

Crystal Cable Minissimo Loudspeakers

by Roy Gregory, August 2, 2014

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It's fair to say that the audio industry was surprised by the launch of Crystal Cable's original Arabesque loudspeaker five years ago. But if it was surprised by the source of such an ambitious product and its all-glass cabinet, it was astonished by the Arabesque's sound. Glass speakers were something of an industry joke, and they really weren't supposed to work this well. In fact, they weren't supposed to work at all -- yet here was a speaker newbie producing an expensive glass floorstander quite capable of challenging the established benchmark products from companies working in the field for decades. What gives?

To understand Crystal Cable products it's first necessary to get past the way they look. Ignore those striking glass speaker cabinets and the minimalist, jewel-like elegance of the cables and look instead at what's

behind them and it soon becomes apparent that Crystal Cable is first and foremost a technology company. Like those of stablemate Siltech, the cable products are founded on advanced metallurgy, clear thinking and solid science. The glass cabinet of the Arabesque was developed using some of the most advanced Finite Element Analysis (FEA) and gas dynamic modeling software available, an approach that allowed the company to accurately predict the mechanical behavior of both the cabinet and the enclosed air volume -- leading in turn to both the speaker's unique shape and its equally unique performance. Just as the Crystal Cables' delicate and physically attractive form is a natural extension of the technology employed, the Arabesque was no fluke -- and once you understand that, its striking appearance becomes a bonus rather than the *raison d'être*.



Since its launch, the original Arabesque has evolved and expanded into a range of products -- upward into (employing the latest Crystal Cable conductor technology for its internal wiring and the transformer windings on the RAAL ribbon tweeter) and downward into the stand-mounted

, holding to the same cabinet shape and structure, but in this case constructed from individual aluminum plates rather than glass, each new model reinforcing the brand's burgeoning reputation. The history of audio is littered with examples of companies that have strayed from their core business into other product types -- often with less-than-stellar success. Recognizing that the people

at Crystal Cable have succeeded where so many others have failed is one thing. Understanding why they've succeeded is quite another.

Back to the roots

Crystal Cable didn't just appear overnight as a leading cable brand. It looked different, it sounded different and it appealed in a very different way. It's in that difference that we can find the logic that created it. In fact, Crystal Cable is a sister brand to the legendary Siltech. Advances in conductor metallurgy (Siltech's core expertise) created the possibility of designing truly minimalist cables without sacrificing technical performance. But Siltech's brand identity was founded on heavily shielded designs with their necessarily bulky construction. Producing

a minimalist, low-loss, lightweight cable would risk confusing their loyal customer base. The answer was simple: a radically different approach demanded a different brand identity, and Crystal Cable was born. As Crystal Cable's products became more and more minimal in

presentation, Siltech's grew proportionally, until the current Triple Crown cables are some of the thickest on the market, exploiting the beneficial distance between conductor and shield that such a large diameter allows.

Why does this all matter and what's it got to do with the Minissimo loudspeaker? Once you are aware of the relationship between Siltech and Crystal Cable, the latter



company's ability to suddenly produce a world-class speaker design becomes significantly less surprising. In fact, Siltech have been experimenting with projects beyond the realm of cables for some considerable time, producing small numbers of highly regarded amplifiers and some very large loudspeakers along the way. Suddenly, the emergence of the and Crystal Cable Arabesque speakers aren't quite such a wonder. Instead they're just the next logical steps in a development process that's been quietly going on for nearly two decades.

The other thing that marks out the products emerging from the Crystal Cable/Siltech camp is the solid engineering that underpins them. By the time they appear, they are highly evolved designs that tie together the companies' existing expertise with measured and empirical evidence,



all combined to advance down a single logically defined development path. This is engineering in its purest sense -- and it's that which brings us to the Minissimo, a speaker whose form and function are natural extensions of everything that's gone before.

