

German Physiks Review Translation

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The reproduction of sound is not a perfect science and while most theories can be sustained up to a certain point, frequently cause and effect are not related and increasingly often we see strange contradictions. In the loudspeaker world this is especially true as the relationship between the loudspeaker and its surroundings is probably the most complex of all relationships in the field of audio.

Theories about how things should work abound and many are contradictory. Consequently almost every product has a reason to exist, as according to each designer, their own theory is right.

Omni-directional speakers seem to be the real anomaly in the panorama of loudspeakers as they contradict the usual theories about how a loudspeaker should work. In certain conditions they can produce pleasing stereo images and be more interesting than systems assembled according to the generally accepted rules. This is usually counterbalanced by some disadvantages that are almost always related to their omni-directional nature. However, products like the German Physiks leave us speechless, since they are free of any criticism when we talk about sound reproduction. Instead they open a discussion about what is sound reproduction. Since there is no real connection between a live event and the event reproduced by a hi-fi system, the reproduction in the home becomes a live event itself; an event that can be described only by emotional criteria. So, how are these emotions related to the quality of the products making the sound? Omni-directional loudspeaker systems work in a completely different way from other loudspeaker systems, but they may be evaluated using many of the judgement methods used for traditional loudspeakers, provided we take care not to give undue weight to any parameter that is specific to that system.

Put at its simplest, every loudspeaker makes sound, but the task faced by the designer is far from simple. This is because every solution the designer adopts will affect the listener on an emotional level and there are no technical rules to enable this to be predicted or evaluated.

German Physiks was born from the genius of the designer Peter Dicks and the business skills of Holger Mueller. Dicks, a mathematician and engineer, had become fascinated by the potential of the Walsh driver. Mueller, already with many years in the audio industry, was also an admirer of the Walsh driver and a long time user of a pair of Ohm F loudspeakers, which used this driver. Taking the Walsh driver as his starting point, Dicks developed a detailed computer model of how the driver worked and then refined this by building and testing a large number of prototypes. This eventually led to the development of the German Physiks DDD driver.

Mueller established German Physiks in 1992 and has based the product range around the DDD driver. Although it takes its inspiration from the Walsh driver, the DDD driver is a far more advanced device and works in a very different manner. The success of German Physiks' loudspeakers is not solely due to the DDD driver. Mueller's insistence on meticulous attention to detail in areas including the cabinet design and construction and his selection of Hawaphon damping material has been crucial.

In the process of designing the DDD driver, Peter Dicks was able to solve numerous problems, many which hitherto had seemed insoluble. For part of its operating range the driver works much like a conventional piston driver, however above a certain frequency it changes to a

completely different mode of operation. The benefits of the design are numerous, starting with the large area available to generate high frequencies; a common limit for omni-directional loudspeakers.

While conventional drivers can show some weakness in the treble range, the DDD driver solves this issue and acts in a very singular way. We can see that Peter Dicks has worked very hard on the dispersion behaviour of the DDD driver, as it is one of the very few true wide band omni-directional loudspeakers on the market. As mentioned above all the German Physiks models use the DDD driver. In three models the DDD driver is used on its own. In the other models, the very low bass reproduction is handled by one or more woofers. Larger models in the range use up to four DDD drivers.

Even though the frequency response of the DDD driver is quite mind-blowing, to reach high SPLs in large rooms it is necessary to use supporting drivers. For example the Gaudi uses four DDD drivers together with eight 15 cm woofers and four 30 cm sub-woofers. All of this is housed in an enclosure standing more than 2 metres tall; weighing 780kg and costing from €223,000 up to €288,000 a pair for the top of the line version in the carbon fibre finish cabinet.

The HRS 120 reviewed here uses a special woofer for the bass section. Interestingly we listened to the speakers in a number of different positions in the room, but heard hardly any boominess due to standing waves. In almost every position we enjoyed clean, well-defined and powerful bass. It would be easy just to credit the acoustic suspension used on the bass system for this, but we like to think that it is due to this and the driver, the cabinet and maybe other things too. Anyway it works!

