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Lipinski Sound L-707 LOUDSPEAKER

*"... wins recommendation to "Class A" category of
Stereophile's "Recommended Components."
-Larry Greenhill*

Lipinski Sound

L-707

Larry Greenhill

LOUDSPEAKER



Lipinski L-707 loudspeaker

DESCRIPTION Two-way, magnetically shielded, sealed-box loudspeaker. Drive-units in D'Appolito configuration: 1" Vifa ring-radiator tweeter with neodymium magnet, two 7" glass-fiber-cone woofers. Crossover frequency: 2.0kHz. Frequency response: 56Hz–20kHz, ± 1 dB, 31Hz–40kHz, ± 3 dB. Voltage sensitivity: 90dB/2.83V/m. Nominal impedance: 4 ohms. Recommended amplification: 50–250W continuous, 300W peak.

DIMENSIONS 23.6" (600mm) H by 9.4" (240mm) W by 12.4" (325mm) D. Weight: 41 lbs (18.5kg).

FINISHES Black anodized aluminum, black or mahogany base.

SERIAL NUMBERS OF UNITS

REVIEWED 0222, 0223.

PRICE \$4590/pair. Approximate number of dealers: 5.

MANUFACTURER Lipinski Sound Corporation, 6120 Massachusetts Avenue, Bethesda, MD 20816. Tel: (301) 229-4360. Fax: (877) 893-1768. Web: www.lipinkisound.com.

Street buzz is a force to reckon with. When an audiophile whispers to me that a piece of new equipment sounds unusually good, I'm interested. When two manufacturers of other equipment independently tell me "You've got to listen to this speaker," I get excited.

I first heard about Lipinski Sound's L-707 loudspeaker in late December, from an engineer of solid-state equipment. Later, at the 2005 Consumer Electronics Show, a producer of high-quality SACD remasterings of classic recordings spontaneously took me by the arm and marched me over to the Lipinski Sound Corp. exhibit at the Alexis Park Hotel. What I heard there convinced me that the L-707 deserved a lengthier audition in my own listening room.

Andrew Lipinski originally conceived the L-707 as a monitor to assist him in his recording of symphonic music in his native Poland. During a visit to my listening room, he mentioned several principles he'd followed in its design: Each parameter had to be optimized in an anechoic chamber; the L-707's sealed enclosure is tuned for the best impulse response rather than for deep-bass extension; its cabinet is made of 1"-thick MDF with sturdy internal bracing to damp internal resonances; the two 7" woofers have cones of stiff glass fiber with low-damping rubber surrounds, diecast chassis, and low-distortion magnets; the ring-radiator tweeter, made by Vifa, has wide dispersion and a frequency response that extends to 40kHz; while there are black cloth grilles in front of the woofers, there is no grille in front of the tweeter because Lipinski's testing suggested that *any* grille fabric will introduce high-frequency comb filtering; and the tweeter's Belgian foam surround was cut to fit perfectly together in layers without glue, to eliminate any "edge effect" that might color the sound.

A low-order crossover filter was chosen for the best phase response. It uses low-resistance, wooden-core foil inductors and speaker terminals of gold-plated brass that are designed to accept banana plugs or wires up to a thickness of 2 AWG. The L-707 is magnetically shielded.

To make them easier to move between recording and mixing locations, the speakers are shipped in carrying cases of rugged black nylon with side pockets, rather than in cardboard cartons.

Setup

I placed the 41-lb Lipinski L-707s on Sumiko's "Franklin and Lowell" sand-filled stands (\$350/pair), which raised their tweeters 43" above the floor. Then Lipinski and his son, Lukas, placed the speakers and stands on the exact spots usually occupied

by my Quad ESL-989s: 8' apart, 5' from the front wall, and 3' 9" from the sidewalls. As always, I did my listening in my lightly damped, rectangular listening room (26' long by 13' wide by 12' high). Behind my listening chair, the other end of the room opens into a 25' by 15' kitchen. All listening was done with the woofer grilles in place.

A pair of balanced interconnects ran from my Krell KCT preamplifier to the line-level right and left inputs of a Mark Levinson No.334 solid-state stereo amplifier. The phase and speaker-channel identification checks on *Stereophile's* first *Test CD* (Stereophile STPH002-2) indicated that the L-707s were in correct phase.