The problem with ideas that evolve in the virtual world of CAD is that they aren't limited by the physical constraints of reality. It's all very well marveling at the theoretical performance of a shape or volume modeled in the digital domain. But realizing that performance in the real world is dependent on being able to actually manufacture it -- not just once but in series production. Having developed the Arabesque form, with its radically tapered, non-parallel internal shape, figuring out how to build it was a whole other problem. The result was the plate-to-plate glass cabinets of the original Arabesque speaker, but it was an incredibly expensive and time-consuming solution that only a few suppliers could deliver. It simply wasn't possible to translate it to smaller cabinet sizes, hence the aluminum cabinet found on the Mini, although even this was incredibly expensive to produce, making the speaker a luxury that few could afford, despite its remarkable performance.

Enter the Minissimo, a project designed to ease the cost of producing the Arabesque cabinet shape and thus reduce the price of the final product. It's an aim that has been achieved with spectacular success -- partly through altering the cabinet construction and partly through further development of the speaker parts themselves, most notably the crossover. But we're getting ahead of ourselves. Let's start with the cabinet itself and the most obvious difference between the Minissimo and the rest of the Arabesque family.

Smooth operator

Sit a Minissimo next to the existing Arabesque Mini and you can't miss the fact that:

- It's smaller.
- The stand has only three legs -- each of a different diameter.
- It's colored (the original Mini is resolutely silver or black).
- Oh, and it's smooth!

Gone are the faceted plates of the other speakers, replaced by a sinuously curving wall of glossy color,

the brightness of the shades making that smoothness even more obvious. The key to the Minissimo cabinet lies in those gentle curves and what they tell you about the process

that made them. Looking at the cost structure of manufacturing the Mini, one fact stood out, besides the material cost and complexity of machining all those carefully angled plates, each of a different width -- the sheer number of man hours expended on the actual assembly of the cabinet. Outwardly simple, the plates are actually painstakingly bolted to an internal skeleton, each carefully aligned and sealed to its neighbor to ensure airtight joins.

Eliminating the plate-to-plate construction offers massive savings as well as a number of structural advantages. The individual plates are made to different widths to help spread cabinet resonance -- but resonate they do, and even if they are different widths, they are all necessarily the same height. How about making the cabinet from a single piece, machining it from solid? That's a lot of CNC time, but machines are cheaper than people. The benefits would be substantial. Not only do the smooth shapes allow you to realize the full potential of the Arabesque shape and its continuous curvature, the machining process gives you much greater control over wall thickness, allowing you to both vary and optimize it for mechanical/resonant results. Throw in the availability of a new material, a resin-based metal matrix, and you end up with a cabinet that is lighter, with thinner walls, yet due to the curvature and the self-damping properties of the material itself, offers superior resonant behavior without the need for internal damping that risks robbing the sound of life and energy. Because the cabinet arrives as a finished painted unit, the risk of surface damage during assembly (the bugbear of every manufacturer) is also massively reduced. The end result is a cabinet that, whilst it's expensive to machine, eliminates an entire stage in the manufacturing process and as a result, winds up being not just much more cost effective, but potentially superior in performance too.

The Minissimo cabinet is sealed by a single plate recessed into its base; unlike the other speakers in the line which have tuned vents in their narrow "tails", this also supports a downward-firing reflex port -- making stand-mounting mandatory. The lower mass allows for a finished assembly that isn't nearly so top heavy, in turn allowing for a more integrated and elegant base



on the stand, and metal pipes in place of the solid acrylic rods that supported the Mini. The chrome-finished tubes and gloss base offset the painted cabinet beautifully, with five colors being offered initially -- although like all things painted, the world's your oyster as long as you are prepared to pay a premium and wait for delivery.

