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A New Standard of Transparency

MartinLogan CLX Full-Range Electrostatic Loudspeaker

Jonathan Valin

MartinLogan CLX

It was just a few months ago (in Issue 186) that I reviewed the $13k Quad ESL-2905 electrostatic loudspeaker—the best 'stat I'd yet heard, the highest resolution transducer I'd heard, and the speaker that I told you I would buy if I were in the market for a speaker.

Comes now the $22.6k MartinLogan CLX, the long-awaited successor to the long-defunct CLS, MartinLogan's one-and-only full-range electrostat, and though it doesn't unequivocally push the considerably less expensive ESL-2905 out of my shopping cart, it has certainly made me reconsider what I'd buy if I were buying, electrostatically speaking.

To spare you the suspense, the MartinLogan CLX trumps the Quad ESL-2905 in every area of performance save for bass and sheer density of tone color. Not only is it higher in low-level resolution than the Quad ESL-2905, it sets a new standard for midrange resolution, resolving low-level timbral and dynamic details that I have literally never heard before on disc after disc and that, in and of themselves, make the instruments and vocalists on these discs sound much more realistic. It is also considerably more neutral in balance than the somewhat darker and unquestionably more voluptuous Quad ESL-2905; it will play a good deal louder than the Quad ESL-2905 without distortion; it is far and away more transparent to sources than the ESL-2905, which tends to turn everything you put on a turntable or in a CD player some alluring shade of gorgeous; its soundstage is (depending on the disc, of course) wider than that of the Quad ESL-2905 (though I'm not sure it's typically quite as deep, due to the way the Quad's output is contoured in the bass, midband, and treble); and it disappears as a sound source more completely than any other electrostat I've heard and (with a couple of signal exceptions that I will get to) than any other loudspeaker I've heard, save for the MBL 101 X-Treme.

This is the good news. Now, here's the not-so-good. First, though nothing like the bright, thin, overly aggressive CLS of yore, the CLX is not an inherently warm or beautifying loudspeaker. In fact, it has no perceivable color of its own (bespeaking very low levels of distortion); it sounds as "see-through" as it looks. As a result, the CLX seems to reproduce what's actually on records with exceptionally high fidelity. Practically, what this means is that, from the midbass on up, you will hear...*everything.* Good recording technique, bad recording technique, mediocre recording technique, spotlighting, overdubs, tape edits...you'll hear them all without editorialization. If a record is bright and aggressive it will sound bright and aggressive; if a record is dull, dark, or muddy it will sound dull, dark, or muddy.

I know I've talked about transparency to sources in the past. But, honestly, I've never heard a loudspeaker that's as transparent as this one. It even registers changes and tweaks in source-hardware to a degree I've never come across before. For instance, I fiddled with the magnetic anti-skating on the superb Da Vinci Grandeeza tonearm many times when the AAS Gabriel/Da Vinci 'table was upstairs in my "big system" room. I could hear differences, of course. But, save for when I made relatively large adjustments, they were tough to quantify. Downstairs, in the CLX system, an eighth of a turn of the anti-skate in either direction is instantly recognizable as a step forward or a step back. Or take a record I've heard countless times in the past, Joni Mitchell's *Blue* (in the superior Steve Hoffmann reissue from Warner). Pick any cut where Joni backs herself up on multiple potted-in tracks, each with various amounts of potted-in echo. On an average stereo, even on a very good stereo, this artifice isn't supposed to draw too much attention to itself—those voices aren't supposed to sound artificially potted in, even though they are. Through the CLXes, the overdub is unmistakable. You can almost hear the difference in tape hiss on the laid-in tracks, and you can certainly hear the difference in miking and echo and venue. Joni's voice, doubled and tripled, pops up like a separate pocket of time and space—a different soundstage within the larger soundstage. Or consider the voices of Amy Helm and Theresa Williams backing up Levon Helm in real time on his zesty (with a thank-you to Maude Lebowski) cover of A. P. Carter's "Single Girl, Married Girl" (from *Dirt Farmer*). This is high-lonesome accompaniment—sometimes shouted as much as sung—but despite the loudness of the women's roughhewn voices it isn't that easy to hear what they're actually singing on other speakers. It is through the CLXes. Every word, every breath, every intonation, every crescendo. Or de-crescendo. Speaking of which (and as long as we're talking high lonesome), on Ian and Sylvia's rendition of that sad old ballad "Blue" from their eponymous first album on Vanguard, Sylvia sings unusually high-pitched, sweet, and *very* soft harmony on the refrain. In fact, I didn't even realize she was singing on some of the verses and certainly couldn't make out the words, pitches, and timbres of these true *pppp*'s. Here, as if by magic, all is revealed.

