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Pantheon

**WERELDPRIMEUR!**



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MITSUBISHI HC6000  
WILSON WATT/PUPPY SYSTEM 8  
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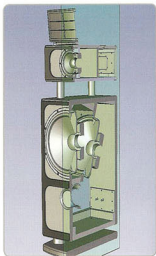
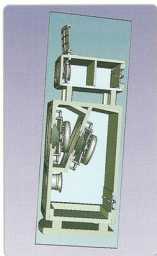
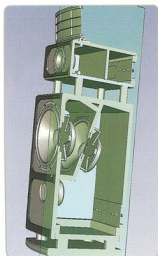


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## Just 39 seats

As you already read last month, there is something very special happening in the small Dutch hi-fi world. A big loudspeaker, with even bigger aspirations, was recently introduced to the public. This speaker doesn't aspire to be just a good speaker, or a great speaker, but the absolute best of the best. And not just the best in Holland, already home to many great speaker builders, but the very best on the whole planet. And there are a lot of speakers to beat. Ambitious, certainly, but also a great motivator to strive for perfection. And who's sitting on top of the hi-fi Olympus? But of course....

Siltech is a company that has been around many years and has achieved a permanent place on the hi-fi map. From America to Hong Kong and from South Africa to Romania, everyone knows Siltech – it will always hold an enviable position in the hi-fi world. And that has a lot to do with a philosophy, beautifully summed up by none other than Oscar Wilde: "Nobody was ever sorry for buying the best." That what it's all about at Siltech. A power amplifier line in the past was a great success, and the 2,4, and 14 series are still successfully sold second-hand. The 8, 18, and 26 models continue to be produced after 15 years. These are expensive power amplifiers, but not the world's best, because the very best are the exclusive top-of-the-line Millennium Fanfare pre-amplifier and the DEPA power amplifiers. A set of these will cost you € 50.000. The pre-amplifier is still a part of my reference set. The power amplifier is built with a no-holds-barred silver-gold thread trafos and delivers 100 watts triode by way of aluminum housing. This tube will last literally tens of thousands of hours without any wear and tear. The cabinets are great on their own, and this is a wonderful example of how the people at Siltech think and work. I haven't even mentioned the cable line yet. Who dares to bring cables on the market that, for a complete cable installation, will cost more than €100.000? The answer is clear: it must be Edwin van der Kleij. And what's great is that he sells them too. Other brands have an occasional hi-end cable available, but they don't sell nearly as many top-of-the-line cables as Siltech does. And if a pseudo-psychologist were to look inside these buyers' heads, they would see that these cables sell because people really believe in the product. People trust these cables, and that's great. Siltech ensures that the cables are perfectly built, carry a lifetime guarantee, plus a trade-in deal for future models. And that is anything but standard practice.



## **Pantheon**

This is not, however, a cable story, but a speaker story. I have experienced close-up how this speaker has grown from a concept to a finished product, and continues to gain momentum. Pantheon was officially announced almost a year ago, and was introduced at the CES last January (2007). Now one year later there is a definitive version. Tied to this definitive model is the announcement that there will soon be a complete Pantheon line on the market, including a 'poor man's' version. But the Pantheon will become the top model for which all known superlatives cannot do it justice. And it remains for many testers the most interesting item, because it's the so-called prototype. In this model all the passion of the designer can be found.

## **Objective**

What does a good loudspeaker need to be good? That's the question I asked Edwin when we were discussing the definitive version. The answer was surprisingly simple. A good loudspeaker needs to have minimal distortion, which is about at the level of an amplifier, a tiny fraction of a percent. That guarantees an optimal sound. A loudspeaker should also perform well, regardless of the room it's in. That sounds simple, but it's not. It is in fact perhaps the toughest challenge of all. But OK, if the bar's not raised too high, the result's can never be spectacular, right?

## **Solution**

While we were talking and listening we came up with a few ideas that weren't particularly 'run of the mill.' In my opinion the most difficult problem when designing a loudspeaker is and will always be keeping control of the low end. An easy claim to substantiate. Why? A two-way system that rolls off at 60Hz can sound spectacular when it comes to speed, placement, and extremely low coloration. No wonder, since it has no low end, and therefore doesn't excite the often problematic low frequency acoustics in the room, and the speaker cabinet isn't overtaxed. The cabinets of many speakers resonate at only one or two frequencies. Listen up devoted reader, I am still a believer, for I have been telling you for many years that a two-way can be amazing for very little money. And that's still true. It remains a speaker that appeals to the Dutch character: namely a lot for a little. Building an ideal three-way is another story altogether. And if you choose two 16-inch units such as the Pantheon, than you will be busy for quite a while. An enormous amount of low end can fill the room and cause a lot of problems. But OK, for every problem there is a solution. In this case NASA was called in to help.

