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HI-FI+ GUIDE TO LOUDSPEAKERS 2017

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HI-FI+ GUIDE TO LOUDSPEAKERS 2017

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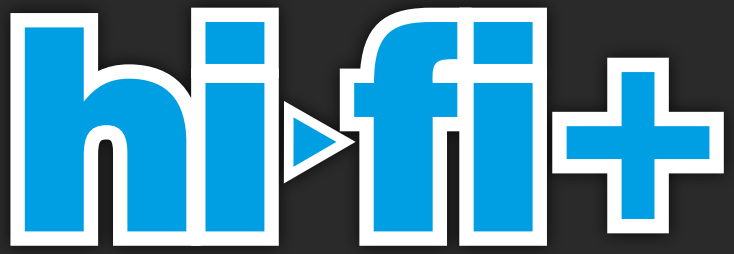

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GUIDE TO LOUDSPEAKERS 2017 HI-FI+

FROM THE EDITOR

Welcome to the ***Hi-Fi+ Guide to Loudspeakers 2017***. This guide represents a snapshot-like look at the world of high performance loudspeakers circa the latter part of 2017.

My mother used to describe the toy catalogues put out by some stores around Christmas-time as "wish books" and in a sense this guide is likewise a loudspeaker wish book—a chance to see what's available now or coming soon, as well as a look at some of the best loudspeakers *Hi-Fi+* has discovered over the past few years. As always we're guided by several key principles:

The Proof is in the Listening: After loudspeaker measurements are taken and charts and graphs drawn, only one thing really matters—the perceived sound quality a loudspeaker delivers to your ears and the musical satisfaction you derive from that sound. Period.

The Best Get Better: The past year has seen a flurry of important and impressive releases at the very top end of the price/performance scale. Some of the best new offerings we have heard are able to convey levels of deep musical information that might have seemed unthinkable just a few years ago.

Value is Out There (if you know where to look for it): While ultra high-priced top-tier models continue to scale the performance heights, today's best affordable floorstanders and standmount monitors are becoming sonic overachievers of the first rank and in ways rarely seen before. In short, this is a golden era for those seeking great sound on a budget.

Size Isn't Everything: Large, floorstanders certainly have their place, but in just the past few years well-designed and relatively compact standmount monitors have begun to deliver extraordinary amounts of performance and sonic refinement for their size and price, meaning bigger isn't always better!

This Guide presents:

- "U Need 2 Know" sections revealing a wealth of new loudspeaker products,
- Talks with five gifted designers of high performance loudspeakers,
- A section highlighting *Hi-Fi+* loudspeaker reviews from issue 100 to present,
- Feature articles on loudspeakers design in general and on standmount loudspeaker in particular, and
- Loudspeaker Lexicon: An in-depth glossary to explain acronyms and terminology.

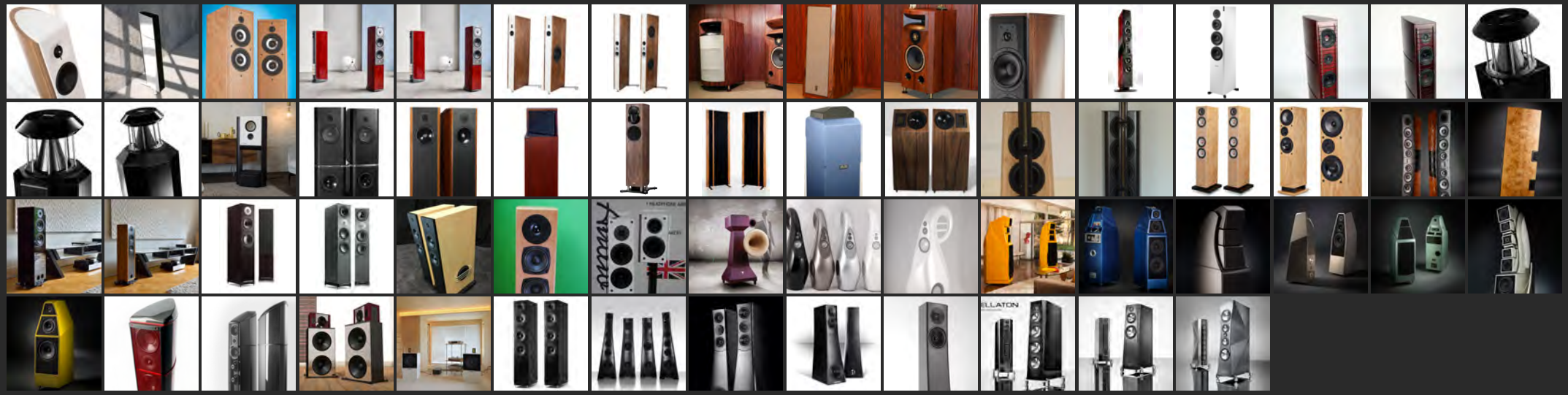
As always, our goal is to help readers to derive deeper satisfaction from the music they love, while having great fun with carefully selected audio equipment and music systems. We wish you the best in your quest for great loudspeakers, and happy listening.

Chris Martens
Publisher, *Hi-Fi+*

U NEED 2 KNOW

DYNAUDIO

FLOORSTANDING LOUDSPEAKERS



STANDMOUNT LOUDSPEAKERS

SUBWOOFERS AND OTHERS

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FLOORSTANDING LOUDSPEAKERS

Aequo Audio Ensis

The multi award winning Ensis speaker (e.g., Best Speaker of the Year, "best ever to have had in listening room", etc.) has made some of the world's most renowned journalists rave on about how such small speakers can deliver such huge sound. This includes taut and deep notes of the lowest octave by its 500watt powered subwoofer and a huge 3D soundstage with holographic imaging. The most highlighted aspects are the very detailed, high-resolution capabilities without ever becoming harsh or too analytical: fast, non-fatiguing, and highly involving. Some of the most musical emotion enabling speakers in the world, regardless of price. Includes many in-house developed technologies, like special composites, the EHDL dispersion and analog room-size and speaker-placement adjustment system.

https://www.aequoaudio.com/ensis

Technical Specifications

Type: Floorstanding loudspeakers

Driver complement: 3-way:
- Bass: 1 × 10-inch (active Ncore power)
- Midrange: 1 × 5-inch
- High Frequency: 1× 1-inch
- Active mid/high is optional

Enclosure Type: Closed box

Frequency Response: 10Hz–40kHz (-3dB @ 16Hz in average room on xxl)

Impedance: 8 ohms nominal

Sensitivity: 90 dB

Price: £24,000 per pair

Availability: ultimate-fidelity.co.uk

Aequo Audio Stilla

A modest-sized and incredibly elegant floorstanding speaker, yet with super-impressive low frequency dynamics. The on-board analogue ARPEC system for room size and placement adjustments, tunes the double 7-inch subwoofers' roll-off—simulating a closed-box- into the lowest (!) frequencies with 2×250watt amplification. Suitable for small and large rooms. Many components are directly derived from the Ensis loudspeaker; again, the mid/high section remains passive with 90dB @ 8 ohms nominal, it matches with almost every amp! The 5-inch driver is responsible for very open, or pleasantly detailed, midrange frequencies without colouration. Highs are handled by the EHDL dispersion tweeter. All are time-aligned by the easy-to-use adjustable angle cabinet, and all are wideband phase-aligned by the first order crossover, to deliver a spectacular, holographic soundstage.

www.aequoaudio.com

Technical Specifications

Type: Floorstanding loudspeakers

Driver complement: 3-way:

Bass: 2 × 7-inch (2×250watt Ncore)
- Midrange: 1 × 5-inch
- High Frequency: 1 × 1-inch
- Active mid/high is optional

Enclosure Type: Closed and special reflex loaded

Frequency Response: 14Hz–35kHz (-3dB @ 17Hz in average room on xxl)

Impedance: 8 ohms nominal

Sensitivity: 90 dB

Price: £18,000 per pair

Availability: ultimate-fidelity.co.uk

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Acoustic Insight Virtual Stage Floorstander

Acoustic Insight shatters the mould of the standard multi-way loudspeaker with electronic crossover.

For a start we use the most advanced Jordan full range drive unit with its unprecedented phase-coherent clarity across the whole musical spectrum without crossover.

The speaker offers uniquely optimised elegant cabinet designs with fully customisable top-end and unprecedented quality bass extension. It also delivers an uncompromised degree of imaging, clarity, transparency, and sheer musical accuracy that must be heard to be appreciated, plus impeccable dynamics and naturally integrated balance across the whole musical spectrum. These are just for starters.

www.acousticinsight.co.uk

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
2 × Full range drivers
1 × adjustable HF unit

Enclosure Type:
Mass loaded transmission line

Frequency Response: 29Hz–27kHz (-3dB); 23Hz–37kHz (-6dB)

Impedance: 5 ohms

Sensitivity: 89dB @ 1W/1m

Price: £3,100

Availability: Directly from Acoustic Insight

Audiovector SR 3 Arreté Raw Surface Limited Edition

With a waxed concrete surface and contrasting 24-karat gold-plated details, the look of the new SR 3 Arreté Raw Surface can be defined as exclusive and very unique. Just like the technical features and beautiful sound of it.

This model, limited to 100 sequentially numbered pairs, uses a brand new coating technology to stabilize and stiffen the cabinet to create the perfect foundation for our advanced in-house Audiovector drivers. It also uses the tweeter of bigger sibling, SR 6 version 2.0 AMT, which has a lighter, faster membrane to add extra detail, size, and soundstage. Cabling comes from our flagship, R 11 Arreté and damping has been further improved. A new optimized crossover knits it all together to a truly coherent, detailed, and more punchy entity.

http://audiovector.com/sr-3-avantgarde-arrete.html

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
1 × Avantgarde AMT 2.0 (Hand built Air Motion Transformer)
1 × Audiovector Evotech High-Efficiency Driver
1 × Audiovector Evotech Long-Throw Driver

Enclosure Type: 2 ½-way bass reflex, bottom ported

Frequency Response: 22Hz–54kHz

Impedance: 8 ohms Nominal

Sensitivity: 91.5 dB

Price: £10,500/pair

Availability: Raw Surface Concrete Coating & 24K Gold Details

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Audiovector SR 3 Signature

Our Signature series is made from a culmination of our many evolutionary developments to achieve the manufacturing of a perfect all-round speaker that can play all kinds of music.

The distinctive curved cabinet shape eliminates the standing waves and internal resonance. With no parallel panels inside, the speaker sounds clean, clear and with amazing power.

The SR 3 series are hand built in Denmark with Danish made in-house parts.

www.audiovector.com

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
1 × Evotech T2011 Silk Dome (Hand build Dome Tweeter)
1 × Audiovector Evotech P2008CS
1 × Audiovector Evotech P2008CS

Enclosure Type: 2 ½-way bass reflex, bottom ported

Frequency Response: 27Hz–27kHz

Impedance: 8 ohms Nominal

Sensitivity: 91.5 dB

Price: £4200/pair

Availability: Piano & Matte Lacquer in Black, White, Rosewood & Cherry. Custom car lacquer finishes available on request

Auris Audio Poison 8

Our new loudspeaker introduces the successors to our well known and celebrated Poison series models: namely, the Poison 8 and Poison 88.

This pair represents, so far, the most accomplished concepts of Auris Audio, in technological and musical sense.

Poison 8 is a 4 way, 3D loudspeaker hand made from natural materials that have become a trademark of Auris brand.

With recommended power handling from 10W -100W this beauty shows superlative performance and unique acoustic style.

http://aurisaudio.rs/en

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement: Beyma, Custom mid driver and Fountek ribbon tweeter

Enclosure Type: Vented

Crossover: 250 Hz / 3500 Hz

Impedance: 8 Ohm

Sensitivity: (1 W / 1 m) 91 dB

Price: 9.588,00 euro

Availability: available world wide

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Auris Audio Poison 88

Our new loudspeaker introduces the successors to our well known and celebrated Poison series models: namely, the Poison 8 and Poison 88.

This pair represents, so far, the most accomplished concept of Auris Audio, in technological and musical sense.

Poison 88 represents a 4-way, high end loudspeakers with 3D option.

Like his "younger brother", Poison 88 is also made by the skilful hands of Auris craftsman.

With its recommended power of 10W to 150W, Poison 88 fills the room with harmony and an indescribable musical feeling that has to be experienced to be understood.

Bi-amp configuration is providing the best possible results.

This "gentle "giant definitely enters the race for the best pair of speakers in the class.

http://aurisaudio.rs/en

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement: Beyma, Custom mid driver and Fountek ribbon tweeter

Enclosure Type: Vented

Crossover: 250 Hz / 3500 Hz

Impedance: 4 Ohm

Sensitivity: (1 W / 1 m) 93 dB

Price: 14.280,00 euro

Availability: available world wide

Classic Audio Loudspeakers Project T-1.5

3-Way, Full Range premium horn system with field coil powered 18" and 15" woofer and beryllium compression horn driver.

www.classicaudioloudspeakers.com

Technical Specifications

Type: Full Range

Driver complement:

1 × 18-inch Field coil powered woofer
1 × field coil powered 15-inch woofer
1 × 4-inch beryllium diaphragm
1 × 2-inch throat field coil powered compression driver
1 × Fostex T-500AmkII Super Tweeter

Enclosure Type: Ported

Frequency Response: 21Hz–40kHz

Impedance: 16 ohms0

Sensitivity: 100 dB

Price: $74,950

Availability: Custom built to customer's wood choice

Classic Audio Loudspeakers Project T-5

3-Way Horn System.

www.classicaudioloudspeakers.com

Technical Specifications

Type: Floorstanding

Driver complement:
- 2 × 11-inch Alnico Woofers
- 1 × Beryllium compression driver midrange
- 1 × Fostex T900 Super Tweeter

Enclosure Type: Ported

Frequency Response: 35Hz–35kHz

Impedance: 16 ohms

Sensitivity: 95 dB

Price: $24,500

Availability: Custom built to customer's wood choice

Classic Audio Loudspeakers Project T-3.4

3-Way Full range premium horn system with field coil powered 15-inch woofer and beryllium compression horn driver.

www.classicaudioloudspeakers.com

Technical Specifications

Type: Full Range

Driver complement:
- 1 × 15-inch Alnico Woofer
- 1 × field coil powered 15-inch woofer
- 1 × 4-inch beryllium diaphragm
- 1 × 2-inch throat field coil powered compression driver
- 1 × Fostex T-500AmkII Super Tweeter

Enclosure Type: Ported

Frequency Response: 21Hz–40kHz

Impedance: 16 ohms

Sensitivity: 100 dB

Price: $54,950

Availability: Custom built to customer's wood choice

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Dynaudio Contour 30

The new Contour series has been re-thought, re-designed and re-engineered for a new era of performance.

Defined by a more organic, smoother, and more contemporary design—and manufactured at Dynaudio's newly expanded state-of-the-art research and manufacturing facility—the Contour 30 marries leading-edge technology and production methods with traditional craftsmanship.

Its soundstage offers impeccable imaging, plus even deeper, more defined bass with a significantly wider dynamic range. The beautiful aluminium baffle complements Dynaudio's renowned high-quality handcrafted cabinetry, and houses Dynaudio's finest tweeter, the legendary Esotar2. It's been matched perfectly to the new woofer and midrange drivers. Dynaudio is innovating and reaching into the future with the latest Contour; effortless simplicity.

www.dynaudio.com

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
1 × 28mm soft dome Esotar2 tweeter
2 × 180mm MSP woofers

Enclosure Type: 2½-way bass reflex, rear ported

Frequency Response: 32Hz–23kHz

Impedance: 4 ohms

Sensitivity: 87dB

Price: Starting from £5,750

Availability: Now – Ivory Oak, Walnut, High Gloss White/Black, High Gloss Grey, High Gloss Rosewood

Dynaudio Evidence Platinum

Handcrafted to the highest standards, Dynaudio's flagship Evidence Platinum combines the innovative Dynaudio Directivity Control technology (DDC) with the company's most advanced drive units, select crossover components, and the highest level of fine-tuning.

In each speaker, four new 18W75 woofers replace the former 17cm woofers, achieving a superior bass performance. Dynamics and accuracy in the lower frequencies are further enhanced by using multiple bass woofers in parallel, offering the same large diaphragm surface of one conventional woofer, but taking advantage of multiple voice coil/magnet assemblies.

Unmatched musical purity and refinement. Totally effortless power. And unequalled sound staging. The Evidence Platinum has reached a stage where technology borders on magic. You don't just listen to music with this one… you hear it.

www.dynaudio.com

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
2 × 28mm Esotar2 soft dome tweeters
2 × 150mm MSP mid-range drivers
4 × 180mm MSP woofers

Enclosure Type: Bass reflex rear ported

Frequency Response: 28Hz–25kHz

Impedance: 4 ohms

Sensitivity: 89dB

Price: £56,000

Availability: Piano Lacquer High gloss finishes in Black, Rosewood, Bordeaux and Mocca

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Dynaudio Focus 60XD

The Focus XD range is a complete hi-fi system… without the clutter of a complete hi-fi system. These high-end active speakers bring true high-res wireless streaming, from every conceivable source, to your home. Each drive unit is powered by its own tailor-made digital amp. And running the show is cutting-edge DSP capable of handling full-fat, 24-bit/192kHz hi-res files.

Send in a digital signal (wired or wireless), and it stays that way right up until the last possible moment—it's pure all the way from the recording studio to the speaker driver. The 600W Focus 60 XDs are the ultimate union of quality, power, and performance. With twin long-throw 18cm MSP woofers and a dedicated 14cm MSP midrange driver, plus Dynaudio's legendary 28mm soft-dome tweeters, they're designed just as much for finesse as they are for outright thump.

www.dynaudio.com

Technical Specifications

Type: Floorstanding Digital Active Loudspeaker

Driver complement:
1 × 28mm soft dome tweeter
1 × 140mm MSP midrange driver
2 × 180mm MSP woofers

Enclosure Type: 3-way DSP Based, Closed

Frequency Response: 18Hz–24KHz

Amplifier: 4 × 150W

Sensitivity: Not applicable (the speakers are self-powered)

Price: £9,500

Availability: Now – High Gloss finish in Black, Walnut, Grey Oak and Rosewood. Satin White

Gamut Audio RS7i

The RS7i is a true 3-way design crafted to deliver epic timing, spectacular resolution,and room-filling dynamics. It features two woofers, the second of which is mounted above the tweeter to deliver stunningly rich, even, and smooth bass tones. Unusually, the mid-range driver is DC coupled, meaning that it is directly connected to the amplifier. Instead of using capacitors in its crossover, the RS7i employs a special combined series and parallel network to filter low frequencies, avoiding the potential for phase errors and time smearing. The RS7i's distinctive swept-back, boat hull-like shape also serves a key sonic purpose, and both its vertical and horizontal tilt are fully adjustable to optimize the speakers' sonic performance in your room.

www.gamutaudio.com

Technical Specifications

Type: 3-way impulse-optimised bass reflex floorstanding loudspeaker

Driver complement:
1 × 1.5-inch tweeter: ring radiator, silk cone, neodymium magnet
1 × 7-inch mid-range: sliced paper cone, impregnated with a bespoke blend of natural oils
2 × 7-inch woofer: wood fibre cone, with Gamut solid wood dust cap for optimal impulse behavior over the full frequency range
Drivers perfectly aligned both physically and electronically to achieve phenomenal phase response for superior musical presentation.

Enclosure Type: Curved shape and rear tilt designed for superior sonic performance
21 layers of sustainably-sourced hand-selected real wood veneers, form-pressed into solid wood panels
2 × 5mm aluminium rear-mounted ports precisely tuned for optimum impulse response.

Frequency Response: 22Hz–60 kHz

Impedance: Nominal impedance 4 ohms
Minimum impedance 4 ohms

Sensitivity: 89.5 dB/2.83 V

Price: From £35,300

Availability: Available now

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Gamut Audio RS5i

The RS5i is a 2½-way floorstander designed to deliver an even richer bass response compared with Gamut's smaller RS3i stand-mount and to deftly master a range of spaces. It won't overwhelm a room on the smaller side of medium, and yet will fluently command a medium-to-large one. Its state-of-the-art drivers are designed by Gamut, for Gamut. The mid-range driver cones are impregnated with specific natural oils to eliminate the possibility of colouration from the cones' fibres, while the woofers' solid wood dust caps, hand-selected according to weight and density, stiffen the cones and ensure unswerving performance across the whole frequency range. All drive units are painstakingly aligned physically and electronically to deliver impeccable timing, presence, soundstage, and dynamics.

www.gamutaudio.com

Technical Specifications

Type: 2½-way impulse-optimised bass reflex floorstanding loudspeaker

Driver complement:
1 × 1.5-inch tweeter: ring radiator, silk cone, neodymium magnet
1 × 7-inch mid-woofer: sliced paper cone, impregnated with a bespoke blend of natural oils
1 × 7-inch woofer: wood fibre cone, with Gamut solid wood dust cap for optimal impulse behavior over the full frequency range
Drivers perfectly aligned both physically and electronically to achieve phenomenal phase response for superior musical presentation.

Enclosure Type: Curved shape and rear tilt designed for superior sonic performance
21 layers of sustainably-sourced hand-selected real wood veneers, form-pressed into solid wood panels
2 × 5mm aluminium rear-mounted ports precisely tuned for optimum impulse response.

Frequency Response: 22Hz–60 kHz

Impedance: Nominal impedance 4 ohms
Minimum impedance 4 ohms

Sensitivity: 88.5 dB/2.83 V

Price: From £26,500

Availability: Available now

German Physiks Unlimited

The Unlimited uses a German Physiks DDD driver with a downward facing 8-inch woofer. Its DDD driver covers 24kHz–200Hz, eliminating the mid-range crossover point all conventional speakers must have and giving exceptional coherence. Its omnidirectional radiation pattern gives a stereo image with the correct tonal balance in nearly all positions in the room—like in a concert—providing a more natural listening experience. It also makes it very easy to set up. Its excellent phase linearity ensures great tonal accuracy and low moving mass provides outstanding transient response. For the size of cabinet, the bass is surprisingly powerful. The Unlimited provides a very realistic and musically satisfying performance whether you listen at high or low levels.

- Suitable for rooms of 10 sq m to 55 sq m
- Power handling: 110 W nominal; 170 W, short-term peaks.

www.german-physiks.com

Technical Specifications

Type: Omnidirectional floorstanding loudspeaker

Driver complement:
1 × 8-inch downward facing woofer
1 × Omnidirectional DDD-type driver

Enclosure Type: Not specified

Dimensions (H×W×D):
1050 × 240 × 240mm

Weight: 28.9kg

Frequency Response: 32Hz–24kHz

Impedance: 4 ohms.

Sensitivity: 88.5 dB for 1W @ 1m

Price: From £11,700, high polish polyester finish in black, white, red, or yellow. Pricing for an optional carbon fibre enclosure is available on request.

Availability: Available now

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German Physiks HRS-130

The HRS-130 builds on the strengths of our Unlimited model. It uses a German Physiks DDD driver with a downward facing 10-inch woofer. Its DDD driver covers 24kHz to 220Hz, eliminating the mid-range crossover point all conventional speakers must have and giving exceptional coherence. The HRS-130's DDD driver provides the speed and openness of an electrostatic and the larger woofer provides a deeper and more controlled bass. A more advanced crossover gives better dynamics and resolution with palpable imaging that helps the speakers disappear. The cabinet's small panels are very stiff, minimising resonances and further enhancing transparency. The HRS-130 provides a performance that is musically and emotionally involving. An audition is highly recommended.

