Burmester
ART FOR THE EAR

Product Information
Loudspeaker B100

The new reference B100 loudspeaker is the latest addition to our loudspeaker line-up. Externally, the form of our latest flagship speaker was inspired by the aerodynamic design similar to the riveted wings found on large classic airplanes of the past. Internally, we developed the B100 using the latest technological advances and measuring techniques of the highest calibre which can detect and remove even the slightest error. To be able to reproduce the time-honoured high dynamics that result in life-like quality sound was of paramount importance during the development process while making the B100. The result speaks for itself, the B100 is gracefully designed loudspeaker despite its size that can easily be integrated into any living room surroundings while at the same time divulge great music that can satisfy even the most critical of listeners.

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The B100 is a three-way full-range loudspeaker with built-in phase ridge passive crossovers using filters of the highest degree. The bass, mid-range and high frequency drivers are arranged in a d'Appolito configuration. The cabinet of the B100 is double walled to add solidness and strength.

DESIGN GOALS AND CONSTRUCTION FEATURES

The construction of the B100 is designed to capture the true essence of music as nature has intended. Even at high volume and a gale like force of over 115dB the ca. 128kg structure of the B100 is not even fazed. This can be made possible thanks to its highly sophisticated double-walled structure using the latest technology and highest quality materials possible in the construction of high end loudspeaker. The internal chamber is composed of strong MDF palates in combination with complex interior reinforcements of 25mm. The centre section of the loudspeakers is specially structured to house the high/mid tone chambers and is further reinforced by 6mm aluminium plates. The outside housing is fully isolated by an insulation layer so that all emitted frequencies are absorbed from the inside. Felt like mats of varying thickness are used for damping on the inside of the speaker wall. These mats are applied in various thickness that are accurately computed and strategically placed throughout the inner housing of the speaker as to insurer the best resonance. This unique technique characterised by Burmester Audiosysteme makes their speakers outrageously fast and precise. Limiting the amount of the absorption in the base chassis allows the base frequencies to realise their fullness even at lower volume levels. The frequency switch of the B100 is arranged with extremely low-loss construction units and works exclusively with phaseridge filters of the highest quality. We are able to create long term stability by using high quality foil condensers and tin condensers rather than using low grade ELKOs.

The loudspeaker clamps are invisibly attached at the bottom of the loudspeaker. The frequency switch is set in a way that permits Bi-Amping and B-wiring. One of our greatest achievements in creating the B100 was devising a as low as possible impedance switch so that that excess power generated from the amplifiers can be channelled and utilized throughout all the individual speaker compartments. Thus resulting in optimal control throughout the individual loudspeaker chassis. As such, the base coil was developed to have only 0.02 ohms. The frequency switch plates was coated with 150um copper and the connection to the bass chassis is with a10qmm cable made from the purest copper. The midrange and tweeters are connected to their respective frequency switch using the new Burmester pure silver loudspeaker cable. The external housing panels of the B100 are interchangeable with three standard finishes.

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WHAT IS SO SPECIAL ABOUT BURMESTER LOUDSPEAKERS?

Music – unchained from the speaker
Combined with a perfectly tuned system of high-quality electronics and top-notch cables our loudspeakers are capable of filling a whole room with music, whereby the music doesn't seem to emanate from the speakers but, instead, to be performed live in the room.

Loudspeakers applauded by musicians
Musicians are critical listeners because the compare the sound of a stereo system with the original sound of the instruments. In their judgement our speakers seem to virtually explode with music when fed material like large orchestras. Yet, even then they let single instruments shine through with substance and authority.

Loudspeakers that reproduce all octaves
Despite their comparatively still moderate size our loudspeakers reproduce all octaves down to the deepest bass foundation. Particularly the bass output is indispensible for bringing across the power and the "goose bump" impact of great music.

Loudspeakers for quiet listening
Often, one likes to listen to music late at night to pleasantly conclude the day. At that time, most people will no longer be able to listen to high volume levels approximating the original performance. Our loudspeakers are designed in such a way that even at low listening levels the music will not lose naturalness and and correct tonal balance.

Loudspeakers for full-volume listening
As a musician, Dieter Burmester enjoys the thrill of listening to music at full volume. With our loudspeakers it is possible to listen to very loud music without loss of precision and tonality and without strain.

Loudspeakers built with attention to detail
A superior concept requires corresponding care in its execution. Every single driver, custom- made to our specifications, is burnt in by us before their technical parameters are measured. Only then are they computer-matched in pairs to very tight tolerances. This procedure guarantees mating tolerances between speakers so low as to be considered impossible to reach – until now. Since we save all technical specifications each driver can be replaced with an identical driver should this become necessary.

Loudspeaker with an attractive appearance
Loudspeakers should not only sound good but also be easy on the eyes. They should be an addition, not a subtraction, to the living environment. This requires perfect design and highest-quality materials. The B100 comes in three standard finishes: elsberry/aluminum laminate, makassar/aluminum laminate and silver/aluminum laminate (other finishes are available as an option). Despite their size the B100 can be easily integrated into a living environment without being overly sensitive to placement.

