



The World Exclusive Omnidirectional *Radialstrahler* Loudspeakers

Undeniable Attraction...Unparalleled Experience

A first look at MBL's *Radialstrahler* speakers leads one to wonder if they were borrowed from the set of a science-fiction thriller, or perhaps from an exhibit at the Museum of Modern Art. Each initial sighting creates new admirers who are curious about the gleaming sculpted spheres. And once the polished melon-shapes fill a room with sparkling natural sound, admiration turns to disbelief and the inevitable question: *Where do those hypnotic notes come from?*

MBL *Radialstrahler*s energize rooms with high-resolution aural 3D sound – the music moves, breathes and encompasses listeners as though at a live performance. The unconventional elliptical shapes suggest high art; true, when the science of physics combines cutting edge technology with brilliant design. The exclusive transducers produce sound waves over the entire frequency spectrum, delivering studio-quality tones and perfectly balanced sound pressure in all directions. Instead of utilizing cone or dome-shaped membranes that vibrate on a flat plane from within an enclosure (like most conventional forward-radiating speakers) MBL *Radialstrahler*s employ proprietary, radial drivers meticulously produced in our factory. These omnidirectional drive units are hand-crafted with numerous petal-like segments that start and stop with lightning-fast precision. Together, they deliver exquisite whisper-quiet musical passages the thunderclap power of body-piercing sound – completely free of distorting cabinet resonances.

Best of all, every MBL loudspeaker benefits from our unique radial driver technology. All share the spherical tweeter and midrange; from the petite MBL 126 up to the six-foot tall, one-ton MBL 101 X-Treme flagship – the pinnacle expression of the *Radialstrahler* principle.

Indulge, enjoy and pursue your love of music with the 360-degree omnidirectional *Radialstrahler* loudspeakers.

Only from MBL.

“This is the most realistic stereo system I’ve ever heard.”

Jonathan Valin, The Absolute Sound

Radialstrahler System MBL 101 X-Treme MKII

€ 330 000 per pair

MBL's Flagship - authority without compromise

4-way loudspeaker with active subwoofers and ambient tweeters

Mirror arrays of MBL's radial tweeter, midrange and woofers in a D'Appolito configuration

Active subwoofers in separate towers containing a total of twelve 12" (30 cm) aluminum sandwich drivers with over 500 liters (18 ft³) of enclosure volume

Extensive options to adapt to listening room acoustics or musical taste

Ideal for listening rooms from 35 m² to 120 m² (360 - 1,200 ft²)

942 kg (2,077 lb) total weight

[Learn more \(en/loudspeakers/101xmk2\)](#)





Radialstrahler loudspeaker MBL 101 E MK

€ 75 400 per pair

4-way Radialstrahler loudspeaker with 12" aluminium subwoofer in down-firing bandpass enclosure

Sophisticated MBL HT37 tweeter, MT50 midrange, TT100 woofer. Speaker technology delivering an immersive, natural sound

Customisation options to adapt to listening room acoustics and music tastes

Ideal for rooms up to 100 m² / 1 100 ft³

Wide choice of finishes

[Learn more \(en/loudspeakers/101emk2\)](#)

Radialstrahler loudspeaker MBL 111 F

€ 43 800 per pair

4-way loudspeaker, bass reflex cabinet loading

MBL HT37 tweeter and MT50 midrange driver with radial technology

Dual 5.5" (15 cm) long-throw aluminium low-midrange drivers in push-push arrangement with solid aluminium struts to prevent power transmission to the housing

Dual 8" (22 cm) long-throw aluminium woofers in 58 liters enclosure, physically and acoustically isolated from system housing

Crossover with two-pole subsonic filter prevents over-excursion of the woofers

Ideal for rooms up to 60 m² (650 ft²)

[Learn more \(en/loudspeakers/111f\)](#)





Radialstrahler loudspeaker MBL 116 F

€ 33 000 per pair

4-way loudspeaker, bass reflex cabinet loading

Ideal for rooms up to approx. 60 m² / 600 ft²

HT37 tweeter and MT50 midrange drivers with radial technolc

Crossover with 2-pole subsonic filter with bass driver protectic

Woofer and low-midrange drivers in push-push arrangement
solid aluminum struts to prevent power transmission to
the cabinet