Folks, I've had some mighty discerning speakers come through my listening room over the past few years. Save for the Symposium Acoustics Panoramas, not a one of them holds a candle to this one with it comes to recording the slightest acoustic tremor. From *mezzoforte* to the softest *pianissimo* an LP or CD is capable of reproducing, these are the most revealing, least colored, lowest distortion transducers I've had in my home.

Now, this transparency to sources is swell for a record/equipment reviewer, but for an ordinary listener it may be a somewhat mixed bag. Because of their incredible ability to clearly preserve the lowest-level timbral and dynamic details—what acousticians call "jitter" (not to be confused with the digital timing errors also called "jitter)—the CLXes can make many instruments, particularly strings and voices, sound more real than virtually anything else I've auditioned. To hear the clarity with which they reproduce the tiniest nuances of the way, say, Ian Tyson brushes or plucks the strings of his guitar on the aforementioned *Ian and Sylvia* album is to hear something so much closer to the way guitars sound in life that it makes virtually every other stereophonic presentation sound smeared in time, congealed and opaque. It also tends to make you think—with reason—that you've never truly heard what's on certain records before. Discs that you may have thought sounded great or, at least, more-than-acceptably-good through other transducers (even other terrific transducers) may come out of the wash an entirely different color than they went in. Highly manipulated studio recordings, for example, simply and unmistakably sound highly manipulated and "canned" (moving from the two-or-three mike simplicity of *Ian and Sylvia* to something like the multitracked, multi-overdubbed Joni Mitchell album *Heijira* is an unforgettable little lesson in how much studio-recording aesthetics changed from 1961 to 1976). Some of you—maybe most of you—may not *want* to hear records reproduced with this kind of honesty. It's a bit like watching a play while simultaneously

seeing through the sets to the people behind the flats who are running the lights and sound, and dressing the actors. It is only the rarest records—and the very best—that won't show their artifices much more clearly than you've heard them before.

And then there is the CLXes' bass.

Though a *major* improvement in the mid-to-upper bass (and everywhere else) over the original, way-too-lean-and-hence-too-bright-and-piercing CLSes, the CLXes are not world-beaters in the bottommost octaves. It's not that they don't bring the same clarity to the bass that they do to the midrange and treble. They just don't bring the same power (and their power in the mids and the treble is, as you will shortly be apprised, somewhat limited to begin with). Also, they don't have great extension on the bottom. Or, at least, they don't in my room as it is currently configured.

I have to be careful here because I'm not entirely satisfied with my newly converted second listening room at this point, particularly in the bass, and other listeners whose judgment I respect claim to have gotten deeper low end than I'm getting. So take what I'm about to say with a grain of salt. (I will report again on the CLXes' bottom octaves when I've set the room up more to my liking.)

As it stands, the CLXes go down more or less flat to about 55–60Hz or so. (MartinLogan, to its credit, doesn't promise you a rose garden here. It rates the CLX as down 3dB at 56Hz, which is just plain honest. In ML's view, if you want *really* low bass, you need to add a couple of its Descent *i* subs, which come equipped with a special crossover specifically tailored for the CLX. I will report at a later date on how well these subs blend—but, until then, don't get your hopes up.)

Now 55 or so cycles isn't very deep bass, and because the CLXes' mid-to-upper bass is so flat and neutral, it doesn't sound as deep, full, or powerful as, say, the bass of the Quad ESL-2905, which is deliberately elevated through the mid-to-upper bass, from about 60Hz–200Hz. I could live uncomplainingly with the greater timbral honesty of the CLXes in the bass if they didn't seem to progressively lose dynamic range and scale as well as frequency extension as they descend in pitch. Oh, they're quite marvelous down to, say, the low C of the cello (about 65Hz), but below that they seem to peter out a bit. This means—once again, as things now stand—that power instruments like bass drums or bottom-octave piano, though clear as the proverbial, are also a bit short-changed in impact and pitch. Turning the volume up helps a little, but not enough, in my opinion. Things that I *know* should sound very deep-reaching and thunderously dynamic, like the drum strikes that dot the *Allegro con brio* of Roberto Gerhard's Third Symphony [Angel] or the piano on Zsolt Durkó's Schoenbergian *Fire Music* [Hungaroton], aren't. They are a little too laid-back and are literally laid-back in the soundstage. They don't leap to the fore, as they should, when they are sounded with explosive power.

