

MICHAEL FREMER

# Ypsilon Electronics Hyperion

## MONOBLOCK POWER AMPLIFIER

**D**esigners of hybrid amplifiers can use solid-state devices in an amp's input stage and tubes in its driver and output stages, as Music Reference's Roger Modjeski did in his RM-200 Mk.II<sup>1</sup>—or they can use tubes in the input and transistors in the output, as Ypsilon Electronics' Demetris Baklavas prefers.

The advantage of solid-state at the input stage can be lower noise. In the RM-200 Mk.II's fully balanced design, carefully matched input devices result in high common-mode rejection and low-noise operation close to the levels achieved with the best input transformers. The RM-200 Mk.II's signal/noise ratio measured a healthy 95.4dB.

In Baklavas's original hybrid monoblock amplifier, the Aelius, the first gain stage was a new old stock (NOS) C3g pentode tube operating in single-ended mode and transformer-coupled to the output stage.<sup>2</sup> The Aelius II added an input transformer, then newly developed, that permitted balanced input operation and the use of longer interconnects. The input stages of both Aeliuses featured tube rectification.

Obviously, the quality of transformers is key to power-amp designs from both Music Reference and Ypsilon. Modjeski offers an upgrade to a hand-wound output transformer, and Ypsilon specializes in designing and manufacturing transformers.



**The Hyperion's output stage is biased in class-A for its first 100W.**

### 209 lbs of push-pull

Ypsilon's new Hyperion monoblock (\$93,000/pair), like the less powerful Aelius II, is a hybrid design with two gain stages. The first stage uses a single 6H30 tube. The Hyperion comes with the former—a Sovtek 6H30 Pi—but to allow tube-rolling, there are separate sockets for the two tube types, which have different *pinouts*. Also included is a 6CA4/EZ81 rectifier tube.

low-impedance dual-triode tube—either a 6H30 or a 5687 will work. The Hyperion comes with the former—a Sovtek 6H30 Pi—but to allow tube-rolling, there are separate sockets for the two tube types, which have different *pinouts*. Also included is a 6CA4/EZ81 rectifier tube.

1 See my review of the RM-200 Mk.II in the December 2011 issue: [www.stereophile.com/content/music-reference-rm-200-mkii-power-amplifier](http://www.stereophile.com/content/music-reference-rm-200-mkii-power-amplifier).

2 See my review of the Aelius in the April 2013 issue: [www.stereophile.com/content/ypsilon-aelius-monoblock-power-amplifier](http://www.stereophile.com/content/ypsilon-aelius-monoblock-power-amplifier).

## SPECIFICATIONS

**Description** Hybrid monoblock power amplifier. Tube complement: one 6H30 Pi or 5687 (input), one 6CA4 or EZ81 (rectifier). Inputs: unbalanced (RCA), balanced (XLR). Output power at 1kHz: 370W into 8 ohms (25.7dBW, (first 100W in class-A), 650W into 4 ohms (25.1dBW), 1150W into 2

ohms (24.6dBW). Frequency response: 6Hz–80kHz, –3dB (input transformer peak: +2.5dB at 50kHz). Voltage gain: 26dB (x20). Input impedance: 47k ohms. Output impedance: 0.3 ohm. THD (1kHz into 8 ohms, 6H30 Pi tube): 0.7% at 100W, 1.2% at 300W. THD (1kHz into 8 ohms, 5687 tube): 1% at

300W. Signal/noise: N/S. **Dimensions** 16.75" (425mm) W by 11.8" (300mm) H by 25" (635mm) D. Weight: 209.4 lbs (95kg).

**Serial numbers of units reviewed** 19, 20.

**Price** \$93,000/pair. Approximate number of dealers: 9. **Manufacturer** Ypsilon Electronics, Athanasioy Street 8,

Paiania 190 02, Greece. Tel: (30) 210-66-44-588. Fax: (30) 210-66-44-812. Web: [www.ypsilonelectronics.com](http://www.ypsilonelectronics.com). US distributor: Audio Imports, 4871 Raintree Drive, Parker, CO 80134. Tel: (303) 264-8831. Fax: (720) 851-7575. Web: [www.audioimports.com](http://www.audioimports.com).