Dual 5.5" (15 cm) low-midrange drivers in sealed 16 liters
chamber

Dual 8" (22 cm) woofers in sealed 46 liters chamber

[Learn more \(en/loudspeakers/116f\)](#)

(files/mbi/images/03_Lautsprecher/01_Startseite_Radialstrahler/116F-TestM.png)

Radialstrahler loudspeaker MBL 120

€ 21 900 per pair (€ 23 620 incl. stands)

3-way loudspeaker, bass reflex tuning

Ideal for rooms up to approx. 35 m² (400 ft²)

HT37 tweeter and MT50 midrange drivers with Radialstrahler technology

Long-stroke aluminum bass driver with aerodynamic basket for low friction losses

Bass drivers in push-push arrangement to prevent power loss to the cabinet

Pyramid shaped, 20 liter bass cabinet with 42 Hz tuning frequency

Crossover with two-pole subsonic filter to protect the bass drivers

[Learn more \(en/loudspeakers/120\)](#)





Radialstrahler loudspeaker MBL 126

from € 12 200 per pair (€ 13 430 incl. stands)

3-way loudspeaker, bass reflex tuning

Ideal for rooms up to approx. 25 m² (300 ft²)

HT37 tweeter and MT50 midrange drivers with Radialstrahler technology

Long-stroke aluminum bass chassis with aerodynamic basket low friction losses

Bass drivers in push-push arrangement to prevent power loss the cabinet

Pyramid shaped, 11 liters bass cabinet with 42 Hz tuning frequency

Crossover with two-pole subsonic filter to protect the bass dri

[Learn more \(en/loudspeakers/126\)](#)



126

120

116 F

111 F

101 E MKII

101 X-Treme MKII

What makes a Radialstrahler so unique?



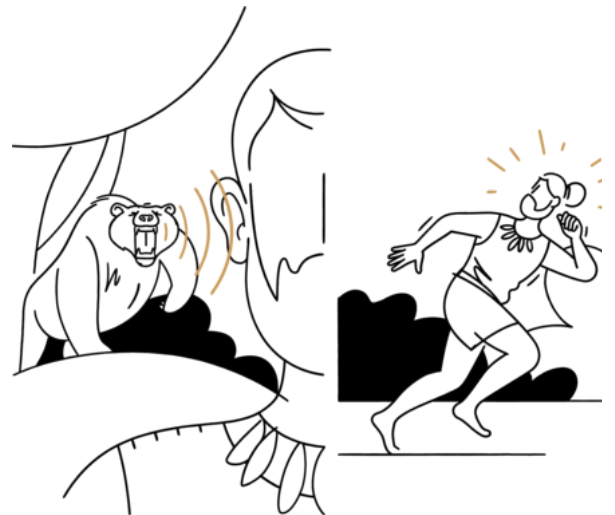
Look to Science

It takes thousands of hours, countless months of development and a dedicated engineering team to design high-performance loudspeakers. Yet what is often overlooked in the process is testing those speakers outside of the laboratory in real-world circumstances. How do they project sound in a living room? How do the acoustics of a room influence the listening experience? How does an omnidirectional loudspeaker differ from a more conventional one when it comes to the interaction between the room and the transducer?

It all comes down to the physics of spatial hearing.

The human ear – nature's precision instrument

Nature is rarely impractical; humans developed excellent hearing abilities to survive, not to listen to music. A rustle in the bushes meant our ancestors had to instantly pinpoint the exact location of the noise and identify what it could be, engaging a fight-or-flight response essential for their existence. With a reaction time of about 10 milliseconds and the ability to detect a minimal difference in pressure from the left ear to the right ear, humans can localize sound sources at lightning speed, and differentiate between millions of different sounds. The human ear is truly wondrous as both an adaptive amplifier and sensory organ.