The Minissimo's driver lineup is familiar from its slightly bigger brother, with an identical 155mm/6 1/8" (framed) laminated paper-cone bass driver paired with the same 26mm/1" beryllium dome tweeter, but the big news is the crossover lacing the two together. Crystal Cable have done considerable development work on the phase linearity and load characteristics of the network, resulting in a new and far less audibly intrusive topology that they are calling the Natural Science crossover, as neat a summation of cause and effect as you are likely to find. Essentially a further development of advanced second-order networks (like the Linkwitz-Riley), the objective is to keep the 12dB slopes phase coherent while avoiding the sharp peaks or troughs in the speaker's impedance curve, in turn reducing the stress on the amplifier, further reducing load-related distortion and improving dynamic range and response. In theory the result should be a speaker that sounds both more coherent and which "breathes" more easily -- things that the existing Mini can already count amongst its considerable strengths. Perhaps the fact that the Mini's crossover now also incorporates the Natural Science topology tells its own story, but as we shall see, what the Mini started, in setting new standards for musical coherence and phrasing, the Minissimo has

taken and extended. (Unfortunately for owners of older Minis, the crossovers are submerged and sealed, meaning that it is impossible -- or at least, not cost effective -- to update them to the new standard.)

The Minissimo delivers a bandwidth of 48Hz to 38kHz ± 3 dB coupled to an 86dB sensitivity, a performance that's hardly

stunning on paper. But dig a little deeper and things become more interesting.

The crossover frequency is a low 1800Hz (not so long ago it would have been around 3kHz in a speaker like this) echoing a similar move on the part of Focal. Despite the reflex loading, the rate of bass roll-off is surprisingly slow, as revealed by a -6dB point at 38Hz. More importantly, the Minissimo manages to scrape in (just) below the critical 50Hz cutoff that allows for convincing weight and scale, the additional extension adding welcome structural underpinning. While

the 86dB sensitivity might be cause for consternation, in practice the speaker sounds significantly livelier than that figure implies, in turn suggesting that Crystal Cable's claims for the benefits of its crossover technology are more than just marketing fluff. I drove the Minissimo with a number of different amplifiers, including Arcam's budget A19, and at no point did I feel that the speaker was getting anything less than the best that the various amps could provide, itself a noteworthy attribute, given that the amplifier/speaker interface is so critical to system performance. The Minissimo likes to play and it plays nice.

One final thing that's worth noting about the Minissimo's numbers is the unusual presence of an overall distortion figure for the speaker. Crystal Cable/Siltech have always been concerned with measurable distortion





as a benchmark for audio performance, highlighting the role of parasitic microdistortions in eroding musical coherence and credibility. The figure they quote for the Minissimo is less than 0.2% at 86dB -- which is outstandingly low for a loudspeaker. Perhaps more importantly, it's around half of the already-impressive figure quoted for the original Mini, demonstrating just how effective the new cabinet and crossover are in preserving the integrity of the input signal.

Pull up to the bumper

Despite ringing the changes, the amplifier I most enjoyed with the little Crystal Cable speaker was the Border Patrol P21 EXD/EXS, a three-chassis, push-pull 300B amp with a pair of power supplies that are each considerably larger (and much heavier) than the Minissimos they were driving. The P20 might only be rated at 20 watts a side, but these watts arrive with some considerable backup and authority to match. On paper, it might not seem like an obvious pairing, but the successful mating underlines key points as regards both products. The speakers do sound crisper and more dynamic than their efficiency rating suggests, while their easy drive characteristic also suits the low rated output of the Border Patrol amp. Meanwhile the amp contributes not just its own remarkable sense of drive and substance, but also the rich colors and broad palette that marks the 300B output tubes. The unusual (at least for a 300B amp) push-pull topology gives it a firm grip and dynamic authority that escapes most SETs, allowing it to really push the signal through the speakers. Together, these products really clicked. Fed from the Wadia S7i and Clearaudio Master Reference and Tom Evans Audio Design Master Groove/Vibe front-end, the results were remarkably engaging and satisfying, encouraging long-term listening and appreciation despite the massive system residing in the listening room downstairs. Oh, yes, be in no doubt that the Vox Olympian/Vox Elysian setup is in another league, but the Minissimos still perform on their own terms,