- Suitable for rooms of 10 sq m to 75 sq m
- Power handling: 120 W nominal; 200 W, short-term peaks
- High frequency adjustment: -2dB, Flat, +2dB or +4dB centred at 8,000Hz

www.german-physiks.com

Technical Specifications

Type: Omnidirectional floorstanding loudspeaker

Driver complement:
1 × 10-inch downward facing woofer
1 × Omnidirectional DDD-type driver

Enclosure Type: Not specified.

Dimensions (H×W×D):
1259 × 325 × 325mm

Weight: 34.5kg

Frequency Response: 29Hz–24kHz

Impedance: 4 ohms

Sensitivity: 86.9 dB for 1W @ 1m

Price: £12,590: satin veneer or satin paint. £15,650: high polish polyester or high polish veneer. £16,200: carbon fibre

Availability: Available now

German Physiks Borderland MkIV

The Borderland MkIV is our top selling model and takes the performance offered by the HRS-130 up a level. It uses a German Physiks DDD driver with a downward facing 12-inch woofer. Its DDD driver covers 24kHz to 190Hz, eliminating the mid-range crossover point all conventional speakers must have and giving exceptional coherence. The DDD driver and woofer are exceptionally well integrated, providing a seamless sound. Voices are very natural with no harshness or smearing; percussion is very realistic due to the DDD driver's speed and wide bandwidth and the 12-inch woofer provides bass that is fast, well extended and has real slam. Like the HRS-130, the cabinet's small panels are very stiff, minimising resonances and further enhancing transparency.

- Suitable for rooms of 10 sq m to 90 sq m.
- Power handling: 300 W nominal; 600 W, short-term peaks
- High frequency adjustment: -2dB, Flat, +2dB or +4dB centred at 8,000Hz

www.german-physiks.com

Technical Specifications

Type: Omnidirectional floorstanding loudspeaker

Driver complement:
1 × 102inch downward facing woofer
1 × Omnidirectional DDD-type driver

Enclosure Type: Not specified.

Dimensions (H×W×D):
1252 × 440 × 440mm

Weight: 54kg

Frequency Response: 28Hz–24kHz

Impedance: 4 ohms

Sensitivity: 86.91 dB for 1W @ 1m

Price: £24,250: satin veneer or satin paint. £25,850: high polish polyester or high polish veneer. £28,900: carbon fibre.

Availability: Available now

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Grimm Audio LS1 series

Perfect music reproduction is about getting all the bits in the right place: not losing anything, not adding anything either. The Grimm Audio LS1 series offers this precision, reproducing a truly musical recording accurately, with all beauty intact. We believe that a scientific approach paves the way to perceptual neutrality, which is fully demonstrated by our LS1 flagship product. Its ultralight Beryllium tweeter offers stunning detail in the top end and the digital motional feedback subwoofer sets a new standard for transparency and control in the low end. By integrating digital processing, DAC's, amplifiers and drivers in one system, a level of sonic purity and convenience was reached that made reviewers call the LS1 "the world's best complete audio system."

www.grimmaudio.com

Technical Specifications

Type: Floorstanding active loudspeaker

Driver complement: 2-way or 3-way floorstanding loudspeakers

Enclosure Type: Closed box

Frequency Response: 20H–20kHz

Impedance: Not specified

Sensitivity: Not specified

Price: System prices range from €13000 to €36000 incl VAT

Availability: Available now

Kudos Audio Titan 808

The flagship of the Kudos range, the Titan 808 features world-class drivers custom-designed as a collaboration between Kudos and Norwegian driver experts SEAS. Its four drive units, all unique to Kudos, are seamlessly matched to enable a minimalist, low-order crossover. Independent upper and lower cabinets separate the tweeter and mid bass from the bass drivers, ensuring that high and low frequencies remain unaffected by each other and preserving a remarkable sonic clarity. The isobaric arrangement of the two bass drivers, meanwhile, delivers a powerfully dynamic bass response. The Titan 808 is designed with the ability to run in active mode with selected leading systems and technologies, including Linn Exakt, Devialet Expert and Naim SNAXO.

www.kudosaudio.com

Technical Specifications

Type: 2.5-way, isobaric bass reflex, floorstander

Driver complement:
- Tweeter: SEAS – Kudos Crescendo K3 29mm fabric dome
- Mid bass driver: SEAS – Kudos 220mm Nextel coated paper cone with 39mm voice coil
- Bass driver: 2 × SEAS – Kudos 220mm double coated hard paper cone with 39mm voice coil

Enclosure Type: Two-part isobaric bass reflex

Frequency Response: 20Hz–30kHz AIRR (average in-room response)

Impedance: (nominal): 8 ohms

Sensitivity: 91dB/@1W/1m

Price: £21,750

Availability: Now

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Kudos Audio Titan 707

The Titan 707 is a smaller, single-cabinet version of Kudos' top Titan 808 loudspeaker. It draws on the 808's high-performance technologies, but with the aim of delivering a flagship-quality model to a wider range of budgets. Its world-class drive units are crafted exclusively for Kudos by renowned Norwegian specialists SEAS. The tweeter is identical to that developed specifically for the 808, while the mid-bass driver is brand new and unique to the 707. Kudos' trademark minimalist, low order crossover remains a key feature, made possible by seamless matching of the drive units. And, like the Titan 808, the 707 has the capability to run in active mode with selected systems including Linn Exakt, Devialet Expert and Naim SNAXO.

www.kudosaudio.com

Technical Specifications

Type: 2-way, isobaric bass reflex, floorstander

Driver complement:
Tweeter: SEAS – Kudos K3 29mm fabric dome
Mid bass driver: 2 × SEAS-Kudos 220mm double coated paper cone, 39mm voice coil with copper shorting ring and aluminium phase plug

Enclosure Type: Isobaric bass reflex

Frequency Response: 25Hz–30kHz AIRR (average in-room response)

Impedance: (nominal): 6 ohms

Sensitivity: 89dB/@1W/1m

Price: £13,000

Availability: Now

Larsen 6.2

Larsen loudspeakers are crafted to use a room's surface sound reflections to their advantage to enrich the listening experience rather than degrading it, enabling a deep and full bass from a relatively compact cabinet. Designed to stand flush against the rear wall hence perfect for a smaller room, the unique positioning and angle of their drivers creates a rich, three-dimensional soundstage with a wide listening area.

The Larsen 6.2 is engineered on the same principles as the brand's top model, the Larsen 8, and features the same high quality Scan-Speak tweeter and mid-bass driver. The latter deftly reaches all the way down to 26 Hz while a true and clean mid-range is topped off by a clear and transparent upper-end.

www.larsenhifi.com

Technical Specifications

Type: 2-way floorstanding loudspeaker

Driver complement:
1 × 7-inch Scan-Speak mid-bass driver
1 × 1-inch Scan-Speak soft-dome vtweeter

Enclosure Type: Bass reflex

Frequency Response: 26Hz–20kHz AIRR (average in-room response)

Impedance: 8 ohms

Sensitivity: 88dB

Price: £2,395

Availability: Now; find your nearest Larsen dealer via UK distributor www.soundfowndations.co.uk

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Linn Akubarik

Akubarik is an integrated Exakt speaker that combines beautiful styling with advanced electronics, offering stunning clarity and precision.

Encased within an elegantly curved and ultra-low resonance cabinet, it is fed a single digital input from an Exakt-enabled Linn networked music player. The on-board digital crossover in each speaker delivers five independently controlled channels, each with its own volume control, DAC and power amplifier.

Our Katalyst DAC Architecture takes unprecedented control of the critical elements that lie at the heart of the analogue signal's creation, giving a deeper insight into your favourite music.

The Linn 3K driver array then delivers fantastically clear mid and high frequencies, while the Isobarik bass system delivers power and musicality in the lowest frequencies.

https://www.linn.co.uk

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
5-way: includes Linn's 3K array for mid and high frequencies, plus Isobarik bass system.
Super tweeter: 13 mm silk dome
Tweeter: 25 mm PU dome
Midrange: 75 mm PU dome
Upper Bass: 165 mm doped paper
Lower Bass: 200 mm servo x 2 (Isobarik)

Enclosure Type: Ported

Frequency Response: N/A

Impedance: N/A

Sensitivity: N/A

Price: £27,500

Availability: From Linn Specialist retailers: https://www.linn.co.uk/find-a-shop

Magnepan 3.7i

Magneplanar speakers are tall, slender, flat-panel designs less than 5cm thick. Rather than using conventional cone and dome drivers, their sound-producing elements are proprietary ultra low mass ribbon drivers. The 3.7i is a full-range 'true-ribbon/quasi-ribbon' design in which Magnepan's superb patented 1.4 metre long true ribbon tweeter is positioned along one edge, running the full height of the speaker. Next to it is the midrange quasi-ribbon panel and then alongside the latter, the quasi-ribbon bass panel. This configuration provides superb integration, with the bass, mid, and high frequencies all blending together to produce sound from one seamless canvas. The tweeters can be set on the inside or outside edge of the loudspeaker as best suits the listening room.

www.magnepan.com

Technical Specifications

Type: Floorstanding 3-way full-range ribbon panel loudspeaker

Driver complement:
Tweeter: 1.4 metre long true ribbon
Midrange: Quasi-ribbon panel
Bass: Quasi-ribbon panel

Enclosure Type: Flat panel design (less than 5cm thick)

Frequency Response: 35Hz–40kHz

Impedance: 4 ohm

Sensitivity: 86dB/2.83V @ 500Hz

Price: £8249–£8995 depending on finish

Availability: Now; find your nearest Magnepan dealer via UK distributor www.decentaudio.co.uk

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MonoPulse Model A

The custom-built MonoPulse. The only loudspeaker with absolute impulse accuracy.

Our lives once depended on knowing the direction of a snapped twig. We were sensing direction by the arrival times of the sharp edges or impulses in that sound.

Music is full of impulses. MonoPulse loudspeakers retain the original impulse accuracy, and so re-create the positions and depth of a three-dimensional sound-stage. This unique design, using radar technology, gives holographic realism and presence. So you hear the music the way it was created.

In the Model A, this is combined with 20Hz bass, massive 550 watts power handling, distinctive 3D effect real carbon-fibre HF housing, custom enclosure colours, extending spikes and adjustable HF.

See also the Model S Stand/Floormount.

www.monopulse.co.uk

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
1 × 200mm LF unit
1 × 28mm silk-domed HF unit

Enclosure Type: Ported 30-litre enclosure tuned to 30Hz

Frequency Response: 20Hz–22KHz

Impedance: 8 ohms

Sensitivity: 91 dB

Price: £1,795; €2,295

Availability: Custom built. Typical 4 weeks

Neat Acoustics Iota-XPLORER

For 28 years Neat Acoustics have been handcrafting critically acclaimed loudspeakers from their factory in the North East of England. With a small team of people who are predominately musicians and recording engineers Neat are a speaker company who are in the music business!

Introducing the Iota Xplorer, which uses the same basic configuration as the Alpha, in an enlarged form. The top section is sealed off from the lower ands acts as a 2-way infinite baffle. It houses Neat's own P1-R3 170mm bass/midrange drive unit alongside an Air Motion Transformer (AMT) tweeter in a horizontal array, as per the Iota and Alpha models.

The lower, ported, section of the XPLORER houses not one, but two of Neat's P1-R2 bass drive units in an Iso-baric configuration giving extended bass performance from a relatively small cabinet.

www.neatacoustics.com

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
2 × Neat P1-R2 bass drivers
1 × Neat P1-R3 170mm bass/midrange driver
1 × Air Motion Transformer (AMT) array

Enclosure Type: Sealed box, upper section; ported isobaric LF enclosure

Frequency Response: Not Specified

Impedance: Not Specified

Sensitivity: Not Specified

Price: Estimated price £3,500 incl. VAT

Availability: November/December 2017

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NewForm Research Ribbon Pyramid 45

The Pyramid simply eliminates as many errors as possible. When the loudspeakers disappear, the music shines through and the listening experience is fulfilling and natural.

Get Creative! Build a superb loudspeaker system around a Ribbon design delivering "the best high end in audio". The Newform Coaxial Ribbon LineSource configuration offers minimal diffraction, wide dispersion and minimizes the vast majority of limitations of conventional loudspeaker designs.

Newform Ribbons are high impedance, wide dispersion designs, which offer the transparency of the classic panels in a more compact, practical and more room friendly package ideal for audiophiles and speaker kit builders alike. The models include 8-inch, 15-inch, 30-inch and 45-inch units in either neodymium or ceramic 8 magnet configurations.

www.newformresearch.com

Technical Specifications

Type: 2-way floorstanding loudspeaker

Driver complement:
6 × 5-inch Peerless HD midbass drivers
NFR Oval 45 ribbon driver

Enclosure Type: Sealed, Ribbon monopole

Frequency Response:
36Hz–20kHz ± 2 ½ dB

Impedance: 8 ohms

Sensitivity: 90dB

Price: $4287.00 US per pair, factory direct

Availability: Now

NewForm Research Ribbon Super Module 45

Loudspeaker design minimalism. The slim and tall Newform Ribbons enables this approach which dispatches with the fidelity bugaboos of baffle bounce and diffraction. The linesource configuration minimizes floor and ceiling bounce while providing a wide sweetspot and exceedingly clear and natural sound at the listening seat.

Get Creative! Build a superb loudspeaker system around a Ribbon design known for delivering "the best high end in audio". The Newform Coaxial Ribbon LineSource configuration offers minimal diffraction, wide dispersion and minimizes the vast majority of limitations of conventional loudspeaker designs.

Newform Ribbons are high impedance, wide dispersion monopoles offering the transparency of the classic panels in a compact, practical and room friendly package ideal for audiophiles and speaker kit builders alike.

www.newformresearch.com

Technical Specifications

Type: 2-way floorstanding loudspeaker

Driver complement:
6 × HD Peerless or SEAS midbass drivers
NFR 45 ribbon driver

Enclosure Type: Sealed, Ribbon monopole

Frequency Response:
38Hz–20kHz ± 2 ½ dB

Impedance: 8 ohms

Sensitivity: 89dB

Price: $3,744 US per pair, factory direct

Availability: Now

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Penaudio Serenade Signature

Serenade was Penaudio's first Stereophile Class A recommended speaker. It reflected "trickle up" technology. We learned a lot about drivers, cabinets, and crossovers when we created Serenade.

Serenade Signature evolved from our love of monitors and music. It is a speaker that plays music and has no boundaries set by its cabinet or components. It seduces and engulfs you even more then Serenade. Fast, tight, accurate, powerful bass. An open, three-dimensional mid-range and nothing but sweetness from our Seas Crescendo tweeter.

www.penaudio.fi/3-products/

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
2 × 145 mm woofers
1 × 145 mm midrange driver
1 × 29 mm tweeter

Enclosure Type: 3-way, Bass Reflex

Frequency Response: 32Hz–30kHz

Impedance: 4 ohms

Sensitivity: 87 dB

Price: €10,670

Availability: Now

ProAc Response DT8

This new floorstanding model utilises ProAc's proven soft dome tweeter and 2 × 165mm midrange/bass drivers, each unit featuring a different cone material to maximise the quality of the midrange and bass. The rigidly constructed cabinet is heavily damped internally and ported at the base of the cabinet in order to load the bass. The DT8 is available now in a range of eight real wood veneers including natural oak and cherry at £1,950 and rosewood and ebony at £2,350.

www.proac-loudspeakers.com

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
1 × soft dome tweeter
2 × 165mm midrange/bass drivers

Enclosure Type: Ported at base of cabinet

Frequency Response: 38Hz–30kHz

Impedance: 4 ohms

Sensitivity: 90dB

Price: £1,950 in standard veneer finishes; £2,350 in ebony and rosewood

Availability: In Stock

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Raidho D-5.1

The Raidho D-5.1 is a true 3-way Raidho Diamond Driver™ loudspeaker. It has two dedicated 115 mm Raidho Diamond™ mid-range drivers and four 8" Raidho Diamond™ bass drivers.

When you emerge yourself in the physical presence of the D-5.1's something magical happens. It simply reveals the inner substance of the music with a realism and naturalness that most likely will leave you breathless. The D-5.1 is a truly unique musical performer and is for those who really enjoy spending time and effort setting up their system and finding superb matching components. The Raidho D-5.1 might be the closest you will ever get to bringing "real life" music experiences into your listening room.

www.raidho.dk

Technical Specifications

Type: 3-Way Floorstanding

Driver complement:
1 × sealed Raidho Ribbon Tweeter™
2 × 100mm Raidho Diamond™ mid-range drivers (Cutting Edge Diamond Technology™)
4 × 160 mm Raidho Diamond™ bass drivers (Cutting Edge Diamond Technology™)

Enclosure Type: Vented design, port in front panel

Frequency Response: 25Hz–50kHz

Impedance: > 6 ohm

Sensitivity: 89 dB 2.83 V/m

Price: Raidho D-5.1 in High Gloss Black: €200,000. Raidho D-5.1 Walnut Burl or personalized colour: €225,000

Availability: High Gloss Black Piano. All possible paint colours & Walnut Burl Veneer

Raidho XT-5

The XT-5 is the latest flagship in the Raidho XT-Series. It stands tall and slim like the mast of a schooner.

The Raidho XT-5 is a design piece which is built and designed with the purpose of bringing maximum musical pleasure to the listener and at the same token being a sculptural piece of art in any home.

The XT-5 is built around the acknowledged Raidho Ribbon Tweeter™ and with a total of six Raidho Titanium Driver™ units it is capable of delivering a breath-taking musical experience with remarkable dynamics, extreme bandwidth and clarity. The XT-5, with its Raidho Titanium™ driver technology is the natural evolution from the little sister X-5. The XT-5 is the first speaker from Raidho to be available with the unique and rare Birdseye Maple Burl veneer.

www.raidho.dk

Technical Specifications

Type: 3-Way Floorstanding.

Driver complement:
1 × sealed Raidho Ribbon Tweeter™
2 × 100 mm Raidho Titanium Mid-Range Drivers ™
4 × 100 mm Raidho Titanium Bass Drivers™
3-way design (crossover points: 170Hz & 3.5Khz)

Enclosure Type: Internal vented design, port in rear

Frequency Response: 40Hz–50kHz

Impedance: > 6 ohms

Sensitivity: 87 dB 1W 2.83 V/m

Price: XT-5 High Gloss Black: €35,300. XT-5 Birdseye Maple Burl or any personalized colour: €39,800

Availability: High Gloss Black or any personalized colour & Birdseye Maple Burl Veneer

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Russell K Red 150 Precision Audio Loudspeaker System

The Red 150 is a 2½-way floorstanding speaker that just sounds real. Designed in the UK.

www.russellk.co.uk

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
1 × 25mm soft dome tweeter
2 × 6.5-inch midrange/bass drivers

Drivers: 2 × 6.5" Bass units with impregnated paper cone and curved optimised acoustic profile high power Ferrite magnet driving a 25mm voice coil with aluminium former and Faraday distortion cancelling copper ring. 25mm soft dome tweeter Double Ferrite magnet system. Copper Clad Aluminium voice coil wire on a Fibreglass Former and Faraday distortion cancelling copper ring

Crossover: All drivers connected in positive phase – Sub bass driver starts roll off at 80Hz 6dB/Oct fed by "Enclosed Field Iron Core Inductor". Features high power without saturation, very low DCR and almost no stray magnetic field. Bass/Mid driver crossover frequency 2200Hz nominal 12 dB/Oct. Utilises an "Enclosed Field Ferrite Core Inductor in the signal path. Very low DCR nominal stray fields. Tweeter attenuation by misaligned Zobel network as opposed to conventional L-Pad. All Drivers have only one component in the signal path. Phase optimised through the crossover region

Enclosure Type: Aperture-loaded vented enclosure

Dimensions: H- 950mm (1000mm including plinth, base and spikes), W-240mm, D-250mm

Construction: 16mm MDF all sides apart from front baffle which is 19mm. Totally undamped cabinet. 3 acoustic loading bracing shelves with multiple apertures, mounted below the tweeter, below the bass mid driver and below the sub bass driver

Design: One bracing shelf mounted near the bottom of the enclosure containing an internal port venting into a small chamber containing two asymmetric length reflex ports tuned as a system to 21Hz

Frequency Response: 20Hz–22kHz (dependent on room)

Impedance: Not specified

Sensitivity: 87dB/1 watt/1 metre

Price: Not specified

Availability: Not specified

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Russell K Red 120 Precision Audio Loudspeaker System

The Red 120 is a compact 2½-way floorstanding speaker with very tight, clean, extended bass response that can be used near rear walls. Our latest speaker – Designed in the UK.

www.russellk.co.uk

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
1 × 25mm soft dome tweeter
2 × 5-inch midrange/bass drivers

Driver details: 2 × 5" Bass units with impregnated paper cone and curved optimised acoustic profile – High power Ferrite magnet driving a 25mm voice coil with aluminium former and Faraday distortion cancelling copper ring. 25mm soft dome Tweeter with Ferrite magnet system – Copper Clad Aluminium voice coil wire on a Fibreglass Former and Faraday distortion cancelling copper ring

Crossover: All drivers connected in positive phase. Sub bass driver starts roll off at 80Hz 6dB/Oct fed by "Enclosed Field Iron Core Inductor". Features high power without saturation, very low DCR and almost no stray magnetic field. Bass/Mid driver crossover frequency 2200Hz nominal 12 dB/Oct. Utilises an "Enclosed Field Ferrite Core Inductor" in the signal path. Very low DCR nominal stray fields. Tweeter attenuation by misaligned Zobel network as opposed to conventional L-Pad. All Drivers have only one component in the signal path. Phase optimised through the crossover region

Enclosure Type: Aperture-loaded vented enclosure

Dimensions: H- 860mm (910mm including plinth, base and spikes) W-200mm D-190mm

Construction: 16mm MDF all sides apart from front baffle which is 19mm. Totally undamped cabinet, 3 acoustic loading bracing shelves with multiple apertures, mounted below the tweeter, below the bass mid driver and below the sub bass driverDesign: One bracing shelf mounted near the bottom of the enclosure containing an internal port Internal port vents into a small chamber containing a second reflex port tuned as a system to 24Hz

Frequency Response: 25Hz–22kHz (dependent on room)

Impedance: Not specified

Sensitivity: 87dB/1 watt/1 metre

Price: Not specified

Availability: Not specified

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Spendor D7

The Spendor D7 is an elegant, modern, medium-size, 2.5-way, floor-standing loudspeaker. The D7 delivers music with a fresh vibrant realism that conventional loudspeakers cannot match. This new level of performance is the direct result of important Spendor innovations like our LPZ (Linear Pressure Zone) tweeter, our 5th generation twin-venturi linear flow port, our dynamic damping technology, and new Spendor drivers featuring EP77 polymer and Kevlar composite cones.