Relaxed musical enjoyment

Today, humans are able to identify various instruments within musical composition – even over a telephone line. However, it requires intense concentration as the brain has to constantly work to fill in the missing pieces. In order for the brain to switch off all distractions and listen with relaxed focus, the natural playback of music is required. Only then are visceral emotions stimulated by the crackling tension in Edvard Grieg's *In the Hall of the Mountain King* (Peer Gynt, Suite N° 1), the melancholy war of Johnny Cash's train-rhythm baritone on the American Recordings, or the club ambience on the live recording, *Jazz at Pawn Shop*. As the Greek philosopher Plato famously stated: Music gives a soul to the universe, wings to the mind, flight to imagination and life to everything.

Plato's observation lives in those who listen to music through MBL's omnidirectional loudspeakers. The experience is one of intense emotional connection and pure musical enjoyment. All because of the legendary design that MBL loudspeakers use to evenly distribute sound throughout a listening room.



Omnidirectional loudspeaker advantages

Eliminating the cabinet enclosure for the mid-range and tweeter gives an MBL omnidirectional loudspeaker several benefits:

No disturbing resonances inherent in conventional cabinet design.

No unwanted smearing reflections on the baffle.

No diffraction effects on the edges of the housing.

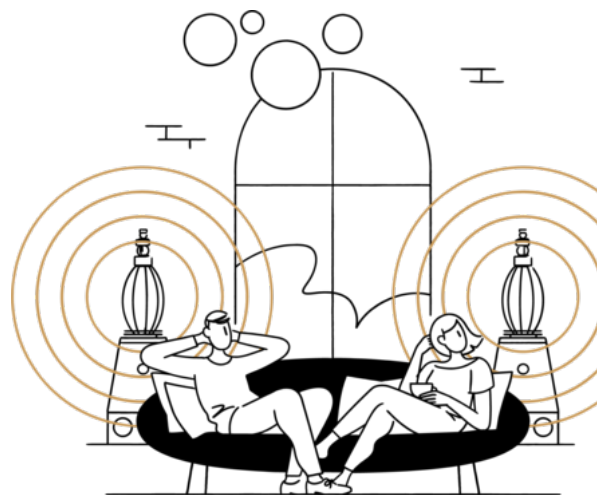
No time delay in the sound radiation as a result of reflections from the baffle.

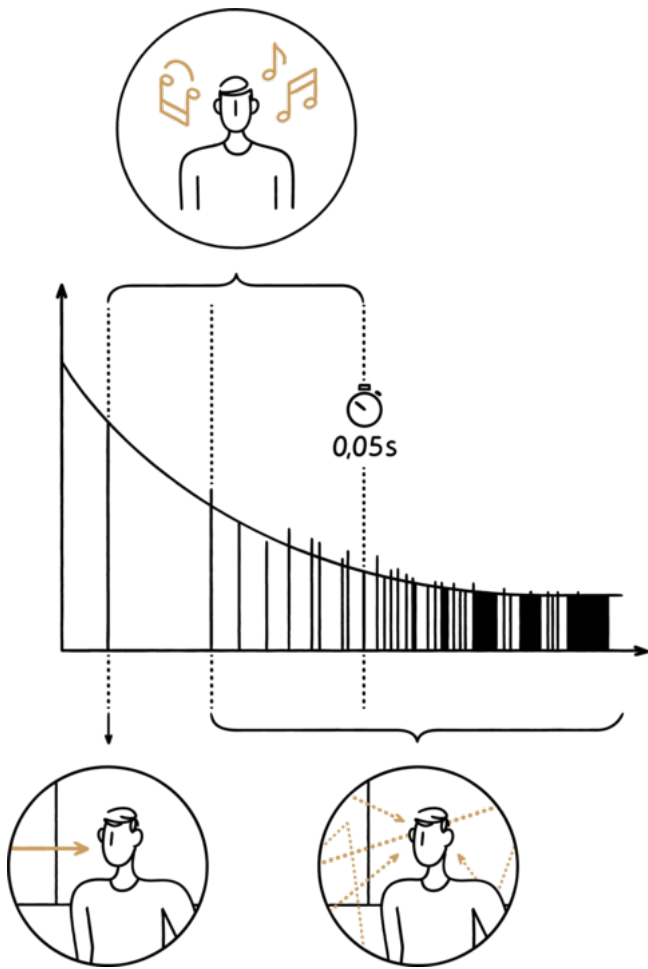
In addition, the 360-degree radial pattern's interaction with the listening room delivers a natural sound experience through:

A more natural blend of direct and indirect sound emanating from acoustic instruments.

