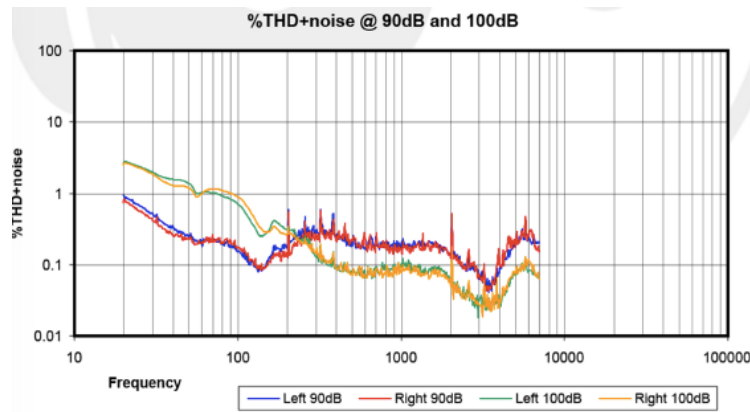


Fig. 2: HD 569 harmonic distortion (source: InnerFidelity.com)

And the HD 569 measures well below the 5 to 10% threshold for humans to actually hear distortion during music playback. The higher distortion levels in the bass frequencies at ultra-loud levels may seem concerning, but humans are actually even less sensitive to distortion in the bass than at higher frequencies. In all, this is actually a very good showing for the HD 5-series. That's potentially important, given low distortion means a greater ability to respond to the EQ we already know the headphone requires.

Speed and detail

In this context speed refers to how quickly a headphone can start and stop producing a sound. This is technically referred to as *impulse response* or *ringing*. A faster headphone has greater accuracy than a slower one in the time domain. A “fast” headphone is not still producing a sound beyond the sound's actual presence in the recording. That said, it's rare that any headphone fails to reproduce the whole auditory range out to at least 20,000 hertz (20,000 vibrations each second). 0.00005 second seems plenty adequate for sound separation.

More relevant: the pronounced lower mids elevation combined with the middle mids recession we saw in Fig. 1 serves to take the edge off mid-range sounds. This translates into a slight sense of detail fuzziness in that portion of the audio spectrum. One need only EQ this out, then listen to recordings to determine that the 579 has the potential to provide a better sense of clarity than it does out of the box.

Dynamics

Dynamics is, at least partially, another time domain property. It refers both to the range from quiet to loud a device is capable of reproducing, and to how well it can reproduce sudden changes in loudness. Time domain measurements are hard to come by, but my own experience doesn't seem to be contradicted by reviewers that the HD 579 has the typically realistic dynamics of a good dynamic driver headphone. In plainer language it exudes a sense of liveliness when called for, rather than over-politeness.

Soundstage and imaging

Soundstage is the ability of speakers or headphones to create the auditory illusion that the sound they produce comes from a larger three dimensional space instead of just from the devices themselves. Imaging is the precision in which individual sound sources can be located within this illusory space.

Due to some hearing loss in one ear I cannot properly evaluate this feature. There are few reviews of the HD 579 available and they contain little mention of sound stage or imaging. Best I can determine, they're simply average in sound stage size and imaging precision.

Timbre

The word timbre usually refers to the characteristic sound of one musical instrument vs another. But sound reproduction devices can sometimes have a distinctive departure from naturalness of their own, such as a metallic or plasticky accent. When equalized to neutral, the HD 579 has the natural timbre typical of a non-metallic diaphragm dynamic driver.