"Spendor's approach is the most radical I've seen, going where no Hi-Fi manufacturer has gone before. D7 is extremely capable and very neutral, but most importantly it puts the music first." Jason Kennedy, *Hi-Fi+* Issue 106.

www.spendoraudio.com

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
1 × LF 18cm
1 × MF/LF 18cm
1 × HF 22mm LPZ

Enclosure Type: 5th gen twin venturi linear-flow reflex

Frequency Response: 29Hz–25kHz

Impedance: 8 ohms

Sensitivity: 90dB

Price: £3,995 to £4,795

Availability: Now

Spendor D9

The new Spendor D9 is an elegant, modern, full-size, 3-way, 4-driver, floorstanding loudspeaker. The D9 communicates music with exceptional resolution and a vibrant realism that conventional loudspeakers cannot match. It delivers low frequencies with breath-taking power, scale, and authority. It is easy to place in real-world listening rooms, very efficient, and easy to drive. The D9 incorporates all the engineering innovation developed for our 2.5-way Spendor D7 loudspeaker, but the new D9 is far more than a big D7…

"The D9 really hits the sweet spot of attainable price, achievable performance, and acceptable domestic impact. A superbly balanced and beautifully judged design."

Roy Gregory, *Hi-Fi+* Issue 151, Sep 17

www.spendoraudio.com

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
2 × LF 18cm
1 × MF 18cm
1 × HF 22mm LPZ

Enclosure Type: 5th gen twin venturi linear-flow reflex

Frequency Response: 27Hz–25kHz

Impedance: 8 ohms

Sensitivity: 90dB

Price: £6,995 to £8,495

Availability: Now

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Studio Electric FSX

FSX is a mid-size floorstanding loudspeaker using a "3-driver + passive radiator" design. Mid-High components live in a separate sealed enclosure from the low frequency sections.

FSX loudspeakers receive individually graded and tightly matched drivers to insure truly exceptional performance. This robust speaker features a 1.5" baffle board and heavy internal bracing. Extensive listening tests, and burn-in at our factory, insure a speaker that will sound great right out of the crate!

The voicing of this speaker was described by a major US Audio publication as: "Musical, Neutral, and refreshingly Even throughout the frequencies"

Available in custom finishes, including White, Piano Black, Figured Maple (shown) or Makassar Ebony.

www.studio-electric.com

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
LF: 1 × SE HighXt™6.5-inch /170mm/ copolymer + 8-inch passive radiator
MF: 1 × SE HighXs™6.5-inch/170mm/ copolymer
HF: 1 × 1-inch/25mm soft dome

Crossover Frequencies: 80Hz/3kHz

Enclosure Type: Construction: HDF and MDF with hardwood veneers

Cabinet Dimensions (H×W×D):
45.5 × 8.625 × 22.125 inches (sans grill)

Weight: 94 lbs./42.6kg (shipping weight: 135 lbs. / 61.2kg)

Frequency Response: 34Hz–222kHz

Impedance: 4 ohms

Sensitivity: 91dB/1 watt/1 metre

Price: $9,500–$11,500. Available options include bi-wire connectors and "tweeter tilt" switch

Availability: Now

TALK Electronics Ltd Apprentice SPF

This is a small compact floorstanding speaker with a fun and musical performance, ideal for small rooms or where space is at a premium with a Front slot port to aid easy positioning.

www.talkelectronics.com

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
2 × mid/bass drivers
1 × tweeter

Enclosure Type: Bass reflex with front slot port

Frequency Response: 60Hz–20kHz +/- 6dB in room on axis at 1M

Impedance: 4 ohms

Sensitivity: 88dB @ 1M

Price: £399.95

Availability: UK Retailers

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TALK Electronics Ltd SP2

This is a medium sized floorstanding speaker with a fun and musical performance. HiFi Choice Recommended, ideal for average rooms where space is at a premium with a Front slot port to aid easy positioning.

www.talkelectronics.com

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement:
2 × mid/bass drivers
1 × tweeter

Enclosure Type: Bass reflex with front slot port

Frequency Response: 40Hz–20kHz +/- 6dB in room on axis at 1M

Impedance: 4 ohms

Sensitivity: 88dB @ 1M

Price: £999.95 (depends on finish)

Availability: UK Retailers

Tune Audio ANIMA

ANIMA, [Latin for soul] is a three-way, all passive, fully horn loaded, 109dB sensitive loudspeaker.

ANIMA's distinguished design is built around its bass horn which stands tall and fires to the floor utilizing Tuner Audio's proprietary "virtual mouth" technology.

Driver complement: 15" for low, 5" for mid and 1" compression driver with neodymium magnet and titanium diaphragm for high frequencies. Bass and mid horns are built of grade A, 13 layer Baltic birch plywood while the high horn is a moulded proprietary epoxy mixed with several aggregates in a compound.

1st order networks are used in all ways and features user adjustable mid and high frequency level, which allows to accurately fine tune ANIMA to the listening room.

www.tuneaudio.com

UK Distributor www.bfaudio.co.uk

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
1 × 15-inch bass driver
1 × 5-inch midrange driver
1 × 1-inch compression driver for high frequencies

Enclosure Type: Horn

Frequency Response: 40Hz–20kHz

Impedance: 8 ohms

Sensitivity: 109dB

Price: €40,000

Availability: Not specified

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Vivid Audio Giya G1 Spirit

Eight years after the Vivid Audio Giya G1 introduced tapered tube reflex bass loading to the world of audio we presented Giya G1 Spirit. It took all that was excellent about the original design but augmented it with the knowledge gained from the development of the other models in the range. The new C225-100 has double the power of the original C225 and a 50% increase in motor strength to deliver an even cleaner, deeper and tighter bass than ever. The low-mid also benefits from an increase in coil diameter and re-optimised diaphragm profile to double the power and frequency range. G1Spirit is available with an optional outboard crossover permitting an easy switch to a fully active system.

www.vividaudio.com

Technical Specifications

Type: Floorstanding, loudspeaker

Driver complement: 4-way. 5-driver
LF: 2 × 225mm alloy cone drivers with underhung 100mm edge-wound coil and radial magnet in reaction-cancelling configuration
Low mid-range: 125mm alloy cone with 75mm underhung coil and radial magnet in exponential tube
Upper mid: 50mm carbon-reinforced alloy catenary dome with underhung coil and radial magnet on exponentially tapered tube
HF: 26mm carbon-reinforced alloy catenary dome with underhung coil and radial magnet on exponentially tapered tube

Enclosure Type: Vacuum-infused sandwich composite

Dimensions (H×W×D):
1600 × 440 × 820mm

Frequency Response:-6dB, 25Hz–36kHz

Impedance: 6 ohms nominal

Sensitivity: 87dB for 2.83VRMS @1m

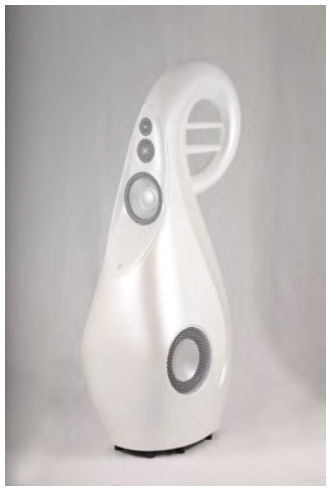
Price: £64,000 in Piano Black or Pearl White. Custom finishes add £3,900

Availability: Six weeks from receipt of order

Vivid Audio Giya G3 Series 2

Vivid Audio's Giya range of loudspeakers benefit from a host of innovative features first demonstrated in our Oval series but now including the patented tapered tube reflex bass loading which eliminates the resonances normally found in low frequency enclosures. Being a four way-system the reaction cancelling bass drivers are optimised for bass delivery. Loaded with the unique combination of exponential absorber and vented enclosure the Giya range delivers a truly remarkable bass quality. After the G1 and G2, Giya G3 is the smallest in the range to be equipped with the 76mm motor and is the answer to those seeking the purity of reproduction and power of Giya in a package, which is easily accommodated into any home.

www.vividaudio.com



Technical Specifications

Type: Floorstanding loudspeaker

Driver complement: 4-way 5-driver.
LF: 2 ×135mm alloy cone drivers with underhung 76mm edge-wound coil and radial magnet in reaction-cancelling configuration
Low mid-range: 125mm alloy cone with 50mm underhung coil and radial magnet in exponential tube
Upper mid: 50mm carbon-reinforced alloy catenary dome with underhung coil and radial magnet on exponentially tapered tube
HF: 26mm carbon-reinforced alloy catenary dome with underhung coil and radial magnet on exponentially tapered tube

Enclosure Type:
Vacuum-infused sandwich composite

Dimensions (H W×D):
1161 × 341 × 578mm

Frequency Response: -6dB, 33Hz–36kHz

Impedance: 6 ohms nominal

Sensitivity: 87dB for 2.83VRMS @1m

Price: £28,000 in Piano Black or Pearl White. Custom finish; add £3,900

Availability: Six weeks from receipt of order

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Wilson Audio Alexandria XLF

From the time he started building loudspeakers in his garage, Dave Wilson had one motivating passion: to make the reproduction of music sound as much like the real thing as possible. Size, weight, and manufacturing complexity are all of little consequence when the task at hand is to make a loudspeaker that outperforms the Series 2 Alexandria in every significant measure, and brings the listener an unmistakable step closer to the exhilaration of a live musical event.

www.wilsonaudio.com

Technical Specifications

Type: Floorstanding

Driver complement: 1 X 13", 1 X 15" woofer, 7" mid, 1" silk dome tweeter

Enclosure Type: Vented mid and ported woofer

Frequency Response: 19.5 Hz–33 kHz +/- 3 dB, RAR

Impedance: 4 ohms

Sensitivity: 93.5 dB @ 1 W @ 1 kHz

Price: Not specified

Availability: Now

Wilson Audio Alexia Series 2

Already the leader in the industry for extremely unyielding manufacturing tolerances, Wilson has further tightened its driver matching protocols. Work was done in the crossover to make the Alexia Series 2 more amplifier friendly by slightly raising the nominal impedance. The woofer enclosure 10.8%. New WAMM Convergent Synergy tweeter, version Mark V. After hundreds of hours of careful listening, it was clear that Wilson's tweeter continues to be the most musically authentic and intrinsically satisfying tweeter yet tested, regardless of diaphragm material.Wilson has implemented a more advanced mechanism for adjustment of the tweeter module, which now features twice the number of adjustments. The Alexia is by a large margin the most time-domain correct loudspeaker in its category.

www.wilsonaudio.com

Technical Specifications

Type: Floorstanding

Driver complement: 1 X 8", 1x10" woofer, 7" mid, 1" silk dome tweeter

Enclosure Type: Vented mid and ported woofer

Frequency Response: 19 Hz–32 kHz +/- 3 dB, RAR

Impedance: 4 ohms

Sensitivity: 4 ohms / minimum 2.54 ohms @ 85 Hz

Price: Not specified

Availability: Now

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Wilson Audio Alexx

Alexx is the fourth all-new loudspeaker from Wilson Audio in as many years. It may be intuitive to assume the Alexx replaces the venerable MAXX, in that it is Wilson's latest entry into the large speaker segment just below the Alexandria, but, in reality, the comparison with the MAXX begins and ends there. Instead, the Alexx is an altogether more complex and sophisticated loudspeaker. Alexx incorporates Wilson's latest thinking on loudspeaker design in the areas of time-domain geometry, driver configuration, and driver development. It is the latest beneficiary of Wilson's ongoing analysis of low-resonance cabinet strategies via laser micrometer. Alexx draws from both recent designs such as the Alexia and the Sabrina, as well as the WAMM—Dave Wilson's up and coming Magnum Opus—with which it was developed concurrently.

www.wilsonaudio.com

Technical Specifications

Type: Floorstanding

Driver complement: 1 X 10", 1X12" woofer, 2 X 7" mid, 1" silk dome tweeter

Enclosure Type: Vented mid and ported woofer

Frequency Response: 20 Hz–31 kHz +/- 3 dB, RAR

Impedance: 4 ohms

Sensitivity: 91 dB @ 1W @ 1m @ 1k

Price: Not specified

Availability: Now

Wilson Audio Sabrina

The inspiration for Sabrina arose from two distinct and seemingly disparate sources: the original WATT/Puppy, and the Alexandria XLF. The WATT/Puppy was the result of Dave Wilson's belief that a well-designed compact loudspeaker could outperform many of the much larger state-of-the-art systems of its day. Sabrina is nearly the same size as its 1980s progenitor.

The objective for Sabrina was to take the wealth of knowledge and experience contained in the XLF and distill it down to its essence. To create a loudspeaker that, like the first WATT/Puppy, could stand alongside much larger systems and offer the kind of dynamic contrast and harmonic expression that is the defining character of Wilson Audio loudspeakers.

www.wilsonaudio.com

Technical Specifications

Type: Floorstanding

Driver complement: 8" woofer, 5" mid, 1" silk dome tweeter

Enclosure Type: Vented mid and ported woofer

Frequency Response: 31 Hz–21 kHz: +/- 3 dB, RAR

Impedance: 4 ohms

Sensitivity: 4 ohms / 2.53 ohms minimum @ 139 Hz

Price: Not specified

Availability: Now

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Wilson Audio Sashas Series 2

Research and development is a never-ending process at Wilson Audio. Inevitably, technology that didn't exist at the debut of Sasha W/P Series 1 influenced the design and execution of Sasha Series-2. Two prime examples: Laser Vibrometry Analysis, long used in automotive and aerospace applications, allows us to measure mechanical vibrations in our cabinets down to the level of nanometers. This invaluable data allows Wilson to optimize the composite structure of the cabinet, as well as the position and thickness of the internal braces. The Wilson Convergent Synergy tweeter was developed for the flagship Alexandria XLF. We next adapted it for the three-module Alexia. For the Sasha Series-2, a new version was designed specifically for its two-module platform, and features a bespoke rear-wave chamber.

www.wilsonaudio.com

Technical Specifications

Type: Floorstanding

Driver complement: 2 X 8" woofer, 7" mid, 1" silk dome tweeter

Enclosure Type: Vented mid and ported woofer

Frequency Response: 20 Hz–27 kHz +/- 3 dB, RAR

Impedance: 4 ohms

Sensitivity: 4 ohms / minimum 2.17 ohms @ 90 Hz

Price: Not specified

Availability: Now

Wilson Audio WAMM Master Chronosonic

The WAMM Master Chronosonic is the most time-domain correct loudspeaker in Wilson's history. It plumbs new depth in terms of technology and execution. From drivers to cutting-edge composites, from crossover technology to perfecting geometries. Most importantly, the adjustability in the time domain is precise down to five millionths of a second for any installation—accuracy heretofore only achievable in the theoretical domain. The result is a musical experience with a level of intellectual and emotional verisimilitude only bettered by the live musical event itself. It is a loudspeaker truly worth of the term "Magnum Opus."

www.wilsonaudio.com

Technical Specifications

Type: Floorstanding

Driver complement: 1 X 10.5", 1 X 12.5" woofer, 2 X 7" mid, 2 X 5" mid, 1" silk dome tweeter

Enclosure Type: Vented mid and ported woofer

Frequency Response: 20 Hz–33 kHz +/- 2 dB, RAR

Impedance: 3 ohms

Sensitivity: 90 dB @ 1W @ 1m @ 315Hz

Price: Not specified

Availability: Now

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Wilson Audio Yvette

For many audiophiles, Sophia was the first experience they had with Wilson. Sophia was treasured for her unique combination of musicality and accessibility with other traditional Wilson virtues, such as dynamic resolution and soundstaging. The new Yvette draws from this rich tradition. But, perhaps more importantly, it derives its core technology directly from the enormous research-and-development reservoir of what is perhaps Wilson's most prolific era of innovation to date. Wilson's latest Sasha Series 2, the Alexia, the leading-edge Alexx have all informed the Yvette project, in some cases, with identical components. And like the Alexx, the Yvette was developed alongside Dave Wilson's new WAMM project. Yvette is the most advanced and musically refined single-enclosure loudspeaker in Wilson's history.

www.wilsonaudio.com

Technical Specifications

Type: Floorstanding

Driver complement: 10" woofer, 7" mid, 1" silk dome tweeter

Enclosure Type: Vented mid and ported woofer

Frequency Response: 20 Hz–25 kHz +/- 3 dB, RAR

Impedance: 4 ohms

Sensitivity: 86 dB @ 1Watt @ 1meter @ 1kHz

Price: Not specified

Availability: Now

Wilson Benesch A.C.T. One Evolution

A.C.T. One Evolution is a classic British loudspeaker design that has evolved through an iterative design process and four models since 1991. A pioneering design, the original A.C.T. One introduced curved carbon fibre composite panels to loudspeaker design and included a 20-degree sloping top and metal baffle. Like the Porsche 911, decades on, the A.C.T. One Evolution stands as a testament to timeless design principles.

A.C.T. Monocoque technology seen in the flagship Cardinal, forms the loudspeaker enclosure creating one of the stiffest, most highly damped loudspeaker enclosures in the industry.

Fitted with Wilson Benesch's Tactic-II Drive Units and a Semisphere Silk-Carbon Dome Tweeter, A.C.T. One Evolution represents state-of-the-art loudspeaker engineering.

www.wilson-benesch.com

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
1 × 25mm (1-inch) Wilson Benesch Semisphere Tweeter
1 × 170mm (7-inch) Wilson Benesch Tactic II Lower Midrange Drive Unit
1 × 170mm (7-inch) Wilson Benesch Tactic II Upper Midrange Drive Unit
1 × 170mm (7-inch) Wilson Benesch Tactic II Bass Drive Unit

Enclosure Type:
Polyalloy – Carbon Fibre Composite Enclosure
Lower Midrange Chamber: Ported Enclosure
Upper Midrange Chamber: Ported Enclosure
Bass Chamber: On-Axis Floor Augmented Reflex Port

Frequency Response: 34H–30KHz +/- 2dB

Impedance:
6 ohms nominal/4 ohms minimal

Sensitivity: 89dB at 1 metre on-axis, 2.83V input

Price: £19,950 (standard finish)

Availability: In full production, available via www.wilson-benesch.com

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Wilson Benesch Resolution

Wilson Benesch, industry leaders in carbon fibre composite high-end audio design, introduce their latest loudspeaker Resolution. Inspired by the company's flagship Cardinal, each from the award-winning Geometry Series, Resolution utilises Wilson Benesch's carbon fibre A.C.T. Monocoque to form the stiffest, most highly damped loudspeaker enclosure in the industry. The geometrically optimised, complex organic composite cabinet is fabricated in the company's state-of-the-art VRTM technology suite.

Internal cross-bracing and proprietary visco-elastic bonding integrates the composite structure to the stepped polyalloy baffle and foot to form an extremely rigid enclosure that eliminates cabinet colourations to create a stunning presentation.

Fitted with Wilson Benesch's Tactic-II Drive Unit and a Semisphere Silk-Carbon Dome Tweeter, the Resolution represents ground up loudspeaker engineering.

www.wilson-benesch.com

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
- 1 × 25mm (1-inch) Wilson Benesch Semisphere Tweeter
- 1 × 170mm (7-inch) Wilson Benesch Tactic II Low Bass Drive Unit
- 1 × 170mm (7-inch) Wilson Benesch Tactic II Midrange Drive Unit
- 4 × 170mm (7-inch) Wilson Benesch Tactic II Isobaric Bass Drive Unit

Enclosure Type:
- Polyalloy – Carbon Fibre Composite Enclosure
- Low Bass Chamber: Infinite Sealed Baffle
- Midrange Chamber: Infinite Sealed Baffle
- Isobaric Chamber: On-Axis Floor Augmented Reflex Port

Frequency Response: 30Hz–30KHz +/- 2dB

Impedance:
- 6 ohms nominal/4 ohms minimal

Sensitivity: 89dB at 1 metre on-axis, 2.83V input

Price: £35,500 (standard finish)

Availability: In full production, available via www.wilson-benesch.com

Wolf von Langa AUDIO FRAME X, model "Chicago"

The unique field coil loudspeaker AUDIO FRAME X.

Our high-performance bass-midrange drive units ensure a precise, powerful and lively foundation. The mid- and high-frequency devices complement this foundation with space, sound and time information and together form a completely new playback system with breathtaking realistic music reproduction quality.

The model "London" bears its name through the use of a full-range speaker based on the Paul Voigt "energised drive unit" of the year 1933, Sydenham, London, the precursor of the midrange driver of the model "Chicago" is none other than the Western Electric 755A and it reproduces all the relevant voice sound spectrum. The model "Berlin" includes two spherical wave horns after the inventor Friedrich Roesch from Berlin.

www.wolfvonlanga.com/

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
- 2 × Field Coil bass/midrange woofer A1.1500
- 1 × Field Coil midrange driver A1.750
- 1 × Air Motion Transformer VL2.1

Enclosure Type: Dipole, open baffle

Frequency Response: 35Hz–25kHz

Impedance: 8 ohms

Sensitivity: 96 dB/1W/1m

Price: USD $44,500

Availability: Ultra gloss black, oiled walnut

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Wolf von Langa SON

SON is an acoustic furniture combined with an exceptionally technology for a complete musical experience. As a result of the fine-tuned combination of an unique 11-inch field coil speaker with an ultra-fast high frequency driver, music played through the SON fills the room with sound, while the technology takes a back seat. The perfect execution of the finest components, accomplished in the Wolf von Langa workplace, will delight; and in conjunction with their award worthy design, they will fit nicely in any upscale residential ambience. The SON is a perfect speaker for the living room, the music room, the library, or any place in the home where people like to enjoy the sound of their own favorite music.

www.wolfvonlanga.com/

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
1 × Field Coil bass midrange woofer A1.1200
1 × Air Motion Transformer VL2.1

Enclosure Type: Vented resp. passive radiator, dipole tweeter

Frequency Response: 25Hz–30kHz

Impedance: 4 ohms

Sensitivity: 95 dB/1W/1m

Price: USD $11,500

Availability: Ultra gloss black, ultra gloss white, oiled walnut

ARSLAB CLASSIC 3.5

Classic 3.5 is meant to enliven larger rooms with precise and rich sound. A spacious living room, a home cinema, a specially designed listening room – this speaker will fit in perfectly for various needs and applications. It is a skillfully crafted device which will help you shape your acoustic environment the way you want.

Following their best traditions, Arslab aimed for the best quality/price ratio possible, genre independence, and exactly true audio reproduction.

A masterfully engineered crossover, high-quality drivers, and carefully planned enclosure construction create flawless high-fidelity sound. Powerful when it has to be, delicate and smooth when it is necessary, Classic 3.5 misses out nothing.

Made in Europe.

www.worldaudiodistribution.com/brands

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
2 × 6-inch woofer
1 × 6-inch midrange driver
1 × 1.25-inch tweeter

Enclosure Type: 3-way, Bass Reflex

Frequency Response: 40Hz–22kHz

Impedance: 6 ohms

Sensitivity: 88 dB

Price: €1,190

Availability: Now

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YG Acoustics Sonja™ XV

(available in two configurations: Sonja™ XV and Sonja™ XV Jr.)

