



ARABESQUE

by



CRYSTAL CABLE
ARABESQUE Mini

COUNTRY OF ORIGIN



HOLLAND



Not many realize that in the audio arena Crystal Cable is a remarkable company. Sure, the happy users of their products know. For others however the company often remains associated with premium-priced bling. That's because their cables do not fit into the lowest price segment and their finish is shiny with a clear sheath protecting a visible silver or silver/gold mesh shield. Their small diameters are far from the muscle cables most audiophile associate with quality. Never exceeding 5mm in thickness, these cables even arrive in the smallest possible stylish black jewel boxes.

If you look beneath the surface however, something else emerges. Packed in that tiny shiny format is a lot of high tech. The delivery format is the personal signature of one of the few ladies in audio manufacturing. Gabi van der Kley desired something different and refused the bulky products which literally sell more air than actual conductor. For raw technology she could rely on the many years of R&D from Siltech run by her husband Edwin. Though both companies share technologies and manufacturing facilities, they retain their signature looks and, importantly, different sonics.

Imagine this. Two strong individuals with similar companies based out of the same office building, sharing a production facility and on top of that hearth and home. That is living the audio life 24/7 whilst running a family. Not a recipe to happiness many will copy.

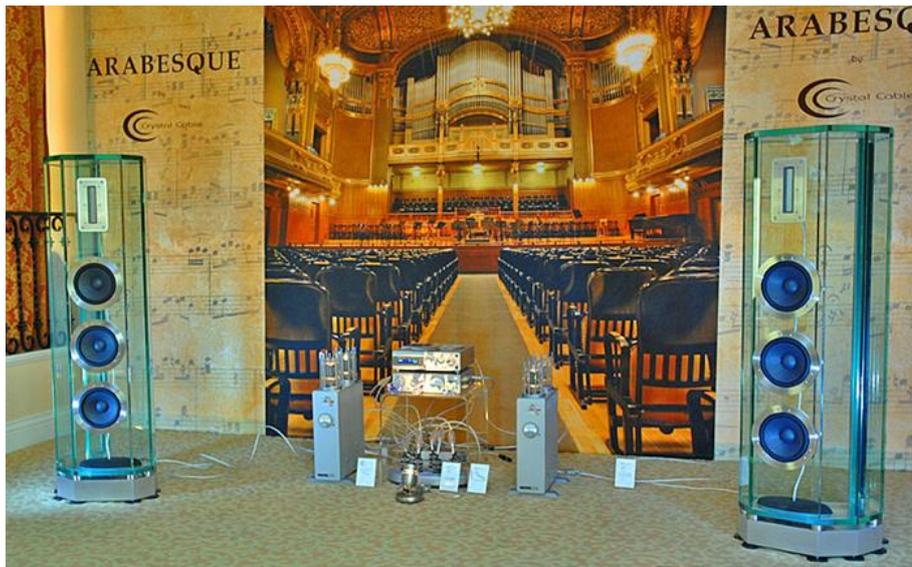
We already did say 'remarkable'?



That this cooperation is fruitful and far from stale is proven by a steady stream of innovative new products from either company. Here product once developed isn't marketed under two labels and packaged two different ways as in the automotive industry where a Toyota is a Citroen is a Peugeot built in the Czech Republic with only a few differences like various logos. We learned that this kind of manufacturing is called *badge engineering* and becoming quite popular.

Back to Crystal. At a certain point whilst in their home close to Arnhem/Holland our power couple came up with the idea of building their own loudspeaker. With his inquisitive mind Edwin had recently discovered the Comsol software tool, an inter-disciplinarian technical simulation package. It was this tool which he wanted to use to design and measure the loudspeaker in the virtual realm before the very first piece of MDF was ever cut. This was back in 2007. The resultant loudspeaker was the Pantheon XXV which became the physical commemoration of Siltech's 25th anniversary.

Around a year later the technical staff at the Elst production facility of Siltech and Crystal Cable had been working with the deceptively simple looking Comsol program long enough to have gained in-depth knowledge and experience with both the software and breadth of possible data input. The physical and mental skills of this R&D team would now be tested to the breaking point when tasked to design and build a fully transparent loudspeaker completely out of glass that would not only look gorgeous but sound it too.