EQ-ability

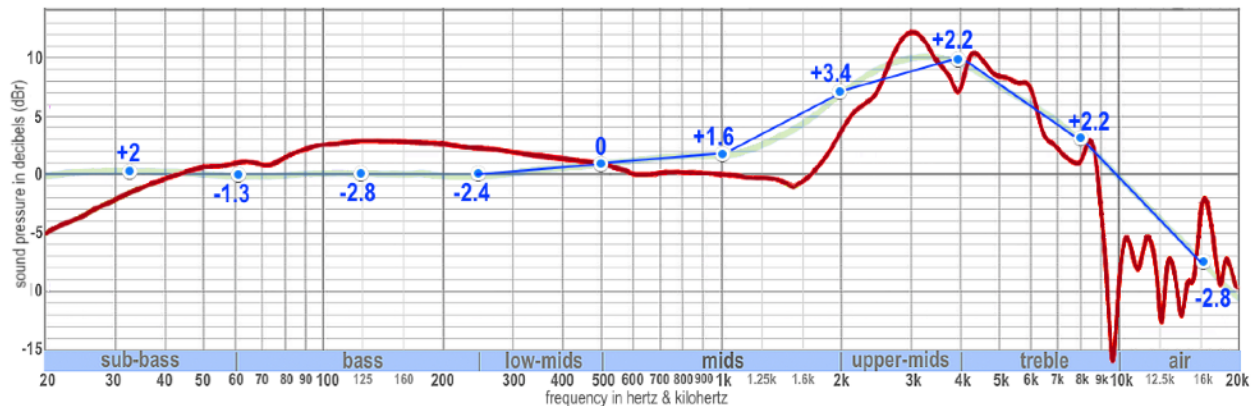


Fig. 3: possible 10-band EQ for HD 579

To achieve a more accurate sound reproduction Fig. 3 shows that you can achieve good results using even one of the 10-band graphic EQ tools that tend to be readily available. The blue line in the Fig. 4 graph shows the EQ result overlaid on top of the of the reference neutral pale green line through most of the graph. And the EQ line covers the neutrality line almost exactly with the adjustment values shown — except for the range from 1 to 4 kilohertz. The values at 2 and 4 kilohertz shown in Fig. 3 result in only a single decibel error on either side of the neutrality curve. But note that a quality frequency response graph, such as is shown in Fig. 4, is based on a population-average ear anatomy. Your ears will differ from that especially above 4 kilohertz, so you need to tweak the shown adjustment values as needed until an aggregate of many tracks of music sounds most correct.

Elevating the bass via EQ is also quite workable, at least at reasonable loudness levels. To achieve the well-known Harman target bass shelf set the 32 hertz band to +8, the 64 hertz band to +3.5 and the 125 hertz band to -1 decibels. The rest can stay the same as shown in Fig. 4.

Another consideration, is frequency response change over time as ear pads wear in. This can be quite significant after extensive use but I've used my 579's rather lightly over the three years I've owned them and so far am not experiencing any noticeable change.

Sennheiser's HD 5-series alternatives



We see from Fig. 4, below, how similarly the HD 579 and HD 599 measure. The 599 is a bit closer to neutral across the upper-bass and mid-range, but not so much as to eliminate the

HD 579 PRO Owner's Report

need for EQ. This graph shows only one of several aspects of sound quality. But what little review evidence we have suggests the 599 offers only a small improvement in the other areas of sound stage, imaging, distortion, dynamics and detail.

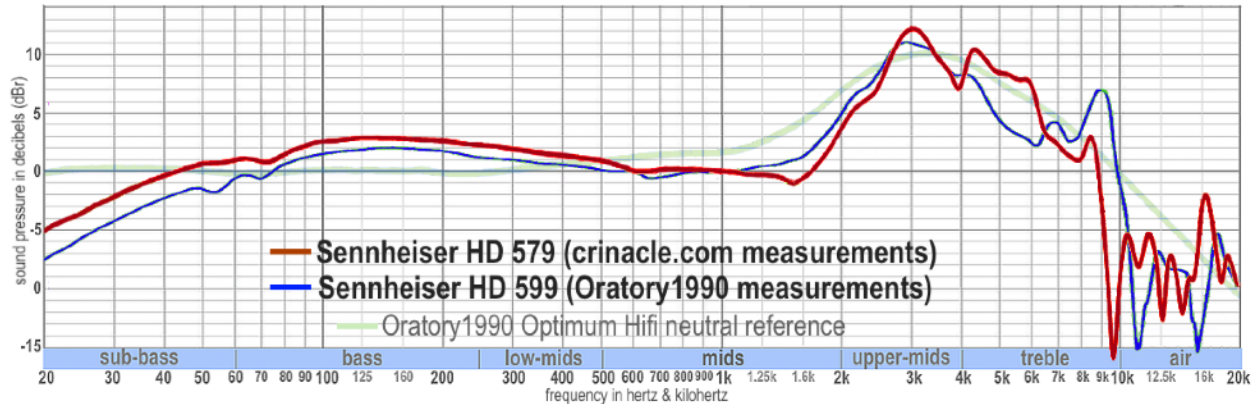


Fig. 4: HD 599 compared to HD 579 (source: Oratory1990)