The illusion that the loudspeakers "disappear," conjuring a sound stage within the room for an airy, spatial, three-dimensional reproduction.

Organic timbres heard in any seating position within the room, not just in a single sweet spot.





The spatial listening experience

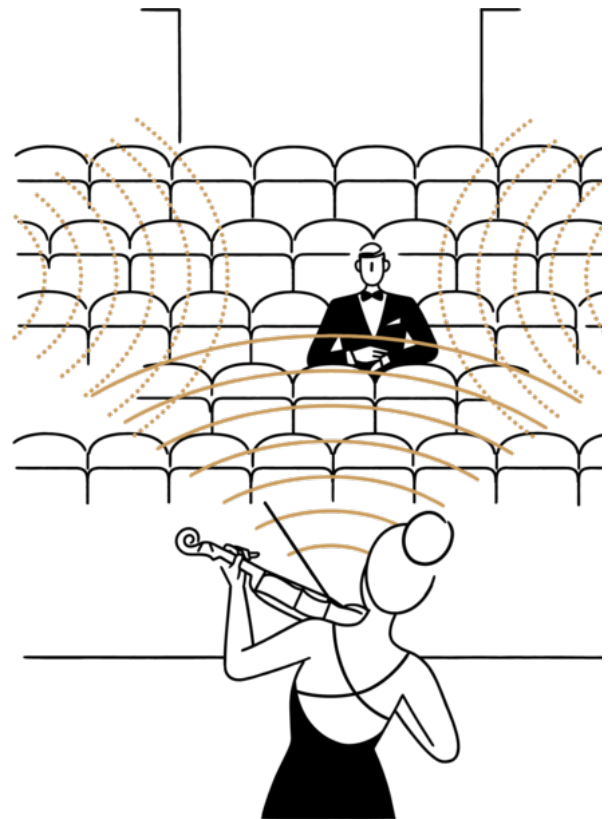
Sound waves travel at different speeds. In the case of natural sound sources, like a stringed cello in a concert hall, the instrument's direct sound waves reach the ears of the audience followed less than 20 to 50 milliseconds later by the first reflections of those same sound waves from the walls, ceilings and floors. This combination of direct and indirect sound contributes to the immersive believability of the listening experience.

In this setting, the direct sound is largely responsible for the localization of the sound event and the basic audio character (type of instrument). In a sense, the indirect sound refines the timbre and provides information about the spatial conditions. In an anechoic chamber, where there is an absence of reflected sound, such as in an anechoic chamber used for certain loudspeaker measurements, music sounds sterile or lifeless. The other extreme is an echo chamber where music sounds as if it's being played in a bathroom. In that instance, the indirect sound components, which are too loud and resound for too long, create a diffuse, washed-out, unpleasant noise.

The importance of indirect sound

It's simple to understand the important role of reflected sound by considering the incredible efforts put into the construction of fine concert halls and opera houses. All reflective surfaces must throw the music back into the room with precise measured intensity. For example, in the case of the Hamburg Elbphilharmonie, the renowned acoustic architect, Yasu Yasuhisa Toyota, specified that the interior space be plastered with 10,000 gypsum panels, each weighing between 70 and 80 kilograms. Thanks to their individually milled recesses for all frequency ranges, they have precisely calculated reflection properties – a multi-million Euro endeavour.

For a sound system to mimic the natural balance of direct and indirect sound, the loudspeakers must emulate the instruments in a concert hall that radiate sound throughout the performance space. Sound waves can't just be projected forward; they also have to be radiated to the sides, the rear, above, and below. Only then can the system achieve a naturally projected mixture of direct sound (the first wave front), the early reflections which arrive at the ear a little later, and the fading reverberation.