Sonja™ XV is an extreme, four-tower version of Sonja™, created to celebrate YG Acoustics™' 15 year anniversary. It combines everything that YG Acoustics™ knows about speaker-design, and incorporates several next-generation technologies. New technologies introduced in Sonja™ XV include the revolutionary BilletDome™ tweeter and the ViseCoil™ made-in-house bass inductors. Sonja™ XV—an entirely new sonic benchmark, truly extreme in every way... handmade in U.S.A.

www.yg-acoustics.com

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement: Sonja™ XV – 20 drivers per pair of speakers (10 drivers per channel). Each channel includes:
1 × BilletDome™ tweeter
2 × BilletCore™ mids
3 × BilletCore™ mid-woofers
4 × BilletCore™ woofers

Sonja™ XV Jr. – 16 drivers per pair of speakers (8 drivers per channel). Each channel includes:
1 × BilletDome™ tweeter
2 × BilletCore™ mids
3 × BilletCore™ mid-woofers
2 × BilletCore™ woofers

Enclosure Type: Machined aircraft grade alloy. Acoustic suspension

Frequency Response: Usable output extends from below 20 Hz to above 40 kHz

Impedance: 4 ohms nominal, 3.5 ohms minimum

Sensitivity: 88 dB/2.83 V/1 m 2__anechoic

Price: Sonja™ XV – £350,000. Sonja™ XV Jr. – £250,000

Availability: Current and available

YG Acoustics Sonja™ 2

(available in four configurations) (Sonja™ 2.3, Sonja™ 2.2, Sonja™ 2.1, Sonja 2C)

Sonja™ 2 is the continued evolution of YG Acoustics™' flagship line of speakers, and incorporates all 8 of our key technologies. The BilletDome™ tweeter and ViseCoil™ bass inductors, descendant from the Sonja XV, are employed in Sonja™ 2. Driven by innovative applications of acoustical engineering and world-class precision-manufacturing, Sonja pushes the edge of the art. Marrying these elements with stunning industrial design, results in a loudspeaker which is transformative in both performance and sheer visual beauty. Sonja™ – unparalleled sonics, timelessly elegant form, pure seduction... handmade in U.S.A.

www.yg-acoustics.com

Technical Specifications

Type: Floorstanding loudspeaker – (Sonja™ 2.3 and Sonja™ 2.2). Stand-mount Loudspeaker – (Sonja™ 2.1, Sonja™ 2C)

Driver complement: Sonja™ 2.3 uses 10 drivers per pair of speakers (5 drivers per channel). Each channel includes:
1 × BilletDome™ tweeter
2 × BilletCore™ mids
2 × BilletCore™ woofers
Sonja™ 2.2 has the same driver complement as above but utilizes a single BilletCore™ woofer per channel
Sonja™ 2.1 and Sonja™ 2C have
1 × BilletDome™ tweeter and
2 × BilletCore™ 6" mid-woofers
per channel

Enclosure Type: Machined aircraft grade alloy. Acoustic suspension

Frequency Response: Usable output extends from below 20Hz to above 40kHz (Sonja™ 2.3 and Sonja™ 2.2)

Impedance: 4 ohms nominal, 3.5 ohms minimum

Sensitivity: 88 dB/2.83 V/1 m 2__anechoic

Price: Sonja™ 2.3–£120,000
Sonja™ 2.2–£79,000

Availability: Current and available

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YG Acoustics Hailey™ 1.2

Hailey™ delivers the lifelike natural sound of YG Acoustics™' Sonja™ flagship, at a price that is accessible to a wider audience within the ultra-high-end. The technologies of Hailey™ mirror those of Sonja™, using equally stunning industrial design, and the same world-class precision-manufacturing. The result is astonishing sonic performance—unequalled, with the exception of the flagship itself—in a gorgeous marvel of engineering and craftsmanship. Hailey™ – spectacular sonics, timelessly elegant form, pure harmony... handmade in U.S.A.

www.yg-acoustics.com

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement: (per channel)
1 × ForgeCore™ tweeter
1 × BilletCore™ mid-woofer
1 × BilletCore™ woofer

Enclosure Type: Machined aircraft grade alloy. Acoustic suspension

Frequency Response: Usable output extends from below 20Hz to above 40kHz

Impedance: 4 ohms nominal, 3 ohms minimum

Sensitivity: 87 dB/2.83 V/1 m 2__anechoic

Price: £45,000

Availability: Current and available

YG Acoustics Carmel™ 2

Carmel™ 2 delivers the lifelike natural sound of YG Acoustics™' flagship Sonja™ and Hailey™, at a price that is within reach for many of us who—until now—could only dream of owning a speaker of such ultra-high-end calibre. Carmel™ 2 is the culmination of years of research, and a near-obsessive desire by YG Acoustics'™ lead-designer Yoav Geva, who insisted that his inevitable responsibility was to extend the leading-edge technologies of Sonja™ and Hailey™, to Carmel™ 2. The result is astonishing—world-class performance in a gorgeous marvel of industrial design and precision-manufacturing. Carmel™ 2 – spectacular sonics, timelessly elegant form, pure clarity... handmade in U.S.A.

www.yg-acoustics.com

Technical Specifications

Type: Floorstanding Loudspeaker

Driver complement: (per channel)
1 × ForgeCore™ tweeter
1 × BilletCore™ mid-woofer
per channel

Enclosure Type: Machined aircraft grade alloy. Acoustic suspension.

Frequency Response: Usable output extends from 32Hz to above 40kHz

Impedance: 4 ohms nominal, 3.5 ohms minimum

Sensitivity: 87 dB/2.83 V/1 m 2__anechoic

Price: £25,000

Availability: Current and available

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Zellaton REFERENCE MkII by Flamingo Audio Limited

3-Way Speaker System, Min Power Requirement 50W.

info@flamingoaudio.co.uk

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
1 × Cone Tweeter
1 × Midrange unit
3 × Woofers

Enclosure Type: Cabinet with rear vents, using constraint layer damping for airflow

Dimensions (H×W×D): 131 × 45 ×71 cm

Net Weight: ~135 kg

Frequency Response: 22Hz–40kHz

Impedance: 4 ohms

Sensitivity: 89 dB/1W/m

Price: £113,950

Availability: Delivery 3–4 months

Zellaton STAGE by Flamingo Audio Limited

2.5 Way Speaker System, Min Power Requirement 30W.

info@flamingoaudio.co.uk

Technical Specifications

Type: Floorstanding

Driver complement:
1 × Cone Tweeter
1 × Mid/Woofer
1 × Woofer

Enclosure Type: Cabinet has rear vents, using constraint layer damping for airflow

Dimensions (H×W×D): 115 × 44 × 64 cm

Net Weight: ~90 kg

Frequency Response: 24Hz–40kHz

Impedance: 4 ohms

Sensitivity: 87 dB/1W/m

Price: £63,950

Availability: Delivery 3–4 months

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Zellaton STATEMENT by Flamingo Audio Limited

3-Way Speaker System, Min Power Requirement 50W.

info@flamingoaudio.co.uk

Technical Specifications

Type: Floorstanding loudspeaker

Driver complement:
- 1 × Cone Tweeter
- 2 × Midrange units
- 2 × Woofers

Enclosure Type: Cabinet with rear vents, using constraint layer damping for airflow

Dimensions: TBA

Net Weight: TBA

Frequency Response: 20 Hz–40 kHz

Impedance: 4 Ohm

Sensitivity: 90 dB/1W/m

Price: £254,950

Availability: Delivery 3–4 months

New Contour New legend

EISA AWARD Best Product 2017-2018
BOOKSHELF LOUDSPEAKER
Dynaudio Contour 20

Effortless simplicity... 27 years in the making

When you get a Dynaudio Contour you're up in the big league. You can see it from the craftsmanship. You can hear it in the performance. And everyone else can, too. This is a speaker re-thought, re-designed and re-engineered to start a new era of performance.

DYNAUDIO
Contour 20

dynaudio.com

STAND-MOUNT LOUDSPEAKERS

Audiovector SR 1 Avantgarde Arreté

The SR 1 Avantgarde Arreté is a speaker that brings you the perfect balance. It sounds free and with no compression. Easy to place and easy to play.

The hand built Air Motion Transformer has a rear-radiating air flow construction to improve the soundstage and detail.

In homes where there is a need to strike a balance between sound performance and speaker size, the SR 1 makes the decision very easy.

This is the top of the line Stand-mount speaker in the full range Audiovector model programme.

Designed, engineered, and built in Denmark.

www.audiovector.com

Technical Specifications

Type: Stand-Mount Loudspeaker

Driver complement:
1 × Avantgarde AMT
(Hand build Air Motion Transformer)
1 × Audiovector Evotech
High-Efficiency Driver

Enclosure Type: 2-way bass reflex

Frequency Response: 39Hz–52kHz

Impedance: 8 ohms Nominal

Sensitivity: 87.5 dB

Price: £4,200/pair

Availability: Piano & Matte Lacquer in Black, White, Rosewood & Cherry. Custom car lacquer finishes available on request.

Audience ClairAudient 1+1 V2+

The 1+1 V2+ is the most unique small footprint loudspeaker in the world. Like all Audience ClairAudient speakers, it features the single wideband driver design that delivers a totally transparent sound due to the lack of a crossover. However, in this model a bi-pole configuration is used which expands the soundstage, extends low frequency and increases power handling. There are active full range drivers on the front and back, which are complemented by passive radiators on each side. The jewel-like enclosure is a joy to look at and will fit into any room where space is at a premium and high quality sound is desired. Affordable and amazing, the 1+1 V2+ must be heard to be believed.

www.audience-av.com

Technical Specifications

Type: Stand-Mount

Driver complement:
2 × Full-Bandwidth, Crossover-Less A3S2-16 Drivers (drivers are mounted in a bi-pole configuration)
2 × Side-firing passive radiators

Enclosure Type: MDF, Passive Radiator Loading

Frequency Response: 50Hz–21kHz

Impedance: 8 ohms

Sensitivity: 87 dB

Price: $2,345

Availability: Domestic and International

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Audience ClairAudient The ONEs V2+

Just like all of its larger ClairAudient siblings, The ONE V2+ uniquely provides the high resolution and speed of electrostatics, the power and authority of dynamic systems and the coherency of a point source. The ONE V2+ delivers spectacular imaging, as well as a full and natural midrange unmatched by loudspeakers many times their size and price. The sonic qualities of the V2+ design are nothing short of stunning. Utilization of Audience's optimized A3S2-16 drivers, re-tuned passive radiators, Au24 SX Internal wiring, and solder-less Tellurium plated Copper binding posts put these loudspeakers into a different class. They are more "high end". They sound like larger and more capable loudspeakers with noticeably more finesse, dynamics, and resolution.

www.audience-av.com

Technical Specifications

Type: Stand-Mount

Driver complement:
1 × Full-Bandwidth, Crossover-Less A3S2-16 Driver

Enclosure Type: MDF, Passive Radiator Loading

Frequency Response: 50Hz–21kHz

Impedance: 16 ohms

Sensitivity: 84 dB

Price: $1,445

Availability: Domestic and International

AVI HiFi DM12

A high-end, fully active stand-mount from the inventors of this category of HiFi product, the DM12 is the new addition to our range of acclaimed active loudspeaker systems. The DM12 includes our award-winning, high-speed, linear bi-polar power amplification, 75 WPC for the tweeters and 250 WPC for the bass/mid drivers; active 8th order crossovers; our state-of-the-art analogue preamplifier with two digital and one analogue input; our audiophile quality DAC, HF and LF adjustment; high-end drivers, all contained in beautiful, real-wood veneered cabinets. They provide class-leading accuracy, clarity, imaging, and overall performance.

www.avihifi.co.uk

Technical Specifications

Type: Active Stand-Mount

Driver complement:
1 × Custom design, broad bandwidth 6.5-inch paper cone bass/mid
1 × high-end ring dome tweeter.

Enclosure Type: Ported cabinet

Frequency Response:
Better than 30Hz–20kHz

Impedance: Not specified

Sensitivity: Not specified

Price: £3,250

Availability: Available now

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Dynaudio Xeo 2

The award-winning Xeo 2 is the most compact speaker in the world's first range of high-end wireless stereo speakers.

The Xeo 2s can play anything you stream to them via Bluetooth – from any compatible device. They also have on-board physical inputs: digital optical (which can handle 24-bit/192kHz hi-res files), analogue RCA stereo, and analogue 3.5mm minijack. But these speakers aren't just well connected; they're smart too. Mount them on stands; keep them on a shelf; put them in a corner; seat them on optional wall-brackets. Just tell the Xeo 2s where they are via a rear switch, and they'll optimise their sound for that position.

No speaker cables, no amplifiers, no equipment racks: the only thing you have to do is pick a song from your library and stream it.

www.dynaudio.com

Technical Specifications

Type: Bookshelf or wall mount Active Loudspeaker

Driver complement:
1 × 28mm soft dome tweeter
1 × 140mm MSP woofer

Enclosure Type: 2-way DSP Based, Bass reflex

Frequency Response: 40Hz–20KHz

Amp Power: 2 × 65W

Sensitivity: Not specified (speaker is self-powered)

Price: £1,200

Availability: Now – Black or White

Dynaudio Special Forty

The new Special Forty anniversary speaker draws on 40 years of cutting-edge research – and brings it totally up to date with Dynaudio's most celebrated techniques and technologies.

The new Esotar Forty soft-dome tweeter features precision-optimised airflow conduits and a lower resonant frequency for complete integration with the new woofer. That woofer – Dynaudio's best 17cm model yet – has an improved spider and excursion symmetry, plus a new, higher-grade hybrid magnet system for total clarity in its performance.

The Special Forty anniversary speaker is classic Dynaudio: all the craftsmanship, attention to detail and total love of authentic sound you've come to expect – re-engineered for 2017.

www.dynaudio.com

Technical Specifications

Type: Stand-mount Loudspeaker

Driver complement:
1 × 28mm soft dome Esotar Forty tweeter
1 × 170mm MSP woofer

Enclosure Type: 2-way, bass reflex rear-ported

Frequency Response:
(+/- 3dB) 41Hz–23kHz

Impedance: 6 ohms

Sensitivity: 86dB

Price: £2,500

Availability: Now – High Gloss Red Birch, High Gloss Grey Birch

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Dynaudio EMIT M20

The Emit M20 continues Dynaudio's 40-year tradition of outstanding compact loudspeakers.

Its neutrality, transparency, and detail are all thanks to legendary Dynaudio technologies and innovations, including high-performance soft-dome tweeters, MSP (Magnesium Silicate Polymer) mid/bass drivers and lightweight, large-diameter aluminium voice-coils. Dynamics are exceptional, and the combination of the precisely tuned bass-reflex enclosure and the mid/bass driver's incredible performance ensure class-leading bass reproduction.

The Emit M20, a step up in performance from the smaller M10 model, offers true high-end sound quality and exceptional value – and proudly continues Dynaudio's legacy of stellar compact loudspeaker design. No wonder it earned the coveted 2016 Product of the Year accolade…

www.dynaudio.com

Technical Specifications

Type: Stand-mount Loudspeaker

Driver complement:
1 × 28mm soft dome tweeter
1 × 170mm MSP woofer

Enclosure Type: 2-way, bass reflex rear ported

Frequency Response: 50Hz–23kHz

Impedance: 4 ohms

Sensitivity: 86dB

Price: £599

Availability: Now – Satin Black or Satin White

Eclipse TD508MK3

TD508MK3 features our unique 8cm fibreglass drive unit to ensure an incredible level of performance, way beyond the expectations of a compact monitor speaker. Our waveform reproduction technology ensures you are given the sense of being at the heart of a live performance, listening to the artist breathing and the unique sounds of their individual musical instruments.

A wide range of adjustment and flexibility, including settings for both ceiling and wall mounting, makes TD508MK3 the perfect option for discerning Hi-Fi and home cinema aficionados, or as an ideal sound installation for high value commercial venues. Musical reproduction notwithstanding, the TD508MK3 is also a stunning example of loudspeaker design that will enhance any listening environment.

www.eclipse-td.com/uk

Technical Specifications

Type: Stand-mount loudspeaker

Driver complement:
Single, full range driver

Enclosure Type:
Teardrop shaped, cast resin

Frequency Response: 52Hz–27Khz

Impedance: 8 ohms

Sensitivity: 82 dB/W

Price: £960

Availability: Approved ECLIPSE stockists – see website for details

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Ensemble Ondiva/Ondiva ARC stands

- Construction (Design: Urs Wagner)
- Two-way, quasi point-source, reflex port (opposite: multi-driver; soundwall)
- Analogue crossover (opposite: digital segmentation)
- Wave-dynamic shape and multi-layer, complex, non-resonant cabinet wall structure, in continuation with ARC stand (opposite: single material, angular shape)
- Custom-made drivers and crossover parts
- Behaviour
- Precise acoustic information, from all positions (opposite, red listening spot' design)
- No need for subwoofer
- Veracious acoustic dimensionality and balance
- Dynamics from lowest levels to full impact
- Uncoloured, natural tonality
- Usability
- Easy load, easy to set up
- At ease even in acoustically difficult rooms
- Also suited for professional use (acoustic lens')

www.ensembleexperience.com

www.ensembleaudio.com

Technical Specifications

Type: Stand-mount loudspeaker

Driver complement: Reflex port

Enclosure Type: Wave-dynamic shape
Multi-layer, complex, non-resonant cabinet wall

Frequency Response:
38Hz–25Khz (-6dB/in-room)

Impedance: nominal 8 ohm; lowest impedance 6 ohms

Sensitivity: 88.5 dB (1m/2.83V pink noise)

Price: Ondiva loudspeakers, £13,500/pair; Ondiva ARC stands, £2600/pair

Availability: Silver grey, black; other colours on special order

Gamut Audio RS3i

The RS3i is a high-performance compact stand-mount loudspeaker designed to deliver remarkable bass extension and dynamic range for its size. Its drivers, crafted in collaboration with world-leading Danish experts, are perfectly aligned both physically and electronically to achieve phenomenal phase response. The swept-back, rear-tilted angle of the cabinet enables a very precise relationship between the position of the speakers' drivers and the listener's ears and brain, enabling all sonic frequencies reach the listener simultaneously. Its integral, acoustically optimised stand features the same construction principles and high quality materials as the loudspeaker itself, and is designed to position the RS3i at precisely the right height and tilt angle for optimum performance.

www.gamutaudio.com

Technical Specifications

Type: 2-way impulse optimised bass reflex compact stand-mount loudspeaker

Driver complement:
1 × 1.5-inch tweeter: ring radiator, silk cone, neodymium magnet
1 × 7-inch mid-woofer: sliced paper cone, impregnated with a bespoke blend of natural oils
Drivers perfectly aligned both physically and electronically to achieve phenomenal phase response for superior musical presentation.

Enclosure Type: Curved shape and rear tilt designed for superior sonic performance
21 layers of sustainably-sourced, hand-selected real wood veneers, form-pressed into solid wood panels
2 × 5mm aluminium rear-mounted ports precisely tuned for optimum impulse response
Integrated acoustically optimised stand

Frequency Response: 34Hz–60kHz

Impedance: Nominal impedance 4 ohms; Minimum impedance 4 ohms

Sensitivity: 87.5 dB/2.83 V

Price: From £17,600

Availability: Available now

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Kanto Audio YU4

Throw on a vinyl with YU4's built-in phono preamp, or sit back and stream your carefully curated playlist via Bluetooth.

www.kantoaudio.com

Technical Specifications

Type: Bookshelf Speaker

Driver complement:
4-inch Kevlar Drivers

Enclosure Type: Acoustic MDF

Frequency Response: 60Hz–20kHz

Impedance: 4 ohms

Sensitivity: Not specified

Price: £269.99

Availability: Available now

Kanto Audio YU6

Thanks to its built-in 200W amplifier with aptX Bluetooth interface, and its on-board phono preamp, the YU6 lets you satisfy your craving for powerful, full-impact sound. More than a speaker, the YU6 is in essence a complete, self contained audio system.

www.kantoaudio.com

Technical Specifications

Type: Active and Bluetooth-capable Stand-mount loudspeaker/Bookshelf Speaker

Driver complement:
1 × 5.25-inch Kevlar driver
1 × 1-inch silk dome tweeter

Enclosure Type: Acoustic MDF

Frequency Response: 50 Hz–20 kHz

Impedance: 6 ohms

Sensitivity: Not specified (the speaker is self-powered)

Price: £329.99

Availability: Available now

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Linn Akudorik

This is a stand-mounted speaker like no other.

The elegantly curved cabinet houses a high quality bass driver and Linn 3K Driver Array, providing the musical accuracy you'd expect from Linn. However it's how each drive unit is fed a near perfect signal that sets this speaker apart.

The innovative stand houses the Exakt digital crossover, volume control, Linn DACs and power amplification, with a dedicated channel for each of the four drive units. Signals are passed from stand to speaker using a unique connection, so you won't see any messy wiring despite the complexity of the electronics.

Our Katalyst DAC Architecture then converts these signals with an unprecedented level of control, ensuring a deeper insight into your favourite music.

https://www.linn.co.uk/

Technical Specifications

Type: Stand-mount Loudspeaker

Driver complement:
4-way: includes Linn's 3K array plus bass driver.
Super tweeter: 13 mm silk dome
Tweeter: 25 mm PU dome
Midrange: 75 mm PU dome
Bass: 165 mm doped paper cone

Enclosure Type: Ported

Frequency Response: N/A

Impedance: N/A

Sensitivity: N/A

Price: £17,500

Availability: From Linn Specialist retailers: https://www.linn.co.uk/find-a-shop

MonoPulse Model S

The custom-built MonoPulse. The only loudspeaker with absolute impulse accuracy.

Our lives once depended on knowing the direction of a snapped twig. We sensed direction by the arrival times of the sharp edges or impulses in that sound.

Music is full of impulses. MonoPulse loudspeakers retain the original impulse accuracy, and so re-create the positions and depth of a three-dimensional sound stage. This unique design, using radar technology, gives holographic realism and presence. You hear the music how it was created.

The Model S Standmount (there is also a floorstander version) combines this with 29Hz bass (25Hz for the floorstander), 250 watts power handling (300 watts for the floorstanders), ten cloth colours, plus tops in three hardwoods or any metallic colour. (For the Floorstander there are also available extending spikes)

See also the MonoPulse Model A.

www.monopulse.co.uk

Technical Specifications

Type: Powered Standmount or Floorstanding Loudspeaker

Driver complement:
1 × 130mm (160mm) LF unit
1 × 28mm silk-domed HF unit

Enclosure Type: Ported 10 litre (20 litre for the floorstander) tuned to 40 Hz (38 H for the floorstander)

Frequency Response: 29Hz–25kHz (25Hz–25kHz for the floorstander)

Impedance: 8 ohms

Sensitivity: 89dB (90dB for the floorstander)

Price: £895; €1,195 (£995; €1,295 for the floorstander)

Availability: Custom built. Typical 4 weeks

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Newform Ribbon Module 58 (R58)

The R58 features the NFR 8" baffle mount Ribbon with a 5" midbass in a sealed enclosure. Customization allows for the use of midbass drivers from a wide range of quality manufacturers from ScanSpeak to Peerless to Vifa and Seas etc. A low crossover point to the Ribbon (~ 1,400Hz) produces outstanding transparency, dynamics and soundstaging.

These systems deliver the fine detail so dear to music lovers and the full spectrum dynamics that make the action real for home theatre fans.

Newform Ribbons are high impedance, wide dispersion design, which offer the transparency of the classic panels in a more compact, practical and more room friendly packages ideal for audiophiles and speaker kit builders alike.

www.newformresearch.com

Technical Specifications

Type: 2 way Bookshelf/Stand-Mount

Driver complement:
5-inch Peerless or ScanSpeak
8-inch NFR Ribbon

Enclosure Type: Sealed, Ribbon monopole

Frequency Response:
44Hz to 20kHz, +/- 2 ½ dB

Impedance: 8 ohms

Sensitivity: 86dB

Price: $1592 US per pair, factory direct

Availability: Now

Old School Audio MONITOR M2

All of us were charmed of old school some days. Nostalgia for their past, interesting history, amazing technical equipment – it is like a good wine, "older is better".