To evaluate the speaker's frequency response in my room, I used a Velodyne DD-18 subwoofer's built-in signal generator, calibration microphone, and virtual

spectrum analyzer (see *Stereophile*, June 2004, p.133). I set up the mike on the back of my listening chair at my seated ear height of 37" above the floor and set the DD-18's volume control to "0" so that the sub would put out no audio signal. I then keyed the Velodyne's remote to display its internal System Response screen on my TV monitor. This automatically initiates a repeated sweep tone from the DD-18's signal generator, which is then fed into a tape input of my Krell KCT preamp. The L-707's frequency response showed room-mode peaks at 40Hz, 125Hz, and 180Hz, with the speaker's output falling gradually below 40Hz, to -6dB at 25Hz (fig.1).

Playing pink noise from *Stereophile's Test CD 2* (Stereophile STPH004-2), the L-707's tonality remained constant as I moved back and forth and side to side in my listen-

MEASUREMENTS

I estimated the Lipinski L-707's voltage sensitivity at a high 90.3dB(B)/2.83V/m, which is to specification. However, the speaker drops below 4 ohms in the lower midrange and upper treble, reaching a minimum value of 3.35 ohms at 180Hz (fig.1). There is also a relatively tricky combination of 5.2 ohms and -40° at 87Hz, a frequency where music in general has considerable energy. A good amplifier rated into 4 ohms will be needed to drive these speakers to high levels, therefore.

The traces in fig.1 are free from the small wrinkles and discontinuities that would imply the existence of cabinet resonances. However, a couple of strong modes could be found on both the sidewalls and the rear panel, at 465Hz and 555Hz (fig.2). While it is possible that these resonances are high enough in frequency to have no subjective consequences—LG noted no midrange congestion in his auditioning—I would have preferred not to have seen them, as they are very high in level. L-707 owners should experiment with using damping materials between the cabinet and the stand (see my article on this subject at www.stereophile.com/features/806).

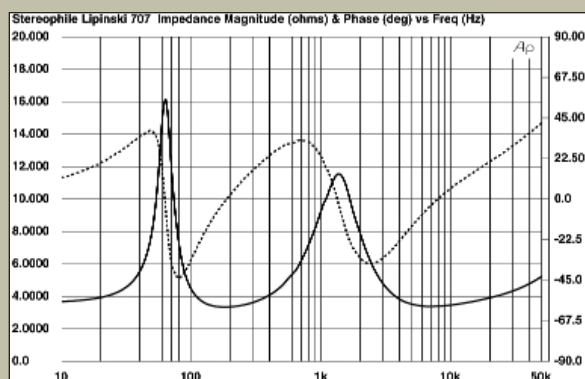


Fig.1 Lipinski L-707, electrical impedance (solid) and phase (dashed). (2 ohms/vertical div.)

The single impedance peak in fig.1, at 62Hz, suggests that this is the tuning frequency of the sealed-box-loaded woofers. The woofers' response, measured in the nearfield, is shown to the left of fig.3. The broad, 3dB-high peak in the upper bass is entirely due to the nearfield measurement technique, which assumes a 2pi (hemispherical) environment;

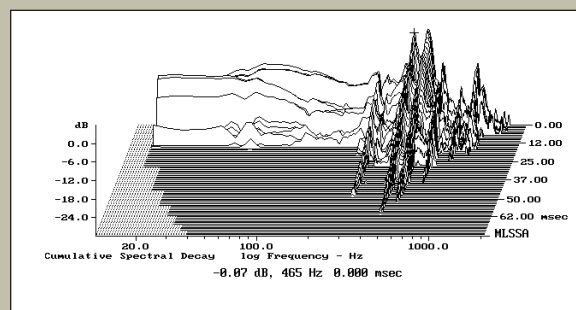


Fig.2 Lipinski L-707, cumulative spectral-decay plot calculated from the output of an accelerometer fastened to the center of the cabinet's side panel (MLS driving voltage to speaker, 7.55V; measurement bandwidth, 2kHz).