I don't want to overdo this. The CLXes' bass is leagues ahead of that of the CLSes, but it is (as Martin Logan admits) limited in a way that the rest of this marvelous speaker is not, and because it lacks some dynamism and extension it makes the rest of the speaker seem a little lacking in foundation, a little lacking in large-scale clout. Once again, this isn't the CLS; this isn't an X-ray machine. But it could use a bit more power delivery at the very bottom.

Some of the CLXes problem in the bass is simply the lack of "body" that plagues all electrostats. They just don't have the "weight" of cones (or Radialstrahlers), and it isn't just in the bass. You hear it everywhere—a slight two-dimensionality that makes voices and instruments sound as if they are projected on a screen (as opposed to the freestanding statuary of an MBL 101 X-Treme or a Magico Mini II). To be fair, there is less of this effect with the CLXes than with other 'stats (including the Quad ESL-2905).

There is also *none* of the sense that I've gotten with every other electrostat of listening through "windows," of the physical presence of the speakers.

Putting aside their tonal balance and congenital lack of weight, as I said earlier the CLXes disappear better as sound sources than any planar dipole I've heard. For all intents and purposes, they just aren't there.

HOW COME YOU CAN SEE THROUGH CLXes?

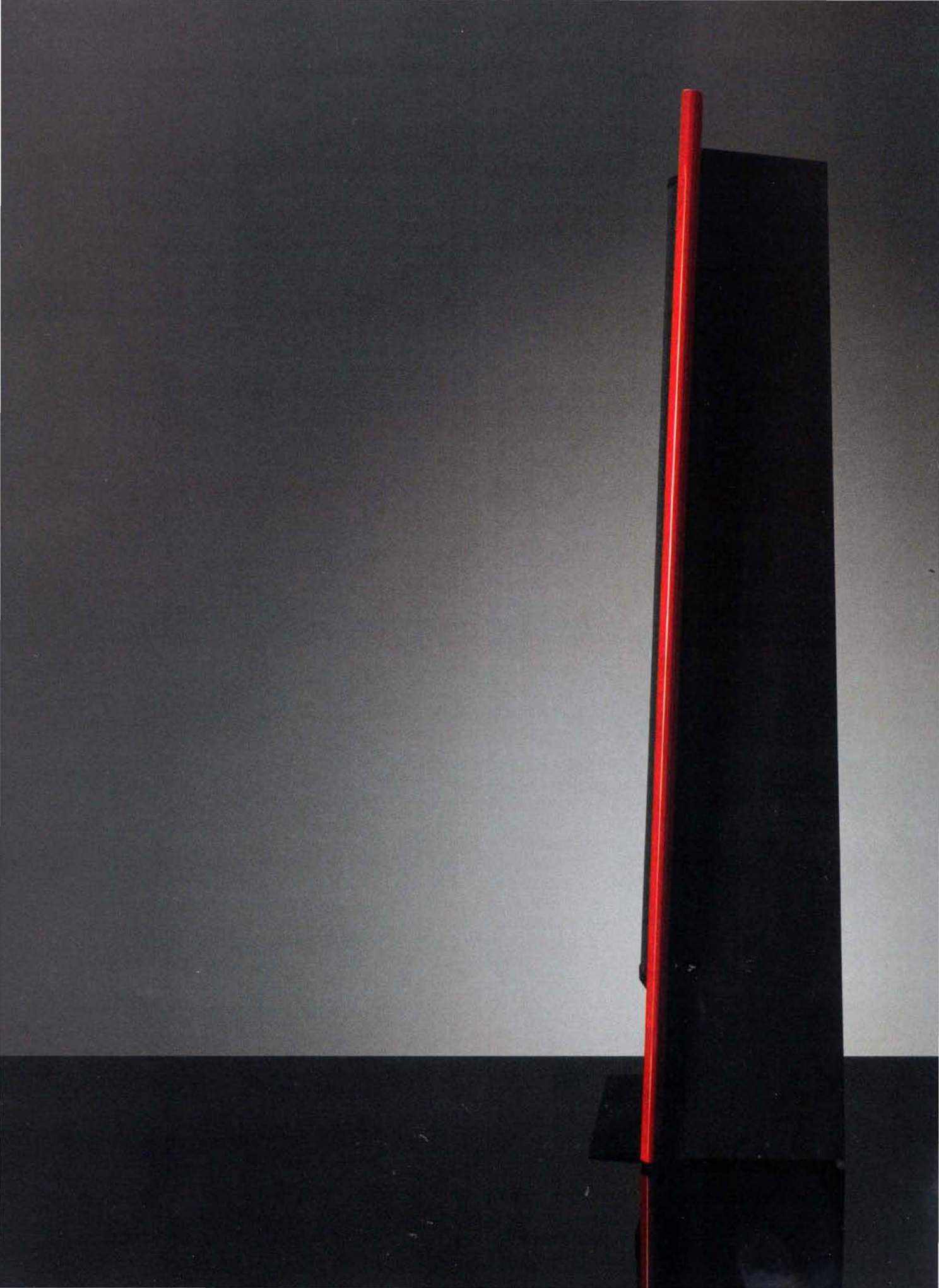
One of the things that has always set MartinLogan electrostats apart is their transparency. I mean this literally: You can see through them. Other 'stats and planars come with dustcovers to keep prying fingers and airborne contaminants away from the drivers and stators. How come MartinLogans don't?

