



LB-acoustics Messgeräte GmbH

4/1/2018

update 003

Introduction of Mysphere 3.2 as variant:

Mysphere 3.x use an unique driver concept with no acoustic cabinets. Consequently it has to be acoustically damped by the used amplifier.

- Mysphere 3.1 is optimized regarding damping for amps in a range of 10-30 ohms output impedance. Lower amp impedances would tend toward over-damping.
- To assist users of Tube amps in real OTL mode and aid optimum current delivery, we offer a second variant of Mysphere with a higher impedance of 110 ohms. This variant is called Mysphere 3.2
- To overcome this, we are adding from the beginning of production a second variant of Mysphere with a higher impedance of 110 ohms. This variant is called Mysphere 3.2
- All other technical data remain the same as for Mysphere 3.1.
- An overview of suggested optimum amplifier match is shown in the table below. There may be occasional instances of rare amplifier types where the contrary variant might better match your personal acoustic taste:

Mysphere 3.1	Mysphere 3.2
Small Mobile Players	Strong Solid-State Amps
Tube Amps with Transformer	Tube amps in OTL mode
In cases of uncertainty, we can advise the optimum Mysphere variant for the amplifier you envisage using	

WRITER'S CHOICE AWARD

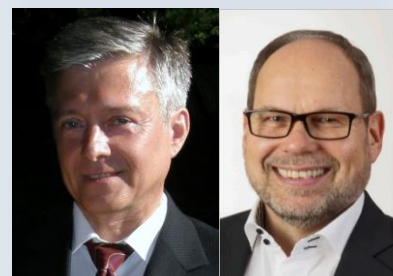


We are delighted to receive the “*Positive Feedback* Writers Choice Award” for Mysphere 3.1 as best product in the category of headphones in 2017

More to read at: <https://positive-feedback.com/audio-discourse/the-14th-annual-positive-feedback-writers-choice-awards-for-2017/>.

EDITORIAL

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Dear friends of headphones:

This newsletter gives information about the status of product development and market introduction of headphone MYSPHERE 3.x.

Notes includes:

- Introduction of new product variant Mysphere 3.2
- First award received
- Production start
- Web-Shop
- Cables
- Story of Mysphere “why it is as it is”
- FAQ's

Yours truly,

Heinz Renner
Helmut Ryback

Production Start

A status report

Just before year's-end, LB-acoustics started production of Mysphere 3.1 + 3.2

- We commenced with batch-production of 100 sets
- The heart of this headphone is the driver itself. Many membranes and coils are already prepared, and magnet systems are ready for fitting to the driver basket
- A number of drivers have been produced and await optimised pairing (left and right)
- The internal wiring components for 100 headphones are nearly finalised
- Machined and hard anodised aluminium, as well as plastic formed parts are ready
- Cable sets are in preparation (with finally angled connector type)
- The head-bows build will start in the second week of January
- Packaging is in preparation

Some visual insight:



FAQ's (to be continued)

Some questions and facts

❖ Which amp to choose to pair with Mysphere 3.x?

- Listening tests demonstrate:
 - Using potent solid-state amps, the clarity of sound reproduction increases, with very clear and precise bass response, image and sound-stage. Purity of sound is conveyed.
 - Tube amps give superior results as well, and Mysphere 3.1 allows a high level of transparency of amplifier performance and the recorded sound. Using high impedance OTL mode you should use Mysphere 3.2
 - When driven by simple iPhone like amplifiers, Mysphere offers the targeted performance envisaged by the design. Note: such compact units are not premium audio devices, and so sound and dynamics will of course be determined by the capability of the amplifier in these devices. Yet it's nice to have the option to use Mysphere on the go.

❖ Why did you decide to choose the size of the driver of 40 x 40 mm?

- Main targets for design was low moving mass.
 - A significant larger membrane would constrain performance under a heavier moving mass.
 - The squared design enables an effective larger surface area compared to round systems.
 - The squared membrane has lower tension stress within the moving rim leading to low symmetric distortion.

❖ Where will Mysphere be demonstrated?

- The next and closest chance will be at the stand of Woo Audio at CanJam in NY in Feb. 2018 and later at SOCAL in LA or in Spring 2018 at AXPONA in Chicago.
- In Europe the next fair will be the AUDIOVISTA in Krefeld, Germany, end of February. In May, it will be presented at the HIGH-END show in Munich (the first official press release).
- Another option will be to order a test sample for one week in the upcoming WEB-shop at www.mysphere.at
A cost would be applied for this service to cover logistics.