The input-stage tube's bias is fixed. Its dedicated negative power supply includes a custom C-core input transformer, wound with silver wire, that eliminates the DC bias voltage bypass and produces the a true balanced input. The two halves of the input tube are paralleled via separate coil windings to provide independent paths for each half's bias current.

The interstage transformer is a step-down that couples the input triodes to the output devices and includes phase-splitting windings that drive each pair of MOSFET output-stage devices in opposite phase to each other. Using the interstage transformer, Baklavas avers, lowers the tube's output impedance, which better drives the output stage while providing a perfectly balanced, floating signal. Not using the transformer, he says, would require at least two additional gain stages plus power supplies, making for a more complex circuit. He prefers to keep things as simple and elegant as possible.

As with anything in life or audio, there's a drawback to such a design: the difficulty of producing a transformer with wide bandwidth and integrating it into a solid-state circuit requiring unconditional stability. But transformers are Baklavas's game, and the time I've spent with his trannies has convinced me to unconditionally trust them.

The Hyperion's output stage is biased in class-A for its first 100W into 8 ohms, and can output a total of more than 370W into 8 ohms, 650W into 4 ohms, and 1150W into 2 ohms. Each of its two stages has its own power-supply transformer, and both the tube input and solid-state output power supplies use inductive chokes built in-house for filtering. A great deal of attention was reportedly paid to the design, construction, and materials of the cores of these

power-supply transformers, to minimize mechanical, magnetic, and electrically induced noise.

In addition to the chokes, the power supply incorporates 112,800 $\mu$ F of capacitance to keep ripple voltage negligible at all power-output levels. Internal connections are made with Ypsilon's own specially drawn silver wire, coated with Teflon.

As in the Aelius, the Hyperion's output "floats—neither the plus nor the minus terminals are grounded. The amp is well protected using a "crowbar" circuit. There's no output relay, though there is a circuit breaker on the rear panel, and inside the Hyperion's case is a fuse for the input transformer. If the output shorts, or sees a load of less than 1 ohm, or there's excessive DC offset, the Hyperion automatically shuts down. Once the problem is fixed, turning the amp back on restores output.

### Roll 'em in, set 'em up

Each Ypsilon Hyperion weighs 209 lbs—moving and unpacking the pair of them was a multiperson operation. The installation of a lawn-sprinkler system chez Fremer the day the crates arrived provided the necessary manpower—after the guys had washed their hands of topsoil.

The Hyperions arrived having been burned in for only 100 hours. I found that, even after they'd been broken in, they required at least an hour of play to develop their full potential. For the first hour or so, they sounded somewhat dynamically constricted and not entirely transparent.

I first ran a long pair of TARA Labs Zero balanced interconnects between my darTZeel NHB-18S preamplifier and

## MEASUREMENTS

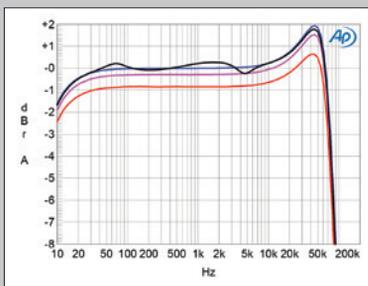
I measured the Ypsilon Hyperion with my Audio Precision SYS2722 system (see the January 2008 "As We See It," <http://tinyurl.com/4ffpve4>). Before performing any tests, I ran it at one-third its specified clipping power into 8 ohms for an hour. At the end of that time the top panel was warm, at 104.4°F (40.3°C), the heatsinks slightly hotter at 109.8°F (43.3°C). With the 6H30 Pi input-stage tube, with which I did almost all the testing, the gain at 1kHz at the speaker terminals was 26.4dB for both the bal-

anced and single-ended inputs. With the alternative 5687 tube the gain was 0.5dB higher. The output preserved absolute polarity (*ie*, was non-inverting) with both tubes and inputs.

