

# Equipment Reviews

## Vivid Audio Kaya 45 Loudspeakers

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Details

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Review components come and go, and for the most part it doesn't take me long to get their measure. Speakers, especially, don't take much time to figure out, and I'm fairly confident in my speaker-analyzing skillz. It's a mature technology, right? A mechanical device with three, maybe four moving parts: drivers and crossover in a box.

But there's a fairly sharp line between made-to-spec speakers with MDF cabinets and mass-produced drivers, and those more ambitious models based on new technologies, with drivers designed and even made in-house, and cabinets that *aren't* made of slabs of MDF. For the past two months, I've been trying to digest a pair of the latter: Vivid Audio's Kaya 45. It hasn't been easy. I realize now that I should have expected this speaker to be a bit of a challenge. The deeper I looked into it, the harder it was to understand how it's put together and how it works.

The Kaya 45 was designed in England and is manufactured in South Africa. It retails for \$18,000 USD/pair in any of its three standard colors of Pearl, Piano, and Oyster Matte; add \$1500/pair for any of a variety of other finishes. My review samples were finished in Oyster Matte, a low-profile, very finely pebbled gray. If I were buying a pair of Kaya 45s, I'd probably go with Piano black (though Oyster would likely better disappear into a room).



I found the appearance of this ambitious product somewhat charming. Its constantly curving shape is an exercise in adventurous styling -- but take a good, long look at Vivid's line of Giya models, and the Kaya 45 starts to look tame. At 45" tall, the Kaya 45 looks bigger in person than it does in photos. The upper part, which houses the midrange and tweeter, is wider than it is deep -- and the lower part has the opposite proportions. The overall shape of the speaker is organic, mammalian. My immediate response was that it reminded me of the Hammerpede from the movie *Prometheus*.

"I'm sure it's friendly," I muttered as I walked past.

Each Kaya 45 weighs 55 pounds -- fairly light for its size, but its rounded shape made for a devil of a time getting a grip on the thing. The pebbled finish on the review samples made this a bit easier, but I still needed help getting them out of the box. A pair in Piano lacquer would probably shoot out of your hands like watermelon seeds. The binding posts are at the very bottom of the speaker. I had to kneel down to access them, which was a bit awkward, but after they're connected, the result is a very clean rear panel.

Vivid specifies the Kaya 45's sensitivity as 87dB/2.83V/m, and its nominal impedance as a manageable 6 ohms. My Bryston 4B<sup>3</sup> power amp had more than enough grunt to drive the Kayas to far louder volumes than I could endure.

## But it's what's inside that counts

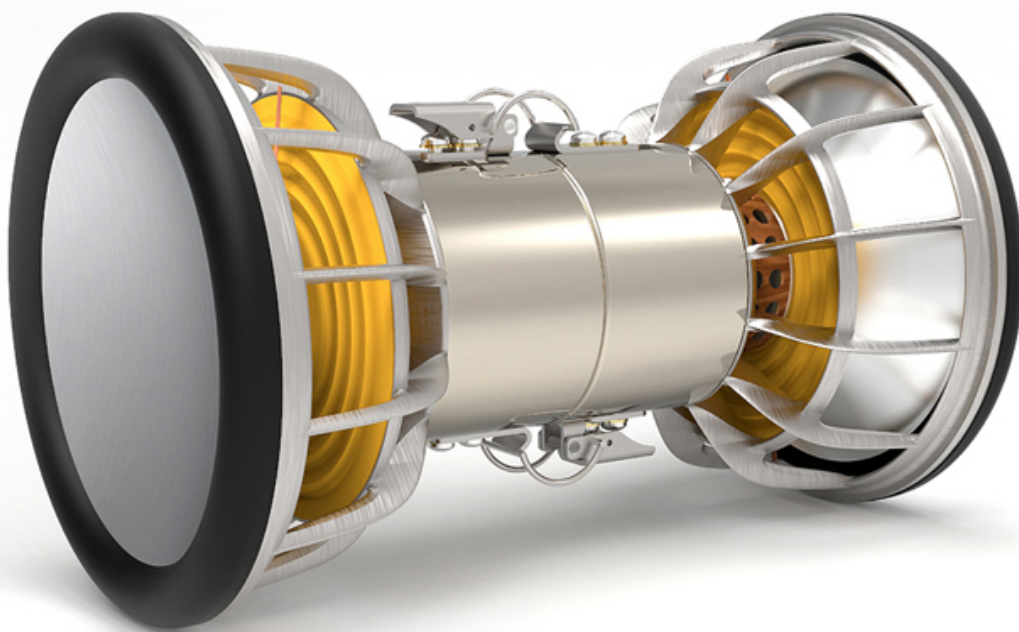
From Vivid's top Kaya model, the Kaya 90, down to the Kaya 25, the entire line shares little with conventional loudspeakers, other than the fact that it has drivers that move in and out to set air in motion. The Kaya 45's enclosure is assembled from left and right halves and a front baffle, all three pieces cast in fiberglass in silicone molds. Each piece is made of a composite formed by two skins of glass-fiber-reinforced resin sandwiching a core of Lantor's Soric material. Soric is shaped in a honeycombed sheet designed to allow resin to flow through and over it, to provide strength while also letting the resin reach all areas of the shell. Here's how Vivid describes the process:

Dry glassfibre cloth is laid in an open tool followed by the Soric core and finally the second layer of glass fabric. A silicone countertool is placed over the whole thing and the air removed by a vacuum pump. Atmospheric pressure compresses the dry fibre pack and, after checking for leaks, resin is administered through a feed pipe. Once all the spaces have been filled the resin stops flowing and the curing phase begins.

The three main sections are then bonded to each other. Those bonds are good -- I could detect no joins or inconsistencies.

This process achieves Vivid's goal for their speaker enclosures: a stiff, lightweight structure. The thing is, stiff, light enclosures aren't what audiophiles traditionally crave in their speakers -- we generally want heavy, dead, and thick. We're told that we want an inert cabinet -- one that responds to a knuckle rap with a short, nonresonant *clunk*. Well, that's one way to eliminate resonances -- throw dense mass at the problem.

The Kaya cabinets don't store energy, Vivid says, and their rounded, nonparallel shapes help eliminate internal standing waves. But that's not all. Each Kaya 45 has two opposed, side-firing, 6.5" (165mm) woofers joined at their magnets. These woofers fire in phase, but oppose each other, so any resonances created by their excursions cancel each other out. With the Kaya 45s blasting away at obscene volumes, I could put my hand anywhere on their enclosures and feel almost no vibration.



Like all Vivid drivers, the woofers are built from scratch entirely in-house, and they're works of industrial art. Their aluminum-alloy cones are, reportedly, extremely delicate. In fact, the first thing I saw when I opened the box containing the speakers was a big, bright-red note stating that under no circumstances should I touch the cones. The Kaya 45s are shipped with nifty perforated grilles for the woofers and the 4" (102mm), aluminum-alloy midrange cone on the front panel, these grilles attached with tiny neodymium magnets. Damn straight -- I slapped these on as soon as I got the speakers out of the box.

Each woofer's open, almost skeletal basket is designed to minimize the reflection of soundwaves back toward the cone, and to avoid creating a resonant chamber that might affect the motion of the cone. Keeping with this idea that what comes out the back of the driver is as important as what comes out the front, Vivid has another proprietary trick -- the company aggressively perforates the voice-coil former, which serves to damp resonances induced by the backwave as it flows out of the magnet's pole.

More bass intricacies: Each Kaya 45 has two ports, each port flared at each end. The port apertures are seamlessly flush with the speaker's rear surface, just behind and above the woofers. Inside the cabinet is a long, triangular bass trap that Vivid calls a bass absorber. This cavity, in the shape of an exponential horn, is folded back on itself to fit inside the Kaya 45's small interior and stuffed with fiber fill of graduated density: the narrower the cavity, the tighter it's packed with fill. The result is that it helps absorb the woofer's backwave, to prevent those vibrations from rattling around inside the cabinet and making their way back to the inner surfaces of the woofer cones. In similar fashion, the 1" (26mm) tweeter and 4" midrange each have a tapered tube that serves to absorb their backwaves, though these much shorter "horns" aren't folded back on themselves; instead, they jut straight out the back of the Kaya 45, directly behind the drivers.



As I investigated the design of these speakers, I communicated via e-mail with Laurence Dickie, designer of Vivid speakers. His combination of in-depth knowledge, willingness to share that knowledge, and patience with my endless questions drove home the fact that I was dealing with an expert who happens to be an enthusiastic audiophile. He explained the horns:

The sound comes down the side of the magnet into the outer section of the horn before hitting the back where it reverses direction and is guided inwards and forwards into the inside of the magnet.