Well, for one thing, the more objects between you and any driver the more veiled its presentation. Most of us routinely take the dustcovers off dynamic speakers when we play them. Following this same logic, MartinLogan has done the job for us. The CLX, like the CLS before it, is only "covered" by its perforated grilles, which also function as its stators. What you're looking at, if you look through the holes in these grille/stators, is the electrostatically charged PET membrane itself.

But if the charged stators are exposed, why don't they pose a hazard if you brush up against them? For two reasons. First, though the diaphgragm is charged with high voltage, current is low. Second, the grille/stators are coated on all sides with a proprietary Nylon insulation. As far as I know, no one has ever been shocked—much less hurt—by a CLS or a CLX.

With no dust covers and virtually no box (just a narrow wooden frame on three sides), the CLXes put very few material objects between you and them. Undoubtedly, part of their legendary acoustic transparency results from their boxless, dustcover-less physical transparency.

The CLXes do have one added bit of structure that the CLSes didn't—a sidepiece made from a material called Eco-Sound extending back from the outside rear edge of the woofer panel. You might think this sidepiece adds rigidity to the frame, but that's not its primary purpose. It is there to decrease low-frequency rear-wave cancellation,—a problem common to all dipole loudspeakers,—by increasing the air path length behind the CLX and delaying the out-of-phase back wave. The consequent reduction in front-wave cancellation boosts overall low-frequency output. **JV**



SETTING UP THE CLXes

In part because they combine a large curvilinear panel with a large flat panel, the CLXes are rather tricky to set up. Happily, the manual that accompanies them is easy to understand and gives you explicit and reliable set-up instructions. To begin, you will want to situate these speakers at least four feet from backwalls and at least three feet from sidewalls and at least five-to-six feet apart (measured from the center of one CLX panel to the center of the other CLX panel—seating distance will, of course, dictate how much separation you need, although locating any planar speaker too far from its mate can result in suckout in the midbass). I prefer the Xes on their excellent (supplied) spikes, although don't put them on spikes until they are properly placed. Assuming you've got them about where you want them, you'll now face the questions of toe-in and tilt.

The amount of toe-in you use with CLXes is critical to their imaging and soundstaging and overall frequency balance. MartinLogan has a method you should use (which involves shining a flashlight toward the curvilinear panel from the "sweet spot" and making sure the reflected light is shining back from a specific spot on the speaker—the outer third of the CLS panel). This will get you precisely where you want to be with toe-in, which, in practice, isn't very much (just a few degrees away from parallel-to-the-seating-position). Some folks seem to like the speakers tilted back a slight bit. I prefer them straight up and down, although the height of your listening chair and room acoustics will play key roles in this decision.

Speaking of room acoustics, remember that the CLXes have a different dispersion pattern that other 'stats. Columnar line sources with curved drivers, they will reflect off sidewalls to a certain extent and you may want to damp the point of first reflection on your sidewalls. You may also want to damp the walls immediately behind these 'stats, though I do not recommend overdamping. If you're getting too much midbass, corner traps can fix it. Everything depends on the size and shape and relative liveness or deadness of the room.

I don't know whether I ought to mention this or not—for fear that some of you will start fiddling where you shouldn't—but you (or, preferably, your MartinLogan dealer) can adjust the upper-bass/lower midrange balance of the CLX. Inside the crossover/transformer box on the back of the speaker are two groups of switches that, properly set, can boost output in the power range from the factory-default "flat" setting. IMO, *they should be left alone*!