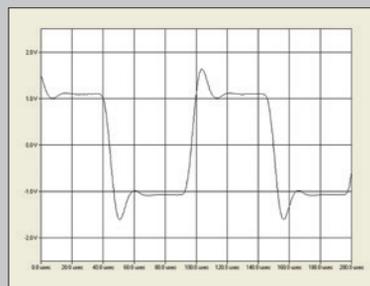
While the Hyperion's input impedance is specified as a moderately high 47k ohms, my measurements indicated a lower value at low and middle frequencies: just over 21k ohms for both the balanced and unbalanced inputs. This is still high enough not to be an issue, but at 20kHz the impedance dropped to just 3k ohms, which will

be marginal with some preamplifiers, rolling off the top octave. Fortunately, this shouldn't have affected Michael Fremer's listening, given his associated equipment: His Ypsilon PST-100 preamplifier has a low output impedance, and his darTZeel preamplifier has a fairly uniform, if high, output impedance across the audioband.

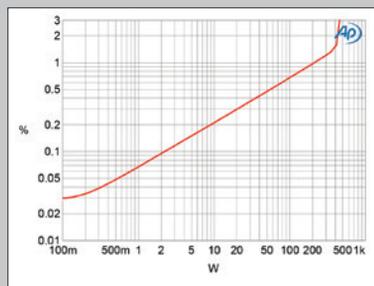
Despite the Hyperion's large number of output devices, its output impedance was relatively high for a solid-state design, at 0.35 ohm. As a result, the modification of the



**Fig.1** Ypsilon Hyperion, frequency response at 2.83V into: simulated loudspeaker load (gray), 8 ohms (blue), 4 ohms (magenta), 2 ohms (red) (1dB/vertical div.).



**Fig.2** Ypsilon Hyperion, small-signal, 10kHz square-wave into 8 ohms.



**Fig.3** Ypsilon Hyperion, distortion (%) vs 1kHz continuous output power into 8 ohms.

the Hyperions. A few weeks later, I swapped out the darTZeel for the Silver edition of Ypsilon's PST-100 Mk.II line preamp.<sup>3</sup> So often, when swapping out familiar gear for new, there's a period during which my brain accentuates or exaggerates the differences between the old and new sounds. At such times the new can at first seem like an uninvited guest disrupting my system's musical harmony.

That wasn't the case here. Sure, it took me some time to get used to the Hyperion's sound, which was richer, fuller, creamier, more full-bodied than that of the darTZeel NHB-458 monoblocks—but that sound was also immediately familiar because it meshed well with the sound of Ypsilon's VPS-100 phono preamplifier. *That* model arrived here for review some nine years ago and never left—except briefly, to be upgraded to its Silver edition.<sup>4</sup> Big hybrid amps running in class-A for the first 100W are good company during a record cold snap!

### Power, Grip, Depth, Delicacy

No doubt the single tube in the Hyperion's signal path subtly greased the musical proceedings with a smooth yet transparent overlay of richness. Having become acclimated in recent years to the sound of the darTZeel NHB-458, which is less generous in the upper bass and lower midrange (detractors of solid-state designs might describe its sound as "thin") and is faster in the transient realm (detractors might say "overly and unrealistically sharply drawn"), the gross

distinctions between these two great performers were easily audible for the first week or so of listening.

But even while the contours of the new sound were still easily definable and the differences between the two amplifiers were still clear, the Hyperion's "additive" quality wasn't immediately—or ever, for that matter—identifiable as what's usually thought of as tube sound, but rather as a subtle harmonic and textural generosity that I think most listeners would find very pleasing and desirable, regardless of on which side of the tube/solid-state divide they stand.

At the high performance level of my reference amps, and because of what I'd assumed I'd hear from the Hyperions, based on my experience with other Ypsilon gear, I expected to draw equal amounts of pleasure from both, and hear no new revelations.

