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For as long as I have known Sandy Gross (co-founder of Polk Audio and founder of both Definitive Technology and GoldenEar Technology), I've observed him to be a man driven by two impulses. One is an impulse to experience and savor some of the finer things this life has to offer: good conversation, fine art, fine music, fine dining, and, of course, fine audio equipment. But the other is an impulse to make at least some of those things—specifically, fine loudspeakers—available to people of relatively modest means. How these twin impulses play out in real world terms involves some very interesting design choices, to say the least.



GoldenEar Technology Aon 3 monitor



GoldenEar Technology Aon 3 monitor

On one hand, Mr. Gross has the means, the ears, the technical resources, and the know-how to build true ultra-high-end (and thus, ultra high-priced) loudspeakers, should he ever wish to do so. But while I am aware that Mr. Gross has explored and carefully weighed that option, it is one he has never chosen to pursue (I suspect because it would mean building products that only a well-heeled few could afford to own). So, Gross has instead done what may be an even better thing, which is to dedicate himself and his successive companies to building loudspeakers that offer *near* ultra-high-end performance, but at decidedly down-to-earth prices. A great case in point would be GoldenEar's new Aon 3 two-way bookshelf monitors (\$999.98/pair), which are the subject of this review.

As Sandy Gross tells the story, the genesis for the Aon 3 (and its slightly smaller and less expensive sibling, the Aon 2) came on a business trip when he was visiting a prospective GoldenEar dealer to demonstrate his Triton Two tower-type speakers. During the visit, the dealer invited Gross to listen to an expensive pair of two-way monitors (think \$5000+/pair)—monitors of which the dealer was greatly enamored. Recounting the event in a conversation with me, Gross observed that he found the premium-priced monitors to be “really *very* good,” but after a few moments of reflection he thought to himself, “if GoldenEar really put its mind to the task, I’ll bet we could build a small, high-performance monitor that would give these pricey speakers a real run for their money—and for a fraction of the price.” To make a long story short, the Aon 3’s (and smaller Aon 2’s) are precisely the speakers Sandy Gross had in mind. Are they truly able to compete with products several times their price? In a word, yes, though with a few minor caveats, as you’ll learn in a moment.

## FEATURES

### GoldenEar Aon 3 Technical Highlights

- One Heil-type Golden Ear HVFR (high velocity folded ribbon) tweeter. The tweeter features:
  - o A thin, light, and responsive pleated diaphragm made of “a high-temperature film.”
  - o High-powered Neodymium magnets.
  - o A unique drive motion where alternate pleats of the diaphragm push and/or pull together in unison, effectively squeezing the air between the pleats outward or drawing the air inward.
  - o The principles of this type of tweeter design were pioneered many years ago by Dr. Oskar Heil, who termed his version of the driver the “Heil Air Motion Transformer.”
  - o A plethora of sonic benefits are claimed for the Heil-type driver including, “greater control,” “smoother, more extended response,” “vanishingly low distortion,” “dramatically improved dynamic range and detail,” and “superb dispersion characteristics.”
  
- One 7-inch mid-bass driver with MVPP (multi-vented phase plug) design. This driver features:
  - o A “rigid free-flow cast-basket chassis” where the concept is to minimize chassis flexing while also minimizing reflective surfaces behind the driver cone.
  - o Proprietary computer optimized cone topology.

- o A “high-gauss” magnet assembly.
  - o A 1-inch high-temperature Kapton former voice coil assembly.
  - o The driver is said to provide “extremely extended resonant-free linear frequency response characteristic,” with an eye toward providing both resolution and transient speeds compatible with the extremely “fast” HVFR tweeter.
- Dual, side-mounted 8-inch planar low-frequency radiators.
    - o By positioning the radiators on opposite sides of the Aon 3 cabinet, GoldenEar achieves what it terms an “inertially balanced configuration” that minimizes cabinet vibrations (because inward and outward motions of the two radiators effectively cancel each other out).
    - o The passive radiators help extend low frequency response.
    - o According to GoldenEar, the Aon 3’s passive radiator system “performs like a well-tuned transmission line, but with superior transient performance and control.”
- The Aon 3 features an enclosure shaped like a “truncated pyramid”—a design said to offer “significant performance advantages” in the form of “non-parallel cabinet walls” and “reduced baffle area around the tweeter.” In keeping with established GoldenEar design aesthetics, the Aon 3 is offered only in black, where the cabinet sports gloss black top and bottom caps, while the sidewalls of the enclosure are wrapped in black designer fabric.
    - o Gold-plated speaker binding posts.
    - o Recessed keyhole hanger on the rear panel facilitates wall mounting.



