# Power and elegance

**I am proud to introduce these loudspeakers to you; we have not had too many horn systems featured in HIFI TEST and then we get such a bull's eye, which sets standards both technically and in terms of sound.**

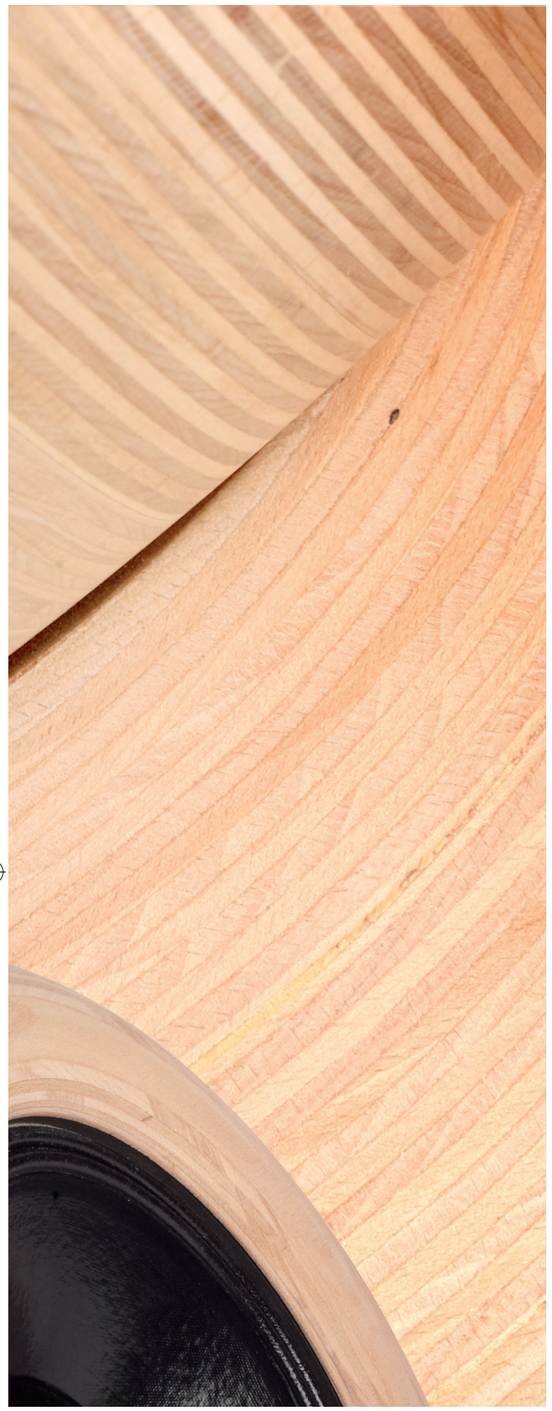
Miniaturization is the order of the day: in many households, hi-fi technology is only allowed if it virtually 'disappears' visually or if at least does not "pile it on". I have nothing against the fine small speakers, which were recommended to us by Piega and Nubert for this issue, but sometimes it feels they are lacking something, or perhaps even much more.

Heyder, the loudspeaker manufacturer from near Stuttgart, has been known to some of us for quite some time: ready-made loudspeakers with a horn and even individual horns made of wood have been manufactured here for several years in loving and high-precision work. There are horns in round and elliptical form, all in beech, birch multiplex or MDF layered, sanded and then surface treated. The emphasis lays on sustainable and environmentally friendly raw materials.

If desired, the horns can also be stained in color before the finish, which then also results in particularly interesting visual options.

Today, we introduce LMH no. 2, which the company owner Jens Heyder also likes to call "Horny Two".

**Design** The theme of Heyder, the loudspeaker manufacturer, is quite clear: wood, wood and more wood. The shapes that can be realized by hand and with the most modern CNC milling



machines are breathtaking, or at least have you ever seen a wooden sphere loudspeaker weighing tens of pounds? And this one is not only built like this for optical reasons, but it also represents nothing less than the ideal loudspeaker, especially on the inside: there are no parallel opposing surfaces and thus no standing waves which feel as disturbing resonances.

The purpose of a high-tweeter horn, on the other hand, lies elsewhere: due to the precisely calculated course of the opening of such a "funnel", the coupling of the driver to the room and its radiation behavior can be controlled very precisely, so that the sound pressure response

The bass reflex, fitted with a cork layer, provides the basic bass depth; the level is adjusted in the active crossover.

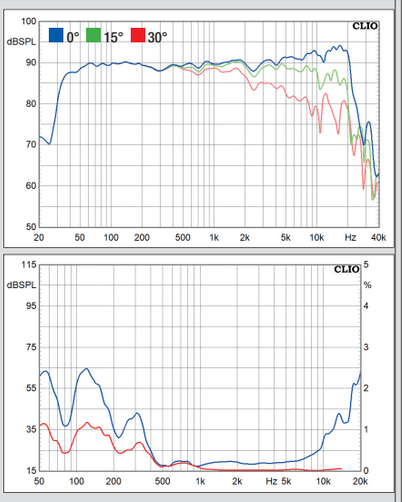
does not undertake ups and downs at angles, but always remains very linear.

Here, the horn is simply placed on the woofer housing with a flange that allows the horn to be tilted and rotated relative to the slightly upward radiating woofer.

Of course, one can imagine that despite machine support, the construction of such a housing or horn requires a lot of detailed work and time. The precise fitting of the individual layers alone takes a lot of time, not to mention the final sanding and polishing. The pair of loudspeakers shown here took a whopping 150 hours of work.

And this naturally results in a retail price of around 16,800 euros, which may seem high but fair in view of what is being offered.

## TEST INFORMATION







### Frequency Response

The frequency response is extremely balanced from 25 hertz to over 20 kilohertz with minimal DSP equalization. The somewhat accentuated high range tone on axis can be precisely dosed by angling.