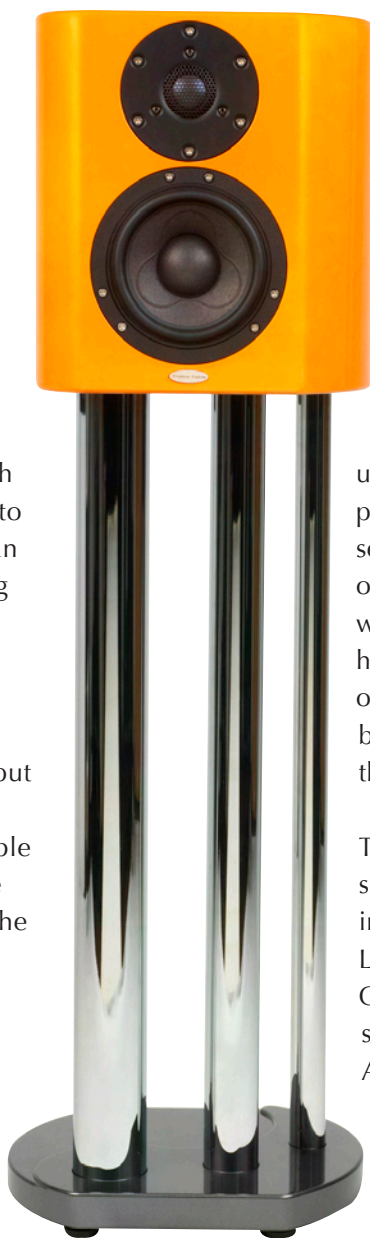
definitely deliver and never leave you feeling short changed.

Setting up was remarkably straightforward, partly down to the manageable size and weight of the speakers, partly down to their hard, flat feet, the perfect choice for the soft wooden floor in my second listening room -- I mean lounge. These rotate on standard M6

threads, so they are easy to adjust -- and easy to replace, something I'd definitely do if I were using the Minissimos on a carpeted floor. I ended up with the speakers very slightly closer together than the norm in this room, with minimal toe-in -- presumably a function of the excellent dispersion afforded by the smoothly curved baffle, amongst other things. Distance to the wall behind the speakers was critical, and they definitely like room to breathe. Working with three stepped options for distance, I always ended up with the speakers in the most forward placement, irrespective of amplifier. Having settled on initial position, final adjustment was once again down to millimeters: you'll know when you've hit the right spot because you'll have bass weight and energy. A touch forward or back and you'll lose that sense of lively bounce and attack, crucial factors in realizing the speaker's musical potential.

The other (sometimes overlooked) aspect of speaker setup, but one that proved crucial in this instance, is siting the listening seat. Listening distance can make or break the little Crystals, and by and large you'll find yourself sitting closer to them than you might expect. A perfect equilateral triangle is a good starting point, then adjust for room nodes by moving the seat forward and back -- although I suspect the emphasis will be more on the advance rather than the retreat. As you approach the speakers

you gain dynamic range and immediacy, while the soundstage opens out behind and beyond them. Yet they're so devoid of edge, discontinuities or intrusive peaks, so well integrated and contiguous, that even in such a forward seating position the speakers simply disappear. It's an interesting combination of





requirements: on the one hand here's a speaker that demands space, but on the other it will also work in small rooms -- or across larger ones. I can see it being the answer to many an audiophile's prayers, especially those with long, narrow spaces to deal with. At the same time I can see the Minissimo disappointing if you simply stand it where you always put your speakers and sit where you always sit. If ever a speaker was made for nearfield listening, this is it. The baby Crystal speaker is expensive enough that it should command respect; give it its due and you'll appreciate the results.