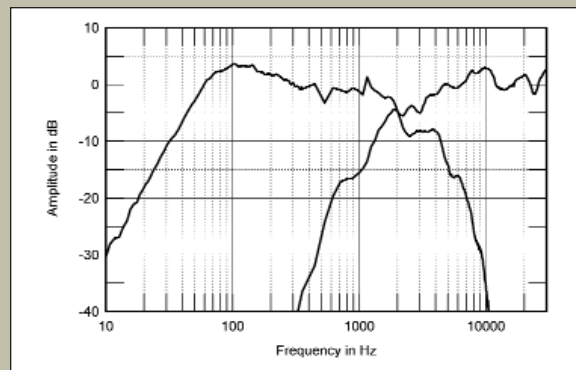


Fig.3 Lipinski L-707, acoustic crossover on tweeter axis at 50", corrected for microphone response, with the nearfield response of the woofers plotted below 300Hz.

ing chair. I found the L-707s' "sweet spot" in my room to be about 12" wide and 12" deep. It was easy to stay in this sweet spot, as it was quite wide. The sweet spot dulled slightly when I stood up, but did not vary more when I moved around the room.

Sound

While the Lipinski L-707s displayed excellent imaging, extended dynamic range, and translucent mids and highs, their strongest characteristic was their wide, deep soundstage, with an unusual level of spatial resolution for individual orchestral instruments and choral voices. John Atkinson's recording of an excerpt from Elgar's *The Dream of Gerontius* on *Test CD 2* created a wide, deep soundstage that allowed me to easily place the tenor at the far left and the brass section at the far right.

The L-707s' imaging and portrayal of space also allowed them to convey the ambience of the recording venue. Listening to the percussion solo during "Nardis," on Patricia Barber's *Café Blue* (CD, Premonition/Blue Note 21810 2), it was easy to locate the piano at the right, the standup string bass at the center, behind the piano, the snare at center, and the cymbals at extreme right. And when I closed my eyes, Mary Gauthier's voice singing "Long Way to Fall," from her *Filth and Fire* (CD, Signature Sound SIG 1273), sounded three-dimensional, actually seeming to be in the room with me.

Midrange timbres were especially rich. During "Silk Road" and "Running Water," from I Ching's *Of the Marsh and the Moon* (CD, Chesky WO144), I easily heard the timbres, sonorities, and resonances of Sisi

Chen's *yang ching* (Chinese dulcimer) and Tao Chen's bamboo flute. The reediness of Antony Michaelson's clarinet was evident and highly involving during the *Larghetto* of Mozart's Clarinet Quintet in A Major, K.581, from *Mosaic* (CD, Stereophile STPH015-2). The stinging emotion and irony of Eva Cassidy's rendition of "What a Wonderful World," from her *Live at Blues Alley* (CD, Blixstreet G2-10046), was intensified by the L-707s' ability to capture the rich tonalities and colors of her voice, which beamed with hope despite her knowledge that she had cancer (she survived the gig by only six months).

Recorded vocalists and instruments benefited the most from the L-707s' imaging and their ability to reproduce timbres free of speaker-introduced colorations. Madeleine Peyroux's wonderfully alluring

the L-707 is actually maximally flat down to 70Hz, with a slow 12dB/octave rolloff below that frequency. While this will not be a speaker anyone will choose for room-shaking low frequencies, it does offer quite good bass extension in-room, as LG found.

The outputs of the woofers and the tweeter, taken in the farfield with the grilles over the woofers only, and leaving the tweeter embedded in its foam-lined recess, are shown to the right of fig.3. The crossover appears to be set around 2kHz, with fairly slow initial filter slopes. The woofers have a trace of unevenness evident in the upper midrange, which results—when the overall response is averaged across a 30° horizontal window centered on the tweeter axis (fig.4)—in a slight emphasis in that region. This is not a large enough extent to add coloration, but it will slightly emphasize recorded detail. Otherwise, the L-707's on-axis balance is superbly even, with excellent high-frequency extension.

Despite its having woofers with quite large radiating diameters, the Lipinski speaker offers superbly well-

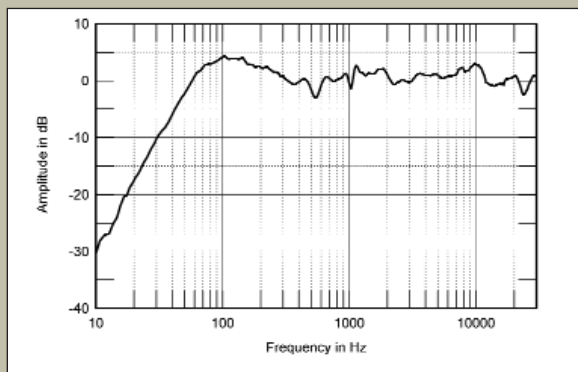


Fig.4 Lipinski L-707, anechoic response on tweeter axis at 50°, averaged across 30° horizontal window and corrected for microphone response, with the nearfield response of the woofers plotted below 300Hz.