This type of horn is known as re-entrant and is acoustically exactly equivalent to a straight horn but just more compact. Of course the whole thing is filled with graduated-density fibre absorber as with all our tapered-tube designs in order to completely absorb the rear wave without resonance or reflection.

The Kaya 45's three-way crossover has 24dB/octave slopes, and all its components -- including polypropylene capacitors and air-cored inductors -- are wired point to point rather than attached to a circuit board, as Vivid feels that the more direct connections of point-to-point wiring yield the best sound quality. Considerable time and effort goes into constructing the crossover parts list, with automated design software taking advantage of the high quality of Vivid's drivers to get an initial design that's very close to optimal.

Trying to understand the Kayas got me considering what goes into any high-end loudspeaker. A multitude of speakers sell for about the price of the Kaya 45, many of them consisting of MDF boxes veneered or painted and stuffed with off-the-shelf drivers connected by crossovers of dubious design. Of course, many of these speakers sound damned good, but are they really worth that kind of coin?



A friend of mine owns a Reagan-era Harley-Davidson Sportster. It's a well-kept vintage motorcycle, and one day I saw it parked next to a brand-new Sportster. Without trying very hard, I saw a dozen parts on both bikes that I would wager shared *the very same part numbers*. The tooling on this bike had likely been paid off several decades ago. A few parking spots down, I spied a brand-new

Japanese sport bike with a 600cc engine. The Japanese big four -- Honda, Kawasaki, Yamaha, Suzuki -- release completely updated 600cc supersports about every three years, after which it's common for the design engineers to throw out most of the previous generation's technology and tool up completely new engines, suspensions, and chassis. Yet these all-new motorcycles sell for about the same price as Harley's frozen-in-time Sportster. There's a disconnect here. Either the Harley should sell for half the price, or the 600cc sport bike should retail for twice what it does.

I think you can see where I'm going. With its complex cabinet, in-house drivers, and abundance of forward-thinking engineering, I think it's reasonable to conclude that, at \$18,000/pair, the Kaya 45 is a stone-cold bargain. And I haven't even talked about its sound quality.

### **A day without clouds**

On a dry, crisp day, a flat landscape such as downtown Toronto's, viewed from 20 miles north of the city, takes on an effervescent, hyper-real quality. As I write this, it's a cloudy winter day -- I can't see squat out my office window, but the temperature is forecast to drop down to -4°F (-20°C) the day after tomorrow. When it does, I'll be able to see all the way down to Lake Ontario. The 1815-foot-tall CN Tower will stand out like an icy finger, rising up through air purified by having every molecule of water sucked out of the sky and falling dead to the ground. As I inhale those long, pure views, they make me aware of how muddy the atmosphere often is. Listening to the Vivid Kaya 45s in my room was the audio equivalent of looking through that purified air.

It took me about a week to get totally comfortable with the Vivids. At first, out of the box, they tipped to the lean side, sounding just a bit more thin through the midrange and into the treble than I prefer for music. Even so, I was instantly captivated -- but not in love. Instead, fresh out of the box, these speakers *fascinated* me. I found myself turning up the volume to higher levels than I'd normally find comfortable, especially given that initial tendency to tip up the highs. Regardless, I just wanted to crank the Kayas.



One of the first albums I played is what I think is The Tragically Hip's best album, *Fully Completely* (LP, Geffen 4704109). I've listened to it often since its first release, in 1992 -- it was the soundtrack to my 30s -- but seldom at home: 95% of my listening to *Fully Completely* has been in my various cars, all of which have been equipped with serious audiophile systems. This album requires a system that can project sound outward, that can generate high SPLs with dynamic speed. That's what this album sounded like through the Vivids -- they seemed to reproduce the Hip's lyrical, intelligent rock with great integrity.

No matter how loudly I played *Fully Completely*, the Kaya 45s reproduced the music with a top-to-bottom cohesiveness, a fully integrated *rightness*. From the first note that leapt from these speakers, what I heard was clarity.

I found myself drawn to the sound of Johnny Fay's cymbals and hi-hat, which had a silky, burnished quality through the Kaya 45s. Same thing with the acoustic guitars in "Wheat Kings." I could almost see Paul Langlois's and Bobby Baker's fingers on the fretboards, their picks on the strings. There was a monstrous feeling of actual metal resonating in my room. But despite what, on the face of it, sounded like a heap of good old-fashioned audiophile *detail*, I was comfortable listening at high volume levels -- there was no ear strain or listening fatigue.