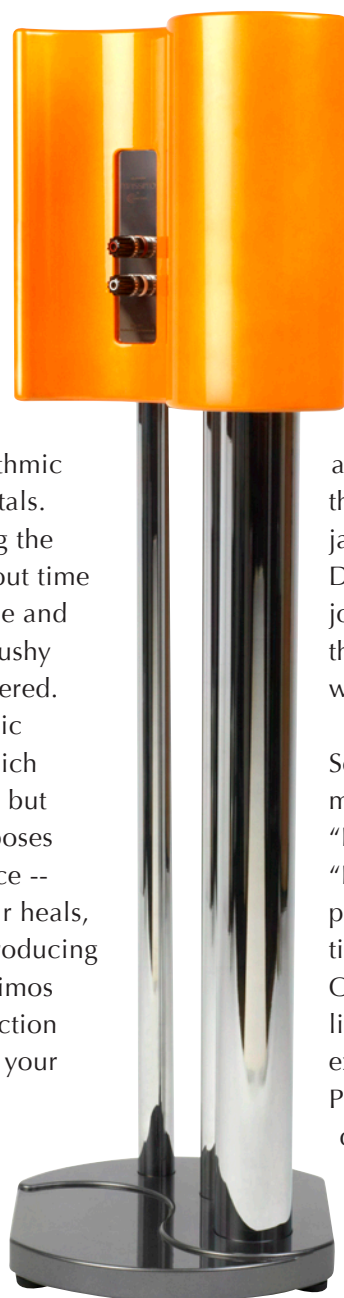
As I've just suggested, bass energy and the resulting sense of forward musical motion are key to the Minissimo's performance. Few speakers that I've heard -- and very few that have such low sensitivity -- can match the sheer rhythmic integrity and articulation of the little Crystals. This isn't about pace and drive, propelling the music with unseemly haste. This is all about time and space -- maintaining the sense of pace and the spacing between notes, whether it's pushy and upbeat or more laid-back and considered. It's about allowing the signal and the music to set the pace rather than the system, which might seem like a rather odd observation, but it's remarkable how much equipment imposes temporal gates on the musical performance -- slow tails to notes, making them drag their heels, clipped transients forcing the pace and producing a relentless, hectoring quality. The Minissimos get this crucial aspect of musical reproduction just right, with important implications for your potential enjoyment.

First cousin to rhythm and timing is phrasing, and it's here that the Minissimo's quality really hits home. In one way, that should come as no surprise -- that was always the jewel in the Arabesque Mini's musical crown. What is a surprise is just how far the Minissimo extends that attribute. Let's take the Shelby Lynne LP *Just A Little Lovin'* [Lost Highway LP B0009789-01], a *Dusty In Memphis* tribute much beloved by audiophiles and manufacturers for

its crystal-clear, lucid recording quality. Even if you don't own this disc, I can pretty much guarantee that you'll have heard it (or its CD or high-res file equivalents) at a hi-fi show or in an audio store. But its popularity has always surprised me. Yes, the recording is great and some of the playing is fantastic in its shape, touch and delicacy, but the vocals! Shelby Lynne has a great voice, but that doesn't guarantee great music, and here the quality of the recording simply serves to show the limitations in her phrasing. Play it on a system that smooths over, forces or limits the rhythmic expression in a performance and the results are nice enough. But play it on the Minissimo and the clunky awkwardness of her phrasing is rendered brutally apparent, halting when she should go, going when she should definitely stop. An album like this, however well intended, is always a calculated risk and aiming high just adds to the potential scale of the disaster. Covering Dusty is a bit like a junior jazz singer offering up a tribute to Ella or Lady Day, and sadly Ms Lynne really isn't up to the job. There's making the songs your own and then there's murdering them. What we have here is whole-scale slaughter.

Some songs are worse than others, but the mannered pauses and hesitations that litter "Breakfast In Bed," the mechanical delivery of "I Only Want To Be With You" and the halting phrasing on "Anyone Who Had A Heart" and the title track are real low points, while "The Look Of Love" is a travesty. Don't believe me? Just listen to the original or Analogue Productions' excellent reissue of *Dusty In Memphis* [Analogue Productions 8214-45] to hear how it should be done. Hell, pull out the Tourists and hear what Annie Lennox can do with this material. But preferred versions aren't the point here. The point is just how big and how obvious the musical differences are when you make those comparisons through the Minissimo -- and just how glorious those performances are when the performers get it right.

During the course of the review I got to swap out the 300Bs in the Border Patrol amp, changing a set





of Langrex Premiums for Electro Harmonix tubes in their stead. The immediate contrast between the solid, rich warmth and stability of the Langrex and the airy speed but skittish musical structures of the brand-new EH tubes was remarkable -- as was the evolution of the new tubes, gaining stability, space and a calmer sense of pace and shape as they ran in. Listening to the way that tubes evolve is not a new experience, and the fact that they do is not exactly news, but I've never heard this change expressed quite so clearly in terms of rhythm, structure and musical shape.

