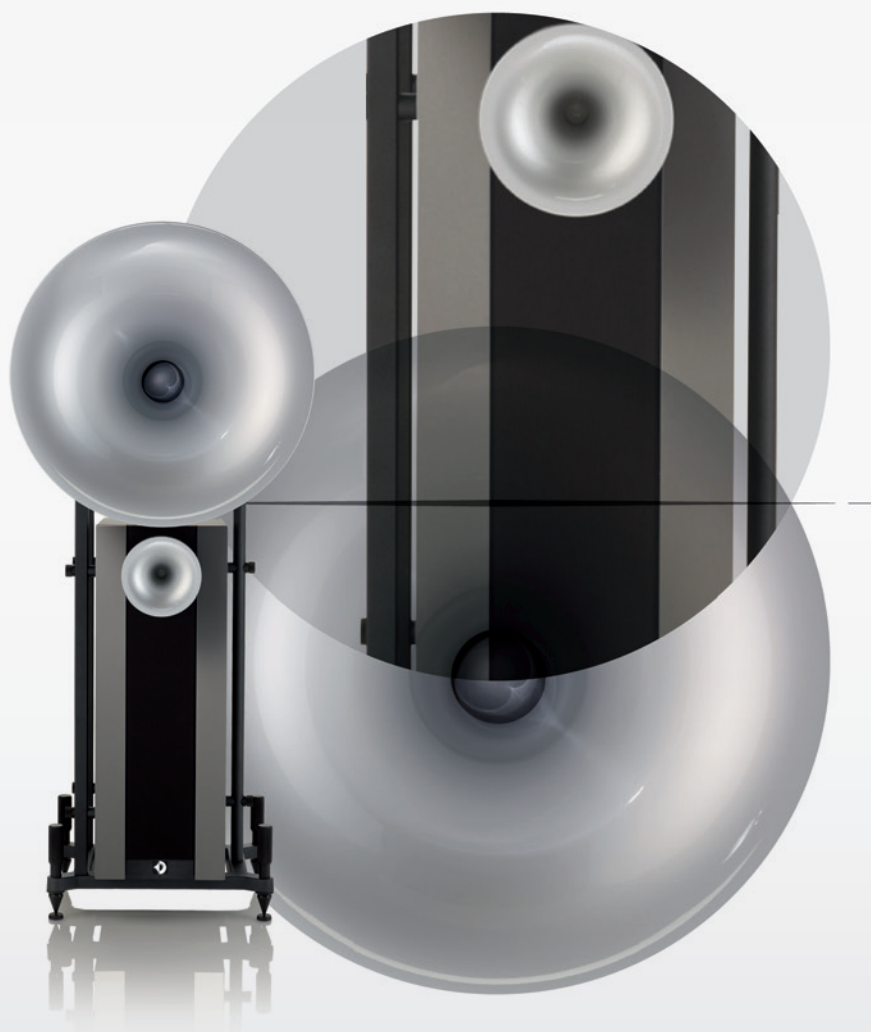


DUO | FACT SHEET

The classical horn system



avantgarde
ACOUSTIC

DUO | FACT SHEET

The classical horn system

DUO

104 dB sensitivity

8 ohm drivers

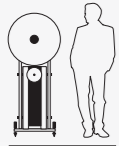
27 inch spherical midrange horn

CDC system with no crossover

Bass with active feedback control

2 x 10 inch neodymium bass drivers

250 watt subwoofer amplifier with 60.000 μ F



THE SYSTEM

The Duo combines all of Avantgarde Acoustic™'s technological and creative potential, resulting in a most sophisticated two way horn system. With its enlarged 670 mm midrange horn, a driver system of exclusive quality and precise integration of all components, this system offers unrivaled performance across the sound spectrum.

The Duo is a 2-way spherical horn system with integrated active subwoofer Sub 225 . Its high sensitivity (104 dB/W/m) and its hybrid concept with self-powered subwoofer makes it easy to drive with any amplifier. Even with low powered tube amps the Duo is able to deliver a powerful, dynamic and three-dimensional sound, because the power-demanding work at low frequencies is managed by the self-amplified Sub 225.