Because of the immediately obvious added harmonic and textural richness, subtle though it was, once I'd begun listening critically, I found myself playing mostly classical and jazz, I'd received in the mail a two-LP set of pianist Daniil Trifonov, then 21 years old and the recent winner of the 14th International Tchaikovsky Competition (among many other awards), performing Tchaikovsky's Piano Concerto 1, with Valery Gergiev conducting the Mariinsky Orchestra.

3 See my review of the PST-100 Mk.II Silver in the July 2011 issue: [www.stereophile.com/content/ypsilon-pst-100-mkii-line-preamplifier](http://www.stereophile.com/content/ypsilon-pst-100-mkii-line-preamplifier).

4 In reviewed the VPS-100 and VPS-100 Silver in "Analog Corner," in the August 2009 and March 2011 issues.

### measurements, continued

amplifier's frequency response with our standard simulated loudspeaker<sup>1</sup> reached  $\pm 0.25\text{dB}$  (fig.1, gray trace). Of more concern is the ultrasonic peak in the Hyperion's response, centered between 40 and 50kHz and reaching 2dB in height. The peak gave rise to a single damped cycle of oscillation with a 10kHz squarewave (fig.2) and was not affected by the load impedance, which suggests that it occurs before the output stage, perhaps at the input transformer. Figs. 1 and 2 were taken with the balanced input; the peak was also present with unbalanced drive and with both tubes, though it was slightly lower in height with the 5687 than with the 6H30 Pi tube.

The Hyperion's wideband, un-weighted signal/noise ratio, ref. 1W into 8 ohms and taken with the input shorted to ground, was good at 72dB, despite the presence of some very low-frequency noise, presumably from the input tube. The ratio improved to 84.1dB when the measurement bandwidth was restricted to the audioband, and to 94.9dB when A-weighted.

Befitting its size and 209 lbs—oh, my achin' back—the Ypsilon Hyperion is a very powerful amplifier with specified power deliveries of 370W into 8 ohms (25.7dBW), 650W into 4 ohms (25.1dBW), and 1150W into 2 ohms (24.6dBW). However, as figs. 3-5 reveal, at our usual definition of clip-

ping, at which the THD+noise reaches 1%, the Hyperion delivered 239W into 8 ohms (23.8dBW), 400W into 4 ohms (23dBW), and 315W into 2 ohms (19dBW). It did meet its specified power when I relaxed the definition of clipping to between 1.4% and 2% THD+N, but these are disappointing results.

Of more concern in these graphs is the Hyperion's linear increase in distortion with increasing power output above a few hundred milliwatts. While the THD+N percentage remains acceptably low below 10W or so, above that power, and especially at low frequencies, it reaches levels

1 See [www.stereophile.com/content/real-life-measurements-page-2](http://www.stereophile.com/content/real-life-measurements-page-2).

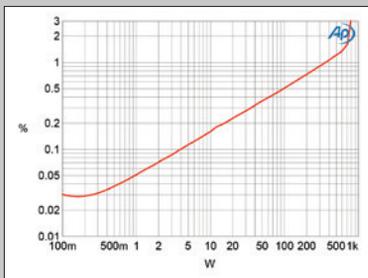


Fig.4 Ypsilon Hyperion, distortion (%) vs 1kHz continuous output power into 4 ohms.

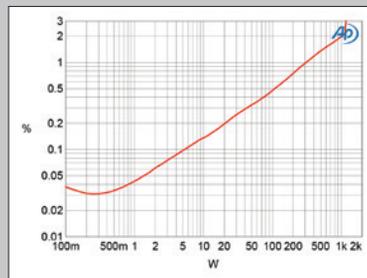


Fig.5 Ypsilon Hyperion, distortion (%) vs 1kHz continuous output power into 2 ohms.

