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10|2022 Die technische Dimension von HiFi

GROSSES

ANALOG SPECIAL

PLATTENSPIELER: Linn Selekt LP12, Transrotor Massimo Nero

PHONO-VORSTUFEN: Line Magnetic LP-33, Octave Phono Module

TONABNEHMER: MoFi UltraGold

ALL-IN-ONE: Audio-Technica Record Player

Special Print Manger P2

NAD C700

STARKER STREAMING-AMP

MANGER P2

EXZELLENTE RÄUMLICHKEIT

Cabasse The Pearl Keshi

KLEINE KUGEL, GROSSER KLANG

Österreich: 7,60 €
Schweiz: 13,70 Sfr
Belgien: 8,05 €
Niederlande: 8,30 €
Luxemburg: 8,05 €
Italien: 8,95 €
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Slowenien: 8,95 €
Finnland: 10,15 €
Dänemark: 79,95 DKK
Griechenland: 10,35 €

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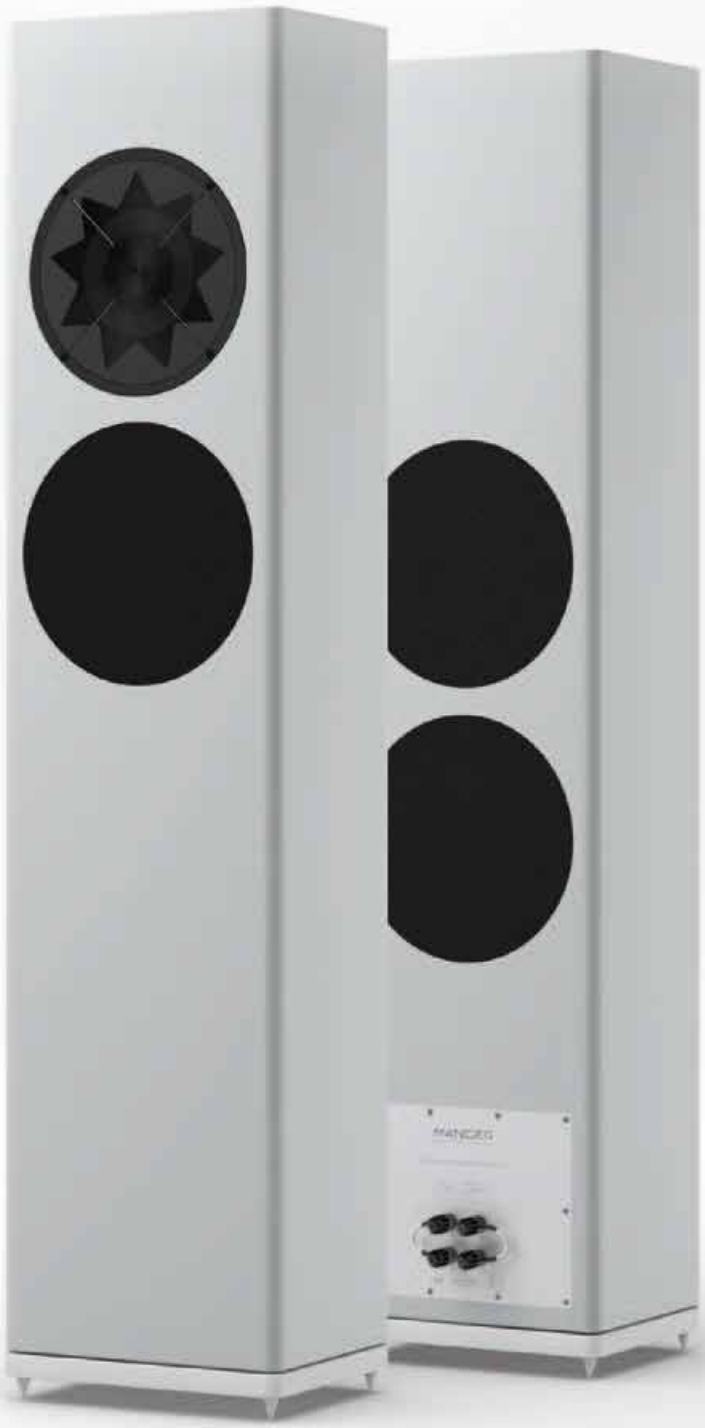
Standing the Test of Time



For more than 40 years, the name Manger has stood for constantly evolving, exceptional sound transducers. How the current passive Manger P2 performs against the conventional speaker elite will be discussed here.