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DUO DRIVERS

The classical horn system



THE MIDRANGE HORN DRIVER

The utmost care at choosing the drivers is the key to successfully transforming the theoretical advantages of the horn technology into an outstanding High End speaker. As mostly people focus on treble and bass response, Avantgarde Acoustic™ considers the midrange as the "heart" of each speaker system.

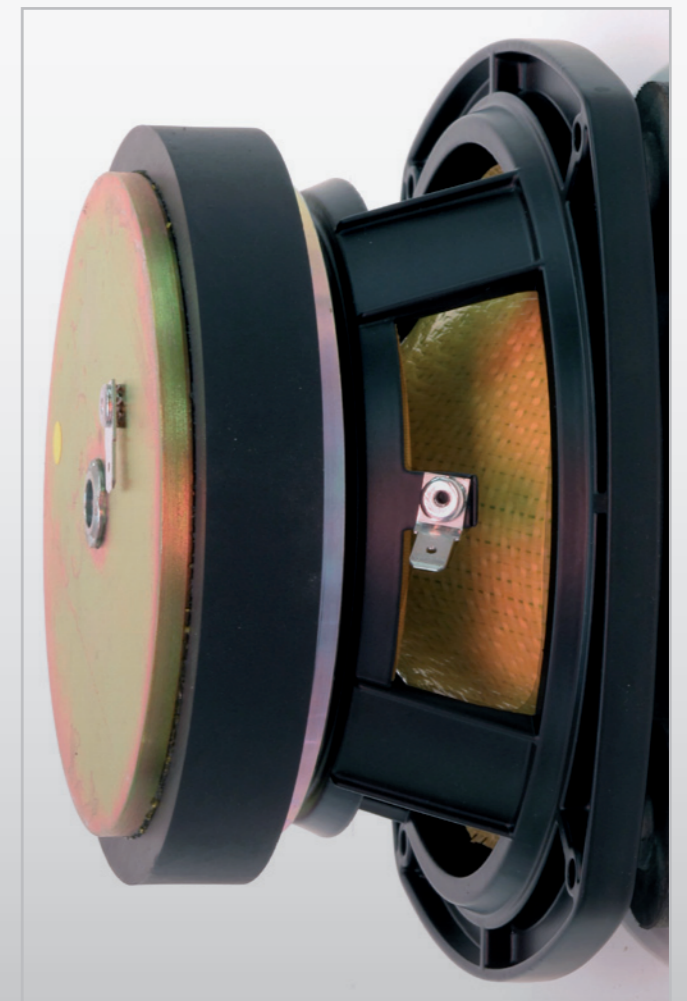
In the captivating world of horns, size matters: the bigger the dimensions of the horns, the more extended the bandwidth becomes, and the more the listener takes advantage of the incredible performance of the horn technology. That is why our engineers focused all of their expertise to develop a set of unique enlarged spherical horns with an extended frequency range of one full octave – compared to its smaller Uno brother. The result is the spectacular 27 inch spherical midrange horn, seamlessly powered by the high performance M2 driver.

The M2 is a 170 mm (7 inch) midrange driver with a 100 mm (4 inch) dome especially developed for the Duo and optimized for a large, linear excursion. A strong ferrite magnet assembly is used to generate a powerful magnetic field which homogeneously controls the movement of the voice coil. The M2 has a very low cut-off frequency with seamless and crossover-less integration to the subwoofer. The design of the dome ensures a phase-neutral radiation of the sound waves into the midrange horn SH6704 and wide bandwidth of the extended midrange down to 170 Hz.

The kevlar midrange cone of the M2 is coated with trillions of tiny microfibrils generating a "Velours Damping Effect". This

incrementally small fur of the VDE technology cone effectively reduces partial resonances of the cone itself. Furthermore the microscopic fibres of the VDE technology help to effectively absorb high frequency distortions.

The Avantgarde Acoustic™ proprietary CDC system features a controlled roll-off at 2,000 Hz, and allows us to completely eliminate all passive crossover components in the signal path. This way the M2 gets the pure and non-distorted full-range signal directly from the amplifier! The nominal impedance of the M2 is 8 ohm and the sensitivity is 104 dB (1Watt/1m).