However, it has been a very complicated situation here. Today's technological progress has made a great step far ahead in comparison with "good old times". Retro-speakers now are out of time: obsolete work materials and technologies, low quality drivers…

Could there be a compromise today? Or is it a simple win-win situation (which is much better)?

The answer is "yes". The newest series "Old School" loudspeakers are a great example of how they would have made loudspeakers had they had access to present-day technologies and knowledge.

Made in Europe.

http://oldschoolaudio.eu/monitorm2.html

Technical Specifications

Type: Stand-mount loudspeaker

Driver complement:
8-inch woofer
5-inch midrange driver
1-inch tweeter

Enclosure Type: 3-way, reflex

Frequency Response: 38Hz–25kHz

Impedance: 4 oh,s

Sensitivity: 88 dB

Price: €3990

Availability: Now

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Penaudio Cenya Signature

This model is a special, author's edition of the top bookshelf speakers Cenya; on its back, there is a plate with signature of Sami Penttila, the founder of Penaudio.

It has slightly increased size, bitum reinforced enclosure panels of multi-layered plywood, for excellent vibration damping and modern ecologic look. The reflex canal pipe is made of aluminum and has its port opening at the rear panel.

Cenya Signature sounds amazingly open, clean, and stands out with exquisite microdynamics of its sound. Perfection, dedication, and experience gave birth to this piece of scientific art.

www.penaudio.fi/3-products/

Technical Specifications

Type: Stand-mount Loudspeaker

Driver complement:
Woofer, 145 mm
Tweeter 29 mm

Enclosure Type: 2-way, Bass Reflex

Frequency Response: 35Hz–30kHz

Impedance: 4 ohms

Sensitivity: 86 dB

Price: €6390

Availability: Now

Raidho D-1.1

The Raidho D-1.1 is a compact 2-way stand-mount loudspeaker. It features the Raidho Diamond Driver™ and the Raidho Ribbon Tweeter™. Through our work with the Raidho Diamond Drivers™, we have learned something essential about audio reproduction: Less is truly more. When the resonances, which are always present in a system, are minimized and almost removed, and when your psychoacoustic capabilities no longer have to deal with unwanted resonances, then your mind is free to enjoy the reproduced music to a whole new level. Needless to say, the performance of the D-1.1 seems endless in all respects.

www.raidho.dk

Technical Specifications

Type: Stand-mount.

Driver complement:
1 × Sealed Raidho Ribbon Tweeter™
1 × 115mm Raidho Diamond mid-bass driver ™. (Cutting Edge Diamond Technology™)

Enclosure Type: Vented design, port in rear panel

Frequency Response: 50Hz–50kHz

Impedance: > 6 ohms

Sensitivity: 85 dB 2.83 V/m

Price:
D-1.1 High Gloss Black: €20,500
Raidho D-1.1 Walnut Burl or personalized colour: €22,900
Raidho Stand: €2,500
Raidho Speaker Stand High Gloss Black: €2.950

Availability: High Gloss Black piano. All possible paint colours & Walnut Burl veneer

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Russell K Red 100 Precision Audio Loudspeaker System

Medium size Stand-Mount loudspeakers designed for total performance without compromise.

Crossover network:

- Drivers connected in positive phase, crossover frequency 2200Hz nominal 12 dB/Octave.
- Bass Inductor "Enclosed Field Ferrite Core"
- Very low DCR nominal stray fields.
- Tweeter attenuation by misaligned Zobel network, as opposed to conventional L-Pad.
- Both Drivers have only one component in the signal path and are phase optimised through the crossover region.

Designed in the UK.

www.russellk.co.uk

Technical Specifications

Type: 2-way, Stand-Mount loudspeaker

Driver complement:
6.5-inch bass unit with impregnated paper cone and curved optimised acoustic profile. High power Ferrite magnet driving a 25mm voice coil with aluminium former and Faraday distortion cancelling copper ring 25mm soft dome Tweeter with Double Ferrite magnet system – Copper Clad Aluminium voice coil wire on a Fibreglass Former and Faraday distortion cancelling copper ring.

Enclosure Type: Reflex port

Frequency Response: In room frequency response: 30Hz–22KHz

Impedance: Not specified

Sensitivity: 86dB @ 1 watt/1 metre

Price: Not specified

Availability: Now

Russell K Red 50 Precision Audio Loudspeaker System

High performance Mini Monitor able to reproduce realistic sound in small to medium size rooms.

Crossover network:

- Drivers connected in positive phase
- Crossover frequency 2200Hz nominal 12 dB/Octave.
- Bass Inductor "Enclosed Field Ferrite Core"
- Very low DCR nominal stray fields.
- Tweeter attenuation by misaligned Zobel network as opposed to conventional L-Pad
- Both Drivers have only one component in the signal path and are phase optimised through the crossover region

Designed in the UK.

www.russellk.co.uk

Technical Specifications

Type: 2-way, Stand-Mount Loudspeaker

Driver complement:
5-inch bass unit with impregnated paper cone and curved optimised acoustic profile a high power Ferrite magnet driving a 25mm voice coil with aluminium former and Faraday distortion cancelling copper ring
A 25mm soft dome Tweeter Single Ferrite magnet system – Copper Clad Aluminium voice coil wire on a Fibreglass Former and Faraday distortion cancelling copper ring.

Enclosure Type: Reflex port
Constructed from 16mm MDF all sides apart from front baffle, which is 19mm
A totally un-damped cabinet with one acoustic loading bracing shelf with multiple apertures mounted above the woofer
A reflex port loading tuned to 55Hz

Frequency Response: In room frequency range: 45Hz–22 KHz

Impedance: Not specified.

Sensitivity: 85dB @ 1 watt/1 metre

Price: Not specified

Availability: Now

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Spendor D1

The Spendor D1 is a 2-way mini-monitor loudspeaker. It is perfectly suited to smaller listening spaces. Whatever the location, the Spendor D1 delivers music with depth, clarity, and a natural sense of timing, which is remarkable for such a small loudspeaker.

"A compact stand-mount of such remarkable musical coherence that it's capable of challenging all those high-end miniatures that cost many, many times its modest price. And that's the thing: it's not just what these loudspeakers do (which is impressive enough), but how they do it for the price that is the burning question."

Roy Gregory, *Hi-Fi+* Issue 151.

www.spendoraudio.com

Technical Specifications

Type: Stand-Mount Loudspeaker

Driver complement:
LF 15cm
HF 22mm LPZ

Enclosure Type: Sealed

Frequency Response: 55Hz–25kHz

Impedance: 8 ohms

Sensitivity: 85dB

Price: £2,195

Availability: Now

Studio Electric m4

Building on the success of the award winning SE Monitor, The new m4 takes stand-mounted speakers to a new level of performance.

m4 features our proprietary highX™ 6.5" woofer, coupled to a high-performance 1-inch soft dome tweeter. The asymmetrical crossover network uses custom value capacitors by ClarityCap™, as well as tight tolerance air-core inductors, and non-inductive resistors.

www.studio-electric.com

Technical Specifications

Type: Stand-mount Loudspeaker

Driver complement:

LF: SE HighX™6.5-inch/170mm/copolymer

HF: 1-inch/25mm soft dome

Crossover frequency: 3kHz

Enclosure Type: M4 cabinet construction features graded MDF and HDF with a veneer of a newly developed, sustainable wood product that looks and feels like exotic hardwood.

Construction: HDF and MDF with recycled Wenge veneer

Cabinet Dimensions (H×W×D):
12 × 8.625 × 15 inches (sans grill)

Weight: 19 lbs./8.5 kg (shipped two per carton) @ 43 lbs. / 19.5kg

Frequency Response: 44Hz–22kHz

Impedance: 6 ohms

Sensitivity: 88dB/1 watt/1 metre

Price: $2,400/pair. Stainless Steel wire mesh grills are optional.

Availability: Now

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Vivid Audio B1 Decade

Vivid Audio broke new ground in loudspeaker engineering when it launched the Oval series B1 in 2004. Bristling with technological innovations such as carbon-reinforced catenary dome drivers, tapered tube absorbers, radial magnets and reaction cancelling drivers in a low-diffraction enclosure, B1 drew on many of the lessons designer Laurence Dickie learned from creating the iconic Nautilus. B1 Decade celebrates ten years of loudspeaker production in our Durban-based manufacturing plant and brings the design bang up-to-date with a new look and loads of materials and technology from our Giya series all united by newly computer-optimised crossover networks to bring the ultimate levels of clarity and performance to a wider audience.

www.vividaudio.com

Technical Specifications

Type: Stand-mount loudspeaker with built-in stand

Driver complement: 3½-way, 4-driver
LF &LMF: 2 × 125mm alloy cone drivers with underhung 50mm edge-wound coil and radial magnet in reaction-cancelling configuration
Mid-range: 50mm carbon-reinforced alloy catenary dome with underhung coil and radial magnet on exponentially tapered tube.
HF: 26mm carbon-reinforced alloy catenary dome with underhung coil and radial magnet on exponentially tapered tube

Enclosure Type: Vacuum-infused sandwich composite

Frequency Response: -6dB, 34Hz–36kHz

Impedance: 4 ohms, nominal

Sensitivity: 89dB for 2.83VRMS @1m

Price: £20,000 in Piano Black or Pearl White. Custom finishes add £1,600

Availability: Six weeks from receipt of order

Wilson Benesch Discovery II

A striking, conceptually unique stand-mount design. Discovery II features a dual push-pull clamshell Tactic II Drive System underside of the cabinet, delivering powerful bass with lightning speed and accuracy, remaining perfectly integrated with the midrange driver.

Technologically and materially advanced like its Geometry Series counterparts, Discovery II is constructed from precision CNC-machined aluminium baffle, top plate, bottom plate arrays. Visco-elastic bonding integrates the alloy structure to the company's carbon fibre composite A.C.T. Monocoque, forming one of the industries stiffest and most highly damped stand-mounted enclosures.

From the world's first hybrid tweeter dome technology, to the unique Tactic II Drive System, each and every facet is testimony to the art of acoustic engineering at the cutting edge.

www.wilson-benesch.com

Technical Specifications

Type: Stand-mount loudspeaker

Driver complement:
1 × 25mm (1-inch) Wilson Benesch Semisphere Tweeter
1 × 170mm (7-inch) Wilson Benesch Tactic II Midrange Drive Unit
2 × 170mm (7-inch) Wilson Benesch Tactic II Isobaric Bass Drive Unit

Enclosure Type: Polyalloy – Carbon Fibre Composite Enclosure

Midrange Chamber: Ported Enclosure

Isobaric Chamber: Ported Enclosure

Frequency Response:
-38Hz–30KHz +/- 2dB

Impedance:
6 ohms nominal/4 ohms minimal

Sensitivity: 89dB at 1 metre on-axis, 2.83V input

Price: £14,950 (standard finish)

Availability: In full production, available via www.wilson-benesch.com

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – STAND-MOUNT LOUDSPEAKERS HI-FI+

Zellaton LEGACY by Flamingo Audio Limited

2-Way Reference Monitor System, Min Power Requirement 20W.

info@flamingoaudio.co.uk

Technical Specifications

Type: Stand-Mount

Driver complement: 1× Dome Tweeter
1× Mid/Woofer
1× Passive Radiator

Enclosure Type: Sealed Cabinet w/ABR

Dimensions (H×W×D): 36 × 23 × 27 cm

Net Weight: ~10 kg

Monitor Stand, Dimensions (H×W×D): 64 × 23 × 35 cm

Monitor Stand, Net Weight: ~14 kg

Frequency Response: 45Hz 38kHz

Impedance: 4 ohms

Sensitivity: 86 dB/1W/m

Price: £19,950

Availability: Delivery 3–4 months

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SUBWOOFERS

Audiovector QR SUB

Our QR SUB is a powerful and very dynamic active subwoofer with a passive radiator. Both bass drivers feature the Audiovector Pure Piston technology, which is a strong sandwich membrane construction.

The design goal of the QR series has been to offer today's most advanced technology in a perfectly finished compact package.

The QR SUB is designed to improve the sound quality and to add bass with its terrific speed of delivery. The listener has full flexibility with both Neutrik speakon high-level and RCA low-level inputs.

www.audiovector.com

Technical Specifications

Type: Subwoofer

Driver complement:
1 × Front-Firing 10" Pure Piston woofer
1 × Downward-firing 10" Pure Piston passive radiator

Enclosure Type: Passive Radiator

Frequency Response: 22Hz–180Hz

Subwoofer amplifier power: 350 Watts

Subwoofer controls provided: Not specified

Price: £890/each

Availability: Black Piano, Matte White & Matte Dark Walnut

Eclipse TD520SW

The TD520SW features two high quality subwoofer drive units with a diameter of 20 cm each, which give the user ultimate flexibility on positioning, while maintaining the highest quality of super fast bass reproduction. The TD520SW is equipped with a compact digital power amplifier that has excellent energy conversion while also maintaining the high volume efficiency of the subwoofer. As with the range topping TD725SWMK2, the TD520SW is equipped with two input systems each of which provides an independent audio volume and low-pass filter. This gives flexibility to those people who plan to integrate the subwoofer into a stereo set-up and a multi-channel arrangement, allowing the ability to switch between the two options with the minimum of fuss.

www.eclipse-td.com/uk

Technical Specifications

Type: Subwoofer

Driver complement:
2 × 20cm RTR Drivers

Enclosure Type: Sealed, completely vibration free, Gloss Piano Black

Frequency Response: 25Hz–150Hz

Subwoofer amplifier power: 250W

Subwoofer controls provided: Dual discrete inputs with Volume and LFP adjustments – full remote

Price: £3,000

Availability: Approved ECLIPSE stockists – see website for details

GUIDE TO LOUDSPEAKERS 2017: U NEED 2 KNOW – SUB WOOFERS HI-FI+

Kanto Audio SUB6

Featuring a compact, sealed box design, SUB6 pumps out 200W of peak power to ensure your sound is perfectly balanced.

www.kantoaudio.com

Technical Specifications

Type: Subwoofer

Driver complement:
1 × 6-inch Paper Cone Driver

Enclosure Type: Acoustic MDF

Frequency Response: Not specified

Subwoofer amplifier power: 200 W

Subwoofer controls provided: Level, Crossover Frequency, Phase, Standby Power

Price: £219.99

Availability: Available now

Kanto Audio SUB8

Easily integrate this 250W subwoofer into any pre-existing sound system for a truly immersive auditory experience.

www.kantoaudio.com

Technical Specifications

Type: Subwoofer

Driver complement:
1 × 8-inch Paper Cone Driver

Enclosure Type: Acoustic MDF

Frequency Response: Not specified

Subwoofer amplifier power: 250 W

Subwoofer controls provided: Level, Crossover Frequency, Phase, Standby Power

Price: £269.99

Availability: Available now

ICE (Immersive Cinema Experience) S6.2

ICE S6.2 is the high output loudspeaker designed for behind the screen or behind the acoustic wall installation. Can be used as main and surround speakers in medium size home theatres.

Setting up with the ICE 6.1 speakers, the 6.2 can be used as a screen channel speaker in medium or small size rooms.

http://ceratecaudio.com/ceratec-ice/

Technical Specifications

Type: Screen channel speaker

Driver complement:
2 × 165mm woofers
1 × 30mm tweeter

Enclosure Type: 2-way, closed box

Frequency Response: 70Hz–20kHz

Impedance: 4 ohms

Sensitivity: 92 dB

Price: €1,192

Availability: Now

ICE (Immersive Cinema Experience) S8.2

ICE S8.2 is the premium quality high output loudspeaker designed for behind the screen or behind the acoustic wall installation. Can be used as main and surround speakers in spacious home theatres.

Alongside with ICE 8.1, 6.1 speakers, the ICE S8.2 can be used as screen channels in the medium size set ups.

- Crossover: 2th Order, 2.2 kHz. 80Hz subwoofer crossover frequency
- Construction: Audiophile parts and point to point soldering.

http://ceratecaudio.com/ceratec-ice/

Technical Specifications

Type: Screen channel speaker

Driver complement: Woofer 200 mm-2, Tweeter 25mm CTA diaphragm

Enclosure Type: 2-way, closed box

Features: Elliptical constant directivity: (-6dB 90°H × 60°V from 1.5 kHz) waveguide

Cabinet: 38L sealed cabinet made of high quality Plywood and MDF, internally braced. Light absorbing black soft touch coating

Frequency Response: 70Hz–20kHz

Impedance: 4 ohms

Sensitivity: 90 dB

Price: €2,492

Availability: Now

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Mads Klifoth of Audiovector

***Hi-Fi+*: Tell us about the origins of your company. When did you found or join the firm?**

Mads Klifoth: Audiovector was founded in 1979 by Ole Klifoth, father of CEO Mads Klifoth. The aim was and is to bring a live music experience into people's private homes.

I entered as CEO in 2014 with a purpose to take over the company which I did last year. Our common idea is to stay original, keep development and production in Denmark and to never compromise our strong DNA.

What led you to pursue a career as a loudspeaker designer? Did any particular design heroes or mentors inspire you?

Ole Klifoth struggled in the 1970´s to find the perfect speaker. He failed so he had to build the perfect speaker himself. For me it is truly inspiring to have your father as your mentor.

Do you prioritize design factors when you create a new speaker?

Absolutely, very much indeed. The best designs, follows the "form follows function" idea. Fortunately, many of our designs sounds great—due to many years of development. An example is our tear drop shaped cabinets. They look elegant and are the best with respect to acoustics, no standing waves, minimal damping etc.

What role do lab measurements and listening tests play in evaluating and refining new loudspeaker designs?

Lab development and measurements are very important to achieve low distortion, smooth frequency response, and fast impulse response. We alternate between measurements and listening tests (in the company listening room and in our private homes) until we get the sound we want. Listening tests always have the last word!

What parts of loudspeaker design are science-driven and what parts come down to careful artistic judgements?

We design and develop our speakers with science and heritage. We then improve the prototypes with artistic judgement and a very detailed choosing of components. This way we get the best of both worlds and a great sounding speaker that is ready to launch.

Constant listening tests are very, very important when developing a loudspeaker.

As you see it, how are your loudspeaker designs different to and better than others on the market? What sets your designs apart?

All our speaker lines are designed, developed, and made in Denmark to ensure the best quality at all times.

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We engineer our own drivers, so they have the roll-off we want to be able to use smooth filtering, thus presenting a very easy load to the amplifier. We take pride in having high efficiency and careful mechanical decoupling. We use broad band damping material inside. Meticulously water-cut and exactly positioned. This is much better than random filling damping and is one of the criteria for accurate production.

Which of your loudspeaker designs do you consider a personal favourite, and why?
The R 11 is our favourite because it stands father to all models in the ranges below. The development, the engineering, and the handcraft that is put into this speaker is extraordinary and the best and biggest achievement we can do/have done.

Having said this, we are very fond of the SR 3 series, especially the new SR 3 Arreté Raw Surface Limited Edition using our v. 2 Arreté AMT tweeter.

How would you describe for laymen the differences between good loudspeakers vs. truly great ones?
The truly great speakers give you "Chills" & "Goosebumps". When the music can thrill you, sound open, delicate and dynamic, it is truly amazing.

A good loudspeaker will satisfy your basic needs, but you will always consider the music playing as a background experience.

What specific advice would you give to loudspeaker buyers? What things should they listen for? What are warning signs that suggest a loudspeaker might not provide long-term satisfaction?
Forget about specifications! You must listen—not just with your ears, but also with your stomach and your heart. You will know the feeling when it appears.

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If you had only a half hour or so to evaluate a new loudspeaker in a dealer's showroom, what are three or four pieces of music you might want to use for your preliminary assessment?

- Speed and bass accuracy: Bruce Springsteen – '57 Channels'
- Dynamics and transients: Fink – 'Trouble´s What You´re In'
- Space, scale, and depth: Snegurochka – 'Dance of the Tumblers' and
- Diana Krall – 'A Case of You'

Looking ahead, do you think the loudspeaker marketplace will change or evolve in the next five years, and if so what new trends or requirements do you anticipate?

We anticipate more focus on high quality reproduction. High quality meaning a combination of involvement and clear, dynamic sound.

Active speakers will play a bigger role as the streaming quality will get much better. The quality of streamed music will improve dramatically with improved formats like DXD and DSD. +

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Daniel Emonts of Dynaudio

***Hi-Fi+*: Tell us about the origins of your company. When did you found or join the firm?**

Daniel Emonts: Dynaudio was founded in 1977 by Wilfried Ehrenholz, Gerhard Richter, and the former Scan-Speak designer, Ejvind Skaaning. Dynaudio initially made drivers for the OEM and DIY market, but a year later they launched their own finished speakers.

I joined Dynaudio a couple of years ago.

What led you to pursue a career as a loudspeaker designer? Did any particular design heroes or mentors inspire you?

I started early! With a limited young student budget, I couldn't afford to purchase loudspeakers with the performance I desired, so I made them myself!

And yes, people like Wilfried Ehrenholz, Ejvind Skaaning, Raymond Cooke, and Jacques Mahul were all heroes for me. What they created some 30–50 years ago inspired me greatly.

Do you prioritize design factors when you create a new speaker?

Of course, the sound: linearity, realistic image, and little (or low) distortions.

Pictured: Founder, Wilfried Ehrenholz

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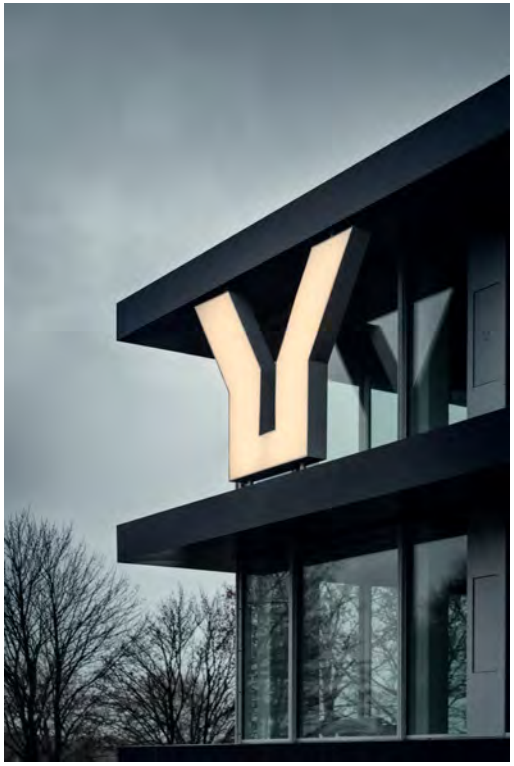

But when listening, the speaker should 'disappear'—only the music should remain, no sound.

What role do lab measurements and listening tests play in evaluating and refining new loudspeaker designs?
We do develop our speakers with intensive measurements and simulations, but listening sessions with a group of engineers, audio enthusiasts, and music lovers are vital and an integrated part of our development process.

What parts of loudspeaker design are science-driven and what parts come down to careful artistic judgements?
We use science based considerations for simulations, especially with our active systems by using Matlab and other simulation software (acoustic, magnet field design, multi-physics simulations with Comsol), but the fine tuning is always done with intensive listening sessions with the team.