## **Comsol**

The Comsol program comes into view like a real 'deux ex machine.' This is not a minor part of the design process, and it is therefore worthwhile to give it some attention. Comsol is a distinguished program by and for NASA, that is primarily used for gathering data to calculate the best solutions. It sounds a lot simpler than the machine we just mentioned, and in theory it is. In the case of these loudspeakers (this was incidentally the first time that such a program had been used for this purpose), one condition for success is providing as much accurate data as possible about the Pantheon speakers. This means all the information regarding placement, back wall and distance, filter, cabinet thickness, etc. By feeding Comsol this information it is able to magically come up with the maximum achievable margins. Unrelated parameters are left out of the process. As a designer you need to know in advance what you want to achieve with your design to get the maximum realistic results. One issue that immediately comes into play is making the loudspeaker 'listening room independent.' This is a very valuable quality for the client: he gets, in short, a loudspeaker that performs better than average in his or her living room. The second step is, as I already mentioned, to ensure that the total distortion is minimal. That has to do with a number of factors. I thought power amplifiers could play a large role in this. I am referring in particular to performance tied to a sound power supply and a responsible damping factor, but with the Pantheon the loudspeaker itself takes this on. Two 16-inch woofers are used in the bass, and are placed in a cascading configuration. One is supported by a port and the other isn't. The large area of the unit combined with the port gives a low-end limit of 8Hz and an effective low end of 18Hz. That is impressively low, but what truly sets this bass apart is that this occurs with a very low distortion rate and an almost perfect start/stop behavior of the cones. In other words, the units stay under control in such a way that they can start and stop within a fraction of a second. This means that the information in the low end is very detailed. The extremely well controlled character is achieved by establishing a very low Q-factor of 0.38. This combination gives a perfect balance between the displacement of the unit and its mass, maintaining perfect control, with the above mentioned effect as a result.

## **Cabinet**

The cabinet is actually made out of three cabinets, and the speaker basket is the most demanding part of the system. To get an optimal cabinet, a new patented procedure is used for the internal walls. The inside of the cabinet is covered with special semi spheres, that all have the same, if not really noble, goal, namely to make the standing waves in the cabinet as chaotic as possible, so that they can spin uncontrollably around the cabinet. The idea behind this is that there is no sound wave that is strong enough to bring the system to the point of resonating. The midrange cabinet is uncoupled from the rest, and the electrostatic is connected to the top by an adjustable mechanism. This last point is again of special importance and much more than a gadget. It is actually the difference between much and everything. The tweeter is quite wide and rounded, but still quite directional. To get the full picture, the idea is to point the tweeter at the face of the listener like a kind of lamp. Only then can the voice reveal itself to the listener in all its glory. The tweeter itself is an old favorite and comes from India. All the cabinets from the Cadence brand have this tweeter, and this is a loudspeaker brand that has always scored high points in my listening room, model

## Cables and filters

The cable is so new that I only know it from prototypes, namely the G7. The inductors and capacitors have high price tags, coupled with an even higher mass. Many kilos, 25 kilos to be exact. From the very beginning there was a lot of experimenting, and the parts were chosen for their sound quality and technical merits. This is all supported by the wise council at Comsol. Siltech delivers an attractive cable that connects the low-end with the midrange and high end.

## Listening

The listening, apart from some test sessions, took place over three serious listening sessions. Strangely, my reference system was the deciding factor, but I'll get back to that later. The first listening session took place in an enormous space that was heavily damped, and the speakers were supported by state-of-the-art equipment. Which meant the top-of-the line from Siltech and four power amps, plus a reference CD player from dCS. This was great, but with a set like this, it's bound to sound fantastic. A second and third session was planned for a week later, and this time the equipment was a bit more modest. Yet the first impression was anything but modest. What power, what detail, and so true to itself. I played a jazz number with a small choir that was beautifully recorded, and was supported by a strong bass. I had heard the number many times before, but I didn't recognize it this time. The totally controlled explosions in the bass were a completely new experience for me. I had never heard this before. A bass that, without drawing all of the attention, managed to support everything in a swinging, inimitable way. Pantheon has always received high marks. Up until now there have only been a handful of systems that could stand beside it, like the Genesis 1, for instance. The following parameter was the truthfulness in which it was presented and performed. These two giants stood before me, but I didn't connect them at all with the bands, orchestras, solo artists and others that came and went. It provided power and impact as needed. Edwin couldn't let me leave without shocking me with the sound of metal doors slamming. I still dream about that sound, and not in a nice way..... Luckily there was also the soft sound of the cymbals, and, after that big piece of steel in the room, I could even handle some loud cymbal crashes. After a complete afternoon of discussions and listening, I came home at 9:00pm and decided to turn on my reference set. At the moment that is a set of Diva's from Apogee, driven by four NAT mono blocks, with cables from Siltech, fed by two absolute top sources - one analog, the other digital. As far as speakers, they're basically mass-less membranes that can resonate at 25Hz in an open cabinet, and in keeping with this, do not color the sound. The sound was enormous, the stage spacious, the color beautiful, and to be honest I've sat here crying in the past. But if I had to choose? The Siltech had much more control, more impact and knew a truthfulness that this system just didn't have. Need I say more? Next up was a very nice tube amplifier, which did a great job, and raised the Pantheon set up to another level. The reproduction detail was greater, the sound stayed in the air longer, and suddenly this system could produce all the colors of the rainbow. Yesterday's solid state amplifier was suddenly boring! And then I didn't know what to think anymore. This speaker scored extremely high in all areas and the low end is literally at the very top. Nobody, and I mean nobody, comes close. I'm talking reference status here.

## Conclusion

What a great job I have sometimes. Just when you think, after all the centuries, that they can't improve on the loudspeaker, there comes along a new, perfectly designed, speaker. This Pantheon scores in fact very, very high. On the first listen it's already very good, but when compared to others it proves to be the decisive winner. This speaker is in all ways at world class level, and no less than one of the very best. This speaker may climb up to the top of Olympus, along with a handful of other loudspeaker gods. Secretly laughing, he can lean back and relax for a while. But not too long, because the new smaller Pantheons are on the way. That is if they don't get too cocky over at Siltech.

## Jo Mullers