Carlo D'Ottavi

It is usual to expect much from expensive speakers and these German Physiks loudspeakers do not disappoint. Considering the price I would have expected a more luxurious finish, but bearing in mind that the German taste in aesthetics tends more towards austerity than ours' in Italy, the simple styling is understandable. In the area of sound reproduction there are absolutely no flaws. The HRS 120 shows a timbral correctness; a 3 dimensionality of stereo imaging and a solid bass that is perfectly integrated with the rest of the frequency range and that is the equal of the best dynamic loudspeakers. We have often listened to omni-directional loudspeakers that while considered exceptional and unique for their dispersion characteristics, were found lacking in those areas that are the foundation of the realism that we demand from an audio system. The HRS 120 succeeds in closing this circle, but it is a pity that it is not cheaper.

Fabio Masia

We have encountered excellent products of all types and designs. Often when we listen to such products our emotions make us far from objective. With experience we naturally establish our own personal theories and prejudices about equipment and it is only a truly exceptional product that is able to demolish these. When one encounters such a piece of equipment the effect can be jaw dropping, leaving one in a suspended state of anxiety and excitement where all other considerations such price, value for money and placement disappear into the background. All we can think is, "We'll worry about those later, now we have other things to do". A times comes though, when still excited we are asked how much the product should cost and we reply, "Any price". Things become less romantic and the truth begins to roll upon us like a rock. It is good to try to delay paying the bill, but it will arrive sooner or later and its arrival is like falling out of bed from a dream: but what a dream!

Dark chocolate (*Fabio Masia*)

The inner surfaces of the cabinet are treated with a special material made by Korff AG, especially developed to absorb vibration on large panels. It is called Hawaphon and is made from a synthetic sheet with numerous small compartments each containing small steel shot about 1 mm in diameter. It looks very similar to bars of white chocolate. The mass, the damping characteristics of the synthetic material and the movement of the steel shot converts vibrations into heat and lowers the resonant frequency of the panels where it is applied. This is a clever idea that was originally developed for the construction industry. In addition the inner surfaces of the cabinet are further lined with a 1cm thick layer of high density felt.

LISTENING

Frequency Response

The frequency response is very extended. It is very impressive that this response is flat, constant and above all that here is no clue as to where the two drivers change over. This is a testament to the excellent balance of the various parameters of the cross over. Another amazing point is the lack of any exaggeration in the region linking the bass and mid-range. This is a rare ability in a loudspeaker at this level.

Dynamic Capability

One of the areas in which the HRS 120 excels is its ability to accurately portray both micro and macro dynamics. The immediacy and speed of the DDD driver allows you to appreciate every tiny volume change with ease and satisfaction.

Stereo Imaging

When listening to omni-directional loudspeakers like the HRS 120 the usual methods of assessment are not of much use at the beginning. The loudspeakers are fairly insensitive to where they are positioned in the room. Only when moved too close to the walls is there a slight increase in bass and some loss of the depth of the stereo imaging. This imaging itself is indeed spectacular when the loudspeakers are moved away from the rear wall. Needless to say, the HRS 120s disappear like the best mini-monitors.

Harmonic Reconstruction and Tonal Balance

We must underline the tonal accuracy and dryness of the HRS 120. This could be mistaken for a certain coldness, but actually is the result of a high level of linearity more commonly associated electrostatic than dynamic loudspeakers. This characteristic influences voices in as much as that may sound different, apparently less harmonically rich, but probably just less coloured than with other speakers.

IN CONCLUSION

One thing is certain: German Physiks has clear ideas about every aspect of the commercial process: marketing, communication, product placement and product quality are all first class! Moreover, in our opinion, the company has succeeded in keeping that amount of mystery, which is much liked by audiophiles: it increases both their curiosity and their expectations of the product's performance. Our expectations were never disappointed. The HRS 120 sounded wonderfully flawless and in fact better than our greatest expectations. In addition, the product is beautiful; perfectly built as well as being extremely versatile. We can also say that amplifier matching is comparatively easy and even with different types of electronics there is little variation in the sound. With the HRS 120 the characteristics of the room are less important than with other loudspeakers. Even if we are not used to omni-directional loudspeakers and we may sometimes feel it is strange, the differences offered by the omni-directional characteristic of German Physiks loudspeakers are an advantage in almost every situation. As for the price, it is high in absolute terms, but so are the levels of performance and quality.