As for driving the CLXes, though they are relatively sensitive for electrostats (90dB) with a nominal impedance of 6 ohms, they are not as easy a load as this may suggest, since they dip in impedance to 0.7 ohms at 20kHz. Assuming that you care about (and can hear) the topmost treble, you'll need an amp capable of handling such a very low impedance load. This means solid state—and really good solid state, at that.

I've had tremendous luck with the Swiss-made Soulution 710, which has got to be the most finely detailed and neutral solid-state amplifier I've ever heard. Unfortunately, it's quite expensive. You could make do quite well, I would think, with something in the 200-400 watt range from Bryston or Parasound or, for a bit more money, Pass. You can also use tubes, albeit at a very small price in high-frequency extension (although a bit of added tube plumpness in the low end might be a good thing with these speakers). **JV**

Perhaps this exceptional disappearing act is because they *aren't* like other 'stats or planars in certain key respects. As those of you familiar with the original CLS or any of ML's hybrid electrostats already know, MartinLogan electrostatic panels are curved ("CLS" stands for "curvilinear line source"). There were and are several good reasons for making the mid/treble 'stat panel belly out. First, this increases horizontal dispersion and lowers "beaming" in the treble, reducing the "head in the vise" effect endemic to large planars. Second, it makes the speaker sound more like a columnar line source whose sound originates a bit behind the panel. This was the theory behind the CLS, at least. In practice, the CLS *was* less "beamy" and far more open and neutral than flat panels, but because it was sucked out in the upper bass/lower midrange and tipped up in the upper mids, it was also thinner and brighter and markedly more aggressive than many flat panels.

That was then. As I noted in my review of the nifty little MartinLogan Source in Issue 180, MartinLogan has since completely redesigned its electrostatic panels—improving everything from the density of perforations in the stators (which, ML claims, now expose twice as much panel surface as traditional 'stats) to the suspension of the electrostatic diaphragm (which is now far more rigid) to the membranes themselves (which are now made of super-lightweight, plasma-deposited PET) to the ultra-transparent Votjko crossovers (yes, Virginia, there is a Votjko—he's the guy who designs all of ML's crossovers). In addition to these improvements, ML has tried something that I don't think has been tried before in the lower midrange and bass. Below 360Hz the CLXes cross over from the curvilinear mid/treble panels to large, flat, "triple-stator," "dual-membrane" bass panels, physically located just outside the curved mid/tweets. (The Quad ESL-2905 also uses separate flat bass panels, in addition to its twin concentric time-delayed panels, to bolster the bass, although Quad's flat bass panels are not double-layered like MartinLogan's.)

As I explained in my Quad review, all electrostats suspend a featherweight membrane coated with an electro-conductive material and charged with very-high-voltage bias current between two "stators" that are alternately fed the positive and negative signals from the amplifier. The "push" and "pull" that these signals exercise on the electostatically charged membrane cause it to vibrate, producing sound. MartinLogan's triple-stator, dual-membrane bass panels go this one better. Instead of a single membrane suspended between two stators, ML's triple-stator setup suspends two membranes between three stators, doubling the force with which bass notes are sounded.

There is no question that the CLX is much, much stronger and flatter and fuller and more natural in the so-called "power region" between 100-400Hz than

the CLS was. It is one of the most obvious and welcome differences between the "X" and the "S," and one has to think that MartinLogan's ingenious bass panels are the reasons why. This said, doubling up on bass drivers doesn't seem to have extended the very low end as much as one might have thought. What it has done, however, is allow the CLX to play considerably louder (I'd guesstimate 5 or so dB louder) without crashing into its own stators than the Quad ESL-2905 does. Oh, you can still "clip" the CLXes by overdriving them, although they won't distort with a crackling noise (like the Quads do); instead, they brighten and soften up when they are overstressed, losing dynamic impact and gaining upper-midrange brilliance. If dynamics are getting softer and rounder and the upper mids more piercing as the sound get louder, then it's time to turn the volume down.

While we're on the subject of dynamics, let me add a word or two about the CLXes' range and scale. As I've already noted, you cannot (or, at least, I cannot) find a more discerning loudspeaker than this one from *pppp* to *mf*. From whisper soft to moderately loud, dynamic range is audibly expanded, with sensational revelation of low-level details that go unregistered via other transducers. The CLX is incredibly fast and supernaturally clear, and yet it never sounds etched or analytical as the CLS could, largely, I think, because while it is reproducing subtle changes in dynamics fully and realistically, it is also reproducing subtle changes of tone color just as fully and realistically. Here speed is accompanied by dense lifelike timbre (assuming the recording has dense lifelike timbre, of course). In a peculiar way this makes the CLX less sensationally "showy" than the CLS, because it's not constantly spotlighting detail (shouting out how transparent it is) but blending raw detail with pigment. The CLS used to show you the bones of music; the CLX also gives you the rosy flesh.