The audio industry is rich in ideas that were celebrated with great furor, only to quickly be condemned to niche existence or disappear altogether into obscurity. One remembers omnidirectional ion tweeters, full-range ribbon speakers, the Japanese flat-diaphragm offensive, air-bearing turntables, Class-H amplifiers and much more. But some ideas are not affected by the ravages of time.

An extraordinary invention that has undergone continuous refinement since the early seventies finds its completion in the current test candidate. At 114 centimeters tall, the P2 is Manger's largest passive floorstanding loudspeaker, and at 27 by 21 centimeters, it is wider rather than deeper. The P2 is available in all RAL and ICS colors, either in satin or ultra high gloss, but also veneered. With its

rounded edges, impeccable finish and the characteristic flat “Manger star” above the 8” woofer hidden behind a recessed front cover, this speaker makes an impression. Its distinctiveness is reminiscent of a cross between Dieter Rams’ Braun design and Stanley Kubrick’s Monolith. Both in modern surroundings and as a contrast to a traditionally furnished old building, the result is a harmonious image.

Apart from the fact that the transducer has a magnet system and a voice coil, it is completely different from other chassis we know.

Time - the overlooked Factor of Sound

The lynchpin of the P2, which has already been mentioned, is of course the Manger Transducer. Dissatisfied with the loudspeakers available at the time, Josef W. Manger became interested in the way people perceive sound. In the process, he became aware that with spatial localization and magnitude evaluation of sound sources different auditory processes play a role than with pitch perception. But only the latter found its way into the metrological assessment of loudspeakers through the established amplitude-frequency response diagrams. These measurements revealed nothing about the ability of a loudspeaker to reproduce impulse-like sound events. But it is precisely the detection of short sound events, such as the cracking of a branch in the forest, that makes it possible to flee from danger in the right direction and to survive.

In Manger’s opinion, an ideal loudspeaker should be able to reproduce these impulse-like sound events without distortion. But the reality was different, as he found out by measuring the step response. You can read about the background of such investigations on the next page.

Full-range loudspeakers with good impulse response were and are possible. However, their broadband performance is either at the expense of the high-frequency radiation angle, which often results in a dull sound, or at the expense of adequate power in the lower frequency range, often even both. Optimized impulse behavior can also be achieved with 1st order crossovers, but only on an optimized radiation axis and when using extremely powerful drivers.

Manger took a different approach. After analyzing the way the basilar membrane in the inner ear breaks down frequencies into spatially separated resonant sites, he chose the same path for his transducer. Instead of piston-shaped vibration, the voice coil of the Manger transducer sets a so-called resistance-inhibited diaphragm into bending waves that travel to the center and to the edge. Near the center, these vibrations are damped by a high-frequency reflection damper acting on the diaphragm from behind. Near the edge, the star-shaped ring fulfills the task of damping returning reflections.

It was quickly beyond question, that the transducer enabled extremely precise impulse behavior. Whereby frequency response, efficiency and bass range - the first Manger Discuses S05 were marketed from 1979 on as full-range speakers - still showed potential for improvement.

With the transition from discuses to two-way speakers in 1986, and with a shift of the crossover frequency

from 200 Hz to 340 Hz, i.e. above the range where the Manger transducer itself begins to oscillate piston-like, and with numerous other optimizations, the speaker system could considerably improve its conventional measurements over the years, without losing in its primary virtue, the impulse behavior.

The Right Support

In the P2, the Manger transducer is supported by the aforementioned 8" bass chassis from specialist ATE. The diaphragm consists of a sandwich of two carbon fiber layers, which are connected via a soft foam layer. As a bass reflex system, the Manger P2 has two passive membranes at the back, which ensure that cabinet resonances from the inside are strongly damped before they reach the outside.