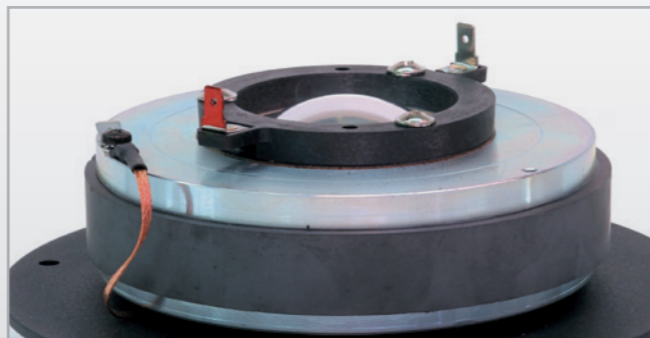
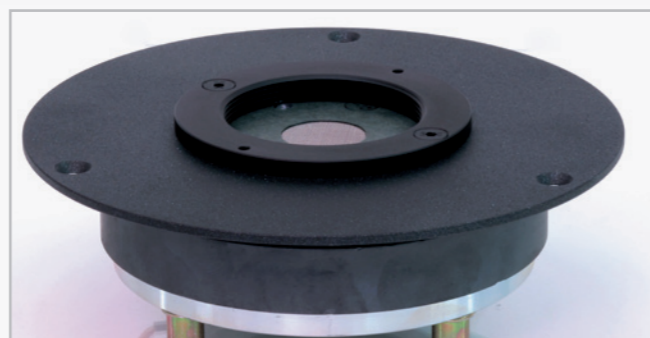


DUO DRIVERS

The classical horn system



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THE TWEETER HORN DRIVER

The H2 tweeter is a reduced sensitivity version of our reference tweeter H3⁰. The exceptional driver H2 combines the smoothness of an electrostatic driver and the power of a strong 1 inch horn driver. The mere force of the 3 kg (6.5 lb) magnet on the voice coil guarantees 100% detail and precision even at low volume levels, and provides the Duo with compression-free sound reproduction even at extreme sound pressure levels. With the spherical horn SH1801 the H2 offers an ultra wide bandwidth down to 900 Hz. Due to the passive crossover point being at 2,000 Hz we achieve a wonderful smooth sound with incredible dynamic headroom

DUO DRIVERS

The classical horn system



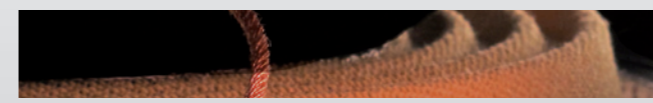
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THE SUBWOOFER DRIVER

The Duo is supplied with the active subwoofer Sub 225, which is driven by two powerful 25 cm (10 inch) long-excursion drivers.

The 10-ND500 long excursion drive unit is characterized by its extremely high efficiency and utmost power handling capabilities. The extended controlled excursion is ± 7 mm. Exclusive neodymium magnets with a special under-pole magnet topology are used to maximize the flux density in the air gap and to eliminate energy leakage of the magnetic field. The powerful neodymium magnet with a very strong BL power factor and the very stiff but light membrane will ensure highest resolution and authority even with complex signals at extreme sound pressure levels.



DUO | AMPLIFIER

The classical horn system



THE SUBWOOFER AMPLIFIER

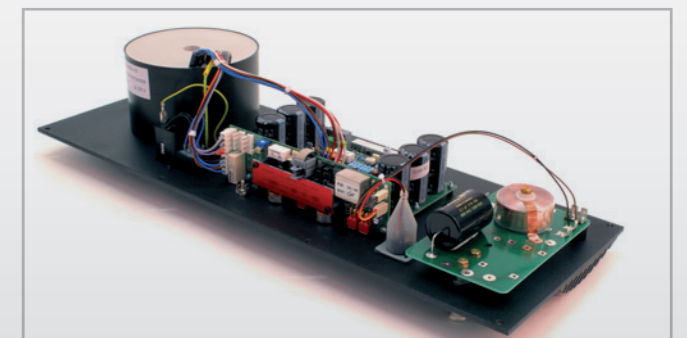
The integrated active PA 106 electronics consists of a powerful 250 watt amplifier and an active frequency crossover. A forceful 330VA toroidal transformer and an energy reservoir of 60.000 μ F providing ample energy reserves and dynamic headroom.