GoldenEar Technology Aon 3 monitor on Sound Anchor stand

## SONIC CHARACTER

In just a moment I will talk in some depth about the sound of the Aon 3, but before I do, let me invite you to take a look at a pair of reviews I have written on GoldenEar's Triton Two floorstanding speakers. The first is a review of a stereo pair of Triton Two's published in *The Absolute Sound* (click to [read the review](#)) while the other is a two-part review prepared for *The Perfect Vision* covering a Triton Two-based surround for *The Perfect Vision*. As you will discover in a moment, the Aon 3 and Triton Two share some strengths in common, so that these past reviews can provide some background context for my remarks.

One of the strongest design elements in the Aon 3 is GoldenEar's superb HVFR tweeter—an exotic Heil-type tweeter that offers excellent high frequency extension, superb detailing and transient speed, and is blessedly free from apparent edginess or problems with overshoot and ringing. In listening to the Aon 3, it rapidly becomes clear that the HVFR tweeter sets a very, very high performance bar that the rest of the speaker in turn attempts to match. The fact is that the HVFR tweeter is so agile and finely focused that it becomes a real challenge to build a midrange driver that can keep pace. But frankly, it is in the area of midrange driver development that I think the GoldenEar team has done some of its best work in creating the Aon 3.

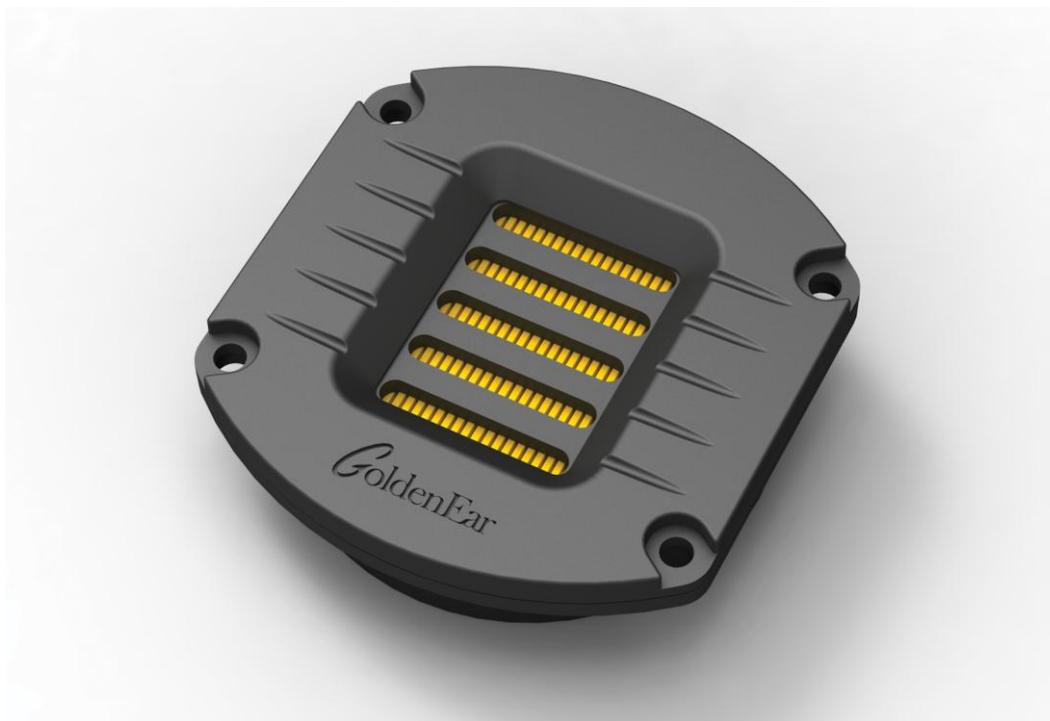
In previous models such as the Triton Two, GoldenEar has solved the problem of tweeter-to-midrange matching by using relatively small and light mid-bass drivers designed to provide “smooth linear frequency response extending above 20 kHz,” a high-frequency benchmark rarely achieved by most midrange drivers. The reasoning was that only such an ultra-wideband midrange driver would offer the speed and responsiveness necessary to merge seamlessly with the blazingly quick HVFR tweeter. Consequently, GoldenEar made serious R&D investments in midrange driver technology—R&D efforts that led the firm to use computer-optimized diaphragms, rigid open-basket chassis, specialized high-temperature voice-coil assemblies, and their distinctive multi-vented phase plug. The resulting drivers did, as promised, merge beautifully with the HVFR tweeter.