As you see it, how are your loudspeaker designs different to and better than others on the market? What sets your designs apart?
In a word: Tradition. Our own Dynaudio drivers are modern state-of-the art designs, but their roots go all the way back in the late Seventies. We have our own cabinet factories, as well as crossover design philosophies which we apply in most of our loudspeakers. This consistency makes Dynaudio loudspeakers instantly recognisable in both aesthetic design, sound performance, and the perception of quality.

Which of your loudspeaker designs do you consider a personal favourite, and why?
Our newest model: The Special Forty. With its traditional looks, it incorporates our latest design in driver development, crossover design, and the use of special components. Its superior sound is the result of 40 years constant development—and it truly is a real gem.

How would you describe for laymen the differences between good loudspeakers vs. truly great ones?
Modern designed loudspeakers from major brands are all more or less good, thanks to modern design tools. Truly good loudspeakers though, are those that can be listened to for a long time without getting fatigued, that draw the listener into the music, and that capture emotions. When a customer is making a quick audition through a range of different speakers in a retail store, he shouldn't be blinded by loudness

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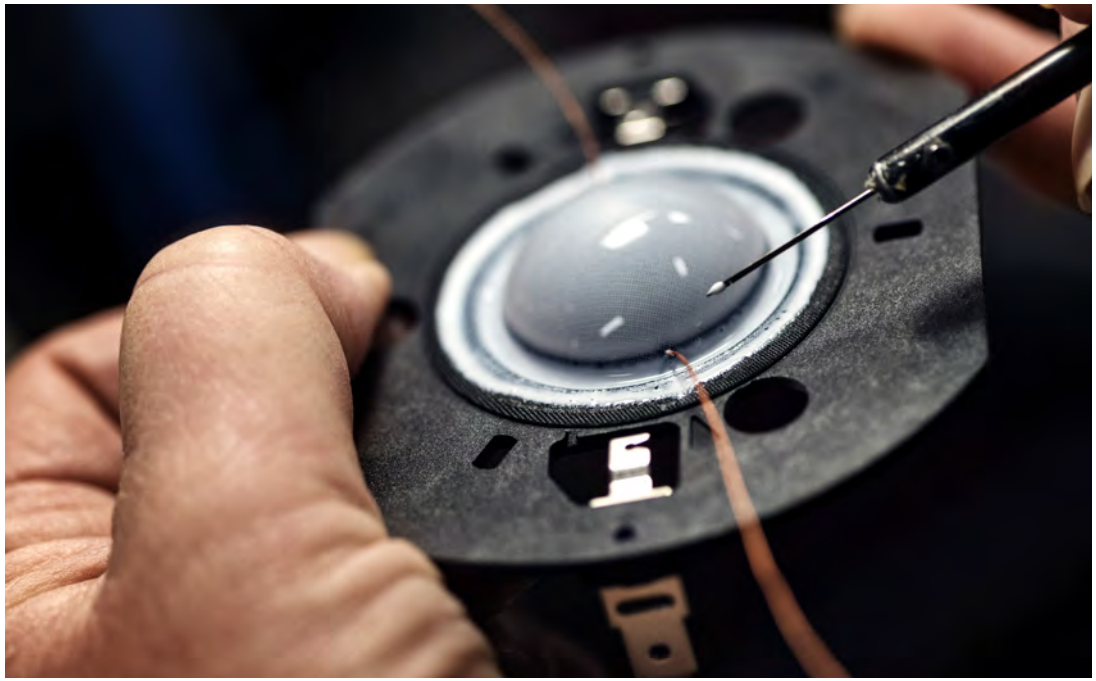
because a speaker has a higher sensitivity, but he should go for the more subtle playing speaker that doesn't just blast sound…

What specific advice would you give to loudspeaker buyers? What things should they listen for? What are warning signs that suggest a loudspeaker might not provide long-term satisfaction?

Take your time. If the retailer wants only to make a quick sale, then change the retailer. Bring your own music of course, that you like and are familiar with. A retailer will always play music that will bring forward qualities out of any speaker, even the average one. Pay attention to linearity (i.e., no frequency range should be more forward or recessed), and listen for a good image in terms of depth, width, and height, and that is detached from the loudspeakers.

If you had only a half hour or so to evaluate a new loudspeaker in a dealer's showroom, what are three or four pieces of music you might want to use for your preliminary assessment?

Of course I would suggest three different genres of music, depending on the listener's taste. Perhaps one classical track, a pop/rock track, and one jazzy tune, some film music and a bonus track. Some people don't listen to some genres and would replace one style with another.



To name some tracks:

- Classical: The fourth movement of Mahler's 4th symphony, performed by the Cleveland Orchestra (Pierre Boulez), sung by Juliane Banse
- Pop/ rock: 'Empire Builder' by Laura Gibson or 'Father Please' by Freshlyground
- Jazz: 'Temptation' by Diana Krall, or 'Chan Chan' by Buena Vista Social Club
- Film track: 'Ah America' from Nick Cave & Warren Ellis
- Bonus track (to test bass performance): 'Limit to Your Love' from James Blake

Looking ahead, do you think the loudspeaker marketplace will change or evolve in the next five years, and if so what new trends or requirements do you anticipate?

A new generation of listeners is on its way and small Bluetooth speakers are very much the demand now. This generation will upgrade one day, but they will want the convenience of both wireless (connectivity) and portability. From speakers purchased for around €100 today, consumers will upgrade to something around the €600–800 mark and might consider products like the Music 3 or 5 from Dynaudio. Classic passive stereo loudspeakers will become a niche market, but there will always be customers interested in real high-end loudspeakers, those that have a five-digit or higher price tag, probably with unchanged sales figures. +

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Daryl Wilson of Wilson Audio Specialties

***Hi-Fi+:* Tell us about the origins of your company. When did you found or join the firm?**

Daryl Wilson: In the late seventies, my father (David Wilson) began to understand the importance of the time domain—specifically as it related to the transient propagation of individual drivers. He discovered that even tiny errors in the alignment of the drivers in relationship to the listener caused obvious sound-quality degradation. When the drivers were aligned accurately to the listening position, the loudspeaker sounded far more lifelike. These discoveries led to a patent for adjustable-propagation-delay loudspeaker arrays, as well as the method to measure time-domain distortion (still used today at Wilson Audio, albeit in a much more refined form). Wilson Audio's first commercial product, the WAMM (Wilson Audio Modular Monitor), was the physical manifestation of my father's theories.

Throughout the 1980s, my father continued his secondary career as a recording engineer, producing, along with my mom (Sheryl Lee Wilson), a series of records on the Wilson Audiophile label which are prized to this day for their holographic recreation of soundstage and for their natural musicality. During this time, my father began to yearn for a portable location monitor that would offer him the same kind of transparency and neutrality he could achieve with the WAMM. Again, finding nothing commercially available that met his standards, he disappeared into the garage and emerged some months later with a small (but heavy) loudspeaker shaped like a truncated pyramid, called the WATT (Wilson Audio Tiny Tot).

By 1989, WATT owners were demanding a dedicated woofer for the speakers, and the aptly named Puppy—a Tiny Tot's best friend—was introduced. The combined WATT/Puppy still holds the distinction of being the best-selling loudspeaker over $10,000 in history.

In those early days of Wilson Audio, before the company was firmly established internationally, I started my "audio training and apprenticeship" with small steps. The first of these steps was in Facility Maintenance—sweeping the driveway and parking lots, cleaning the fabrication area, taking out trash, cleaning the bathrooms, etc.

As time went on, I was given other responsibilities dealing with Wilson Audio information and communication, such as collating information for dealers, answering phones, etc.

As Wilson Audio continued to grow and became a recognized brand name, the days of twisting wires in the garage came to an end. The company grew larger and out of

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our home in Novato, California, and then expanded beyond the walls of our leased shop space, finally settling soundly in our current facility in Provo, Utah, U.S.A.

I feel truly blessed to have had the opportunity to see the growth Wilson Audio has experienced and the huge leap into our custom-built facility. It's here that I've grown and developed the most as a member of the Wilson Audio team.

Through blood and sweat and (some) tears I've learned and gained a fuller understanding of the business in high-end audio, the intricacies of industrial design, and the guild manufacturing processes, all of which forms the platform for Wilson's business culture. Being a part of the building process from the beginning stages—raw materials and shaping them into an enclosure—to crating the finished product in shipping, has given me the utmost respect for how much time, passion, and attention-to-detail is involved in producing the world's best loudspeakers. My father wisely mentored my development, the heart of which was systematically immersing me in all of the departments at Wilson Audio to gain the deepest understanding of loudspeaker manufacturing. This has been an essential foundation for my growth as a designer.

Over my lifetime I've built thousands of Wilson Audio speakers. My hands-on education and experience, from each department (not including my most recent work in R&D), is as follows:

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- Fabrication Shop: Responsible for Cub II and Puppy 6 & 7 weekly production. My product building responsibilities focused on: X-1 Sub, Sophia, W.A.T.C.H. Dog, WATT, MAXX, Center Channel, and Cub/ Center Stands.
- Quality Assurance: Fabrication Q.A. for just about all our products. Helped Q.A. paint products when needed.
- Production: Responsible for weekly Puppy, X-1 Sub, and WATT. Hand built wires, prepped for speaker production and grills. Helped build X-1 Uppers, WHOW, original WAMM ELS and original WAMM Sub. Night Shift Foreman and responsible for weekly WITT production.
- Inventory Assistant: Made wire kits, foam kits, screw kits and tool kits. Helped Lab by assisting with the testing of speaker systems and helped with lab prep work. Helped Shipping and Receiving by making labels, preparing crates for delivery, and crating the finished product.
- Trade Shows, Customer Service and Dealer Events: Display set-up/tear down. New product Q&A and customer service. Traveled to 26 countries over the years for Dealer/Distributor training and product promotion.

Over the years, it has been one of my greatest pleasures and joys to just sit down with my father and listen to music, and discuss in great depth and detail what we hear.

What led you to pursue a career as a loudspeaker designer? Did any particular design heroes or mentors inspire you?

I've always admired the purity of process my father employs in the effort to discover the greater truths in those things he investigates. Most people have heroes that wear sports jerseys, uniforms, or even capes from fictional universes. My heroes are my parents. Starting as young child, I watched as they got up every morning, worked harder than anyone I knew, risked every material possession, and even, at one point, lost our home.

Building any business is risky and extremely difficult. But none of that stopped their pursuit of building this business, the center of which was a culture of passion and excellence. During both the hard times and those sweet moments of celebration, my mother and father have never rested on their laurels, and have always strived to be better today than they were yesterday. They treat everyone with respect, and even though perfection is impossible, excellence is not.

I consider myself an artistic soul and I recognized very early that I had the chance to create works of sonic and industrial art alongside my heroes. The choice to travel this path was an easy decision, one that has been a deeply satisfying endeavor. There have been plenty of challenges and I'm certain the future holds many more obstacles, but I embrace those challenges and actively look for ways over, under, around or through those challenges.

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Do you prioritize design factors when you create a new speaker?

All of our creative efforts are aligned with our goal of creating sound that is as close to realisms as is currently possible. First and foremost is getting the time domain right. Most of Wilson designs are modular, which allows the loudspeaker to be adjusted for accurate driver-to-driver alignment in the time domain. The next design goal would be to carefully and thoughtfully sculpt around that structure and make it as visually beautiful as possible. Our designs are created in such a way that when an observer studies their forms they are continuously rewarded the deeper they dig into each design. The human ear is acutely sensitive to timing elements in music. If timing between drivers is smeared, even minutely, the ear/brain easily identifies that sound reproduction as synthetic and unnatural.

What role do lab measurements and listening tests play in evaluating and refining new loudspeaker designs?

Measurements and listening go hand-in-hand and both need to be executed at the highest level. We have investing in state-of-the-art testing equipment and take the pursuit of knowledge very serious… but at the end of the day "Not everything worthwhile can be measured, and not everything that can be measured is worthwhile." -William Bruce Cameron.

What parts of loudspeaker design are science-driven and what parts come down to careful artistic judgements?

I enjoy reading quotes and surround myself with those that inspire me most. A favorite of mine is from Albert Einstein: "It would be possible to describe absolutely everything scientifically, but it would make no sense. It would be without meaning, as if you described a Beethoven symphony as a variation of wave pressure." Simply put, science only gets you so far. We don't completely understand every factor that influences a loudspeaker's ability to sound real, yet. For example, blending the crossover points can be done by computer simulations, up to a point. You can get a frequency response that measures flat and looks ideal, but typically these computer-generated choices, while good as starting points, tend to sound uninvolving and/or unnatural. Science and engineering plays a key part in our materials research, but no matter how a material measures, the human ear is the final arbiter for the material's sonic merit.

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The proof of this is found across our industry and many brilliantly engineered products exemplify this concept of listening combined with science: cartridges, equipment racks, LPs, tonearms, cable construction, binding posts, inductors, and the list goes on and on. Our use of science and artistic judgment together is guided by the desire to connect you to the music in the ways that empower and inspire you.

As you see it, how are your loudspeaker designs different to and better than others on the market? What sets your designs apart?

Form follows function. Aristotle said, "We are what we repeatedly do. Excellence, then, is not an act but a habit." There are a lot of products one can choose from where their beauty is, unfortunately, only skin deep. When you pull apart the layers of some of the product offerings in the market, what you often find beneath the pretty veneer finish is cheap materials constructed by indifferent and uninvolved cheap labor, using cheap parts. These products are often priced to hit a "price point" so shareholders can get the returns they were promised. Wilson Audio is a privately held company beholden only to our ideals and our customers. Passionate craftsmen handcraft our products here in the United States of America using only the finest and best sounding components. It is our company mission to bring you closer to your music. We want the customer who buys our products to be emotionally connected with that piece of music they are listening to.

Which of your loudspeaker designs do you consider a personal favourite, and why?

Alexx.

Every product created at Wilson Audio includes decades upon decades of experienced hands throughout the factory participating in molding, crafting, and shaping the final products that are shipped from our docks to your home. The average tenure of our craftsmen here at Wilson Audio is about 11 years and they are the finest craftsmen and builders of loudspeakers you can find. They are driven, engaged, and there is a deep well of experience to draw from as they build together. From the R&D side of the business I see it as an honor to have been a part of the last 31 of the 57 total products Wilson Audio has created and released in its 44 years of doing business (not to mention a few projects that never made it past the prototyping stage).

What specific advice would you give to loudspeaker buyers? What things should they listen for? What are warning signs that suggest a loudspeaker might not provide long-term satisfaction?

We encourage prospective buyers to establish a reference, preferably live, unamplified music, and then to compare a loudspeaker to that reference. We've found that loudspeakers that connect the listener with both the emotional gestalt of the music and that also believably reproduce the musical event provide long-term satisfaction.

High-end products are ideally more than the core task they are designed to facilitate—in the loudspeaker's case, producing sound. The best high-end products provide greater depth to their experience beyond their practical function. We believe that our loudspeakers create an overall experience that involves all the senses—visual, auditory, and even tactile feelings produced by touching the painted surface and beautiful hardware—and are therefore deeply emotionally satisfying over the long haul. The experience should begin from the time the customer uncrates their Wilson loudspeaker, and last for years and years to come.

Looking ahead, do you think the loudspeaker marketplace will change or evolve in the next five years, and if so what new trends or requirements do you anticipate?

Easy access to sound and music is at an all-time high. The extent to which an individual values that connection to the musical experience will determine how much they surround themselves with the ability to enjoy it more. Wilson's mission is to maintain and cultivate our culture of Authentic Excellence in products and solutions that expand your Hi-Fi and music experience. We believe our products should be engineered and executed at the highest level possible. We focus on every detail in every product we design and produce. The future is exciting. We continue to follow my father's simple philosophical metric for product merit: every product we are working on right now at Wilson Audio is one I want to own. +

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Craig Milnes of Wilson Benesch

***Hi-Fi+*: Tell us about the origins of your company. When did you found or join the firm?**

Craig Milnes: The company is co-owned and directed by Craig Milnes (Design Director) and Christina Milnes who is the (Managing Director). Together we have been the driving force behind the company for almost three-decades. Although for the better part of the last decade, our son, Luke Milnes, has joined the company and plays an increasingly central role in the operations of the company and its Marketing and Communication strategy.

Wilson Benesch was founded on the design of a turntable, that some of your readers may recall as the Wilson Benesch Turntable. In terms of the origins of this product and thus the company; a research project was undertaken during the years preceding the formation of the company. This indicated that significant audible and measurable improvements could be realised in sound quality in audio systems as a result of high specific stiffness materials, namely carbon fibre composites. These materials were being used increasingly in the aerospace industry, but seldom in consumer products.

When the company was officially created in 1989 it was on the back of a grant application to HM Government. The argument was that despite the significant decline of the vinyl format, in the face of the emergence of the compact disc format, which promised "Perfect Sound Forever", vinyl was not a dead format and was in fact superior. The foresight of this argument has been vindicated.

The turntable set in motion an approach to design and R&D that has been maintained ever since. This approach is based upon collaboration and a fundamental control over as many elements of the design and synthesis of a product as possible, through long-term investment in manufacturing. Today Wilson Benesch manufacturers 95% of all the components in our inventory under one roof using state-of-the-art CNC-machinery and a variety of carbon fibre composite tooling. The company also undertakes all design in house using SolidWorks CAD/CAE software published by Dassault Systèmes.

What led you to pursue a career as a loudspeaker designer? Did any particular design heroes or mentors inspire you?

There are a plethora of designers, biologists, chemists, researchers and theorists who have inspired me and continue to inspire. A quote that is perhaps particularly pertinent at this very moment is perhaps that of Edward Wilson, "Nature holds the key to our aesthetic, intellectual, cognitive and even spiritual satisfaction". Our current reference

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loudspeaker line the, Geometry Series, alludes to the relevance of natural forms and our understanding of them. The beauty, and also a unique strength of carbon fibre, is the ability that the designer has to create organic forms that mimic geometry found within nature. It's been said before, but Formula One motorsport, remains the finest example of uninhibited, ambitious design using carbon fibre composites, where curved forms can be seen across the cars to extract maximum stiffness, minimum weight and maximum strength. Look closely at any Wilson Benesch carbon composite component and the same forms can be observed.

But in terms of the origins of our first loudspeaker and those that followed it, it was the work completed on the Wilson Benesch Turntable that was a huge success for the company that led to the development of the A.C.T. One loudspeaker. The carbon composite structures at the heart of the turntable, demonstrated that the materials science we had developed, could be exploited in loudspeaker construction and other designs such as high performance racking systems. As in the carbon composite sub-chassis of the Wilson Benesch Turntable, the control of energy is of fundamental importance in the design of a loudspeaker cabinet.

At the time (early 1990s), the rectilinear form of an MDF loudspeaker enclosure was ubiquitous. The A.C.T. One loudspeaker was different. Not only did it introduce carbon composite side panels, but it also had a metal baffle and a 20-degree sloping top, this particular design feature is now common in many designs, but the A.C.T. One Loudspeaker was the first to articulate this new design language in loudspeaker design. The A.C.T. One loudspeaker was an ambitious project, made possible as a result of a diverse group of collaborative partners. So the answer to the question is, we believed that Wilson Benesch could introduce something unique to the market place.

Do you prioritize design factors when you create a new speaker?

The first priority when designing a new series of products, is that it must introduce something new to the market that has never been seen before. It is our goal to push the art of loudspeaker design to a level that was impossible previously. Looking back through the company's product history, examples to be drawn upon would include, the world's first tapered carbon composite tonearm tube seen in the 'A.C.T. One Tonearm' in 1989. Another would be the world's first loudspeaker to see a curved carbon fibre composite panel, and another would be the realisation of a Resin Transfer Moulded single piece carbon fibre composite monocoque structure seen in the 'Discovery loudspeaker', which gave birth to the company's Odyssey Range.

Throughout the company's history, it can be shown that we create product lines that are built around a core technology, with new technologies evolving through an iterative design process where R&D is a continuous project, with often extremely ambitious

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targets. Only when a genuine step change in technology is realised, do we introduce a new product line. We firmly believe in this approach. It is a development cycle now well understood by our loyal customer base and it is an honest approach to product development.

What role do lab measurements and listening tests play in evaluating and refining new loudspeaker designs?

There is an interplay that takes place between both. Wilson Benesch is a technology company; all R&D is conducted on a scientific basis where tests and results are verified and validated so as to push the state-of-the-art. But music is also about emotion and this cannot necessarily be quantified. After almost three decades of hard work in this field, it is much easier to determine how to move forward and avoid pitfalls. However, as with the design process, the listening has always been influenced by multiple views of the Wilson Benesch team. It is important to ensure that within the tiny adjustments that are made that varied opinions must be taken into account. Once again the fact that the elements are all manufactured within the company enables these subtle but significant details to be accommodated.

What parts of loudspeaker design are science-driven and what parts come down to careful artistic judgements?

Science and art are as one in any considered design, whether it be in architecture, aerospace, car design, or whatever.

As you see it, how are your loudspeaker designs different to and better than others on the market? What sets your designs apart?

Our designs are not limited by anything other than our imagination. If we require a component or suitable material that doesn't exist within the company's inventory, then we strive to create the solution that overcomes the challenge. This approach applies to every element of our loudspeakers, from the terminal to the drive unit, and the diverse range of materials we build into the modular construction of our loudspeakers.

Perhaps what defines Wilson Benesch best is the collaborative method through which we develop our products. To date we have jointly funded five ambitious U.K. government funded research programs that have allowed us to work creatively with some of the leading scientists in the world. At this moment in time Wilson Benesch is also engaged as a partner in an Innovate U.K. funded research project with Bristol University and a software development house. In September the company embarked (became) a partner with some major blue chip companies on a multi-million, pan European research project that includes eight European and five U.K. Universities in a four-year research program to develop next generation materials science that go beyond the cutting edge, under the European funding program 2020.

Of course we have always sought to collaborate locally to our headquarters in Sheffield. In this respect we are fortunate to be located a few miles from one of the leading technology parks in England, the Advanced Manufacturing Park (AMP). This technology park now counts McLaren, Boeing, and Rolls Royce amongst its ranks. These companies are engaged in a collaborative partnership with the local industries and Sheffield University, the latter of which have invested heavily in the park. Wilson Benesch have been working with the Sheffield University and Sheffield Hallam University since the company was founded, so our access to the technologies and the engineers and scientists both within the AMP and within the Universities themselves through collaborative partnerships is extensive. Just now, we are working on two Case Studies with a number of scientists on the AMP that aim to deliver step change technologies for current product developments.

This kind of collaborative approach to R&D allows us to develop technologies that are well beyond what could conceivably be possible from a company of our size.

Which of your loudspeaker designs do you consider a personal favourite, and why?

Every design that Wilson Benesch has realised is unique in some way. Each is distinctive and stands upon its unique set of design goals. They are all special in their own way.

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How would you describe for laymen the differences between good loudspeakers vs. truly great ones?

By virtue of classic design principles a great loudspeaker will look as good in 30-years time as it does today. In my opinion the A.C.T. One, from 1992, is a perfect example. But what we seek is connection: connection to music, to the performer, and to those individuals that created a piece of music. That connection often arrives when a window opens into the space and time within which the performer(s) were recorded. A truly great loudspeaker is able to capture that window momentarily and create a vivid image within the listener's mind that connects you to the performer(s). When a loudspeaker allows music to do this, it is a very moving experience. In this sense it really is like a time machine. No other art form can transcend time and allow you to experience the magic of music from previous generations in such an immediate and profound way.