In order to achieve full control to overcome the inertia of the driver mass, the PA 106 is equipped with Avantgarde's genuine adaptive motional feedback circuitry. These ultrafast analogue electronics compensate for signal deviations induced by the circuit and drivers in real-time. As a result the Sub 225 achieves an astonishingly flat frequency response down to 18 Hz! Furthermore, even at very low listening levels – when the music signal is too weak to overcome the inertia of the bass driver mass – the adaptive motional feedback circuitry will seamlessly increase its power output for a full and rich bass response.

The active crossover allows the adjustment of a number of parameters thus ensuring a very easy and fast installation of the system even in acoustically critical situations. A 3-position subsonic switch, variable settings for the input sensitivity and crossover frequencies make the Sub 225 extremely versatile. The Sub 225 can be remotely switched on/off using the 12V trigger signal.

The Sub 225 is driven via high power speaker terminals for direct connection to integrated amps, power amplifiers or receivers or alternatively via XLR terminals. The signal take-off is not only at high impedance, but is also balanced and transformer coupled. This floats the subwoofer ground, avoiding hum loops and eases connection to balanced and bridged amplifier designs.

The enclosure of the Sub 225 is constructed from 1.2 inch MDF (28 mm). Designed with a centrally located reinforcing stabilizer, the box construction is very rigid, avoiding resonances.



DUO | CONSTRUCTION

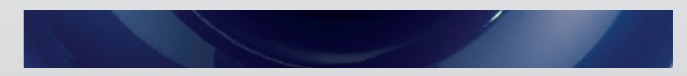
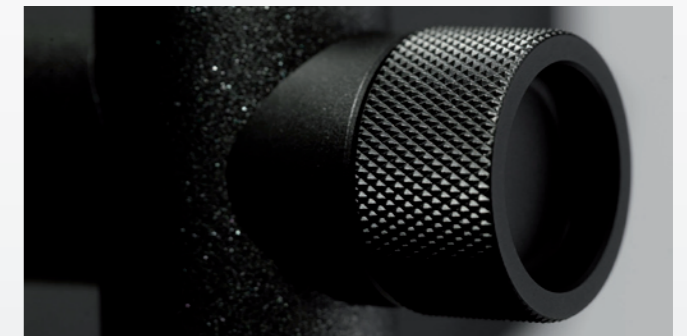
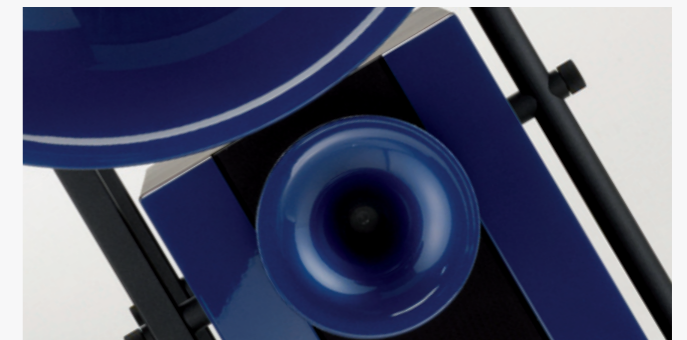
The classical horn system



MECHANICAL CONSTRUCTION

The midrange horn is mounted into a circular housing cylinder with a solid cast aluminium back cover on its back end. The tweeter is located in a sealed compartment in the upper part of the subwoofer enclosure.

The entire loudspeaker system is placed on a solid cast aluminium base frame. The spike assembly of the base frame – featuring solid 55 mm spikes and massive adjusting handles – are easily accessible from the top. Newly designed aluminium spacers with knurled head screws, connecting the frame rails with midrange housing cylinder and subwoofer.