At *mezzoforte* to *fffff* levels, the CLX is as good as electrostats get. Which is to say, pretty good. Once again, lacking the full weight and body of cones or Radialstrahlers, 'stats are "softer" and less hard-hitting, less three-dimensional, less knock-you-on-your-butt powerful than dynamic speakers (or than music is in life) at loud to very loud levels. This simply comes with the territory and is not to be counted as a major demerit (unless, of course, you habitually listen to music at loud to very loud levels). The CLXes will still thrill you with the sweep of a full orchestra in full cry; they just won't thrill you as much as something like the incomparable MBL 101 X-Tremes do.

Finally, a word on that most crucial of subjects: realism.

Because of their speed, their coherence, their low levels of distortion, electrostats make certain aspects of the sound of instruments and vocalists—for instance, tone colors, the low-level details that describe the kind of instrument you're listening to and the way it is being played, transients—sound more lifelike than virtually any other type of transducer, save perhaps for the finest ribbons. The CLXes go this one better—and paradoxically one worse. Because they are so neutral in balance, so "not there" as sound sources, so low in distortion and high in transparency, they make my better and best recordings, particularly of smaller-scale music, sound more realistic than any other speaker I've had in my home (at low to medium-loud volumes). At the same time, because they are so neutral, so "not there" as sound sources, so low in distortion and high in transparency, they also make my less-than-great recordings sound exactly like what they are.

If you can live with this kind of honesty, then, IMO, you cannot find a better speaker for any amount of money, provided that you don't also demand crashing dynamics at 100dB+ SPLs. If you want many of these same virtues in a more *gemütlich* package with the bonus of more powerful and extended low bass, then by all means go for the Quad ESL-2905. As for me…I'll give up that bottom octave for this unparalleled level of mid-bass-to-top-treble neutrality and transparency and realism. The CLXes are my new dipole references. **TAS**

SPECS & PRICING

Type: Full-range electrostatic loudspeaker
High-frequency transducers: 57" CLS (curvilinear line source) XStat electrostatic
Low-frequency transducer: 57" (145cm) DualForce double-diaphragm, triple-stator dipole low-frequency electrostatic
Crossover frequency: 360Hz
Frequency response: 56-23,000Hz +/-3dB
Sensitivity: 90dB/2.8V/1m
Impedance: 6 ohms (0.7 ohms at 20kHz)
Power handling: 225W (continuous)
Dimensions: 70.3" x 25.75" x 14.69"
Weight: 110 lbs.
Price: $22,699 per pair

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JV'S REFERENCE SYSTEM
Loudspeakers: MBL 101 X-Treme, Quad 2905, Magico Mini II, MartinLogan CLX
Line stage preamps: Audio Research Reference 3, Audio Space Reference 2, and MBL 6010 D
Phonostage preamps: Audio Research PH-7, Lamm Industries LP-2 Deluxe, Audio Tekne TEA-2000
Power amplifiers: Audio Research Reference 610T, MBL 9011, Lamm ML-2, Soulution 710
Analog source: Walker Audio Proscenium Black Diamond record player, Da Vinci Gabriel turntable/Da Vinci Grandeeza tonearm
Phono cartridges: Air Tight PC-1 Supreme, Clearaudio Goldfinger v2, Koetsu Onyx Platinum, Da Vinci "Grandeeza"
Digital source: dCS Scarlatti, dCS Puccini, ARC Reference CD7, MBL 1621A transport/1611 F DAC
Cable and interconnect: Tara Labs "Zero" Gold interconnect, Tara Labs "Omega" Gold speaker cable, Tara Labs "The One" Cobalt power cords, Synergistic Research Absolute Reference speakers cables and interconnects
Accessories: Shakti Hallographs (6), Walker Prologue Reference equipment stand, Walker Prologue amp stands, Richard Gray Power Company 600S/Pole Pig line/power conditioner, Shunyata Research Hydra V-Ray power distributor and Anaconda Helix Alpha/VX power cables, Shunyata Research Dark Field Cable Elevators, Walker Valid Points and Resonance Control discs, Winds Arm Load meter, Clearaudio Double Matrix record cleaner, HiFi-Tuning silver/gold fuses