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TECHNICAL SPECIFICATIONS OF THE B100

Dimensions (WxHxD):	310mmx1495mmx620mm
Weight:	app. 128 kg per speaker
Power Rating:	min. 250 watts (pink noise)
Sensitivity (2.83V):	91 dB
Impedance:	4 ohms
Output range (+3/-3dB):	32Hz-45kHz
Crossover frequencies:	160 Hz, 2700 Hz
Slew rate:	6 dB tweeter 2x6 dB mid-rangedriver 6 dB bass driver all first order filters

CROSSOVER CIRCUIT ARRANGEMENT

Woofer: Low pass 6dB/oct. with impedance correction of the upper bass reflex maximums so that the crossover works without interacting with the impedance of the woofer.
Mid-range driver: Highpass 6dB/oct. and low pass 6db/oct.; impedance correction of the resonance frequency and the magnetic coil inductance so the crossover works without interacting with the impedance of the mid-range driver.
Tweeter: High pass 6dB/oct..
Galvanic separation of the woofer and mid-range section for bi-wiring/bi-amping.

THE DRIVERS

275mm custom designed woofer
Custom-built with 275mm die-cast light alloy enclosure, very rigid, magnetically non-conductive, therefore, no magnetical loss
Large vent hole in the pole core to vent the area behind the dustcap.
Vented dustcap behind the centring bell avoids compression effects.
Extremely rigid air-dryed glass fiber cone with resonance-damping coating, extremely stable and distortion-resistant, completely resonance-free response charactristic exceeding 2000 Hz. 50 mm Kapton coil frame, extremely heat-resistant und completely free of eddy-current loss. 25 mm high-wound magnetic coil responsible for very long linear cone throw, exceeds the travel of most woofer cones of this size by a factor of two, resulting in a dynamic gain of 6dB.

135 MM MID-RANGE DRIVER

Kevlar mid-range driver with extremely high load rating, modified to Burmester specifications.
135 mm die-cast light alloy enclosure, very rigid, magnetically non-conductive, therefore, no magnetic loss.
Kevlar-cone diaphragm presently has the best rigidity-to-mass ratio of all known diaphragm materials with resonance-free response characteristics exceeding 3000 Hz
Aluminum eddy current-free coil frame, extremely heat-resistant.

TWEETER

Two AMT (Air Motion Transformer) tweeter modified to Burmester specifications, with horn construction.
Diaphragm foil made of highly heat-resistant Kapton, therefore, extreme load stability.
Diaphragm foils are pair-matched.
Best motion-to-mass ratio.
The app. 30 cm^2 diaphragm area is about ten times the size of conventional dome tweeters. This results in a very low crossover frequency of 2700 Hz and allows a d'Appolito configuration which guarantees very stable and transparent sonic images
No compression effects as with dome tweeters
Neodym magnets with very high energy density (app. 20 times higher than comparable ferrite magnets) allow magnets of smaller size and, thus, a more streamlined design.

SPECIAL FEATURE: COMPUTER-MATCHED DRIVERS

All drivers are broken in at high signal levels by Burmester Audiosysteme non-stop for seven days (woofers and mid-range drivers with 10 Hz, tweeters with pink noise). Then they are measured very carefully over their full frequency range and finally matched in pairs by computer. After the computer-matching process we guarantee that the overall frequency deviation between left and right speaker is less than 0.5 dB! With this procedure we can guarantee the technical specs of the speakers for a long time since they are broken in and, hence, do not change characteristics when used by the customer.

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CABINET CONSTRUCTION

Double-walled enclosure with extremely rigid inner housing and soft dampened outer enclosure to avoid undesirable resonances at the surface of the speaker cabinet.
Bass-reflex woofer enclosure (2 x 60 l volume) with a lower critical frequency of below 30Hz.
Sealed mid-range enclosure with volume of 2 x 4 l
Symmetrical array of the two mid-range drivers above and below the tweeter (d'Appolito). Compared with an asymmetrical driver arrangement this configuration delivers a much more stable and precise sonic image.
The two woofers are also arranged symmetrically in line with the tweeter to extend the d'Appolito concept into the bass region.
Cabinet finishes and prices: see price list

SPECIAL FEATURES

The woofers of the B100 radiate from the side of the speaker cabinet towards each other. This configuration has the advantage that undesirable high frequencies emanating from the woofers (partial harmonics) do not reach the listener directly.
Furthermore, facing the woofer cones towards each other produces an additional compression in the bass region without cancellation effect. Ideally, the distance between the speakers should be at least 2.5 m.

DAMPING

Bass dampening system at the inside of cabinet walls, no sound deadening wool in the bass enclosure to absorb as little as possible of the back-radiating woofer energy.
The dampening material consists of special felt.
Dampening of the mid-range enclosure with a bit of cotton insulation to absorb the sound radiating from the back of the mid-range driver.

OTHER DESIGN FEATURES

Bi-wiring/bi-amping.
Massive binding posts under the speaker cabinet ensure shortest possible distance to the crossover.
Interior wiring of the woofers with 10mm² highest-purity copper litz, wiring of mid-range drivers and tweeters with pure 4mm² silver cable.
Front panel made of solid 20mm thick aluminum plate, milled and enameled. It holds the tweeter and acts as a cabinet stiffener in the area of the tweeter and mid-range drivers (see fotos).
Bell-shaped bass reflex opening to avoid air motion turbulences.

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FINISHES

Elsberry/ silver painted aluminum laminate

Silver / silver painted aluminum laminate

NEW: Macassar / silver painted aluminum laminate

Power rating: approx. 400W

BURMESTER AUDIOSYSTEME
Wilhelm-Kabus-Straße 47 · 10829 Berlin · Germany · Phone +49 (0)30 787968 · eMail: mail@burmester.de · www.burmester.de