After the speakers had a week's worth of play under their belt, I returned to *Fully Completely* and found that though the Kaya 45s' highs had calmed down, I still heard that treble silkiness that, via the Vivids, had so endeared me anew to this album. The dynamic quickness, too, was still there, and the bass had filled in -- it now had a deep, lithe quality.

Last night I went to see Musical Box, a Genesis tribute band. I'd been almost cynically skeptical about this gig -- to me, there's something sad about tribute bands -- but I'm a big Genesis fan, and my best buddy, Neil, was going, so . . . why not? I'm so happy I did. Cannabis is now legal in Canada, so we all shared a hit of some good old-fashioned black hash and went to a rock concert! It was as if I was in my 20s again, except now everyone in the men's room needs way longer to take a piss. Maybe it was the hash, maybe it was the excellent virtuosity, maybe it was the excellent music, or all three. Whatever -- I loved the show. This morning, I'm listening to the first side of Genesis's *A Trick of the Tail* (LP, Atco SD36-129) and reliving last night, minus the hash. There's some extremely deep bass on this album -- a synth note low in the 30Hz decade, I'd wager -- and this bass is integral to the music, conveying a feeling of gravitas to the sometimes pretentious preciousness of this album.



I've never heard *A Trick of the Tail* sound better. Vivid has put a huge amount of effort into optimizing the Kaya series' bass performance, and it shows. "Dance on a Volcano" opens with those deep synth-bass waves, and the combination of clarity and extension down low brought a huge smile to my face. Varying the volume level -- playing this track really effing loud, or at low, late-night volumes -- didn't skew the bass level, as I've heard other speakers do. Rather, I could still hear every note, articulate and tuneful -- that low-bass note, as well as Mike Rutherford's tuneful, intricate electric bass in "Mad Man Moon." And rather than focusing on any single aspect of the Kaya 45's bass detail, I found myself just absorbing all aspects of how it portrayed bass instruments within a cohesive performance. There was a *rightness* in the Kaya 45's lower region that consistently impressed me, across all recordings of all types of music: deep and rich, or quick and tight, depending on what I played.

I don't want to understate the importance of this aspect of the Vivid's sound. With most speakers of my experience, even those at nosebleed prices -- the Crystal Cable Arabesque, the WLM Gran Viola Signature and Duo 18 subwoofer, the Ascendo System Z-f3 -- I've always been able to point to one area of bass reproduction that I really liked, which can only imply that there were other areas that weren't quite up to the same level. I was completely satisfied with *everything* about the Kaya 45's low end.

But man does not live by bass alone.

Lately I've spent some time poking around in the John Wetton days of King Crimson. Wetton had a delicious, rich tenor voice, and despite his rep as a session musician, he's a heck of a bassist. I have a very good 2013 reissue of King Crimson's *Larks' Tongues in Aspic* (LP, Discipline Global Music KCLP 5), and there's so much going on in this album. "Larks' Tongues in Aspic, Part Two" is a thrashing frenzy of drums, percussion, violin, bass, and outraged guitar. That description makes it sound awful, I know, especially in the context of progressive rock, but don't let it throw you -- it's all carefully and brilliantly orchestrated into a cohesive whole. But it takes a kick-ass system to untangle and make sense of all these elements. Otherwise, it just sounds like a hot mess.



The Kaya 45s decoded this midrange nightmare. Bill Bruford's drumming never really stood out from Jamie Muir's percussion, the two players' sounds seeming to blend into one another. But through the Vivids I was able to clearly distinguish Bruford's rolling drum line from the assorted whacks and rattles emanating from Muir's arsenal of Things He Hits.

But while it was immediately apparent to me *how* clear the Vivids were through the midrange, it took me a while to nail down *why* they sounded the way they did. Part of the reason for this clarity, I think, is that the Kaya 45s passed along *only* the musical signal. There was no overhang, no distortion that I could hear, no artifacts. These were the results of well-behaved drivers firmly mounted in an inert enclosure, resulting in a clear window on the musical performance -- or that clear-day thing again. And that clarity, that lack of any distortion, allowed me -- *begged* me -- to raise the volume higher than I'm usually comfortable with. Which brought me even closer to the music.