What specific advice would you give to loudspeaker buyers? What things should they listen for? What are warning signs that suggest a loudspeaker might not provide long-term satisfaction?

Does the speaker disappear and leave you with the music?

If you had only a half hour or so to evaluate a new loudspeaker in a dealer's showroom, what are three or four pieces of music you might want to use for your preliminary assessment?

It's important to invest time and energy in the process, and engage with the sound that a loudspeaker produces. Be it in the dealership or within your own home by way of a home demonstration, listen using your preferred choice of electronics and take the time to get to know it with your own music. Taste in music is as subjective as taste in audio products. One wo(mans) perfect loudspeaker is another's worst nightmare. There is something out there for everyone and the journey of finding it is often a fascinating voyage of discovery. Enjoy it!

We believe so firmly in this process that in the U.K. now, we are offering our prospective customers the opportunity to access our products on their own terms through home demonstration.

Looking ahead, do you think the loudspeaker marketplace will change or evolve in the next five years, and if so what new trends or requirements do you anticipate?

From a design perspective, materials science will continue to be the principle force that drives the high end and defines the state-of-the-art. Almost since the outset, we have used the slogan, "The Future is Carbon" and now more than ever this appears to be the case. We are confident that the technologies that Wilson Benesch are currently working on will ensure that the company remains at the leading edge in this respect.

From the customer's perspective, we envisage that the trends seen in other luxury industries, where a customer can expect a dedicated and personalised service will become the norm within this industry. The availability of information via the internet, puts the modern day customer in a position where a wealth of knowledge about a product and a company is freely available, such that they can identify what it is about a product that is important to them before they look to access that product. This trend is gradually being seen globally across many industries. A product now must reflect its owner and feel personalised and individual like never before. In this respect, we are again confident that Wilson Benesch is leading the way and can offer a client a bespoke product, access to information about our company and its technologies, and access to a bespoke client led service to match. +

GUIDE TO LOUDSPEAKERS 2017: MASTER DESIGNERS – CRAIG MILNES HI-FI+

Yoav Geva of YG Acoustics

***Hi-Fi+*: Tell us about the origins of your company. When did you found or join the firm?**

Yoav Geva: I founded YG Acoustics in 2002. This year we're proud to celebrate our 15-year anniversary.

What led you to pursue a career as a loudspeaker designer? Did any particular design heroes or mentors inspire you?

I come from a musical family, with a brother who is a successful professional opera singer. When I was 16 years old, I bought my first humble stereo system. It consisted of a Sony Discman, a Sony integrated amp and Bose speakers. The sound left something to be desired, so I asked my father (who was an audio enthusiast) for advice. He offered two alternatives: either I worked more and bought better speakers, or I could build my own. My father promised that if I chose the latter, he would fund the books and materials to study the field, since he saw educational merit in the project. I chose to build my own, and the rest is history.

Do you prioritize design factors when you create a new speaker?

This may sound controversial to some audiophiles, but as important as sound-quality is, I view it as a very important 2nd priority. The 1st for YG Acoustics is and always will be robust reliability, because if a speaker is broken, it doesn't matter how good it sounds. In terms of sonics, YG Acoustics prioritizes natural tonality (flat frequency-domain behaviour and uniform dispersion), lifelike timing and dynamics (near-zero relative phase), and long-term fatigue-free listenability (low distortion). To clarify, the three are listed in no particular order.

What role do lab measurements and listening tests play in evaluating and refining new loudspeaker designs?

YG Acoustics designs using scientific measurements and simulations, and verifies by listening. We use over 300 measurements, and recheck the results by comparing our lab-data with that of the NRC in Canada (an independent government facility), but only listening can tell us whether we've truly measured everything. An interesting note is that YG Acoustics speakers are not voiced. All measurements are verified using

GUIDE TO LOUDSPEAKERS 2017: MASTER DESIGNERS – YOAV GEVA HI-FI+

extensive listening tests, but the speakers are not artificially manipulated. YG Acoustics speakers are precisely engineered to convey the recording—nothing more, nothing less.

What parts of loudspeaker design are science-driven and what parts come down to careful artistic judgements?

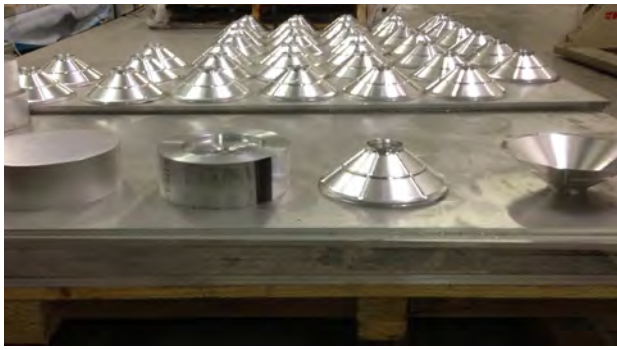
All design is science-driven. The artistic judgement is reserved to the musical performer. What kind of a music-lover would I be if I imposed my preferences over the sonic-presentation that a world-class conductor chose for his/her orchestra's performance?

As you see it, how are your loudspeaker designs different to and better than others on the market? What sets your designs apart?

I can answer what makes our designs different and unique: YG Acoustics employs eight key technologies, all of which are described in detail at www.yg-acoustics.com/category/technologies. In response to your question as to what makes our designs better—I would rather your readers make that judgement for themselves, and cordially extend everyone an invitation to contact their local distributor/dealer (UK – Padood Ltd. For other regions please see our website) to schedule an audition.

Which of your loudspeaker designs do you consider a personal favourite, and why?

I have a good friend who is a talented chef. Whenever I ask him for a recommendation, he answers that he doesn't serve what he doesn't like. I'm personally very fortunate to



GUIDE TO LOUDSPEAKERS 2017: MASTER DESIGNERS – YOAV GEVA HI-FI+

have a pair of Sonja XV's in my home, but I enjoy every YG Acoustics model; otherwise it wouldn't exist.

How would you describe for laymen the differences between good loudspeakers vs. truly great ones?

Good speakers impress you with their bass, midrange, treble etc. Great speakers don't impress you—the music does.

What specific advice would you give to loudspeaker buyers? What things should they listen for? What are warning signs that suggest a loudspeaker might not provide long-term satisfaction?

I recommend an extended audition with music that you're familiar with and enjoy. If you have a significant other who isn't an audiophile—bring him/her with you, as they will provide a fresh, unfiltered perspective. If it doesn't sound lifelike they'll say it, whereas a hardcore audiophile might be too embarrassed to admit that their ears concur.

If you had only a half hour or so to evaluate a new loudspeaker in a dealer's showroom, what are three or four pieces of music you might want to use for your preliminary assessment?

Test tones and a good microphone—just kidding! I'd bring Anne Sofie von Otter singing Schubert's Erlkönig, Tom Jones & Jeff Beck's 'Goin' Down Slow', and my brother Yannai Gonczarowski singing Schumann's Belsazar, which I've heard live so many times that it's become a natural reference.

Looking ahead, do you think the loudspeaker marketplace will change or evolve in the next five years, and if so what new trends or requirements do you anticipate?

I see two important trends emerging:

- I believe that high-end and lifestyle audio are converging. Today's high-end buyer expects not only natural sound, but also meticulous build-quality and an attractive design. Many lifestyle buyers are also becoming more knowledgeable about high-end, and demanding commensurate performance from their gear. This is a very good development.
- Young people are willing to invest considerable sums of money into high-end headphones. As they mature and many start families, we're beginning to see them gravitate towards high-quality speakers as a means to share music with their significant other (and someday their children). The future is exciting and promising. +

SCANSONIC HD

The MB-5 is a unique slim floorstander

Elegantly curved it follows the core of traditions in Danish loudspeaker design.

Meet us on facebook

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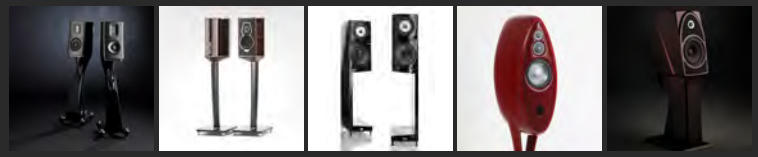
EDITORS' CHOICE

PREMIUM-PRICED FLOORSTANDING LOUDSPEAKERS

PREMIUM-PRICED STAND-MOUNT LOUDSPEAKERS



AFFORDABLE AND MID-PRICED FLOORSTANDING LOUDSPEAKERS

AFFORDABLE AND MID-PRICED STAND-MOUNT LOUDSPEAKERS

In preparing this Guide, *Hi-Fi+* Editors took a running survey of recently reviewed and also soon-to-be-review loudspeaker models and came up with their top five recommendations in four categories:

- **Premium-priced floorstanding loudspeakers,**
- **Affordable and mid-priced floorstanding loudspeakers,**
- **Premium-priced standmount loudspeakers, and**
- **Affordable and mid-priced standmount loudspeakers.**

While we would not necessarily claim these to represent be-all/end-all lists, we are confident that each of the models referenced offers exceptional performance within its category, while also offering that elusive touch of 'magic' that spells the difference between making good sound vs. delivering truly great music.

Enjoy.

PREMIUM-PRICED FLOORSTANDING LOUDSPEAKERS

Estelon YB

The asymmetrical bottle-shaped Estelon YB is a three-way loudspeaker, featuring custom-made Scanspeak drive units instead of the Accuton units found in the company's top X-Series models. However, they YB shares the Estelon traits of speed, articulation, and agility found in the XC and even the Extreme. Installed with care, the YB gives a stellar performance, and our reviewer Chris Thomas concluded he places, "articulation and balance highly on my list of requirements, but the YB fulfils those demands and yet it has this sense of scale plus an acoustically controllable, brooding bass performance that works really nicely in smaller rooms." **AS**

PREMIUM-PRICED FLOORSTANDING LOUDSPEAKERS

KEF Blade

First launched in 2012, the Blade represents the sum of KEF's high-technology-meets-good-sound approach to loudspeaker design. Taking the company's best-ever UniQ coincident midrange/treble unit, flanked by four aluminium coned bass drivers, two to each side of the loudspeaker, making the most symmetric drive unit layout in audio today. This advanced configuration is matched by an innovative heavily braced, internally chambered, ported curved GRP (glass reinforced plastic) shell enclosure totally free from internal wadding. As Roy Gregory noted in his review of the Blade in *Hi-Fi+* Issue 91, "they are dynamically and rhythmically involving, communicative, and capable of considerable musical subtlety." **AS**

Magico M3

Derived from a limited-edition design, the Magico M3 takes the technology from the M-Pro and applies it to create one of the best high-end designs currently on sale. A three-way, five-driver, sealed cabinet floorstanding loudspeaker, the M3 is the company's first design to feature carbon-fibre/foam cored side wings augmenting the aluminium enclosure and unique internal aluminium spaceframe design. Couple this with drivers sporting innovative technologies like diamond-beryllium tweeters and graphene mid and bass drivers. According to Alan Sircom, the result "says loudspeakers can be made with lower distortion than hitherto thought possible, and shows a way it can be done." **AS**

PREMIUM-PRICED FLOORSTANDING LOUDSPEAKERS

Wilson Audio Sabrina

The Sabrina is Wilson Audio's least expensive floorstanding speaker, but it is also one of the company's most special products, arguably representing the price/performance sweet spot in the entire range. Though relatively compact, the eerily coherent and revealing 3-way Sabrina in most respects plays like a much bigger speaker (apart from the fact that it doesn't quite do the lowest half octave of bass down below 31Hz). Even so, the Sabrina is so accomplished and in so many areas that it may well become, as *Hi-Fi+* Editor Alan Sircom put it, "many people's first Wilson and last loudspeaker." **CM**

YG Acoustics Sonja XV

YG Acoustics' flagship two-tower, six-module, ten-driver Sonja XV (for eXtreme Version) floorstanding loudspeaker is a no-holds-barred, state-of-the-art design. Featuring cabinets milled from solid aircraft aluminium; bass, mid-bass, and midrange drivers likewise carved from billets of aluminium; and a fabric dome tweeter reinforced by an underlying precision milled aluminium AirFrame flying buttress-like structure, the Sonja XV offers extraordinary resolution, focus, almost limitless expressiveness and nuance, and amazing dynamic clout. Like all YGs, the Sonja XV simultaneously delivers flat (neutral) frequency response and nearly perfect phase linearity. For those seeking one of the best of the best, look no further. **CM**

GUIDE TO LOUDSPEAKERS 2017: EDITOR'S CHOICE HI-FI+

AFFORDABLE AND MID-PRICED FLOORSTANDING LOUDSPEAKERS

Focal Sopra No.3

The top of Focal's Sopra range, this three-way reflex-loaded floorstander showcases both the company's advanced in-house drive unit design and the sheer sophistication of its cabinet manufacturing. The Sopra No.3 brings more cabinet volume and larger bass drivers over the smaller floorstanders in the range, which – on paper – does not add substantially to the performance. However, as Roy Gregory discovered, "It's not about the quantity of bass, but its quality and how that affects the rest of the musical range, bringing impact and transparency that extends up through the critical mid-bass and that opens up and fills out the mid-band." **AS**

GoldenEar Technology Triton Reference

The Triton Reference is GoldenEar's most ambitious loudspeaker to date, aiming to satisfy listeners who crave top-tier, full-range floorstanders, but who find their stratospheric asking prices daunting. Priced below £10,000/pair, the Triton References offer near exotic speaker performance without the exotic price. Sporting a superb passive midrange-tweeter-midrange section coupled with an active, DSP-controlled three-woofer/four-passive radiator bass section, the Triton Reference is a surprisingly easy load to drive, but one that rewards careful selection of ancillary components. The noteworthy woofer section produces some of the deepest, tightest, and most tuneful bass one might ever encounter in this (or any) price class. **CM**

AFFORDABLE AND MID-PRICED FLOORSTANDING LOUDSPEAKERS

Magnepan 3.7i

Most people expect box-shaped speakers, but Magnepan's tall, wide, and thin 3.7i planar dipolar loudspeakers stand as 'boxless' exceptions to the rule. The speakers feature slender 5-foot-long ribbon tweeters with adjacent single-panel, quasi-ribbon bass/midrange drivers. 3.7i's are supplied in mirror-image pairs and can be oriented with tweeters inward (for tighter image focus) or outward (for greater soundstage width and depth) as desired. The 3.7i offers, says *Hi-Fi+* Publisher Chris Martens an uncanny and "elusive mix of sonic detail, transparency, wide-range frequency response, and freedom from box colourations—all at a reasonable price." Top-to-bottom coherency is scary good, as well. **CM**

PMC twenty5.26

Using air-flow modelling derived from Formula One design, PMC's celebration of its first quarter of a century features a 'Laminair' vent at the front of its transmission lines. This seemingly small change gives allows each driver higher excursion and thus deliver higher SPLs. It's just one of myriad improvements and developments that PMC has incorporated in the twenty5 series, the top of the range being the three-way, three driver transmission line loudspeaker twenty5.26. In listening to the twenty5.26, Jason Kennedy concluded it is "a consistently revealing and musically engaging loudspeaker that makes certain well regarded competitors seem incoherent and coloured." **AS**

AFFORDABLE AND MID-PRICED FLOORSTANDING LOUDSPEAKERS

Spendor D9

Spendor's D9 is the top floorstander in the innovative, yet affordable D Series. The narrow-baffled tower is made from HDF, with no internal wadding, and strategically sited constrained layer slabs placed at vibrational nodes to dissipate energy as heat. Spendor's clever Linear Flow port system and in-house drive units all combine to make a loudspeaker that combines the British loudspeaker qualities of tonal neutrality, linearity, and musicality, with surprising deep bass and both dynamic range and shading. "This English gentleman might not shout," concluded Roy Gregory, "but the message is still delivered with purpose, clarity and where necessary, definite intent." **AS**

PREMIUM-PRICED STAND-MOUNT LOUDSPEAKERS

Raidho D1.1

Most veteran audiophiles would agree the Raidho D1.1 is one of the very finest standmount monitors in the world. Here's why. The D1.1 is descended from Raidho's critically acclaimed D-1 and C-1 monitors, and represents an on-going evolution in performance. It features a very low resonance bass-reflex cabinet (with matching low-resonance stands), a thick time-aligned aluminium baffle plate fitted with Raidho's signature ribbon-type tweeter, and a newly revised diamond-coated ceramic 115mm mid-bass driver. The result, says Hi-Fi+ review Chris Thomas, is a speaker that sounds "extraordinarily sophisticated and endlessly textural with a sense of wholesome, open coherence." **CM**

PREMIUM-PRICED STAND-MOUNT LOUDSPEAKERS

Sonus faber Guarneri Homage Tradition

The elegant Guarneri has been radically reworked this year, and the results are outstanding. The new Tradition model – the lone stand-mount in Sonus faber's three-strong Homage series – remains a refined, ported two-way design featuring the brand's own woofer and tweeter, with both an intelligent new port system, and a completely redesigned cabinet and stand to minimise vibration and resonance. The result is the best Guarneri yet; a speaker that, according to Alan Sircom, "has a beguiling sound that manages to encapsulate the studio-monitor accuracy required of today's loudspeakers with the refinement and musical insight of loudspeakers of a generation ago." **AS**

Vienna Acoustics 'The Kiss'

Many audiophiles know of Vienna Acoustics' flagship Klimt-series model 'The Music', but we sing praises of its smaller sibling, 'The Kiss'. The Kiss is a three-way, standmount monitor that incorporates a lower bass-reflex enclosure with a 23cm 'Spider-Cone' woofer and a swivelling top module featuring an 18cm coincident 'Flat-Spider-Cone' midrange driver with a 2.5cm fabric tweeter at its centre. The Kiss requires careful set-up and high-quality ancillary components, but rewards the listener—says *Hi-Fi+* reviewer Roy Gregory—with a sound that is "inviting, engaging, and deeply communicative." Soundstaging, too, is "essentially natural in terms of spread, scale, and presentation." **CM**

PREMIUM-PRICED STAND-MOUNT LOUDSPEAKERS

Vivid B1 Decade

Vivid's B1 Decade 3 ½ -way, 4-driver, bass reflex, integral-stand loudspeaker celebrates the firm's 10th anniversary, representing an update of the first loudspeaker designer Laurence 'Dic' Dickie created for the company—the B1. The B1 Decade features a more curvaceous enclosure/stand formed from carbon-fibre loaded polyester compound. The drive array consists of two catenary aluminium dome drivers (a 26mm tweeter and 50mm midrange unit), plus a pair of revised 158mm metal-coned mid-bass drivers arranged in a reaction-cancelling configuration. Hi-Fi+ veteran Jason Kennedy found the speaker "instantly engaging", "effortless revealing", and "low in perceived distortion", with timing that is "spot on". **CM**

Wilson Audio Duette 2

The two-way stand-mount Duette 2 is Wilson Audio's first loudspeaker designed to work close to boundary walls. The loudspeaker with its clever use of Wilson's own 'X' material for the bulk of the cabinet and its 'S' material for the tweeter baffle, and user-adjustable crossover, plus its use of a soft dome tweeter and 200mm bass driver combine to make for a very amp-friendly high-end design. "It's like the Rosetta Stone of high-end," said Alan Sircom, "unlocking the language of high-performance audio to those who have been hitherto unable to experience it directly due to constraints of room or equipment." **AS**

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AFFORDABLE AND MID-PRICED STAND-MOUNT LOUDSPEAKERS

Dynaudio Special Forty

Dynaudio's Special Forty is an extremely high-quality, high performance monitor priced below £3,000/pair. The Special Forty uses a 17cm MSP (Magnesium Silicate Polymer) mid-bass driver said to be Dynaudio's "best 17cm woofer yet", coupled with a 28mm version of the Esotar tweeter found in most Dynaudio upscale models. The bass-reflex speaker comes with user-tuneable port damping bungs, and features a phase coherent first-order crossover. The upshot is a compact monitor that offers, says Hi-Fi+ Publisher Chris Martens, "surprisingly deep low-end extension" plus "exceptional three-dimensionality and expansive soundstaging," with a downright striking ability to deliver a "realistic sense of 'palpable presence'." **CM**

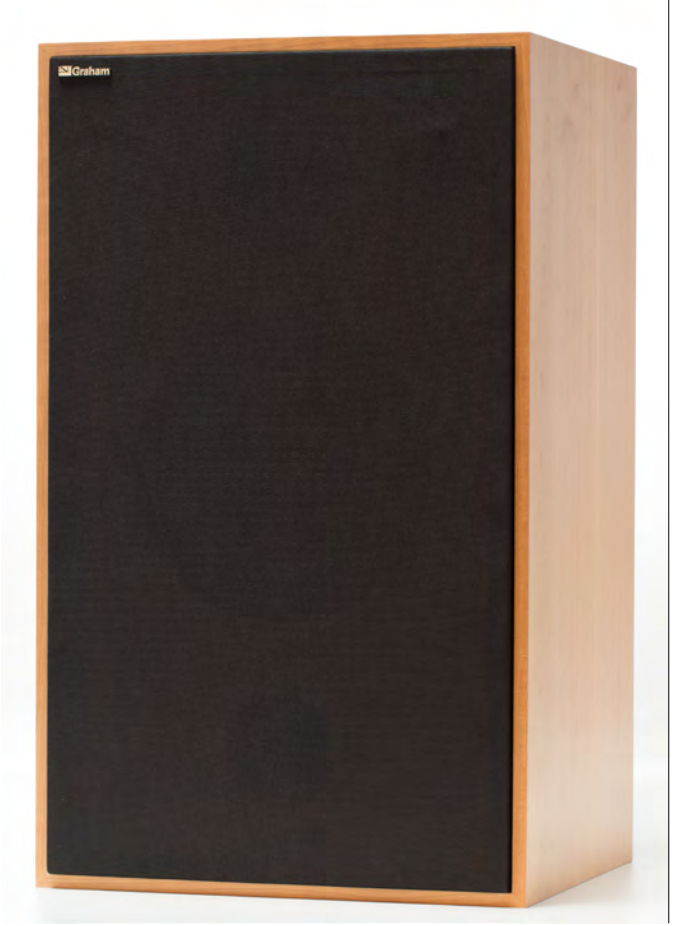
ELAC Debut 5

In a world where high-end audio prices have "gone slightly mental", says *Hi-Fi+* reviewer Chris Thomas, a voice of reason is needed—a voice represented by ELAC's Andrew Jones-designed £250/pair, 2-way, bass-reflex Debut B5 bookshelf monitors. The B5's feature 135mm Aramid-fibre mid-bass drivers and 25mm fabric dome tweeters with integral waveguides. Thomas says the Debut B5's surprise listeners with "excellent tonal balance," respectable bass extension "with very decent control with quite a bit of 'punch'," and a refined top end that is "breathy and superbly textured." In short, the B5's are great small speakers whose performance belies their modest price. **CM**

AFFORDABLE AND MID-PRICED STAND-MOUNT LOUDSPEAKERS

Graham Audio LS5/8

The LS5/8 a large, high-level monitoring speaker for the studio and was also one of the last great loudspeaker projects of the BBC Research and Development team. The R&D team and even the bass units that make up the LS5/8 are long gone, but Graham Audio – with the help of designer Derek Hughes and the Volt loudspeaker company – has brought the speaker back to life. The large (109 litre) front-ported two-way. Nicholas Ripley thought the reborn LS5/8 to be "extremely smooth across the midrange and bass, with an effortless dynamic range that only a big, easy-driving bass unit can bring." **AS**



KEF LS50 Wireless

The original LS50 from KEF was notionally using the ideas behind the BBC LS3/5a (which used KEF drive units), but ended up being the high-end UniQ loudspeaker at real-world prices. To address recent changes in the audio market, the company recently developed the LS50 Wireless, an active, digital hub version of the loudspeaker. If the LS50 was groundbreaking, the LS50 Wireless sets fire to the map. This app-controlled, UPnP-compatible, Tidal-supporting, Roon-ready, Bluetooth, and Wi-Fi loudspeaker is a complete system in two high-quality loudspeakers. "This is one of the best and most important products we'll see all year" concluded Alan Sircom. **AS**

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Totem Acoustic Signature One

Totem's Signature One 2-way bass-reflex standmount monitors feature robustly constructed enclosures fitted with 6.5-inch long-throw mid-bass drivers with 3-inch voice coils, plus 1-inch titanium/aluminium alloy dome tweeters from SEAS. The speaker's crossover, internal wiring, and wiring plates all use ultra high-quality parts. The result, says *Hi-Fi+* Publisher Chris Martens, are "deceptively plain-looking monitors" that sound like "something large, sophisticated, exotic, and very expensive." Martens notes the speakers offer "unexpectedly high levels of articulation, resolution, and detail", handle transient sounds "with a combination of outright speed and F1 car-like agility and grip", and provide 'killer' 3D imaging. A classic is born. **CM**


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ANNIVERSARY
Special Forty.
Simply innovative.
WHAT HI-FI?
AWARDS 2017
Stereo speakers
Best standmount speaker £2000+
Dynaudio Special Forty
Cutting-edge acoustic technology in a classic Dynaudio design
New soft-dome tweeter. New woofer.
New magnet system. New anniversary speaker.
Our legendary technologies, taken back to the drawing board.
DYNAUDIO
Special Forty
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The Complete Guide to Loudspeakers

Jason Kennedy

A balance of compromises, when it boils down to it that is what a loudspeaker is. Ask any experienced engineer or reviewer and this is essentially what they will tell you. This is because the process of transducing an electrical signal into an acoustic one is, despite over a hundred years of development, still not a perfect science. Making a device that can sit in a living room and reproduce everything from a full scale orchestra to the human voice, and all points in between is a herculean task. Yamaha once made the NS20, a speaker with a very large rectangular driver on the back that was designed to emulate a cello by approximating its size and shape, but what chance did that have of reproducing an organ or bass guitar without screwing up.