DUO | COLORS

The classical horn system



EXAMPLES



COLORS FOR THE HORNS AND PANELS

- | | |
|--|------------------------------------|
| Stealth Nocturne Black <small>(panel only)</small> | Turmaline Vivid Black |
| Stealth Nocturne Grey | Shiny Citrine Orange ¹⁾ |
| Diamond Crystal Silver | Ruby Brilliant Red |
| Akoya Pearl White | Sapphire Burma Blue |
| Light Amber Bronze | Light Topas Blue |
| Saona Beach Cream | Smaragd Pearl Green |

A selection of ten standard colors is available for the horns. This includes eight metallic lacquer finishes, the uni-color „*Saona Beach Cream*“ finish and the moderne „*Stealth Nocturne Grey*“ finish. The special „*Shiny Citrine Orange*“ multi-layer coating is available as an option.

The front panels can be ordered in any of the above horn colors, plus the elegant „*Stealth Nocturne Black*“ finish. Four different wooden veneers are available. As standard with matte surface and optional in shiny piano lacquer finish.

On this page you will only find a small selection of thumbnails of the color combinations possible. For a better overview you should visit our website www.avantgarde-acoustic.com.

Here you can download a special *Color & Finishes.pdf* for each product. In this document you can find a nice overview of all front-panel combinations available for each of the horn colors. This will quickly guide you to your favorite horn-panel combinations.

COLOR CONFIGURATOR

On our website www.avantgarde-acoustic.com you will find as well a comprehensive color selection tool. Just go to the respective product within the *HORN*-section. Under *DESIGN* you can select the color of the horn and the color and veneer of the front panel. If you have found your favorite color combination, simply click on the download-button for a high resolution picture (6 mb).

WOODEN VENEERS FOR THE PANELS

- | | |
|--|---------------------------------------|
| Flower Birdseye Maple ²⁾ | Tianshan Mystic Walnut ²⁾ |
| Hanami Lucent Cherrywood ²⁾ | Jacaranda Aura Rosewood ²⁾ |

¹⁾ optional customized color
²⁾ optional available in high gloss piano lacquer finish

DUO | REVIEWS

The classical horn system



TEST REVIEWS*

"So much goes on in the mid-range, and the DUO rewards its owner with excellent linearity, clarity, detail, separation of instrumental lines, immediacy, and natural attack. There's true sonic value in that majestically broad, dynamic midrange, in the obvious microdynamic delicacy and accuracy, the near-zero distortion, the potential for very high sound levels, the easy amplifier loading. You'll need to listen to appreciate the quality of the entire creation." (STEREOPHILE, M. Colloms, USA)

"These DUOs are simply the best I have ever heard. Nothing else has come so close to recreating the power and finesse of a full organ, or bringing a full orchestra into the living room, and of conveying the emotion of a solo performance. These horn systems are so revealing of the sources that it's hard to imagine using anything else. My favourite reference speaker is now ousted in favour of these music-making devices." (THE LISTENER, C. Beeching, UK)

"Never before has a loudspeaker system impressed like this. Never before has music touched me with such enchanting powers of authenticity as when played back over the DUO. Its strengths lie undoubtedly in this nearly hypnotic, distinctly addictive mien that doesn't suffer the faintest hint of coloration. Pure music in all its facets! The excitement of live music is this system's core signature. Accordingly: DUO fantastico." (HÖRERLEBNIS, A. Aschenbrunner, GERMANY)

"Once you listen to the DUO, you will find no way to escape from its sound. Don't try to resist. It's a feeling like a glass of icy-cold beer in hot summer night. For those audiophiles who got exhausted while wandering around various loudspeakers, and for those who love the looks of these extraordinary tower, the DUO is obviously an exit out of the ordinary." (AUDIO, K. Nam, KOREA)

"What a Trip! The DUO catapults you right into the centre of the music. It drags you along and offers a truly holistic lifetime experience. Furthermore along this hell of a ride you will discover details, which you would never ever have dreamt about before. (STEREO, H. Barske, GERMANY)

"To round all this up, the Avantgarde hornspeaker is amazing. Even after hearing the DUOs it is like going from the Ferrari F40 to the Ferrari Enzo. For those looking for the speed of electrostatic panel loudspeakers yet with the easy of drive and dynamics of horns, the DUOs should make your very short list of must audition. Of course in the end what really matters is that you ... Enjoy the Music." (ENJOY THE MUSIC, Steve Rochlin, USA)