For the Aon 3, GoldenEar followed much the same design philosophy in developing a new ultra-wide bandwidth mid-bass driver for the Aon 3, but with a twist. Unlike the Triton Two's dual mid-bass drivers, the Aon 3 mid-bass driver not only goes high, but *also* goes surprisingly low—low enough that no separate active woofer is required. Instead, GoldenEar cleverly fits a pair of 8-inch passive radiators, which help supplement the speaker's bass output, on the sloping sides of the Aon 3 cabinet. The result is a remarkably versatile mid-bass driver, one that seems to possess the speed, detail, and extension of a small driver, while also providing the kind of bass output normally associated with a much larger one. As result the Aon 3 offers a wonderfully seamless blend between its mid-bass driver and tweeter, but also offers something more: namely, unexpectedly deep bass from what is, after all, a very compact two-way bookshelf monitor.

In practice, this means you get a speaker that offers many of the virtues you would expect to find in much higher priced monitors: good midrange-to-treble balance, terrific openness and transparency, and plenty of subtlety and detail. But you also enjoy bass solidity and depth that are rare in small bookshelf monitors of any price. While I won't tell you the Aon 3 has the low-end clout of, say, the Triton Two, which would be untrue, I will tell you the Aon 3 offers enough bass that—in small-to-mid-size rooms—its low-end performance should satisfy most listeners, on most types of music, most of the time. That is saying a mouthful, given how

small and relatively inexpensive the Aon 3 is. What is perhaps even more impressive than the quantity and depth of the Aon 3's bass is the *quality* of its bass, starting from the lower midrange and ranging right on down the lowest frequencies the speaker can reproduce. What is more, the low end (and lower midrange) of the Aon 3 is every bit as agile, detailed, and nuanced as the speaker's midrange and top-end are. This is the quality that, in my view, may make the Aon 3 an even more appealing speaker for some audiophiles than the Triton Two is.

Instead of reaching for subterranean bass frequencies as the Triton Two does, the Aon 3 deliberately limits low-end response to a respectable (and indeed, impressive) 38 Hz, but in the process it shows how less really can be more. With the Aon 3, you'll get less low-end punch and clout than you would from a full-size floorstander, but as a result you will be able to savor the pure, unadulterated, high-resolution sound of the Aon 3's mid-bass driver—without worrying about a powered sub partially masking the speaker's overall excellence.



GoldenEar Technologies HVFR tweeter

There are a few caveats and set-up tips to help readers determine whether the Aon 3 might be right for them.

First, the Aon 3 has a somewhat narrower dynamic envelope than the Triton Two, which means that while the bookshelf monitor works well in small and mid-size rooms it may or may not offer enough dynamic oomph to fill larger spaces. The good news, though, is that the Aon 3 for the most part sounds dynamically expressive, provided you don't press it beyond its limits. Just use a judicious hand on your amp's volume control and things should be fine.