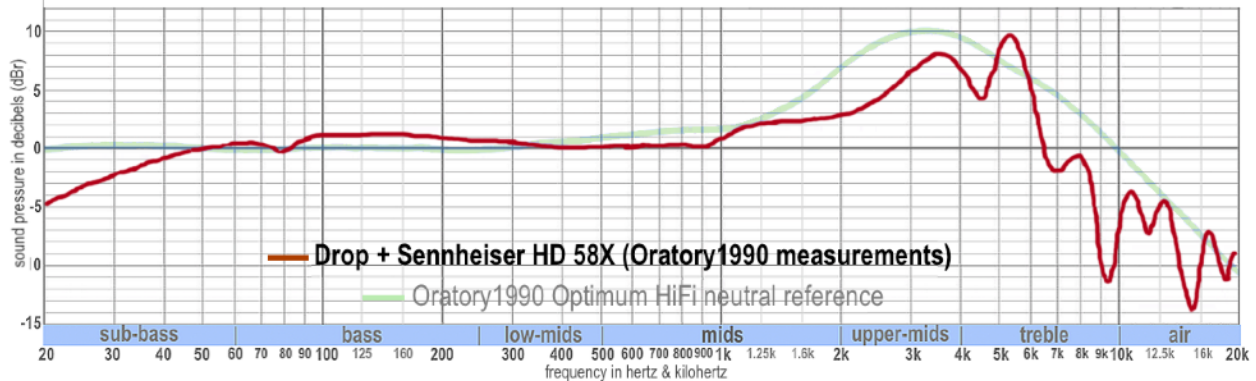


Fig. 5: Drop+Sennheiser HD 58X (source: Oratory Grapher)

The Drop HD 58X lacks much of the 579's bass/mid hump, but falters further on with a noticeable recession from 400 hertz on through to 8 kilohertz. This should make for easy listening for those focused on energetic genres like rock and metal.

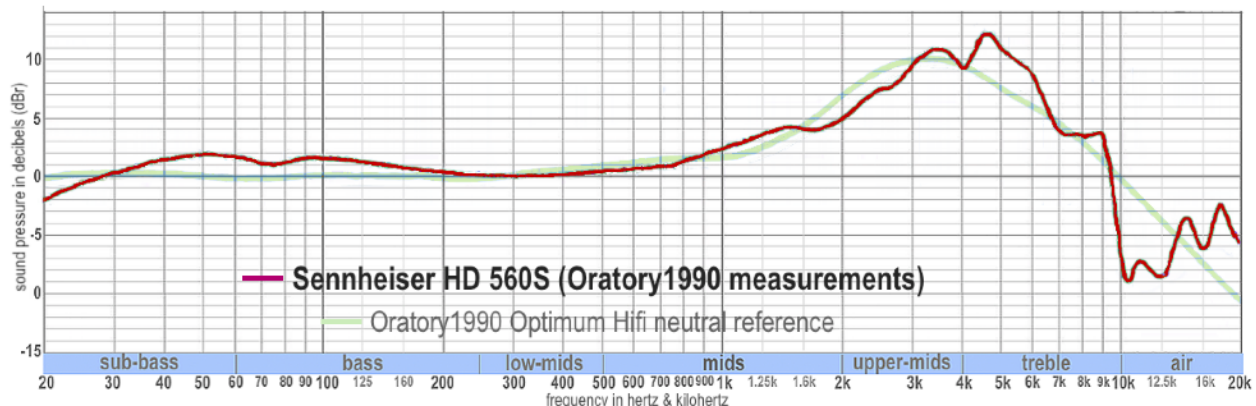


Fig. 6: Sennheiser HD 560S (source: Oratory Grapher)

The new HD 560S, on the other hand, looks to be virtually the definition of a neutral headphone. Only the moderate elevation between 4 and 7 kilohertz looks even potentially problematic. Here we have a lot of reviews to draw on. The upshot seems to be that the 560S is still a 5-series headphone in other areas of sound quality (detail, dynamics, etc), except that the sound stage is noticeably wider than the others. So the HD 560S is likely about as good as one can get in the higher end of the budget price space for a headphone that doesn't require

HD 579 PRO Owner's Report

an external amplifier and DAC for acceptable sound quality. But at the current \$200US list price, I'd still be reluctant to spring for one.



(product shot of the darker finished HD 598 CS)

Upshot: the HD 579, now likely used-only, is a reasonable purchase at or under \$75US. But this assumes you're looking for a quiet-environment headphone, given it's an open-back model. It also assumes you are willing and able to use EQ if you find you need it to correct for its less than ideal mid-range.

Another aspect of the value equation is what you would gain by shelling out for a more expensive item. Within the microcosm of open-back headphones, which tend toward a more realistic rather than coloured presentation, the 579 with EQ is a cheerful but slightly less refined version of the highly regarded HD 600. If my listening environment is less than quiet or my attention is divided between what I'm listening to and anything else, any difference between the 579 and 600 simply disappears.