❖ How loud is Mysphere outside?

- The close position of membrane to ear creates ~6dB less SPL outside compared to the K1000.

The cables of Mysphere 3.x

- All regularly ordered Mysphere products will be delivered with oxygen-free monocrystalline copper (OFC) wires using 8 braided strands and with 0.1 Ohm/m, 0.4 nF/m and a black tear-proof textile sleeve surround, measuring 3.6 mm overall diameter. This sleeve is carefully selected for low microphonic effect and tactile appeal.

A 45-degree angled 3.5mm 4-pole jack is placed at one end of the cable connecting to the head-bow. The opposite end is equipped with a 3.5mm 3-pole jack + a 6.25mm adapter. The total cable length is 1.2m for portable use.

Optional Standard Cables are:

- „Standard Long – asymmetric Cable“ 3,6m with 3.5mm jack plug + 6,25mm Adapter (1/8" to 1/4")
- „Standard Long - symmetric Cable“ 3,6m with 4-pol XLR symmetric connector.
- „Standard Short - symmetric Cable“ 1,2m with 2.5mm Jack plug 4-poles



- Other cables can be made eventually on special request

The “**Story of Mysphere**” or “**why it is as is**”: *(to be continued)*

This section of the Newsletter explains the reasons for the construction and design in more detail.

- Membrane construction:

Mysphere 3.x use a very unique 40mm x 40mm rectangular membrane.

- The history of rectangular membranes goes back to the 1970's when used for speakers targeting larger effective membrane surface area, compared to round or oval shaped membranes. Usually a form of honeycomb layer construction was used for membranes in the past to help overcome tension stress common to these designs – particularly along the four edges.



When the AKG K1000 was produced around 1987, the design overcame such requirements by cutting out the four edges. This allowed use of a thin membrane foil to reduce and thus optimise moving mass.

The difficulties with the earlier K1000 design are twofold:

1. The cut corners tend to move heavily at specific frequencies
2. The centricity is not easy to achieve because the very narrow walls to the edges

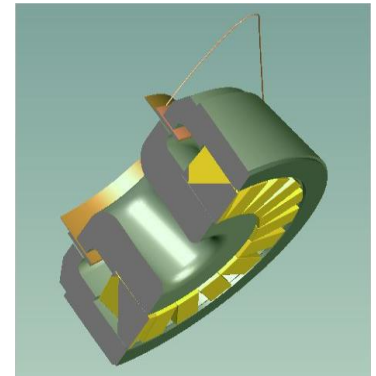
Remark: This design can only be used for drivers working in open not closed back design

- Mysphere 3.x utilises the advantages of this approach and develops it further in the following aspects:
 - I. The cut areas are mechanically damped by a special Polyurethane to mitigate certain vibration modes to achieve optimal performance.
 - II. The linear rim arrangement allows a large diaphragm excursion of 4mm, constructed to produce a symmetrical spring force across each of the two axes for optimal diaphragm movement and realisation of high linearity. A patent is applied to this feature.
 - III. The membrane material is a new composite of many layers that provide mechanical damping and optimum rigidity to promote accurate sound reproduction.
 - IV. The dome of the membrane uses a special kind of enhancement structure made from a glass/plastic-foam combination with very low specific mass of only 0.6 applied to very thin supporting carriers. This enhancement method enables a high level of stiffness up to highest frequencies as well as strong damping.

- The magnet system:

The radial magnet system used in Mysphere 3.x realises a magnetic flux density of 1.5 Tesla and full air venting by 20 gold plated magnet pieces.

- This system was first invented to make small dynamic microphones robust for professional defence applications. The advantage of this design is an optimum mass/magnet-field ratio of rare earth iron to produce the best contemporary magnet system.
 - I. The LB-acoustics team further developed this principle to realise a fully air vented construction. This features the narrowest magnetic air gap between iron and coil and allow lowest mass/force ratio. This “air venting” helps produce the most realistic open headphone design performance, with very low acoustic inductance.
 - II. The 20 cuboid magnets are gold plated to provide optimum corrosion protection for long life with no loss in magnet flux.



By the way: The design of this system is the origin of the Mysphere logo.

*Next Homepage update coming soon.
Upcoming events at CanJam in NY Feb. 2018; SOCAL in LA; AXPONA in Chicago.
AUDIOVISTA in Krefeld German; High-End in Munich*