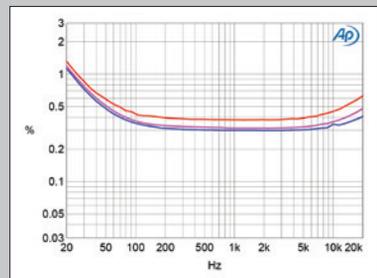


Fig.6 Ypsilon Hyperion, right channel, THD+N (%) vs frequency at: 20W into 8 ohms (blue), 40W into 4 ohms (magenta), 80W into 2 ohms (red).

Disc 2 features Trifonov playing mostly Schubert songs, arranged for solo piano by Liszt (Mariinsky MAR0530-LP).

This is a prize-winning soloist and a world-class orchestra, well recorded in a fine-sounding hall. Whether on the vinyl (which had what sounded like a few “non-fill” problems) or the free 24-bit/96kHz FLAC download, the balance of direct to reflected orchestral sound was, for me, ideal, and the perspective was positively grand, à la recording engineer Dr. Keith O. Johnson. Not everyone likes this kind of somewhat distant sonic drama, but it went perfectly well with Trifonov’s grand, sweeping, romantic playing, and left enough room for Gergiev’s dramatic orchestral swells not to overwhelm the soloist.

The recording sounds simply miked, à la Decca’s microphone “tree,” with a strong, stable center image: the piano was locked firmly in place, despite the rich field of reverberation surrounding it, and presented the orchestra convincingly arrayed behind and to the sides of it. The Hy-



perions’ presentation was intensely holographic, and harmonically generous and convincing without sounding overripe. The sensation of “hearing” the air in the recording space produced a strong feeling of being *in* the Mariinsky Theater during these performances.

Playing an original pressing of Fritz Reiner and the Chicago Symphony Orchestra’s justifiably legendary 1954 stereo recording of Strauss’s *Also sprach*

*Zarathustra* (LP, RCA Living Stereo LSC-1806) produced many rewards: the opening low C on contrabassoon, double basses, and pipe organ, the lush strings, the well-focused solo trumpet pealing out the famous three ascending notes appearing in three-dimensional space, and all the other sonic wonders this recording provides, were more richly and fully drawn than I’d ever heard them, yet with the bite of the brass still fully intact. The sound was richly drawn yet light on its feet and absolutely explosive, the weight of the orchestra’s low end reproduced fully and well controlled. And that was just side 1!

#### measurements, continued

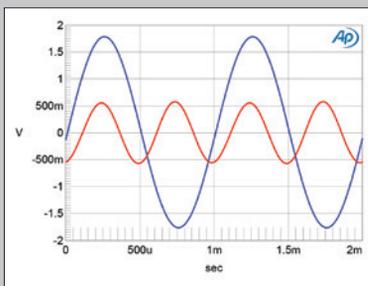
that will be audible with continuous pure tones (fig.6). Why wasn’t MF bothered by this behavior? First, his Wilson speakers are very sensitive (I measured 91.3dB/2.83V/m); most of the time, they would not have been asking the amplifiers to deliver more than a few watts each. Second, the Hyperion’s distortion signature is almost pure second-harmonic in nature (figs. 7 and 8). Provided the harmonic distortion is not accompanied by high levels of intermodulation distortion, the ear is surprisingly tolerant of second-harmonic distortion, which adds consonant tones an octave above the fundamentals, these heard as a

“fattening” or even a “sweetening” of the sound—and as these consonant tones are spectrally fairly close to the fundamental, they tend to be masked. (You can test this for yourself with the examples I included on Stereophile’s Test CD 2.<sup>2</sup>) When MF comments on “the immediately obvious added harmonic and textural richness,” that it is what I would expect from this distortion signature. In addition, the Hyperion’s intermodulation distortion was not as low as I would have liked. Fed an equal mix of 19 and 20kHz tones, the combined signal peaking at 100W into 4 ohms (fig.9), the Ypsilon’s difference component at 1kHz lay at

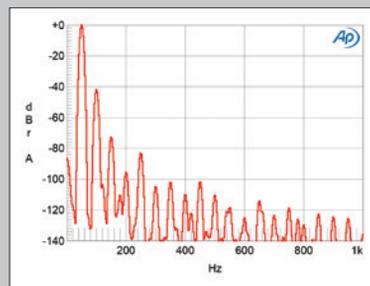
–48dB (0.4%).