Does that make the Crystal Cable speaker one of those audio microscopes that will only play the best recordings? Not at all. This isn't about the recordings -- it's about appreciating the performers and their performances. Let's look at another example, the live Jackson Browne and David Lindley album, *Love Is Strange* [Inside Recordings INR5111-0] -- a fabulous set discovered as a result of a reader recommendation. Keep 'em coming! Toward the end of the second disc they play "Running on Empty" followed as an encore by a medley of "Love Is Strange" and "Stay." The limited instrumentation and live recording make for some awkward fingering, disrupting the internal rhythms of particular phrases. Does that destroy the musical event or intent? No, because here it's imposed by the situation. The notes fall out of place, or lack articulation, but the sequence locks the subsequent notes back into their proper place, maintaining those familiar overall structures and shapes. This is a case of the musicians trying to match the shape of the song, not bend it out of shape to their own ends. The result is more vivid, more obviously live but also possesses the musical integrity to hold your attention. As I said, it's not about the recording -- although that's actually pretty good too.



But perhaps the ultimate expression of the Minissimo's way with musical structure and phrasing is its fluid and articulate presentation of small-scale classical works. Whether you listen to the Florestan CD box of the Beethoven piano trios [Hyperion CDS44471/4] or the Fitzwilliam Quartet playing Shostakovich on LP [Decca 455 766-2], these are musical microcosms, with all the concentrated intensity that suggests. With the musical forces pared back to individual instruments, this is all about the bones beneath the flesh, dynamic contrasts, instrumental texture and the relationship between the players. Take

the closing Allegro from Shostakovich's 9th String Quartet, with its clashing, staccato instrumentation and rhythmic complexity. It's a challenging piece that tests even the best performers -- and certainly tests systems. Just as any loss of structure or pattern destroys the musical sense in a performance, any sort of imprecision in the interlocking phrases and rhythmic patterns reduces a recording to clashing (and none-too-pleasant) noise. The Minissimos leave you in no doubt as to just how hard the Fitzwilliam players are

working, the almost fractured nature of the music making edits in the recording almost impossible. The tension and intensity in the playing will have you holding your breath as they approach the climax, yet never once do they (or the speakers) put a foot wrong, never once do you lose track of the musical conversation -- of who is playing what and why.

It's a bravura performance, both by the musicians and the little Crystals -- and it sums up exactly why these speakers are so special. It's not just a question of their strengths, but the way they dovetail with their weaknesses. Just as a string quartet is a scaled-down version of larger forces, so the Minissimos scale things too -- keeping the size of the performance in perspective and coupled to their temporal grace and flow.



There's no such thing as a musical TARDIS

If you are going to build speakers as small as the Minissimo, then there are certain compromises that you will need to accept -- and most of them are to do with bandwidth and scale. Of course, size can be deceptive and it's the internal rather than the external dimensions that matter, meaning that the thin walls of the Minissimo's cabinet make it a larger speaker than it looks when sat side by side with the thick-walled competition. But let's be honest -- deep bass from any of these speakers will always be a struggle. Physics tells us that we can trade sensitivity for bandwidth and play with driver characteristics (moving mass and resonant frequency) to gain extension -- as per the original and notoriously hard-to-drive Sonus Faber Electa Amator. Or, you can cheat. A bit of judicious "tonal shaping" at the bottom end, a subtle hump here and a dip there and it can seem like your little speaker is producing way deeper bass than it really is. Likewise, play with the top-end response and you impact the overall sense of balance and center of gravity, scoop out a shallow dip in the upper mids and suddenly it images like crazy. The problem is, that as instantly gratifying as these sonic tricks are, they aren't real -- and over time you will start to realize that. More bass isn't the same as deeper bass and risks messing with the rhythmic energy and patterns that give the music its structure -- and that's a poor trade-off when it comes to listening pleasure.