I started the listening test with pretty high expectations, based on my far-reaching examination of Manger's theories as well as my long-standing possession of two early Manger discuses. The chosen bass tuning resulted in a slim but deep and enormously contoured bass, provided the P2 is placed freely so that it can unfold its grandiose spatial abilities. The instruments displayed their full glory, whether Ray Brown plucked his double bass or Jaco Pastorius his fretless Fender Jazz Bass.

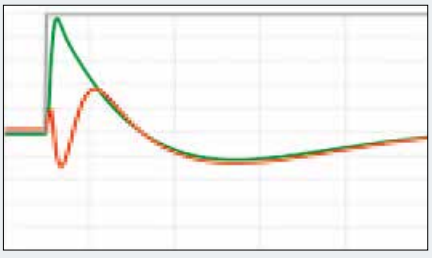
The Manger P2 is a speaker for long, fatigue-proof but stimulating music enjoyment

It quickly became clear that angling the speaker to the listening position needs experimentation and meticulousness. Interestingly the P2 also allows very short listening distances despite its size. Here the Manger transducer as a broadband point sound source plays its acoustic advantage sovereign. The P2 unmasked ping-pong stereo effects with frightening clarity, for example during the drum intro of Eric Burdon's Pretty Colors. Luckily, after this disturbing effect the bass was firmly outlined in the room and a little later Burdon's voice appeared clearly above it. Also elevated freely in space were the unmistakably metallic vibrating cymbals. After enjoying the stirringly arranged percussions of the "The Black-Man's Burdon" album I couldn't resist some Home Cookin' with the grandiose organ and the interplay between Burdon's characteristic voice and Lee Oskar's virtuoso harmonica. In general, I caught myself more than once during the listening session that I stayed longer than usual with an album just for the fun of discovery.

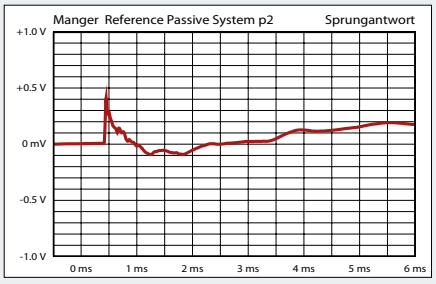
Or that I listened to individual pieces, such as Gaetano Donizetti's

Step Response

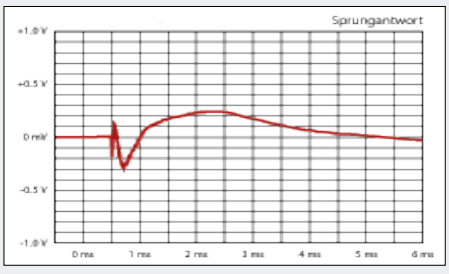
In addition to frequency response, which we show in every speaker test, each loudspeaker is also characterized by its time response. It describes how a loudspeaker alters an incoming signal over time. Time-dependent signal changes are most clearly illustrated by the step response. It depicts the reaction of the loudspeaker to a sudden jump in input signal (gray curve, picture above). A normal loudspeaker (green, red) can only follow the steep rise slowly due to its upper cut-off frequency.
The lower cut-off frequency brings about that the speaker cannot maintain the constant pressure represented by the horizontal grey roof. After reaching the maximum, the pressure starts to drop again and in the simplest case (full-range loudspeaker, green) asymptotically approaches the zero line after a zero crossing. Already a simple two-way crossover with 12 dB/oct. (red) distorts the step response almost beyond recognition.
The sound pressure changes sign four times before it approaches the zero line. And this is still an ideal case. Steeper crossovers as well as more or spatially offset drivers distort the step response even more extremely. Real measurements show that the P2 from Manger realizes a significantly better step response than is possible with most conventional loudspeakers



Simulated comparison of the step response (gray) between a full-range speaker (green) and a conventional 2-way speaker (red).



Measured step response of the Manger P2 speaker.



Measured step response of a good conventional loudspeaker.