I have no reason to believe that this sample of the Ypsilon Hyperion was broken and my measurements are not out of line with its specifications. Given that, it is not an amplifier that I would recommend, especially given its price. While I have found that power amplifiers tend to sound different from one another, I feel they should be engineered to be as close to neutrally balanced as possible, and not designed to produce a “tailored” sound, as the Hyperion seems to be. —John Atkinson

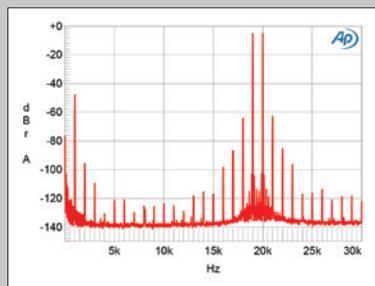
<sup>2</sup> See [www.stereophile.com/content/istereophileis-test-cd-2-tracks-20-26](http://www.stereophile.com/content/istereophileis-test-cd-2-tracks-20-26), available from <http://shop.stereophile.com/test-cds>.



**Fig.7** Ypsilon Hyperion, 1kHz waveform at 50W into 8 ohms, 0.46% THD+N (top); distortion and noise waveform with fundamental notched out (bottom, not to scale).



**Fig.8** Ypsilon Hyperion, spectrum of 50Hz sine wave, DC-1kHz, at 50W into 8 ohms (linear frequency scale).



**Fig.9** Ypsilon Hyperion, HF intermodulation spectrum, DC-30kHz, 19+20kHz at 100W peak into 4 ohms (linear frequency scale).

Side 2 was mind-bogglingly better than I'd ever heard it, all of the inner instrumental voices clearly revealed. Especially amazing was the return of the trumpet call, backed by delicate, barely audible woodwinds that were now clearly delineated—and, a few minutes later, the triangle, each stroke's attack, sustain, and decay convincingly reproduced with great deliberateness and delicacy. And string pizzicati were perfection.

As I listened to that LP of Reiner's *Zarathustra*, I realized that the piccolo, clarinets, oboes, bassoons, trumpets, and horns all sounded more recognizably "right" than I'd ever heard them. Each was individually well defined without pulling apart the sound of the entire orchestra, and within and among the various sections there was instrumental dimensionality and separation.

Under favorable conditions, the Ypsilon Hyperions could put on a spectacularly realistic, impressively well-balanced display of power, grip, depth, and delicacy, and do all of the right things for acoustic music, whether performed by full orchestra or small scale chamber ensemble. You need to hear what they can do with the new 45rpm edition of Duke Ellington's *Masterpieces by Ellington* (2 LPs, Columbia Masterworks ML 4418/Analogue Productions AAPJ 4418-45).

#### What about rock?

Some ripe-sounding amps can be wonderful with acoustic music but won't do rock. Once I'd been floored by the Hyperions' reproduction of recordings of acoustic music, I moved on to the Who and homed in on *Who's Next*, comparing an original UK Track pressing mastered by "Bilbo" (Denis Blackham) with Classic Records' 2005 reissue, mastered by Chris Bellman from the original master tape. In 2005, people complained about this reissue's price: \$30. Today, a copy will cost you a few hundred.

The Classic toasts the Track original, as well as MCA's mid-1990s "Heavy Vinyl" edition I was involved with. While Keith Moon's drums in "Baba O'Riley" are disappointing in every edition, "Bargain" is stupendous in every way, especially on the Classic reissue. Through the Hyperions the kick drums on this track had believable texture, tonality, and especially drive, and John Entwistle's bass had great growl, extension, and definition. But what really stood out were the handclaps and, most particularly, the tambourine, which sounded as if it was being played by someone standing in the room. The wet reverb around Roger Daltrey's voice was presented with the same well-defined clarity, transparency, and balance of direct and "reflected" sound as was Trifonov's piano in the Tchaikovsky concerto. This rock album confirmed that one the Hyperion's greatest strengths was its midrange transparency. Its sound was remarkably transparent throughout, but especially from the lower to the upper midrange.