The Minissimo plays things straight, taking the consequences of that 86dB sensitivity well and truly on the chin. Yes, the fact that the cabinet holds considerably more air than it appears helps, as does the non-reactive impedance characteristic. The clever cabinet shape all but eliminates the need for internal damping materials, clawing back a little more dynamic freedom, and, as

I've already stressed, the user can do his or her bit in terms of listening distance. Can't you just use an amp with plenty of power? Well, you can -- but that's not really the answer and you risk throwing out the baby with the bath water.

Crystal Cable have worked long and hard to preserve the Minissimo's expressive range and musical coherence -- which is all going to waste if the amp can't preserve the

signal intact. The drive characteristic isn't the issue here -- as the Border Patrol amp so neatly demonstrates. What the Crystal speakers need is quality to match their own capabilities, rather than quantity to swamp and obscure them.

Why go to all that trouble? Because what Crystal Cable have bought with their refusal to bend from a technically correct design path, their refusal to accept the easy answers offered by the audio equivalent of full-face makeup and a sheer blouse, is the opportunity to enjoy your recordings in all their glory -- or as much glory as any little speaker can allow.

Design decisions are always a balancing act, and Crystal Cable have eked out every last musical benefit for the sensitivity they've surrendered. The result is a speaker that really does go lower than you expect, that rolls off more slowly than you'd expect and whose bass is way more linear, articulate and informative than you have any right to expect -- at least judged by the standards of the competition.

Part of that has to be down to the monocoque cabinet construction, with its even and predictable mechanical behavior making it much easier to deal with -- and far less intrusive right across the musical range. Eliminating that stored energy banishes musical peaks





and exaggerations, slurring and cabinet colorations right across the range, reflected in the Minissimo's easy sense of neutrality and integration.

Which makes it time to wheel in the Natural Science crossover and its claims to phase coherence. Combine the two and suddenly the Minissimo's lucid, structural clarity and unforced sense of musical purpose make real sense. The phrase "a place for everything and everything in its place" might have been coined for this speaker. The lack of cabinet effects and "voicing" mean that the natural sense of time and rhythm that allows the performance to flow so effortlessly through the speaker is matched by a lack of exaggeration or distortion in the dynamic and frequency domains. No, the Minissimo can't reproduce full-range orchestral dynamics -- but it does a remarkable job nonetheless, because it scales them so precisely, maintaining their relative levels and density and thus their musical sense and importance. They might not fool you into thinking the LSO are sat in front of you, but they leave you in doubt as to what the musicians want to say. Not many speaker makers quote distortion figures. Listen to the Minissimo and you can understand why Crystal Cable do.

Reach for something big and the Crystal Cable speakers won't disappoint. Whether it's a case of the grander end of the classical repertoire or the electronic excess of Yello, big-band Basie or the soundtrack from *Gravity*, cue it up, advance the volume and enjoy. The bottom end of the Minissimo will always favor pitch definition, placement and shape over sheer weight and the deepest of bass textures, but it does a remarkable job of underpinning big musical moments and because it doesn't reach for the help of a little extra output here and there, the music loses nothing in terms of space and shape, pace and placement. Impact is impressive because what arrives does so exactly when it should rather than because of how much there is. When it comes to weight and scale, a good big speaker, properly sited and driven, will always blow away the smaller alternatives, but if that option isn't open (on grounds of cost or space) I'd always take the Crystal Cable option over speakers that might seem initially more impressive and "weighty" but whose gaudy charms fade over time.

The fact that more often than not, I've used the human voice to illustrate just what the Minissimo is capable

of is no accident. Our ear is tuned more acutely to the character and inflections of our fellow humans than it is to any instrument.