Included feet made of POM are gentle on the parquet floor, the 8-mm threads also hold standard spikes.

famous aria “Oh giusto cielo! ...Il dolce suono” in several versions just for fun. First, in the version of the London Symphony Orchestra under Richard Bonynge. Even the way the P2 stages the sonorous orchestra in space at the beginning, only to place the somber chorus of the Ambrosian Singers above it shortly thereafter is deeply moving. But only the ethereal flute playing and the masterly Lucia sung by Edita Gruberová make it a perfect pleasure. In contrast, the phenomenal Lucia from “The Fifth Element”, also accompanied by the LSO, was fresher and more melodramatic, setting the big stage for the key scene from this film via the large Manger loudspeaker. The following Diva Dance exemplifies how important impulsive response across all frequencies is for the music to shred. The P2 makes great cinema acoustically tangible.

But it can also lend dignified expression to a sublime ballad like Bridge over Troubled Water. This song, like no other, combines the power of Simon’s compositional talent with the expressiveness of Art Garfunkel’s voice, especially his rarely and sparingly used vibrato. The Manger speaker does not hide small weaknesses inherent in the recording (Mrs. Robinson - Zounds Gold Remastered) from minute three on, but it does not put them in the foreground with a raised forefinger either.

This is probably also due to the fact that the Manger transducer does not need the high volumes of some other speakers to bring the music to life. That, too, probably made me sit in the listening room for more than twice as long as I had planned in advance. But in return, the P2 not only brought back memories of the Diskus S05, the early Manger Studio Monitor, and the Audio Physic Medea, but also renewed my enjoyment of R.E.M., Tony Benett, Dexys, Feist, and many more.

Conclusion: The Manger P2 is neither a show nor a PA speaker. It is definetely designed for excellent room imaging, in which it combines spaciousness with focus at the highest level. In addition, there is a naturalness that we usually associate with electrostats. Properly placed in a not overly damped room - close walls should not disturb the perfect impulse behavior - it is a speaker for connoisseurs. It will provide hours of physically relaxed, but intellectually stimulating music enjoyment.

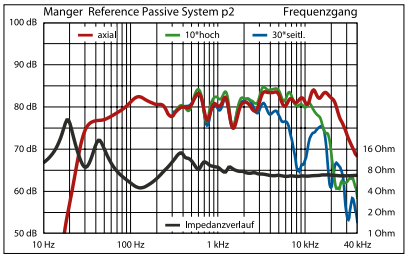
Bernd Theiss

stereoplay Highlight

Manger Audio
P2

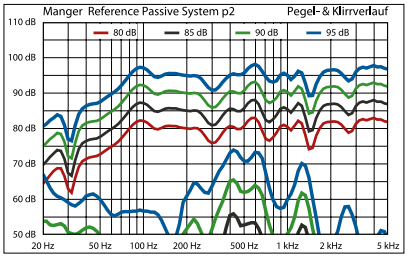
Distributor: Manger Audio
Phone: +49.9776.9816
www.mangeraudio.com
Dimensions (H×W×D): 1139 x 270 x 214 mm
Weight: 32 kg

Measurements



Frequency Response & Impedance

Slightly rippled, with bass dropping early but reaching deep, increased directivity visible above 30 degrees



Levels & THD 85-95 dB SPL

Increased distortion in the mids, but without dynamic compression

Lower Cut-Off Frequency -3/-6 dB	57/30 Hz
Max. Level	94 dB SPL

Practice and Compatibility

Amplifier Compatibility Diagram

To exploit the dynamic capabilities, amplifiers from 90 watts into 4 ohms are recommended

Voltage	19.0 V
Impedance-Δ	4.5 - 14.2 Ω
Current Dem.	4.2 A

Room Acoustics and Placement

The P2 likes lively rooms and free placement for best spatiality, and is well suited for the near field (not a must!)

Listening Dist.	1 m	5 m
Wall Distance	0 m	1.5 m
Rev. Time	0.2 s	0.8 s

Rating

Authenticity	15
Resolution	14
Boundary Dyn.	9
Bass Quality	13
Soundstage	15

Measurements	Performance	Quality
6	6	8

stereoplay Test Rating

Sound absolute Top Class **66**

0 10 20 30 40 50 60 70

Total Rating	**86 points**
Price/Performance	**outstanding**