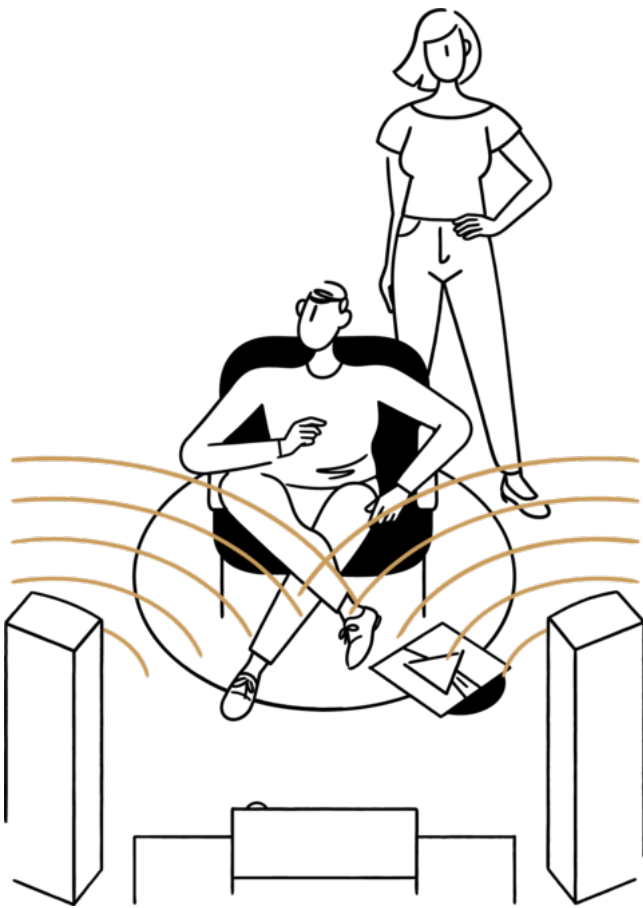


The limits of conventional loudspeakers

This is where the physics of conventional loudspeaker chassis drivers meet their limits. The larger the radiating diaphragm's surface and the higher the emitted frequency, the more dense the sounds become bundled while radiating in a single direction which is forward along the axis of the chassis.

Depending on the diaphragm diameter and the crossover frequency, the sound wave delivery becomes increasingly focused with a conventional multi-way loudspeaker. In the bass range, wavelengths are so large that no bundling effects occur. Climb up the frequency spectrum, directional effects become more frequent until the tweeter or midrange driver takes over with smaller membrane. At this point, the sound radiation initially broadens, but then becomes tighter as the emitted frequency continues to rise. As a result, with each increase in frequency, there are fewer indirect sound component elements. Musical instruments don't behave like this.

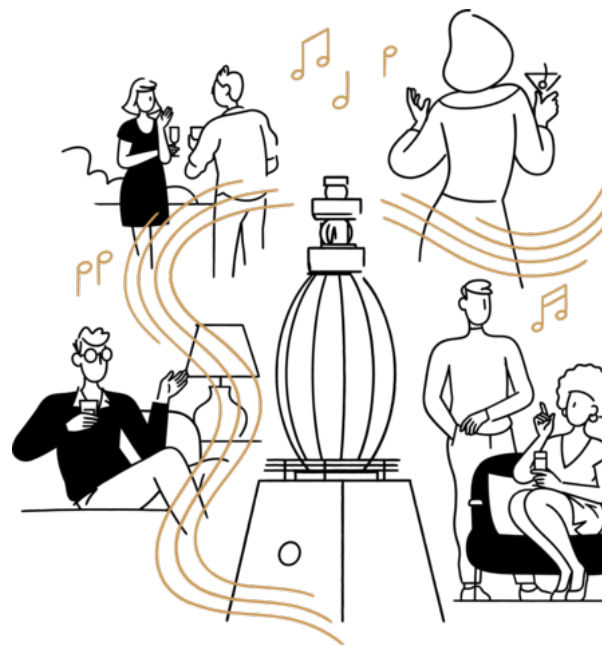
Conventional loudspeakers are, therefore, inherently constrained when it comes to truly natural audio reproduction.