This speaker's ability to capture the tonality and intonation of familiar voices is quite uncanny -- another factor that makes its partnership with the naturally rich tonality of the 300B-equipped Border Patrol amp so successful. Just as the instruments in the Fitzwilliam Quartet are separated tonally as well as spatially, even when playing in chorus, familiar voices are instantly identifiable, even in the background. The glorious purity of Ruth Moody's voice is a thing of wonder, beautifully captured on *The Wilder Things* CD [True North TND577] and beautifully reproduced by the Minissimos. But when she sings the track "Pockets" there's no mistaking Mark Knopfler's guitar or his characteristic backing vocal, even set so deep in the mix. As I said, Shelby Lynne's got a lovely voice -- but she needs to choose how to use it. That's the heart and soul of the Minissimo, their ability to give you the beauty in music -- and their refusal to stray from the path of honesty. Given that there's more good music than there are good recordings, it's a trade-off I'll happily make.

Although I used the Minissimos on the end of various cables, there's also no mistaking (given the internal use of Crystal Cable's monocrystal silver cables) the benefits that come with an all-Crystal Cable wiring loom. Running the speakers on the end of a complete set of Dreamline Plus delivered even greater ease and more natural fluidity, simply extended all the positive performance characteristics. Nordost's Valhalla 2 were certainly more dynamically emphatic, but then there's always Crystal Cable Absolute Dream -- at a price! Whilst it's not essential to reach that far up the Crystal Cable range, I'd certainly make listening to the Minissimos with a fully Crystal-ed system a priority. In many respects, Crystal Cable's Minissimo is the most musically and emotionally satisfying small speaker I've used. In taking the unforced fluidity of the Arabesque Mini and extending it further, adding greater neutrality and lower distortion, improved phase coherence and rhythmic integrity, the result is a speaker that gains massively on the swings but gives up little or nothing on the roundabouts. It's all a question of balance. It might lack the uncanny sense of scale that its sibling generates, the dynamic fireworks of the Raidhos or the absolute transparency of the Magico



Mini, but it makes up for those things in terms of core values -- musical integrity rather than sonic trickery. If you want a small speaker for a big space, then there are better options, not least the Arabesque Mini and the other speakers mentioned above. But this is one speaker that doesn't -- and doesn't need to -- sound bigger than it is. Instead, by resisting the temptation to push a little here and

tweak a little there, all in the name of better, more impressive sound, it succeeds on its own terms. By refusing to bend, either the model or the music, it keeps things intact and in proportion and as a result, it's the music that gets to speak and do the talking. This is one small speaker that doesn't draw attention to itself -- at least not sonically -- and it's all the better for it.

Price: €10,000 per pair with stands.
Warranty: Five years parts and labor.

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Associated Equipment

Analog: VPI Classic 4 turntable; VPI JMW 12.7 and Tri-Planar Mk VII Ull tonearms; Lyra Titan i, Scala, Dorian and Dorian Mono cartridges; Clearaudio Goldfinger Statement cartridge; van den Hul Condor cartridge; Clearaudio Master Reference with 12" Unify tonearm and Accurate cartridge; Nordost Odin tonearm lead; Connoisseur 4.2PLE and Tom Evans Audio Design Groove+ HR phono stages.

Digital: Wadia S7i CD player, dCS Vivaldi three-chassis system.

Preamps: Connoisseur 4.2 and Tom Evans Audio Design Vibe.

Power amps: Berning Quadrature Z monoblocks, Border Patrol P21 EXD/EXS stereo amp, Icon Audio Stereo 60 Signature and Arcam A19 integrated amps.

Interconnects and speaker cables: Complete looms of Nordost Valhalla 2 or Crystal Cable Dreamline Plus from AC socket to speaker terminals. Power distribution was via Quantum QRT QB8s or Crystal Cable Power Strip Diamonds, with a mix of Quantum Qx2 and Qx4 power purifiers and Qv2 AC harmonizers.

Supports: Hutter Racktime and various Harmonic Resolution Systems racks/platforms. These are used with Nordost SortKone or Stillpoints equipment couplers throughout. Cables are elevated on Ayre myrtle-wood blocks.

Accessories: Essential accessories include the Feickert protractor, a USB microscope and Aesthetix cartridge demagnetizer, a precision spirit level and laser, a really long tape measure and plenty of masking tape. I also make extensive use of the Furutech anti-static and demagnetizing devices and the VPI Typhoon record-cleaning machine.