The radiation behavior is very linear and consistent at all angles.

The distortion measurement shows very little distortion in the bass range even at 95 decibels. Especially the sound-damaging k3 remains below the measurement limit in the mid-high range tone. The resonance behavior is very good for a large horn system.

With the bass sphere and the attached horn made of countless layers of wood, the LMH no. 2 is a real eye-catcher.

And the base where the bass sphere rests is also milled and glued from many layers of multiplex.

Due to the low placement, both cabinets point upwards in order to aim at the listening position

**Technology** Anyone who has ever seen a picture of a "real" horn system will have immediately dismissed the idea of having something like this at home. Combinations that are horn-loaded across the entire audible range are so big that the required room size only starts at more than 300 square feet. On the one hand, the housings of a bass horn are really huge; but on the other, with several large horns radiating different frequency ranges, one must come to a certain listening distance in order to achieve a homogeneous sound image.

The 12-inch woofer is a genuine PA driver with high efficiency and power handling.

The LMH no. 2, on the other hand, is one of the popular hybrid systems that work with a conventional bass-reflex housing and then realize the typical horn sound with a large mid-tweeter horn. Indeed: a mid-tweeter horn. The elliptical horn "eTrak" 300 charges from 300 hertz onwards and can then be used from about 600 hertz; that is a whopping 2 octaves below a conventional tweeter in a normal hi-fi box.

And this, of course, gives you a sensationally balanced radiation behavior, one of the huge advantages of such a design. Towards the top, it gets a bit tedious for the large compression driver in the wide horn: our test system reaches a good 20 kilohertz and leaves no wishes unfulfilled in my ears. For the last touch of precision in the range above 12 kilohertz, there is also the option to add another small horn tweeter to the system.

The amplifier unit includes not only the power amplifiers, but also an amp for a subwoofer extension and a powerful DSP active crossover.

There is also the option to run an additional subwoofer, which I would only consider necessary for extremely large rooms and equally high demands on the listening volume.

This is because the Horny Two consists not only of two bass compartments and two horns, but of a control center in the form of a DSP amplifier, which not only provides 1400 watts per side of power, but also takes over the complete filtering of the system. This means not only the crossover between the two drivers, but also the equalization of the frequency response at the listening position by means of state-of-the-art IIR and FIR filters. But I do not want to bore you with details about this, so one last thing: in contrast to conventional equalizing, such filters do not change the phase of the signal; the reproduction remains free from phase shift and appears extremely clean and unstrained. In the system shown, corrections are necessary in the bass range, which drops slightly in level with the low reflex tuning, and depending on the room, a little help is needed here in the range around 30 hertz. And the slight irregularity in the super-tweeter can, but does not have to, be straightened out as well.

The perfect customization to the room takes place at the end customer anyway, a service that is included in the price at least for customers in Germany. Here is where the programming of various presets takes place in the amplifier, which the user can then call up depending on the material being heard.

You can get an idea of the dynamics and power of the horn system just by looking at it.

The stable flange allows the mid-tweeter horn to be fixed in any radiation position.

**Lab** At first glance, the frequency response looks like that of a good conventional speaker; all the more remarkable considering the system's performance. The bass is already very low in the free field and even more so in the listening room. And the high range tone can be adjusted from fresh on axis by angling it too gently.

But THE most impressive feature, however, is the distortion values, which are simply at a very loud 95 decibels just as low as at 85 decibels; here the dynamic limits are simply quite different.

**Sound** The speaker was placed in our listening room for a very long time and I was able to work with it for a while. On the one hand, I must confirm that the system of the speaker manufacturer sounds very little like a tweeter horn among those speakers with a tweeter horn that I am familiar with. On the contrary: the combination acts very relaxed and airy even at high volumes and can be very well adjusted to your personal "tweeter needs" by angling. The increasing bundling towards the tweeter is not as unpleasantly noticeable as with many speakers that have an abrupt transition between conventional drivers and horn tweeters. Rather, we have the impression of a highly precise, holographically exact auditory spaciousness, which, despite all the precision, remains pleasant to listen to,

The chosen bass tuning is just right: thus, when freely set-up, a dry and punchy bass appears, which above all reaches down ultra-deep without losing precision. In fact, you can even cut back a bit for high dynamic demands and then move it closer to the wall.

What I find particularly impressive about the Horny Two is how homogeneously the two drivers blend into each other; here the bundling dimensions match perfectly at the crossover frequency. There is no coloration in the mid-range tone, but just as in the entire listening area, only pure music and dynamics.

**Conclusion** The Horny Two by Heyder, the loudspeaker manufacturer, is not cheap fun, but shows in an impressive way how classic loudspeaker design and modern DSP technology combine to create a great sound.

*Thomas Schmidt*

Due to its low-profile design, both housings radiate upward toward the listening position.

## Floorstanding Speaker LMH No. 2 – Horny Two

### Features

| | |
|---|---|
| · Material | Birch or beech multiplex |
| · Version | Sanded, oiled, varnished |
| · Colors | Stain as desired |
| · Warranty | 2 years (electronics)<br>5 years (housing) |

### Rating

| | | |
|---|---|---|
| **Sound** | **70 %** | **1+** |
| **Lab** | **15 %** | **1+** |
| **Experience** | **15 %** | **1,0** |

- Excellent sound
- Extreme dynamics
- Processing

| | |
|---|---|
| · Pair price | Around 16,800 euros |
| · Manufacturer | LMH |
| · Source | LMH, Leinfelden Echterdingen, Germany. |
| · Internet | www.lautsprecher-manufaktur-heyder.de |

Reference class 1+

HiFi Test 2/22 TV·HIFI

Price/Performance very good