Enjoying music everywhere

Apart from having a more natural mix of direct and indirect sound components, MBL's omnidirectional loudspeakers deliver another significant advantage: the consistent aural delight of natural sound everywhere. Conventional loudspeakers cannot guarantee this because they bundle the sound depending on the frequency. When the listener is offset to the side of such a loudspeaker, less treble can be heard than when seated right in front of it as the frequency response drops off. This is why conventional loudspeakers are often angled toward the listener. The optimal listening position is restricted to the tip of an imaginary isosceles triangle – the elusive “sweet spot” – between the two loudspeakers and the listener.

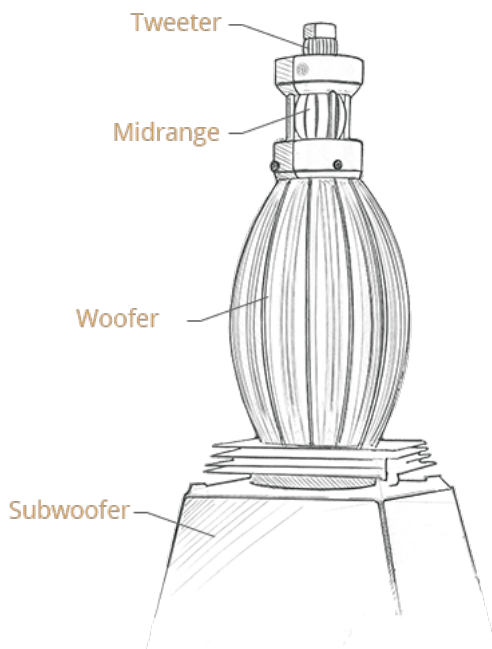
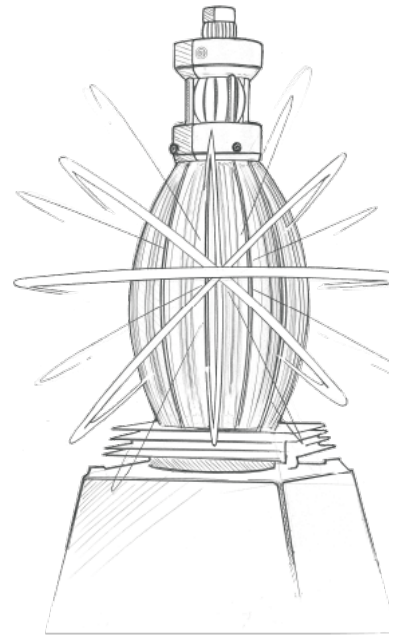
With MBL's omnidirectional speakers, all those sitting on a sofa or in an armchair get to enjoy the same timbres, and the sound image remains stable even if listeners get up and move around the room. MBL's customers live with the loudspeakers, not for the loudspeakers.



The Radialstrahler principle

A naturally perceived sound experience and relaxed music listening requires a combination of direct and indirect sound waves. This is made possible by a loudspeaker that radiates the sound in every direction, as opposed to traditional, cone-shaped driver equipped speakers.

A Radialstrahler loudspeaker does just that and floods the room with sound waves. In contrast to conventional loudspeakers, this flooding also creates those important indirect sound waves from the walls, ceiling and floors in sufficient numbers. That's why playing music with a Radialstrahler sounds so incredibly natural, and the brain can listen with uninhibited pleasure.