With its generous, powerful, well-controlled bottom end, its extraordinary midband transparency, its high-frequency delicacy and airiness, its ideal attacks, sustains, and decays at all frequencies, and its richly drawn harmonic palette and dynamic authority, the Ypsilon Hyperion amplifier did justice to every genre—from the string-driven subtleties of Willie Watson's *Folk Singer, Vol.2* (LP, Acony 174LP), to *Ogilala*, the edgy new album by confessional solo rocker William Patrick Corgan (LP, Martha's Music 538321011), produced by Rick Rubin and mixed by Jan Erik Kongshaug, best known for his engineering and mixing for ECM—to, of course, the grand orchestral recordings cited, and many others.

Some amplifiers that sound as lush and beautiful as this one are simply not useful as reviewing tools. But I found the Hyperion as reliable in that regard as the most "analytical" amplifiers I've used, while giving me far more musical and sonic pleasure from both analog and digital sources.

#### Rolling tubes and preamps

I used three different input tubes in the Ypsilon Hyperions: two pairs of 6H30s and one pair of 5687s. Unlike with the Aelius amplifiers, in which different tubes produced profoundly different sounds, here the differences were more subtle. The stock Sovtek 6H30 Pi's sounded great, while a set of Balanced Audio Technology 6H30pDRs (NOS) notably improved the already impressive bottom end, widened and somewhat deepened the already finely drawn soundstage, and improved instrumental focus.

Both the darTZeel NHB-18S and the even more costly Ypsilon PST-100 Mk.II Silver Edition preamplifiers are impressively transparent and quiet. I was able to use the Ypsilon in passive mode, which made it essentially invisible. (When, in July 2011, John Atkinson measured the PST-100 Mk.II Silver in passive mode, it was flat from 10Hz to 200kHz!<sup>5</sup>) Equally impressive was the transparency of the active darTZeel. Either would make a great mate for the Hyperions—though if I were buying, I'd opt for a preamp and monoblocks of the same brand.

#### Conclusions

Ypsilon Electronics' Hyperion is a powerful, cannily designed, exquisitely voiced monoblock power amplifier. Inside and out, its construction quality is as impressive as it should be for \$93,000/pair. Because of its tubes, its distortion spec of 0.7% at 100W into 8 ohms will probably freak out the measurement fetishists, to whom I say: Just listen to it, and keep in mind that the tube microphones used in the making of many of your favorite recordings probably measured similarly.

The Hyperion strikes the ideal balance between tube-amp richness and flow and solid-state quiet, authority, and dynamic swagger. And it does this without making you conscious of each technology's contribution to the whole—something I felt that Ypsilon's far less expensive Aelius didn't manage quite as well.

When I first heard, and then bought, the Ypsilon VPS-100 phono preamplifier, I concluded that its designer, Demetris Baklavas, was some kind of genius. His PST-100 preamp didn't shake that conclusion, but I was somewhat disappointed with the original Aelius. With the Hyperion, I must again characterize Baklavas as an electronics design genius whose name deserves mention alongside the more familiar names you probably know. He's seriously underrated, and deserving of greater acclamation.

When you make your living by listening to audio gear, at some point you inevitably suffer burnout. While I can't live for long without hearing music in my listening room, there are times when I crave silence to avoid such a burnout. But during the time the Hyperions were here, I think I did more listening for pleasure alone than I've done in years.

If you've got the money, I wholeheartedly recommend the Ypsilon Hyperion. However it measures, it's among the handful of the best-sounding power amplifiers I've heard, and it's the most musically enjoyable of the lot. ■

5 See [www.stereophile.com/content/ypsilon-pst-100-mkii-line-preamplifier-measurements](http://www.stereophile.com/content/ypsilon-pst-100-mkii-line-preamplifier-measurements).