

Nanosat Home-Theater Speaker System

Description

Model: Nanosat speaker
Price: \$125 USD each
Dimensions: 5.8"H x 4.2"W x 4.3"D
Weight: 2.35 pounds each

Model: Nano Sub subwoofer
Price: \$299 USD
Dimensions: 13.5"H x 11.65"W x 13.50"D
Weight: 20.15 pounds
System Price: \$800 USD

Warranty: Five years parts and labor for Nanosats; one year parts and labor for Nano Sub

Features

- Omnipolar technology (Nanosat)
- 0.75" Pure Titanium Hybrid (PTH) tweeter (Nanosat)
- 2.75" Polypropylene Titanium Deposit Hybrid cone woofer (Nanosat)
- Magnetically attached grilles (Nanosat)
- Finish options: platinum, platinum/black, white (Nanosat)
- 8" woofer with Elliptical Surround technology (Nano Sub)
- On/Off/Auto power settings (Nano Sub)
- Magnetic shielding (Nanosat)

Today's loudspeaker designs seem to be going in two directions, for two kinds of buyers. On one side are enthusiasts who want the largest, heaviest, most obtrusive loudspeakers they can get their hands on. It's a "the bigger the better" kind of thing -- something that makes a statement in a room. On the other side are those who don't want big speakers at all, and would rather have something compact, attractive, and discreet -- the less attention it attracts, the better, and any attention it does get better be of the approving kind. (I'd wager that the group preferring small speakers is much larger than the one that wants to own monstrosities.)

Mirage Speakers can satisfy both sides. When Mirage created their first "bipolar" loudspeaker, the M1, back in 1987, it would have definitely fallen into the first camp. Huge, black, and room-dominating, it resembled the monolith from 2001: A Space Odyssey. Today, Mirage still produces big speakers capable of filling a sizable room, visually and sonically. But they've also done some amazing things with their Omnipolar technology -- the term they use to describe their new way of radiating sound in 360 degrees -- by developing ways to implement it in speakers that are minuscule in size and low in price. Enter the Nanosat home-theater system -- five identical satellite speakers and a subwoofer for just \$800 US.

Description

The Nanosat is a descendent of the Omnisat, which Mirage debuted in 2002, and which won a Reviewers' Choice designation and Home Theater & Sound's Product of the Year award for that year. However, the Nanosat is quite a bit smaller, which is surprising -- the Omnisat was already pretty small.

The Nanosat is about half the size and weight of the Omnisat. Whereas the Omnisat would completely cover my whole hand and then some, the Nanosat fits more or less in my palm. At \$800, the Nanosat system is about half the price of the Omnisat 6 system (five Omnisats plus one LF-150 sub), which cost \$1700 when I reviewed it. The Nanosat's lower price will make it attractive to budget-oriented buyers, and its smaller size and improved styling will appeal to those who are conscious about their décor.

Take my wife. She's more than tired of looking at big, floorstanding speakers, no matter how well they're finished. When the Nanosats entered the room, she immediately jumped up to touch them -- a rare welcome for any piece of audio gear -- and proclaimed, "Oh, those look good -- really

good." She liked the Nanosats' styling more than the Omnisats, which are a little pod-like, but mostly she preferred their size. Size matters, as we all know; in this case, smaller is better.

Whereas early Mirage bipolar and Omnipolar speakers used drivers mounted on the cabinets' front and rear, essentially doubling the number of drivers of conventional speaker designs, Mirage has been able to make their Omnipolar models small (Omnisat), smaller (Omnisat Micro), and smallest (Nanosat) by using a "normal" number of drivers, but dispersing sound to the front, back, and sides by placing those drivers at specific angles and reflecting their outputs off of a specially designed saucer that Mirage calls the Omniguide.

This concept of using angled drivers and reflectors, the brainchild of Mirage designer Andrew Welker, was first implemented in the Omnisat. The result is a speaker that, because of the way Mirage has angled the drivers and Omniguides, disperses sound in 360 degrees, but directs more to the front than to the rear. That last part is important: Mirage contends that a speaker that radiates sound evenly all around 360 degrees will have imaging that's too diffuse. They say that directing more energy out the front, as a conventional speaker does, while still dispersing enough sound to the sides and rear, results in better imaging and a more natural sound.

The Nanosat works identically to the Omnisat -- the Nanosat's just smaller. The Nanosat's tweeter is a 0.75" Pure Titanium Hybrid (PTH) dome. The woofer is a scant 2.75" across, and is said to be made of polypropylene with a deposited titanium coating. The drivers are crossed over at 2.7kHz.