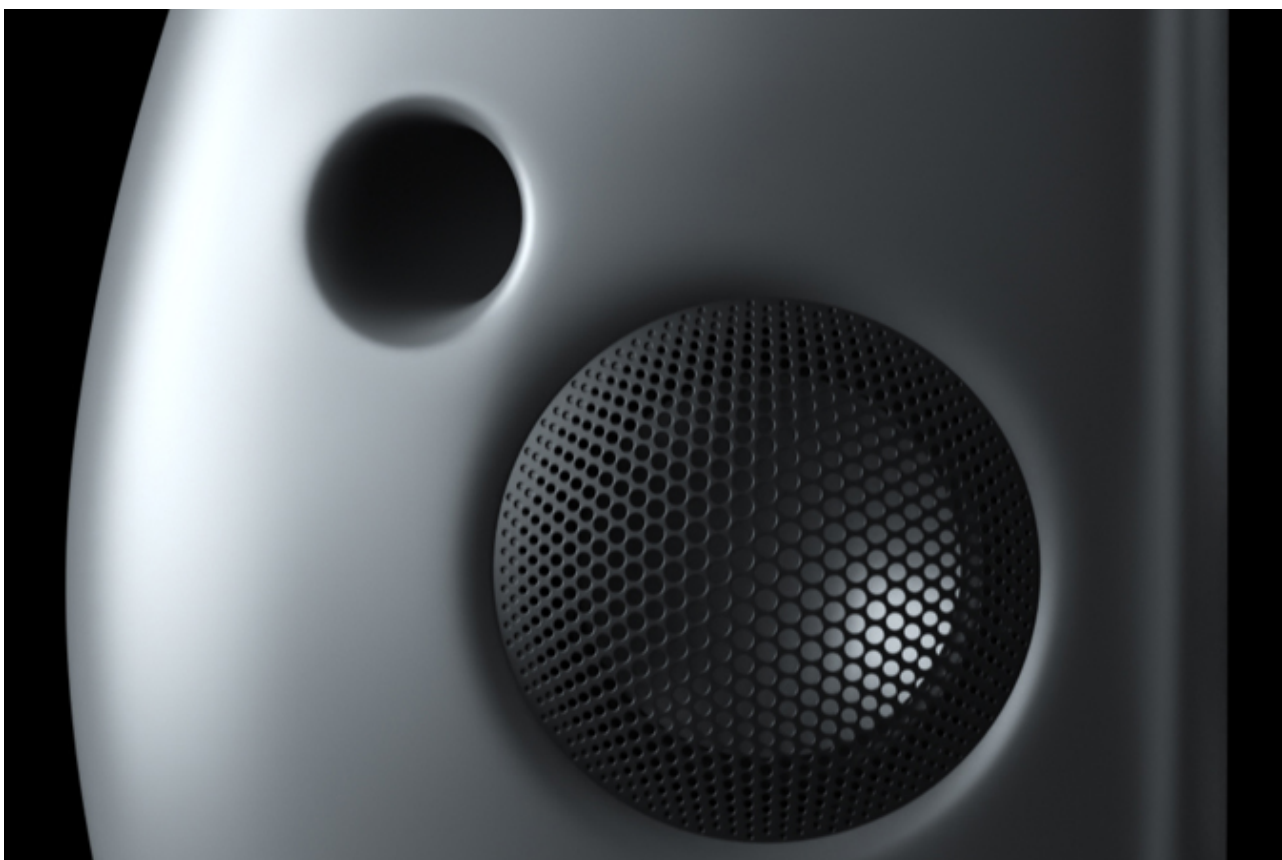


There was a bell-like openness to the Kaya 45's midrange. Listening to the sad, funereal *Fantasia* in Vladimir Ashkenazy's recording of Shubert's Piano Sonata in G, D.894 (LP, London CS 6820), I could hear the full depth of those slow, measured notes. The Vivids didn't do that trick of recessing the midrange to add "depth," and they didn't need to. The Kaya 45s' quick, fluid midrange seemed to *leap* from the speakers with exciting dynamic speed, placing that giant concert grand in a realistic space between the speakers.

Interestingly enough, the Vivids' hyper-realistic midrange and treble never gave me listening fatigue, and never made poorer recordings sound unpleasant or unlistenable. With recordings of varying quality, I found that I could listen to them through these speakers for hours on end -- hell, I was *happy* to. Perhaps the only downside was that they definitely did tell me, very politely, when a recording was subpar. Take, for instance, my old fave, Eleni Mandell's *Country for True Lovers* (LP, Heart of a Champion HoC-011). I've long used this album as a reference recording, listening to it at least once through every component I review. Via the Vivids, I noted for the first time that the highs on this record are just a tiny bit reticent. I was somewhat startled to discover that Don Heffington's

brushes on his ride and hi-hat cymbals in “Another Lonely Heart” didn’t have quite the crystalline sheen I’d thought they did. That said, I happily listened to the entire album.