controlled horizontal dispersion (fig.5), the uniformity of the "contour lines" in this graph correlating with the stable stereo imaging LG heard in his auditioning and indicating that the room's reverberant field will be as uncolored as the speaker's first-arrival sound. Unusually for a ring-radiator tweeter, the example used by Lipinski doesn't get quite as directional at ultrasonic frequencies as other such designs I have measured. However, in the vertical plane, the L-707's use of spaced

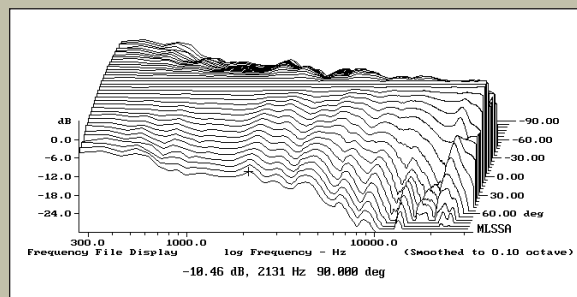


Fig.5 Lipinski L-707, lateral response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 90-5° off axis, reference response, differences in response 5-90° off axis.

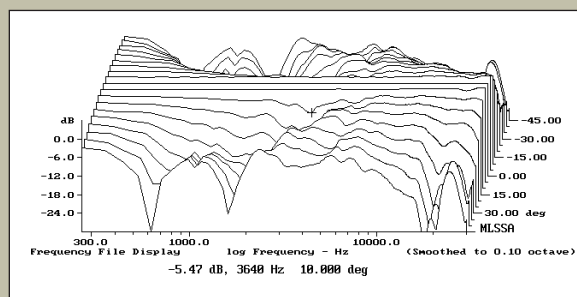


Fig.6 Lipinski L-707, vertical response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 45-5° above axis, reference response, differences in response 5-45° below axis.

interpretation, in Billie Holiday style, of Leonard Cohen's "Dance Me to the End of Love" and Hank Williams' "Lonesome Road," both on *Careless Love* (CD, Rounder 1161-3192-2), was never more clearly heard. The L-707s delivered a clear, undistorted image of Lyle Lovett singing "Friend of the Devil" on *Dedicated: A Tribute to the Grateful Dead* (CD, Arista 7822-18669-2), with no sign of the honk or chestiness that lesser speakers can inflict on male vocalists. Suzanne Vega's cover of "China Doll" on that album had all the richness and timbre I hear from this recording when I listen to it through the more expensive Quad ESL-989 and Revel Salon loudspeakers.

The Lipinski L-707's dynamics ranged wide and fast. Reproducing Eva Cassidy's cover of Simon and Garfunkel's "Bridge

Over Troubled Water," also on *Live at Blues Alley*, the L-707 conveyed the stunning dynamic range of her voice without compression or overload. It also easily handled the wide dynamic range between drummer Mark Walker's tiny cymbal taps and his room-shaking kick-drum beats on Patricia Barber's "Nardis."

The L-707 reproduced the treble component of the musical spectrum with ease, producing extended, translucent highs. I was transfixed by the shimmer and sheen of the reverberating chimes and the reediness of the bassoon, which open Owen Reed's *La Fiesta Mexicana*, from *Fiesta* (CD, Reference RR-38CD). Bud Shank's alto sax and flute, heard on the title track of the L.A. Four's *Going Home* (CD, East Wind 32JD-10043), had highs that were extended, transparent, and wide open.

Bass notes were reproduced with power and good pitch distortion, despite the fact that the two-way L-707 has only two 7" mid-woofers to handle the bass and mid-bass. The Lipinskis allowed me to enjoy pedal notes from the pipe organ on "Lord, Make Me an Instrument of Thy Peace" and "A Gaelic Blessing," both from John Rutter's *Requiem* (CD, Reference RR-57CD). The blend of synthesizer, Tibetan horns, and monks of the Gyuto and Drukpa orders chanting on "Sand Mandala" and "Caravan Moves Out," from Philip Glass's soundtrack for the film *Kundun* (CD, Nonesuch 79460-2), produced deep bass, exotic sonorities, and droning chants that were oppressive, anxiety-provoking, and highly dramatic. Solid, deep organ-pedal chords resonated in my room as I listened to Jean Guillou perform *Gnomus*, from his

measurements, continued

drive-units extending quite high in frequency leads to significant off-axis irregularities (fig.6). Listeners need to place the L-707 on high enough stands that they sit within $\pm 5^\circ$ of the tweeter axis.