Next, note that the Aon 3 requires careful placement in order to deliver optimal bass. In my room the Aon 3s performed best when they were positioned within about 2 feet of my listening room's rear wall. When I pulled the speakers further out into the room, the bass lost weight and punch and became a bit too lean sounding. Don't settle for "pretty good" bass; keep experimenting with placement until the Aon 3s serve up a balanced combination of bass depth, weight, and clarity.

Third, to unlock the Aon 3's full imaging and soundstaging capabilities, plan on spending some time carefully adjusting toe-in angles and the distance between the speakers until you find a desirable sweet spot where images seem suddenly to snap into focus and soundstages take on desirable depth and breadth. More so than many small bookshelf monitors, the Aon 3s may require and will richly reward a little extra time and care during the initial set-up process.

One final performance note: For best results, you'll want to hear the Aon 3s on good stands that position the speakers' tweeters at ear level for seated listeners. When placed up at ear level, the GoldenEars produce images that are quite realistic in height and scale, with desirable qualities of spaciousness and three-dimensionality.

Once fully dialed in, I think the Aon 3s can and do compete on a level footing with monitors several times their price. At the very least, I think many listeners would agree that the Aon 3s will, to use Sandy Gross' phrase, give premium-priced monitors "a run for their money," but for a whole lot *less* money.



GoldenEar Technologies Aon 3 monitor on Sound Anchor stand

## MUSICAL EXAMPLES

To get a handle on several of the things the Aon 3 does well, I turned to Ti-Ti Chickapea's *Change of Worlds* [Orchard Park]—a lovely old chestnut of an album that, for me, brings back fond memories of the time period when I lived just outside of Ithaca, NY. Ti-Ti Chickapea is a remarkable trio comprising the well-known (and incredibly gifted) jazz cellist Hank Roberts, eclectic guitarist Richie Stearns, and violinist and luthier Eric Aceto (whose firm, Ithaca Stringed Instruments, builds wonderful electric violins). The sound of the trio embraces elements of traditional folk music, next-generation bluegrass, and jazz, all assembled in a format that is reminiscent of some of the work of Robert Frisell; it's a delicious mixture that is captured with warmth and terrific realism in this Orchard Park recording. If you listen to the ensemble perform (or perhaps I should say "transform") a traditional song such as "Star of the County Down", you'll hear Stearns' delicate and

articulate tenor guitar establish the song's basic chord structure and rhythm, and then—after several bars—hear the warm, rich, authoritative sound of Roberts' cello taking up the lead. Soaring high up above the guitar and cello, Aceto's violin provides beautiful treble motifs and accents, presenting itself by turns both through sweeping, fluid, fiddle-style lines and through angular and abrupt comments that are vigorously bowed. Tying all the elements together are deceptively simple yet soulful vocals from Roberts.

As I listened to the Aon 3s on this track, I was struck by their speed, purity, and sheer realism in reproducing Stearns' intricate and finely woven guitar lines, and by the way each plucked note seemed almost perfect in attack, sustain, and decay—so that each note seemed to lead an independent life of its own. I was also floored by the way the Aon 3 demonstrated real weight and warmth on the lower registers of Roberts' cello, while revealing the cello's underlying richness and woodiness, which remained fully intact as Roberts explored the instrument's upper registers. This sort of top-to-bottom focus and consistency, spanning the range from upper bass on through to upper midrange, is one of the Aon 3's great strengths. Roberts frequently switches back and forth between arco and pizzicato playing styles, and while those techniques are obviously very different, the Aon 3s left no doubt that all the notes originated from one and the same cello. Again, the Aon 3's tonal consistency and focus are essential. Finally, I was wowed by the accuracy and realism of the Aon 3s as they rendered the voice of Aceto's electric violin—an instrument that sounds pure, clear and at times quite incisive yet is never overly “steely” or brittle-sounding (my wife owns and plays one of Aceto's electric violins, so it's a sound I know well). Finally, I was impressed with the way the Aon 3 found the understated but heartfelt emotion and subtlety in Roberts' seemingly simple vocals. Best of all, each ensemble member is heard playing or singing from a precise location in a highly believable 3D soundstage that floats well free from the speaker enclosures.