On the rear of each Nanosat are good-quality binding posts. *On the bottom is a unique mounting bracket that swivels, allowing you to attach the Nanosat to specially made Mirage stands, or to a wall if you want them completely out of the way. Mirage hasn't missed a beat with this speaker.*

Finally, there's the Nano Sub, which my wife also thought looked much better than the larger, darker, squarer LF-150 sub, which came with the Omnisat 6 system. Two things stand out about the Nano Sub. The first is its appearance: shapely, with rounded edges, it comes in a textured gray finish with silver-colored feet and port tube. It's a rare thing for a subwoofer to look good, but the Nano Sub manages it.

The other thing is the woofer cone itself, which you'll see when you flip the Nano Sub over and look at its belly. The woofer's diameter is 8", and inside there's a 75W amplifier to drive it. The key, though, is the woofer's surround, which has nifty ribs. Those ribs aren't just for show. API, Mirage's parent company, is quite proud of this new surround technology, which they call Elliptical Surround, and which they say "has been designed to increase excursion, eliminate surround distortion, and increase efficiency." Mirage's new S8, S10, and S12 subs also come with Elliptical Surround.

The Nano Sub is designed specifically for the Nanosat system, and Andrew Welker told me that the Nanosat system is designed to be "as simple to use as possible." As a result, the Nano Sub has only a power switch and a volume control. Simply connect the Nano Sub to a surround receiver via the line-level input (or use the high-level speaker connectors if you want to), turn it on, adjust the volume level, and that's all there is to it.

Almost. In the absence of some controls, such as phase, the system's simplicity meant that I had to fiddle with the Nano Sub's placement a bit -- but only a tiny bit. *It took me just minutes to get the Nanosat system sounding great in my room.*

Music and Movies

I find it easier to gauge the fidelity of a speaker system with music than with movies, so I began my critical listening with a couple of film soundtrack albums. The first was the disco-dominated *The Adventures of Priscilla, Queen of the Desert* [PolyGram 516937], to see if the Nano Sub could, as fellow contributor Roger Kanno likes to say, "pound." And pound the little sub did. It won't win awards for depths plumbed -- that 8" driver will go only so low, say 40Hz or so at moderate output levels in my room -- but it will turn some heads for how tight it sounds. Music with drive, which the *Priscilla* soundtrack has, came alive quite impressively through this sub.

Next, I used the *Gladiator* soundtrack [Decca 467094] to evaluate not so much the Nano Sub as the Nanosats themselves. I wanted to hear how "full-rangey" they were. They weren't. Without the Sub engaged, the Nanosats sounded rather thin, and despite their good clarity -- maybe even better clarity than the Omnisats through the upper mids -- there just wasn't enough bottom-end foundation to make listening all that enjoyable. While the Omnisats are certainly not weighty down low, they do put out just enough bass to make them listenable on their own (although they, too, sound better with subwoofer reinforcement). The Nanosats need the Nano Sub.

Luckily, the Nanosat and Nano Sub together define synergy -- the whole being greater than the sum of the individual parts. When I engaged the Nano Sub, *Gladiator* went from being thin and constrained to having weight, depth, and space that exploded into my room. The system didn't sound tiny at all; the Nanosats actually sounded like small floorstanders.

The Nanosat system also proved itself capable of playing quite loud -- but, as I quickly found out, only up to a point. I cranked them up to a sufficiently loud level for my tastes -- loud enough that I had to yell before someone else in the room could hear me. But when I went past that point, the Nanosats started to sound gritty -- obviously, a 2.75" woofer can deliver only so much. In the end, given the size of satellites and sub, the Nanosat system is designed for smaller rooms -- condos, apartments, and the like.



While the Nanosat system was commendable with music, it really shone with movies, where having five identical speakers all around combined to present a cohesive presentation that few conventionally designed systems can match. This mirrored what I found with the Omnisat-based system.

There's a big difference between a home-theater speaker system in which the sound of the center-channel speaker sonically matches the sounds of the left and right fronts, and one in which this doesn't happen. When it doesn't, there's a strange discontinuity in the front soundfield -- most obviously tonally, but spatially as well. For me, such center-channel mismatch is incredibly distracting, and one of the reasons, for a while, that I shied away from home-theater systems altogether. But when Mirage released the Omnisats, I was thrilled with how well its three identical front speakers blended. What's more, the Omnisat is so small it can sit unobtrusively atop the TV, unlike many box-type center-channels. And the Omnisat dispersed its sound so freely that it didn't seem to matter at all that the center speaker was a little higher than the left and right.