In the time domain, the L-707's step response (fig.7) surprised me by indicating that the tweeter is connected in inverted acoustic polarity to the woofers. Despite the setback of the tweeter subbaffle and the low-order crossover filters, the speaker is not time-coincident. This was confirmed by looking at the step responses of the individual drive-units (fig.8). But what is important to note from this graph is that the overhang of the tweeter's inverted step (red trace) blends smoothly into the woofer's step (blue). This time coincidence correlates nicely with the excellent frequency-domain integration seen in fig.4.

Finally, with the exception of some delayed energy in the upper midrange associated with the unevenness of the woofers' output in this region, the L-707's cumulative spectral-decay plot (fig.9) is characterized by an astonishingly clean, quick decay of the transient sound. This is simply superb measured perfor-

mance.

Following my experience with the Lipinski Sound speaker in my own room, and listening to a pair playing some of my own recordings in Ray Kimber's studio in summer 2004, I share LG's enthusiasm for the L-707.

—John Atkinson

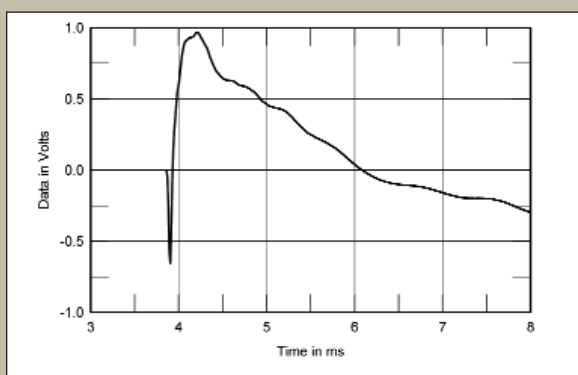


Fig.7 Lipinski L-707, step response on tweeter axis at 50° (5ms time window, 30kHz bandwidth).

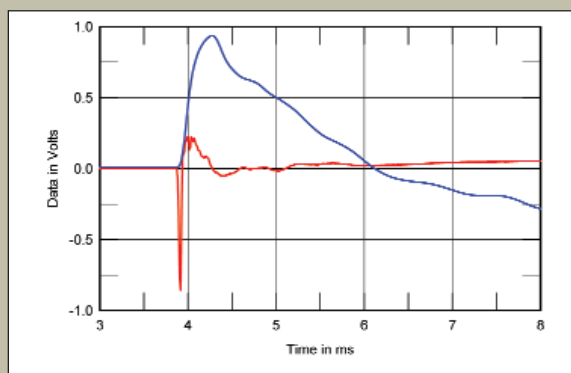


Fig.8 Lipinski L-707, step responses on tweeter axis at 50° of tweeter (red) and woofers (blue). (5ms time window, 30kHz bandwidth).

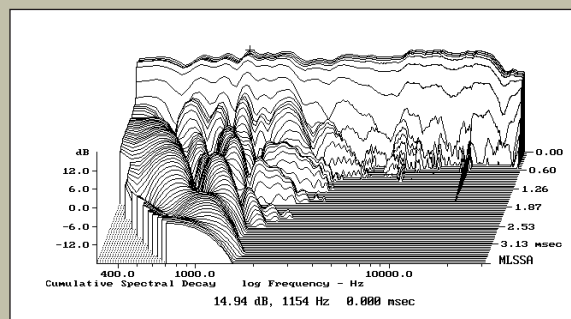


Fig.9 Lipinski L-707, cumulative spectral-decay plot at 50° (0.15ms risetime).

transcription of Mussorgsky's *Pictures at an Exhibition* (CD, Dorian DOR-90117). Though *Tuileries*, from the same disc, didn't rattle objects or cause the air to pulse as it does when I play it through large subwoofers, it still thundered and growled through the L-707s. And the large bass drum and synthesizer on I Ching's *Of the Marsh and the Moon* gave a solid, tuneful foundation to "Silk Road" and "Running Water."