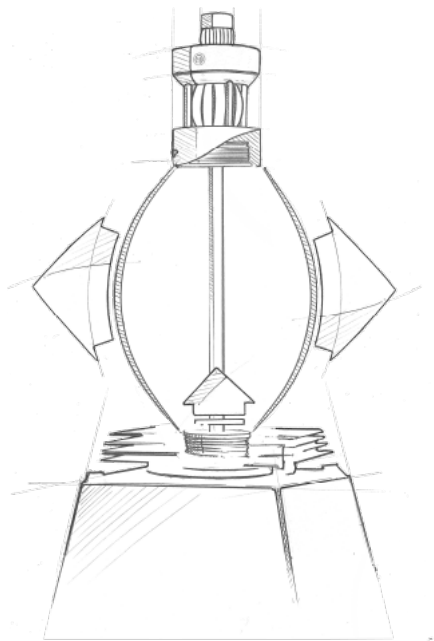
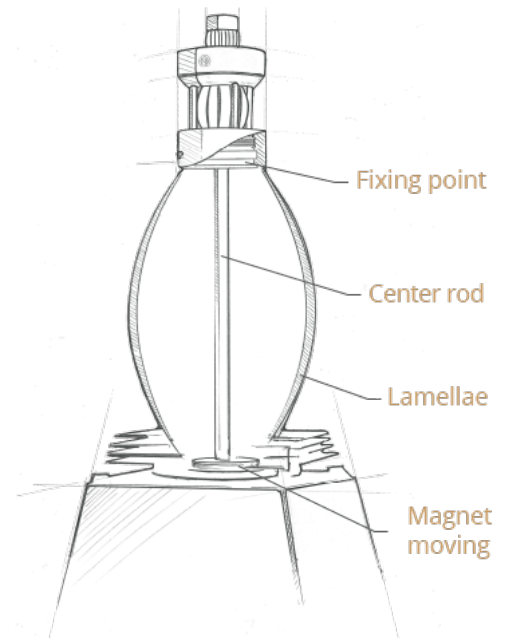


The basic configuration of a Radialstrahler loudspeaker is not dissimilar to that of a conventional loudspeaker. Both consist several drivers, each of which reproduces the different frequency ranges. The classic MBL 101 is a 4-way loudspeaker with 4 different drivers for the different frequency ranges: tweeter, midrange, woofer and subwoofer.

But while the individual drivers of a conventional loudspeaker radiate funnel-shaped sound in one direction, a Radialstrahler loudspeaker uses proprietary radiating drivers. As a result, the loudspeaker emits the sound waves in a dynamic concentric s of 360 degrees.

Every Radialstrahler chassis consists of individual petal-like segments, known as lamellae, which are arranged in a circle around a central axis, resulting in an elongated spherical shape. Each individual lamella is permanently fixed at its upper end and attached to a voice coil at the lower end, moving freely in and out of the magnetized gap.

The lamellae on the bass "melon" are alternately curved outward and stretch down to the vertically moving voice coil. Like a balloon that is held at the upper end, compressed from below then released again, the collective lamellae pulsate and emit sound waves that fill every space in a room. Listeners perceive this as music. Purists call it magic.



And since an omnidirectional Radialstrahler chassis so perfect distributes sound waves in all directions, those critically important, room-filling *indirect* sound waves are also created. The end result is a completely different listening experience from a conventional loudspeaker, which only emits sound in one direction.

From the casual music lover to the passionate audiophile, MB Radialstrahler technology has delivered transcendent and intimate sound interactions for more than 40 years.

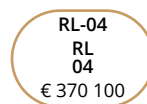
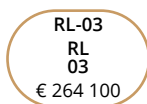
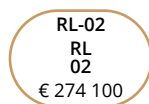
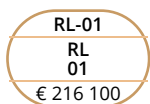
The journey continues....

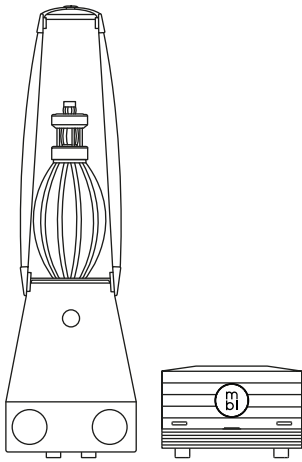
Well-balanced complete systems

Reference Line

Noble Line

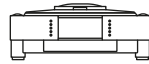
Cadenza Line



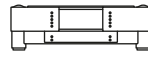


101 EMKII
Radialstrahler

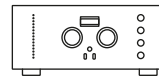
9008 A
Mono amplifier



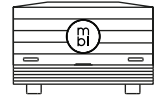
1621 A
CD drive



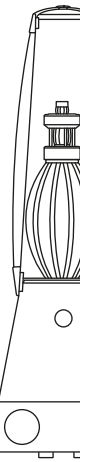
1611 F
D/A converter



6010 D
Preamplifier



9008 A
Mono amplifier



101 EM
Radialstrahler



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Noble Line

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Cadenza Line

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