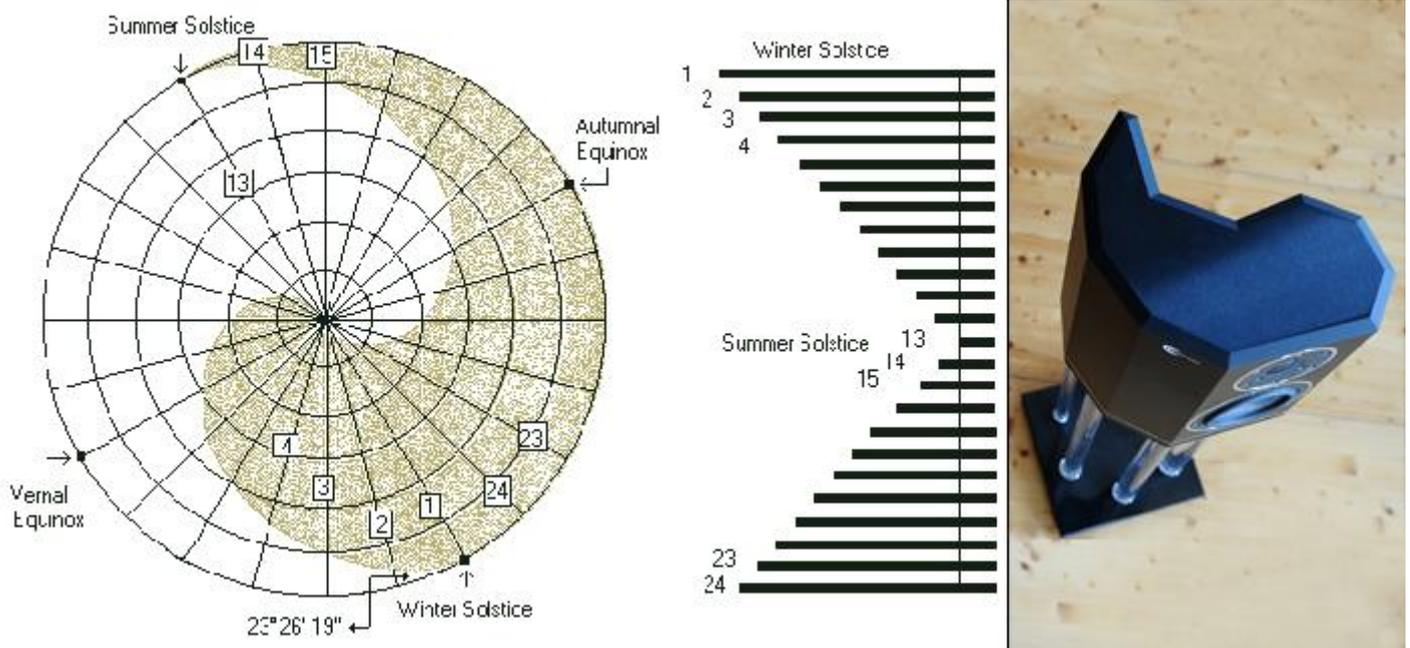
That the development of a clear glass speaker would prove difficult is an understatement. A more or less box-shaped enclosure would introduce the usual standing waves to beg for damping and thus pollute the visual aspects. Comsol to the rescue. After entering dozens of parameters for all kinds of behavioral dynamics involved, a shape roughly like a comma emerged. To enable physical assembly without astronomical costs, this comma-shaped cabinet—can we still call it a cabinet?—would not be cast or bent but built up from twelve differently size panels glued together at irregular angles and finished with top and bottom plates of glass. Where required the panels would sport the necessary cut-outs for drivers and terminals. The bonding of the panels had to be airtight, the glue perfectly invisible especially at the obtuse angles involved to not mar the cosmetics.



Whilst working with Comsol's predictive simulations for how moving drivers would interact with this enclosure, the need for a small opening emerged to bleed out internal air pressure. The program determined that this vent had to be placed

across the total height of the end tip of the comma. But that was not all. Further aesthetic demands from Gabi led to a distinct left and right speaker which would complicate assembly logistics even more. In the end it all led to a stunning statement of arts, crafts, engineering, aesthetics and audio quality.

Each time we see and hear this Arabesque Glass Master we can't stop thinking that after all the sophisticated contemporary engineering power and skills involved, the shape ended up being nothing more or less than one half of the ancient yin/yang symbol. This symbol is a rendering of the sun's cycle as observed from looking at a long pole's shadow on the ground every 15th day at the same time during a full year. When the shadow's lengths are transferred to a circle, half the numbers from outside in and the other half from the inside out make the well-known symbol appear.



Adding up the long road to materialization of this glass speaker, the final price tag of €45.000 euro doesn't seem over the top but obviously still is a *lot*. Not everyone commands such a stout budget for a statement loudspeaker. Gabi therefore initiated a project that would exploit all the experiences and skills accumulated with the Arabesque Glass Master for a smaller and more affordable Mini with the same basic sound quality.



Comsol was started up again to scale down the cost analysis of the Arabesque Glass Master to the anticipated monitor dimensions. To nobody's surprise the German glass provider's costs still pushed very hard on the targeted budget. The new Mini had to be made from a different material but one that should closely resemble the mechanical qualities of glass. Comsol determined that aluminum would be best. An additional challenge with aluminum would be

how to affix the 11 panels plus tops and bottoms (yes, the Arabesque Mini omits one panel to arrive at the same shape). German glass provider Finiglas had years of experience with water-jet cutting of glass to obtain the smoothest cuts imaginable. Such perfect edges can be glued together seamlessly. Now the same had to be done for aluminum - super smooth cuts, special glues. Add new skills too. One advantage over the transparent Arabesque Glass Master was that the Mini could use a sub frame assembly which looks a bit like chain rails running along the inside perimeter of the enclosure.