It was a special pleasure to hear Lipinski's own recording of Krzysztof Penderecki's *Clarinet Concerto* (CD, Koch 521102) in my listening room. Lipinski was the sole engineer for this recording, and used L-707s as monitors while editing the release, so it was no surprise that the L-707s beautifully reproduced the complex orchestral timbres, instrumental placement, and wide dynamic range of this work. Clarinetist Dimitri Ashkenazy played with energy, technical skill, and superb tone as captured by the L-707s, which placed him in a wide, deep soundstage. I found myself closing my eyes and luxuriating in the clarinet's richness and warmth, so ably reproduced by the Lipinskis.

Conclusions

The buzz on the street is correct. Andrew

Lipinski has designed and manufactured a portable monitor loudspeaker with many



No grille for this Belgian-foam tweeter.

mission to have a monitor that sounds good *and* measures well—a rare phenomenon among the 1800 models available on the American market today. We spent months measuring in the anechoic chamber, starting from scratch many times over, to reach a design of a speaker without compromise. Because I began experimenting with quadraphonic recordings in the 1970s, and currently focus on high-resolution six-channel surround (ceiling channel instead of LFE) all the way down to SACD, my second objective was to have the best possible monitors for stereo *and* for surround.

Keeping the above in mind, my

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of the high-end qualities—great dynamic range, detail, pace, three-dimensionality, imaging, and the ability to accurately reproduce instrumental and vocal timbres—that I usually associate with expensive audiophile loudspeakers. While it doesn't reach all the way to the bottom, its depictions of drums and pipe-organ pedal notes have good pitch definition and ample weight to convey the drama of those instruments. The L-707 is better at involving the listener in the drama of music than it has any right to be at its price of \$4590/pair. Be assured that its quality grows even more with exposure. This loudspeaker wins my recommendation for inclusion in the "Class A (Restricted Extreme Low Frequency)" category of *Stereophile's* "Recommended Components."

MANUFACTURERS' COMMENTS

Lipinski Sound L-707

Editor:

As a recording engineer and producer who specialized in classical and jazz, I spent my entire professional career looking for competitive gear to create my recordings. Since I can only create as good a recording as my equipment allows me to hear, monitoring equipment was my first concern.

Behind the idea to create a speaker was a

concern was to tighten manufacturing standards to deliver identical speakers for years to come. Professionals, especially mastering studios ready to upgrade their stereo monitoring systems but not yet ready for surround, ask if we will be able to deliver identical speakers whenever they are ready to expand to surround. We set our standards at a level where we *can* deliver such consistency.

My professional friends also inquired about power handling—some of them are known as addictive tweeter burners. The tweeter alone can handle up to 1000W in peaks. At Georgetown Masters in Nashville we were testing the L-707s with 1000W Pass Labs X1000 monoblocks with great sonic results.

Finally, I created the L-707 as a no-compromise monitor to help me create better audiophile recordings for my audiophile label, with no intention of making it a commercial product. It wasn't until my son, Lukas Lipinski, convinced me to share my gear with the rest of my profession in order to raise the quality of recording and playback to higher standards, that we started Lipinski Sound. Thanks to the discerning ears of *Stereophile* reviewers, we now have the opportunity to give the L-707 back to the community that instilled in me a consistent, money-no-object pursuit of sonic perfection and helped me grow.

Andrew Lipinski
Lipinski Sound

ASSOCIATED EQUIPMENT

ANALOG SOURCE Linn Sondek-Lingo turntable, Linn Ittok tonearm, Spectral moving-coil cartridge; Day-Sequerra FM Reference Signature FM tuner.

DIGITAL SOURCES Krell KRC-28 CD player, Sony SCD-C555ES multi-channel SACD/CD player.

PREAMPLIFICATION Margulis phono section, Duntech MX-10 head amplifier, Krell KCT preamplifier.

POWER AMPLIFIERS Mark Levinson ML-2 monoblocks, Mark Levinson No.334, Krell FPB 600c.

LOUDSPEAKERS Quad ESL-989, Revel Ultima Salon; Velodyne DD-18, REL Studio III subwoofers.

CABLES Interconnect: Red Rose Silver One, Krell CAST, Mark Levinson Silver single-ended, Bryston balanced. Speaker: Mark Levinson HFC 10, Pure Silver Cable R50 biwire double ribbon, Ultralink Excelsior 6N OFHC, Coincident Speaker Technology CST 1.

—Larry Greenhill