TEST REVIEWS*

"We don't remember of any other speaker that could perform such great dynamics and peaks of big orchestras and chorus without any compression and distortion like the DUO. It can easily fill even the biggest rooms with zero compression. The DUO is able to reproduce all kinds of music with detail, accuracy, coherence, dynamics, micro dynamics and colors of sounds in a way, we have never heard before. We will never forget this exceptional listening experience" (HITECH, T. Katsenis, GREECE)

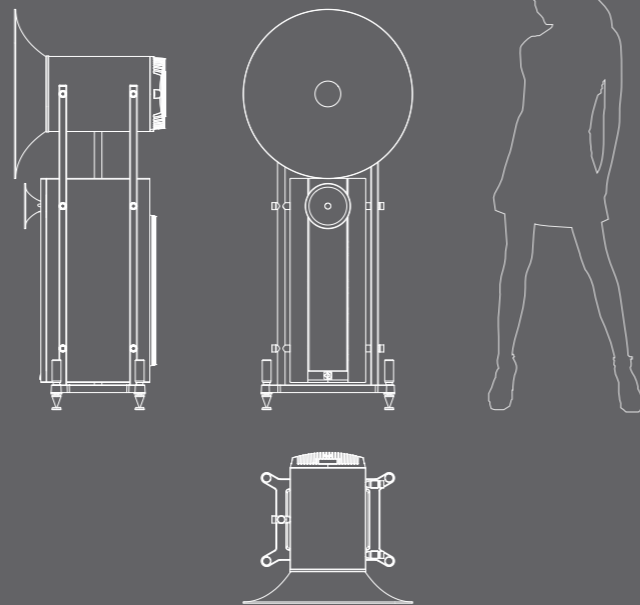
"The DUOs are far and away the most fascinating and formidable speakers I've yet encountered. If you want the music to grab you by the short 'n' curlies, to commune with you most intimately, these DUOs might be your personal hotline to the aural deities. They're for folks who want personal visitations, goose bumps, butterflies in the belly and the occasional heart-stopping scare. In short, they're exactly my kind of breathless fantasy audio device." (SOUNDSTAGE, S. Ebaen, USA)

"The DUO G2 the enchantment of the mermaid. The Avantgarde demonstrated a visceral sound with a dynamic, lightness and fast response of transients. As expected it was able to produce a large sound with willful, realistic and palpable presentation of the musical event - neutral, open and straightforward. Although extremely detailed it cannot be accused of coldness. On the contrary ... Very open, transparent, fantastically dynamic while revealing the smallest details that many other speakers are tabula rasa." (AUDIO & CINEMA EM CASA, J. Zeferino, PORTUGAL)

"The DUO captivated me with its musicality and unique qualities. In addition to the effortless and seemingly unlimited dynamics, the DUO system had an intimate quality that made it seem as though the musicians were communicating directly with me. It did what high-performance audio systems are supposed to do: involve the listener in the music. It went beyond next level of musical communication." (THE ABSOLUTE SOUND, R. Harley, USA)

"The DUO is totally a new era of speaker concept in the 21st century. Every speaker design which should evolve in the future will trace its roots to the Avantgarde. ... I strongly believe that the DUO will become an evolutionary missionary in the history of speakers. I am sure just by looking at its visual appearance and by listening to its sound!!" (AUDIO ACCESSORY, Yasukuni Terashima, JAPAN)

"The DUO is simply the finest horn loudspeaker we have ever heard, and we've heard plenty of them over the years. Amazingly, it isn't even their top-of-the-line model. It is the first horn loudspeaker I've heard that doesn't have horn colorations. The dynamic gradations are state of the art. It's sense of immediacy and transparency are amazing. It's simply "alive" sounding. We tried to find its "fatal flaw"- but we failed!" HIGH END AUDIO, A. Salvatore, CANADA)



SYSTEM DATA

Frequency response	satellite subwoofer
Power capacity	
Sensitivity (1 Watt / 1 m)	
Crossover frequencies	
Nominal Impedance	
Recommended amplification	
Recommended room size	
CDC (Controlled Dispersion Characteristic)	
CPC crossover (patent pend.)	