If you look back at the comments I've just made, you'll see that they represent a blend of thoughts on technical performance (involving accuracy, tonal purity, and realism), but also on the speaker's ability to expose the emotional content embodied in the music. This ability to deliver both a strong technical performance and one that lets the music live and breathe is what makes the Aon 3 very special—and quite exceptional for its price.

Some of you may wonder whether the Aon 3, which is really a pretty small speaker, can possibly deliver satisfying bass. For me the question was answered unequivocally by putting on the title track from master bass guitarist Dean Peer's album *Airborne*. “Airborne” showcases the dizzying array of bass guitar playing techniques Peer has at his disposal and shows Peer accompanied only by percussionist Bret Mann, who performs on a lovely old-school German Sonor drum kit. Even though this track features plenty of moments where Peer gives the low B string of his five-string fretless bass a workout, complemented by potent kick drum and tom-tom “thwacks” from Mann's drum kit, most of the bass content I know to be part of this album came through intact with the Aon 3's at play. True, deep bass aficionados might notice that a very slim layer of low-frequency underlayment winds up being under represented by the little GoldenEars, but not by much. What is more, the bass that is presented is offered up with tautness, speed, snap, and a healthy measure of punch. This, then, is the key to the Aon 3's low-end performance; the bass you do hear is pretty much choice stuff, while the bass you don't hear falls low enough in the spectrum that—for the most part—you won't miss it (or at least will not feel there's much of substance lacking from the presentation).

As you listen to the Aon 3 in a holistic way, you might feel, as I do, that it comes across as being deeper, richer, more vibrant, and more full-bodied than a speaker its size and price has any right to sound.

## CONCLUSION

### Consider this speaker if:

- You want an extremely capable, audiophile-grade bookshelf monitor that, to use sports terminology, plays way “above the rim.”
- You want a monitor that produces deep enough bass that you’ll rarely if ever find yourself wishing for a subwoofer.
- You place a premium on openness, transparency, and overall coherency.
- You like the idea of a monitor that puts the emphasis on sound quality—not on styling flourishes that look cool but do nothing to improve the sound.

### Look further if:

- You absolutely, positively have to have true full-range bass: to achieve that goal, you’ll need to look at GoldenEar’s Triton models.
- Down deep, you want a speaker that has some “bling” factor and serves as an audio “status symbol” of sorts. The Aon 3 can look a bit plain alongside some of the exotic wood-finished, high-dollar monitors we’ve seen. But if you remember the old saying that “beauty is as beauty does,” we think you’ll find the Aon 3 is a lovely thing to behold.

### Ratings:

- Tonal Balance: **9.5**
- Smoothness: **9**
- Frequency Extremes: Bass **9.5**/Treble **10**
- Clarity: **10**
- Soundstaging: **9**
- Dynamics: **9**
- Sensitivity: **9**
- Value: **9.5**  
(a bargain, to be sure, though the smaller and less costly Aon2 might be an even bigger “steal”)

## BOTTOM LINE

*The Aon 3 is a brilliant little bookshelf monitor that, if heard from behind a visually opaque but sonically transparent scrim, could easily pass for a far more costly speaker than it actually is. Several things make the Aon 3 lovable: its transparency and detail, the seamlessness of the integration between its tweeter and mid-bass driver, and its very impressive bass output (for such a compact speaker).*

*While GoldenEar’s flagship Triton Two arguably has broader capabilities and can comfortably fit more varied applications, the sheer openness and focus of the Aon 3 may make it the Golden Ear model most likely to win the hearts and minds of many discerning audiophiles. And did we mention it also offers remarkable value for money?*

## SPECIFICATIONS

### **GoldenEar Technology Aon 3 Bookshelf Monitor**

**Type:** 2-way, dual-driver bookshelf monitor with dual passive radiators

**Driver complement:** one HVFR (high velocity folded ribbon) tweeter, one 7-inch cast-basket mid-bass driver, and two 8-inch side-mounted passive radiators.

**Impedance:** 8 Ohms

**Sensitivity:** 90 dB

**Dimensions (H x W x D):** 14" x 9" x 11"

**Weight:** 23 lbs.

**Warranty:** 5 years, parts & labor