*The Nanosat system was the same. From left to right, there was no discontinuity, and when dialogue or sound effects were panned from one speaker to the next, mirroring movement onscreen -- as in *Memento*, which we just watched again last night -- the tonal balance didn't change at all. That distracting center-channel mismatch was gone; the enjoyment of home theater was back.*

Also like the Omnisats, the Nanosats made great surrounds, particularly in smaller rooms, where they may end up closer to your head than would be ideal with a larger speaker. One of the Omnipolar technology's strengths is the way a speaker "disappears" sonically, even when you sit quite close to it. It acts more or less like a radiating pulse of sound. As a result, if you have a small space, the Nanosat surrounds could sit quite close to your ears -- at one point I put them just 6" away from the back of the couch, and they didn't seem that close at all. They created such a spacious soundfield that they made me feel as if they were at least a few feet away, and in a larger room.

When we watched Cold Mountain the other night, it showcased all the strengths of the Nanosat system that I've just described: a cohesive presentation across the front stage with good clarity on dialogue; excellent surround effects that enhance the film and don't detract from it with gimmicky-sounding hyperprecision; and, finally, an impressive sense of spaciousness and size, the latter most likely a result of the five satellites' Omnipolar radiating pattern. The Omnisats and the Nanosats are the only speaker systems I've had that make what I now call a "cloud of sound" in my room -- they're incredibly spacious-sounding. They're also the smallest speakers I've ever reviewed.

The Nano Sub, not to be forgotten, performed commendably with the cannon shots and explosions during Cold Mountain's battle scenes. The Sub was an instrumental part of making this diminutive system sound rather big -- without it, the Nanosats didn't sound nearly as impressive.

Comparisons and criticisms

If someone's going to criticize the Nanosat system, one of the things will likely be that they lack the hyperprecise imaging that many direct-radiating speakers have. It's true; the Nanosats are more spacious than they are precise, making the stage more general than paint-by-numbers specific. The same is true of the Omnisat system. But that doesn't mean it doesn't cast well-defined images -- voices and sound effects are easy to discern -- it's just that they're not carved out in space.

The other criticism will no doubt concern the speakers' size: they're rather small, and while that's attractive, it means that they sound a touch light compared to even modest-sized bookshelf speakers, or even the Omnisats. This was most notable in the upper bass. The measurements of many bookshelf speakers often reveal a purposely placed "bump" somewhere between 100 and 150Hz, to add some wallop and weight in the bottom end. It works, and it can give the impression that the speaker has much more low bass than it really does. The Nanosat has only a 2.75" woofer in a very small cabinet. It's lucky to be flat to 100Hz, let alone humped up at 100Hz. That impression of weight is somewhat missing with this speaker. On the bright side, the Nano Sub can "pound," and, with careful positioning and setting the volume just right, you can use it to overcome some of the Nanosat's lightness. You won't overcome it 100%, but you can get close.

When the Omnisats and Nanosats went head to head, there were similarities as well as differences. The similarities had mostly to do with that spaciousness that the Omnipolar technology achieves. Even after all this time with the Omnisats, I still marvel at the way they "disappear." The

Nanosats did the same thing; once you've lived with a speaker that sounds so balanced wherever you are in the room, it's hard to go back to more directional designs.

However, the Omnisat, at twice the Nanosat's the price, does sound more refined. It has more bass, and the highs are more pristine. In comparison, the Nanosat sounded a little edgy up top. The Omnisat's midrange, too, is a little more velvety and textured, giving the speaker more presence. To the Nanosat's credit, though, they actually sounded a bit more distinct and forward. One of the criticisms I had of the Omnisat is that it's a bit too laid-back in the mids, making dialogue tough to hear -- I found myself turning the volume up when actors spoke softly. The Nanosat seemed to have that problem licked -- I reached for the remote control only if the overall sound was too high or too low.

The Nanosat takes a healthy lead in appearance. My wife ranked it higher than the Omnisat from the get-go, and, after living with them for a time, I now do too. The Nanosat is smaller, not that size was all that important -- the Omnisat, too, is pretty small, and the center-channel fits on my TV just as easily -- and it looks better, with nicer lines and a more pleasing shape. The same can be said for the Nano Sub over the LF-150.

Conclusion

You can find other small, low-priced speakers, and the Nanosat isn't the only affordably priced home-theater speaker system that comes in a single box. And I've seen other good-looking speakers, but to my eyes, the Nanosats look really sharp -- in terms of appearance, I rank them at the top of the pile. But what makes the Nanosats really special are the results of Mirage's Omnipolar technology: a large, spacious sound that belies the speaker's size; and the superbly cohesive soundfield you get from five identical speakers. Omnipolar design is unique to Mirage; the fact that the company can now offer this technology at such a low price means that virtually everyone can experience Omnipolar sound if they want to.

Review System

Receiver - Nakamichi AV-10
Source - Kenwood DV-S700 DVD player
Cables - Nordost, DH Labs
Monitor - Sony Trinitron direct-view TV

The logo for Mirage is written in a large, stylized, cursive font. The letters are thick and black with a white outline. The 'M' is particularly large and sweeping. A registered trademark symbol (®) is located at the end of the word.

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