Dutch distributor D&D delivered a pair of black anodized Arabesque Mini already assembled to our doorstep. That meant the stands were already affixed to the speakers. As an option—we would say it is mandatory—the Mini can be fitted with these custom stands which consist of a square slab of black granite with four cuffs laid out in the same comma shape as the Mini itself. These cuffs do not have the same diameter and accommodate four equally size-varied Perspex rods that lead up to the enclosure where matching cuffs are found. Noteworthy is the fact that the front of the stone slab does not run parallel to the speaker's baffle to create a slight toe-in. Being already assembled meant that the speakers were delivered more or less nude without proper shipping boxes. Telltale signs of a life in the rough were certain tiny blotches and scratches.

Without stands the Arabesque Mini weighs a healthy 18 kilos. For a speaker shaped a bit awkwardly, it was optically far less intrusive and on the elegant transparent stands seemed even smaller to appear as though floating in the room. While at the specs, Crystal publishes a frequency response of 40Hz to 40kHz (-3dB) while the crossover point is around 2kHz. An amplifier will see a nominal 8Ω load and should provide 50wpc or more to get the 86dB efficient speakers' attention. For a mid-sized stand mount these numbers are not spectacular but numbers don't tell the whole story.



It is up to the user whether to place the Arabesque Mini with its wing or pointy tip of the comma facing in or out. Just as with the distance from the back and sidewalls some experimenting is required to have the speakers 'click' with the room. In our 1000² feet upstairs listening room the effect of wings in was an extra deep soundstage whilst wings out provided more width and more realistically proportioned images. The latter is the default position.

For starters we lined up a Devialet D-Premier fed by a PS Audio PWT transport and Feickert Blackbird turntable with a DFA 1o5 arm sporting a Zu DL-103 cartridge. Loudspeaker cables of choice were of course Crystal Cable just as the power cords and balanced interconnect. For speaker connection the user has choices - spades, bananas or bare wire to the WBT Nextgen terminals or the special Crystal Cable option of their proprietary 4-pin mini connector. Using the latter means that the splitter tails of the speaker cables must be detached. We opted for this to bypass the comparatively large terminals.



Around front the ScanSpeak Illuminator tweeter with its grate cover protecting a 99% pure 26mm Beryllium dome has



a large mounting plate trimmed with a silvery ring. This articulated flange with its 6 large mounting bolts matches the size and sturdy looks of the 140mm ScanSpeak Illuminator long-throw mid/woofer with matching trim. Combined with a small shiny liner trim at the bottom of the enclosure the Arabesque Mini scores very high in the looks department without yet having played a single tone.

That tone can be influenced by a switch on the back enabling a 1dB cut or boost of the tweeter output. A lively or somewhat dull room one can benefit from this option but we left it in the neutral middle position. After the initial setup the first music played was Ludovico Einaudi—yes the composer of the score for the French hit film *The*

Untouchables—but here with his *Divinire*. Between the Minis a Steinway emerged that with a little help of the RF remote control grew into the true full size. Though in essence minimalist and repetitive, this recording with added orchestra hints at Debussy and wasn't it Claude who wrote *Two Arabesques*? Next was Zita Swoon *Band in a Box*, a great live recording performed in the empty De Vooruit venue of Ghent/Belgium.

Just like with the previous CD, the Arabesque Mini proved very capable of displaying things that weren't there. There was no piano in the room, no orchestra and no Belgian collective either. It all came down to a successful illusion created by the equipment as fed by a recording. In this act of make believe, the Mini played a huge role. There was no bigger bass than is possible with other quality smallish speaker but the need for a subwoofer was nonetheless obviated. Without artificial bass enhancement displayed by many modestly sized speakers which boost the upper bass output a bit, Crystal's design instead enabled a clear open look into the complex substructure and meaning of the music without getting analytic or cold.

More demanding music with a lot going on at once drove our particular combination a bit on edge. A little more backup power would be nice in such cases. At the time we had a KR Audio Kronzilla SX-Eco on review. Though only rated at 50wpc, that Czech design is a tube amp. Tube amps routinely sound louder than their equally spec'd solid-state brethren. Making sure that the impedance setting on the Kronzilla was at 8Ω and the eco switch at environmentally 'unfriendly' i.e. in SET mode, we gave this combination a try.



Handling difficult loads is not a forté of the Kronzilla but the Arabesque seemed benign enough to where we did not anticipate any issues even at higher volumes. Where we expectedly had no issues playing the SX-Eco at high levels into our 16Ω 100dB and 107dB hornspeakers, the current combination with the Crystal Cable speakers worked out better at lower settings. There the full glory of the tube's character came into bloom. Rich bass and silky tops had our attention. At higher volume levels these characteristics got a little lost and things flattened out. There was no distortion per se. This combination simply reached a certain point that said enough is enough.



Even though this speaker was baptized the Mini, its performance reached way beyond what the name implied. Do *not* be afraid to introduce this speaker to a larger or even very large room. When placed properly such that room and speaker work as a team, this David easily beats out many Goliaths. Remarkable indeed!

Marja & Henk