I then reached for another chestnut from my frequent-listen pile: Neil Young’s *Greatest Hits* (LP, Reprise/Classic 48935-1). There’s an overload of high-frequency information in “Cowgirl in the Sand” -- the distortion and harmonics of Young’s electric guitar can put a new edge on a dull knife. Ralph Molina’s cymbals, too, are recorded extremely hot, and the Vivids did nothing to hide or dull these instruments -- on the contrary, I could feel the highs resonating in the nerve endings of my skin. But the Kaya 45s’ portrayal of the glass shards shooting out from Young’s distorted guitar excluded any sharp *distortions* that might have made me lunge for the volume knob. As far as I could tell, the Vivids revealed what was really going on in recordings and nothing else, providing more insights while never beating me about the head and neck until my ears hurt.



With “The Rainbow,” from a reissue of Talk Talk’s *Spirit of Eden* (LP, Parlophone PCSDX 105), the Vivids allowed me to be assaulted yet again by Mark Feltham’s distorted harmonica without themselves joining in to beat up on me. I got a full dose of the coiled-up aggression that can be released through that little instrument. Again, no sugarcoating, and again, utterly listenable even at high volumes.

OK -- the Kaya 45’s bass was deep and tight, its midrange and treble overtly clear and unfatiguing -- all well and good. But it was how all of that fit together that gave the true measure of this speaker. What it all boiled down to was that the Vivids presented a huge, deep musical picture without ever editorializing on it. They threw out extremely realistic soundstages that extended behind the speakers and presented instruments in a holistic, exciting, *engaging* manner.

As I write, I’m still listening. There’s an addictive quality to the Vivids -- their open, clear top end and rich bass pulls me right in to the musical worlds encoded in my records. Right now I’m playing St. Vincent’s *MassEducation* (LP, Lorna Vista 448), and “Savior” is thrusting Annie Clark’s voice down my throat. Her voice is miked very closely, its image larger than would be possible in real life

-- but through the Kaya 45s she's here in my room with me *and* enveloped in the big room she recorded this track in, along with a huge but delicately played piano. And as I've often done with these speakers, I'm playing "Savior" loud. It's a monstrous, juicy experience, and the reverb trails on the piano notes go on forever. This is deluxe listening.

### **Baby, please don't go**

Over the years, I've found myself comfortably settling in to a life with my Focus Audio FP60 BE speakers. Review speakers arrive, stay for a while, then go away, and when they leave, I'm generally very satisfied to go back to my Focuses. I relish the FP60 BEs' relaxed, rich tonal balance -- it's a sound I'm comfortable with. For the most part, I'm happy giving up a smidge of detail and clarity in exchange for their romantic richness.

But now I'm torn. I've enjoyed Vivid Audio's Kaya 45s more than I have any speaker in recent memory. There's no question in my mind that these are extremely special loudspeakers, and I don't want them to leave. Their combination of solid, forward-thinking engineering, unique appearance, excellent finish, and stunning sound make them a standout product. If you're shopping for a pair of speakers in the Kaya 45's price range, I strongly suggest you listen to a pair.

. . . *Jason Thorpe*

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### **Associated Equipment**

- **Analog sources** -- Pro-Ject RPM 10, VPI Prime Signature turntables; Ortofon Quintet Blue, Roksan Shiraz, Top Wing Blue Dragon cartridges
- **Digital source** -- Logitech Squeezebox Touch
- **Phono stages** -- AQVOX Phono 2 CI, Constellation Andromeda, JE Audio HP10
- **Preamplifier** -- Sonic Frontiers SFL-2
- **Power amplifier** -- Bryston 4B<sup>3</sup>
- **Speakers** -- Definitive Technology Mythos ST-L, Focus Audio FP60 BE
- **Speaker cables** -- Nordost Tyr 2
- **Interconnects** -- Furutech Ag-16, Nordost Tyr 2
- **Power cords** -- Nordost Vishnu
- **Power conditioner** -- Quantum QBase QB8 Mk.II
- **Accessory** -- VPI Cyclone record-cleaning machine

### **Vivid Audio Kaya 45 Loudspeakers**

**Price: \$18,000 USD per pair.**

**Warranty: Five years parts and labor.**

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