HORN

Horn type	
Horn material	
Horn finish	
Dispersion type	
Horn mouth area	low mid range mid range high range
Horn mouth diameter	low mid range mid range high range
Horn length	low mid range mid range high range

HORN DRIVERS

Diameter	low mid range mid range high range
Magnet material	low mid range mid range high range

SUBWOOFER

Power Output (RMS)	
Power capacitance	
Toroidal transformer	
REAL TIME feedback control	
ADRIC circuit (patent pend.)	
Active frequency crossover	
Subsonic filter, 3-positions	
Automatic 12V remote On/Off	
Smart Limiter	
SoftStart circuit	

Driver diameter	
Number of drivers per module	
Magnet material	

DIMENSIONS/WEIGHT

Dimensions	width depth height (+/- 15 mm)
Weight	

170 - 20.000 Hz
18 - 350 Hz
100 Watts
> 104 dB
170 / 2.000 Hz
8 Ohm
> 10 Watts
> 20 m ² / 200 ft ²
Yes
No

Spherical horn
ABS injection mold
polished
180 Grad

n/a
0,353 m ² / 547 in ²
0,025 m ² / 39 in ²

n/a
670 mm / 26 in
180 mm / 7 in

n/a
370 mm / 15 in
85 mm / 3.3 in

n/a
170 mm / 7 in
25 mm / 1 in

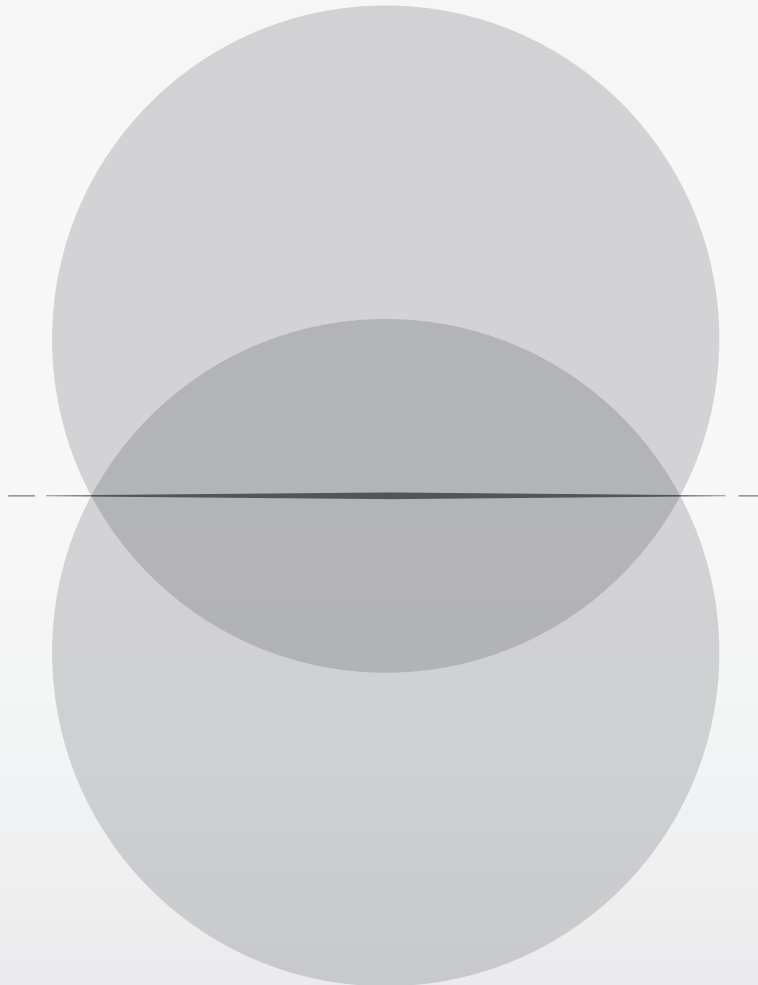
n/a
Ferrite
Ferrite

250 Watts
60.000 µF
330 VA
Yes
n/a
variable 60 - 350 Hz
20 / 30 / 40 Hz
Yes
Yes
Yes

250 mm / 10 in
2
Neodym

670 mm / 26 in
600 mm / 24 in
1.595 mm / 63 in
79 kg / 174 lbs

purity



performance



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