The sheer difficulty of the job that a loudspeaker has to do has led to a diverse array of solutions. These started with horns because at first there was only acoustic energy to amplify and subsequently very low power electronic amplification. Horns still have a following today because nothing else can deliver dynamics and speed in quite the same way. Next came the infinite baffle with a conical driver, the simplest and least expensive solution and the one which ultimately has proved most enduring. And it has come a long way since its introduction in the late 19th century albeit not perhaps as far as the early pioneers of the technology might have imagined given the pace of change at the time. The moving coil transducer was patented in 1874 and the first conical diaphragm in 1901, Rice and Kellog came up with the principle of the direct radiator in 1925 and Kellog filed a patent for an electrostatic speaker in 1929. The first two-way loudspeaker appeared in 1931. Which left the time since then for engineers to refine these principles in an attempt to iron out their shortcomings and improve bandwidth, linearity and power handling.

Despite all this time it's still hard to get designers to agree on the best approach to building the perfect loudspeaker. This is true even when it comes to those who have access to the best test and measurement facilities. Listen to a loudspeaker from Bowers & Wilkins and one from Focal, their French opposite, and while there are plenty of similarities there nearly as many differences, especially when it comes to agreement on how to do the job. This is partly due to market place realities, the fact that end users have differing tastes and differing systems

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in widely differing rooms. A variation makes for a very complex algorithm for building a commercially successful loudspeaker.

Ideally a loudspeaker should not add or detract from the signal, it should act as an electro-mechanical transducer that merely turns a voltage into vibration in the air. To best achieve that it is desirable that the only bit of the loudspeaker which moves is the drive unit(s), yet as the drive units have to vibrate to do the job this energy will be reflected in vibrations in the enclosure that supports the unit. There have been and continue to be numerous attempts to combat this source of colouration, including cabinet materials like aluminium, GRP, concrete and all manner of combinations and unusual approaches. Vivid speakers combine GRP skins with a filling of end grain balsa to achieve low mass and high stiffness, the lower the mass the less capacity it has to store energy and the quicker that energy can be dissipated. The opposite approach is best exemplified by concrete where high mass is used on the premise that it is difficult to excite at audio frequencies, its scarcity of use however indicates that practicality and aesthetics are just as important as sonic theory. There are however plenty of high mass designs on the market that use more attractive materials such as aluminium from the likes of Magico and and it's a popular school of thought.

Wood is however the material of choice for most, it is easy to fabricate with, has a character that we are accustomed to and can be finished in a style that appeals to the average buyer. The fact that it is made of similar material to acoustic instruments and thus joins in with the sound at certain frequencies is just one more challenge for the designer.

Ideals

What most people would agree is required of a loudspeaker is the following: flat response, wide bandwidth, even dispersion, high power handling, low colouration and of course minimal distortion which would theoretically be the result if all of the above were achieved. But building a loudspeaker that does all that often involves conflicting requirements. The electrostatic loudspeaker first put into production by QUAD in 1957 got remarkably close to several of the goals by delivering vanishing levels of colouration in the context of a remarkably even frequency response. However it did not produce the sort of power in the bass required by amplified music, a situation that has never been fully addressed even in larger electrostatic panels such as MartinLogans. The only way that anyone has got close is with hybrids that combine the panel with a moving coil bass driver but the difference in dispersion and dynamic characteristics make such designs very difficult to build even at high end prices.

While not apparently totally essential to the end high power handling is a very desirable quality that provides the potential for higher and thus more realistic volume levels. While few would want the full power of an

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orchestra or rock band in our living rooms there is little doubting that SPLs are a key part in creating a realistic facsimile of live music. Power handling is not directly related to efficiency but it's difficult to achieve without it. Low sensitivity systems require so much power to deliver high SPLs that they are inclined to catch fire, so sensitivity is a useful thing. But you try building a speaker with better than 90dB/Watt at one metre sensitivity that has a flat response, that rarity of such beasts suggests it's very difficult.

Ways and means

Even in a direct radiating loudspeaker there are a lot of variables to juggle. The first decision that needs to be made is whether to build the cabinets as a sealed/infinite baffle, reflex loaded/ported or transmission line. All three have their pros and cons but the reflex loading option is by far the most popular because it gives greater power handling and greater measured bass extension because the output from the port contributes to the overall output. Sealed boxes tend to be less able to sustain high SPLs but have cleaner bass than reflex designs because it's difficult to completely eliminate distortion from a port. Transmission lines offer sealed box bass quality with reflex style power handling but are less common, this presumably because there is so little hard information in the field and as a result they are harder to get right. The software that exist for ported enclosure design is extremely sophisticated and does most of the R&D for you, but this is not available for TLs. There is a subset of reflex loading called ABR (auxiliary bass radiator)

where an unpowered driver is used in place of a port, a design created to address the problems of reflex loading without the complexity of a transmission line.

Once you have decided on how to build your box the next decision would be how many ways to split the signal. The easiest and most appealing in many respects is to go for one way with a single driver, this gives instant coherence of timing and dispersion, but it also limits bandwidth quite seriously. Go for a two-way and you can extend bandwidth significantly but you then need to split the signal with a crossover, which means a decision about the steepness of slope; 6, 12, 18 or 24dB dB/octave (first, second, third, fourth order). And the multitude of component options given that capacitors and inductors vary in sound from one brand to the next.

You can of course easily go up to four-way designs, the more ways a speaker has the narrower the frequency range that each driver has to reproduce and thus the higher the power handling. This means more complex, usually fourth order crossovers which as Pete Thomas of PMC puts it are "an absolute b*#$@&%d" to design because they require more components and these parts are inclined to ring; a midrange crossover has to roll off both the top and the bottom of the signal and they interact if you're not careful. Pete also points out that any crossover order can be made to sound good if the designer knows his onions, so it's much like any other side of this game. The

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popularity of lower order designs boils down to the fact that it's considerably easier to design a first or second order crossover than it is a third or fourth.

Having arrived at how many ways to split the signal comes the challenge of finding or developing drive units that can deliver that signal with as little distortion as possible. The array of choices here is not bewildering but it is pretty big even if you discount ribbons, electrostatic film and whatever it is that Magneplaners use. There remain a number of different materials for cone and dome materials and an even greater range of motor system (magnet, voice coil, pole piece etc) variations. When it comes to cone materials there is a basic range of paper, plastic and metal but within that there are considerable variations such as Focal's sandwich cones with glass reinforced plastics over a foam core and Bowers & Wilkins' use of Kevlar. The former is extremely stiff and the latter relatively pliant but both can be engineered to produce a very fine result. Paper is popular because it's offers a good combination of low mass, stiffness and self damping, it is also usefully cheap of course. Tweeters are largely limited to soft fabric domes or aluminium ones but there is a contest going on to see who can make the lightest and stiffest dome, Bowers & Wilkins has diamond and Focal Beryllium, what next unobtanium?

It's not what you do

As Pete Thomas points out it's not the approach you use but how good you are at

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implementing it that makes the difference between good and less good speakers. Anyone can stuff a pair of drivers and a crossover in a box and it will produce sound, but as we all know that is only the beginning. When it comes to loudspeakers the elephant in the room is er, the room. Building a speaker that measures well in an anechoic chamber is one thing but coming up with a speaker that works in rooms with widely varying dimensions and acoustic characteristics is a whole other ball game. One of the big reasons why small two-ways are very popular is that they don't produce a lot of low frequency energy and thus are less likely to excite the room modes that can muddy the most transparent of midranges. It's also the reason why the best sounding rooms at hi-fi shows tend to have smaller speakers in them, bass is an all encompassing beast that takes a lot of taming if the walls are made of cardboard.

Interface

As well as interfacing with the room acoustically, loudspeakers interact with the floor beneath them. For a long time the accepted wisdom has been to have spikes on their undersides that effectively nail them down. This allows them to sink certain frequencies into the floor and minimises vibration at low frequencies, which means that more energy is transmitted into the floor and thence into the source and amplification. There is another school of thought that isolation is a good thing for loudspeakers, you can see it in the way Bowers & Wilkins decouples its tweeter pods with highly compliant mountings and other brands use similarly soft gaskets to stop driver chassis from exciting the surrounding cabinet. Townshend Audio makes damped spring supports that attempt to isolate the whole speaker from the floor which seem to be highly beneficial. It is clearly time that the spiking ethos was re-evaluated.

Choice and place

So there you have it a riddle wrapped in a mystery inside an enigma*, loudspeaker design is a series of choices with very little in the way of an absolute sound agreed upon. The state of the art has come a long way however and you can get some pretty remarkable speakers for less than the price of a family outing to Legoland. Distortion levels are constantly dropping and fit and finish improving at an impressive rate, all you have to do is find a pair that works in your system, your room and with your music, and often the key to that lies in placement and set-up as much as actual hardware. An hour or so finding the best place for your speakers will reward you with years of top light entertainment. +

*(Churchill's description of what to expect of Russia at the beginning of the second world war)

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Stand-mount loudspeakers – the basics

Alan Sircom

The English have an affinity with standmount loudspeakers (especially two-way standmounts), as evidenced by the evergreen BBC-designed LS3/5a. This is understandable given the size of the typical English listening room, but with that affinity comes arrogance. We did not invent the standmount, and while we make a lot of very good standmounts, it doesn't give us unique right to call ourselves 'the best'. Other countries can lay equal claim to making some extremely good standmount designs, and over the years have made some truly world-class designs and innovations.

In fact, the modern bookshelf loudspeaker derives from the work done by Edgar Vilchur (1917–2011) who in 1954 developed the acoustic suspension loudspeaker system. Acoustic suspension relies on the air in an enclosed cabinet instead of a mechanical suspension found in older designs. At a stroke, Vilchur made loudspeakers that could deliver deep bass without large amounts of distortion, large drive units, and even larger heavy front baffles. Vilchur and his student Henry Kloss (1929–2002) founded Acoustic Research, and in designs like the AR-3 helped create domestically acceptable loudspeaker systems just in time for the birth of stereo.

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A notionally more efficient version small loudspeaker design was the bass reflex, although the relationship between loudspeaker driver, enclosure, and port size remained largely a mystery until A.N. Thiele and Richard H. Small determined a series of parameters to give the bass reflex a more predictable response. The Thiele/Small developed in the 1960s still form the basis of many modern loudspeaker designs to this day.

At the end of the 1950s, however, most British audio enthusiasts were still building large sand-filled open baffle loudspeakers with loudspeaker designs that had remained unchanged since the mid 1920s. Two companies – KEF and Wharfedale – were pivotal in creating and developing smaller standmount loudspeakers in the home, and successes like the KEF Celeste in the early 1960s made it clear that the standmount or bookshelf was here to stay.

Since that time, there have been significant developments in the materials used in the loudspeaker drive units, the components in the crossover network, and the choice of cabinet material. Sophisticated computer modelling designs optimum cabinet sizes, bracing, and port technology, while equally complex computer measurement techniques give the engineers an understanding of air flow inside and outside a loudspeaker, how a different cone surround effects the dynamics of a loudspeaker, and more.

However, we have recently looked at the basic technology and requirements of a loudspeaker back in issue 123. Rather than go over the same ground again, let's look specifically at the practical concerns of installing a loudspeaker (in this case, a standmount) in a room.

Naturally, the first consideration specific to a standmount loudspeaker is, er, a stand. While many companies provide a specific, dedicated stand for the loudspeaker, aftermarket stands often provide better performance. The three important aspects here are height, mass, and rigidity: in most cases (unless the manual says otherwise) the optimum height for a loudspeaker stand would make the acoustic centre of the tweeter of the loudspeaker fall roughly in line with your ears when seated. Some loudspeakers (for example, ProAc) perform best on a high-mass stand, while others (such as Epos) are best used with light-but-rigid stands. Even rigidity has its pros and cons; some companies (such as Linn) would have the loudspeakers completely immobile in the room, while Raidho is more concerned by energy transfer from stand to floor to speaker and that places rigidity as a relatively low priority.

Finding an appropriate amplifier match for a pair of loudspeakers is an important consideration, especially if you go beyond a pair of reasonably easy to drive loudspeakers with a relatively powerful solid-state amplifier. Some loudspeaker specifications do give an indication of how easy the

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loudspeaker is to drive; a loudspeaker with a rated minimum impedance of below two ohms, for example, is likely always going to need a hefty power amplifier to drive it. Similarly, the low-frequency cut-off point in a loudspeaker's frequency response, coupled to its sensitivity and maximum sound pressure level, will give broad indications of the sort of room this system will work well in: a low frequency limit of 50Hz (for example) will perfectly suit a small room, but sound too light in most cases in far larger rooms. However, in both these cases, the best solution is to work with experts who can advise and demonstrate upstream electronics and optimum systems for a given room

Once a loudspeaker is at the appropriate height with the right equipment, it's worth considering the room it goes in. Room treatment is an important consideration in a dedicated listening room, but becomes hard to justify when the room is a shared family space. Nevertheless, a lot of loudspeaker woes can be resolved by subtle use of bass trapping in the corners of a room, absorption or diffusion behind the listener and (often) behind the loudspeakers and even first reflection treatment on the side walls and ceiling. If possible, it's best to use dedicated room treatment solutions than home-brew variations like books, cushions, and sofas, but pragmatic considerations often weigh heavy.

Last but not least, it's worth considering the installation itself. Most loudspeaker manuals include some kind of rudimentary installation diagram, usually some variant on an inverted isosceles triangle, with the listener at the apex and the loudspeakers at either base. Typically, in a rectangular room, try to sit on the centreline along the length of the room, with your chair around 1/3rd of the way from the rear wall. Then, position the loudspeakers at least 40cm from the nearest rear and side walls, and that they are ideally 2m or more apart. Once again, the manual is your friend, especially with regard to toe-in (the angle of the front of the speakers relative to your listening position). There are other schemes of install that many swear by, from firing across the room with the loudspeakers wide, and heavily 'toed in', through 'vowelling in' the room to find an optimum position, and more.

Whichever installation system you try, experiment with careful positioning; consider the basic placement 'roughed in' and fine-tune the speaker set-up, even if it's a centimetre or two movement. These can make big differences, on any loudspeaker. +

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LOUDSPEAKER LEXICON

LOUDSPEAKER TERMINOLOGY EXPLAINED, *Hi-Fi+* Staff

The world of high-performance loudspeaker has cultivated a language all its own to describe not only the various configurations and types of loudspeakers and loudspeaker drive units, but also their performance characteristics, etc. The 'Loudspeaker Lexicon' is intended as a simple glossary to help newcomers come up to speed in Loudspeaker Lingo 101, while providing (we hope) a useful refresher for audio veterans. Enjoy.

- Active
- Bandwidth
- Bass
- Baffle
- Bracing
- Brilliance
- Co-Axial
- Colouration
- Crossover
- Decibel (dB)
- Distortion
- Drive Unit/Driver
- Dynamic Drivers
- Dynamic Range
- Electrostatic
- Enclosure (a.k.a. Cabinet)
- Filter
- Frequency Range/Spectrum
- Frequency Response
- Harmonic
- Harmonic Distortion (THD)
- HF
- Horn
- Hz (Hertz)
- Impedance
- Infinte Baffle (a.k.a Sealed Box)
- kHz
- LF
- Materials
- Midband, Midrange
- Monitor
- Moving Coil
- Noise
- Octave
- OHM
- Port
- Presence
- Resonance
- Reflection
- Sensitivity
- Separation
- Signal-To-Noise, S/N
- Stereo
- Subsonic
- Top Octave
- Treble
- Transmission Line
- Tweeter
- Ultrasonic
- Watt
- Woofer

Active
Loudspeaker systems that contain or partner dedicated electronics – power amplification plus electronic crossovers and equalisers, some of which can be entirely in the digital domain.

Bandwidth
The range of frequencies with defined upper and lower limits over which a system operates.

Bass
Lower part of the audible frequency range. Can be subdivided into deep bass (below 40Hz), midbass (40Hz–100Hz), and upper bass (100Hz–250Hz).

Baffle
The front face of a loudspeaker. Its role is to hold the loudspeaker drivers securely, while preventing the sound emanating from the front of the loudspeaker interacting from any emanating from the rear.

Bracing
The inside of a loudspeaker cabinet can flex and resonate, adding its own colourations. Judicious and careful use of cabinet bracing can help stiffen the cabinet and reduce unwanted distortions.

Brilliance
Alternative terminology for the highest audible frequencies from 6kHz–12kHz.

Co-Axial
Literally 'symmetrical about a common core', as in shielded aerial cable or loudspeaker drive units (such as those made by KEF or Tannoy).

Colouration
A general term used to describe the audible effects of a whole range of different distortions in different hi-fi components, but especially record decks and loudspeakers.

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Crossover
More precisely described as a dividing network, the electrical circuitry inside a loudspeaker, which apportions the drive signal to the individual drive units.

Decibel (dB)
A logarithmic unit used to express relative loudness.

Distortion
Literally any deviation from the original, though often specified to particular mechanisms. Also known as 'nonlinearities'.

Drive Unit/Driver
The sources of acoustic output in a loudspeaker; includes woofers, tweeters, and so on.

Dynamic Drivers
Loudspeaker drivers that create compressions and rarefactions in air by means of a pistonic drive unit operating at audio frequencies. Although there are exceptions, these are typically cone-shaped for loudspeaker drivers operating in the bass and lower midrange, dome-shaped.

Dynamic Range
The ratio (dBs) between the loudest and softest sounds a system or component can handle.

Electrostatic
A principle employed in some exotic loudspeaker and headphone transducers, whereby a large sheet of thin material (typically Mylar) is induced to vibrate (at audio frequencies) across its whole area by an electrostatic charge.

Enclosure (a.k.a. Cabinet)
The rigid mounting for the loudspeaker drive units, often also containing the crossover network, and – in some active loudspeaker systems – even the amplifiers. In most cases, the term is self-explanatory (the enclosure encloses the drivers, crossover, etc.), but can also notionally be applied to the frame housing planar magnetic or electrostatic panels.

Filter
An electrical circuit used to limit the bandwidth of a signal, and one of the principle properties required of a crossover.

Frequency Range/Spectrum
Can refer to any spread of frequencies, but most commonly the Audio Band of human hearing, from 20 cycles per second (20Hz) in the extreme bass to 20,000 cycles per second (20kHz) in the highest treble.

Frequency Response
The variation in output across a specified range of different frequencies.

Harmonic
Harmonics are the whole number multiples of a base frequency called a fundamental.

Harmonic Distortion (Thd)
The addition of unwanted harmonics to a signal.

HF
High frequency (i.e., treble). Often used in terms of describing loudspeaker drive units ('HF' directly equating to 'tweeter').

Horn
As the name suggests, a design using an acoustic horn – often with a specialised compression drive unit – to increase the efficiency of the loudspeaker system. This is one of the earliest examples of loudspeaker technology, as the basic concept predates electrical loudspeaker driver design.

Hz (Hertz)
Unit of frequency of vibration, 1Hz = 1 cycle per second.

Impedance
Measure of the electrical resistance (and reactance) of a component's inputs and outputs.

Infinte Baffle (a.k.a Sealed Box)
In theory, the sides and rear of a loudspeaker cabinet act as extensions of the front baffle in trying to keep rear-radiation from the loudspeaker drivers at bay. When the cabinet is fully sealed, preventing any rear-radiating sound in the process, it is considered an infinite baffle.

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kHz
1000Hz or vibrations per second (1kHz actually corresponds to a tone nearly two octaves above middle C).

LF
Low frequency (i.e., bass). Often used in terms of describing loudspeaker drive units ('LF' directly equating to 'woofer').

Materials
Loudspeaker enclosures were traditionally made of wood, the mechanical parts of the driver (such as the basket) were made of metal, and the drive unit itself was often made of fabric or paper. Materials science has caught up with the world of loudspeakers in all three places, but especially in enclosure material (which can often be aluminium, carbon-fibre, or one of a wealth of mineral-filled resins) and drive unit (which can be also be made from aluminium or carbon-fibre, but also ceramic, industrial diamond, beryllium, a number of different plastics, as well as composites conjoined by lightweight foam.

They all share common properties, however. Most cabinet materials are designed to be rigid and non-resonant, while most driver materials are chosen for their lightness and potential freedom from distortion.

Midband, Midrange
The middle range of audio frequencies, where the ear is most sensitive. Can be subdivided into lower midrange (250Hz–500Hz), midranges (500Hz–1kHz), and upper midranges (1kHz–2kHz).

Monitor
High quality (usually standmount) loudspeaker.

Moving Coil
A transducer system that changes mechanical energy into electrical energy or vice versa, used in high quality pickup cartridges and in conventional loudspeaker drive units.

Noise
Random unwanted low level signals.

Octave
Span of frequency or pitch that represents a doubling or halving of frequency.

OHM
Unit of electrical impedance or resistance.

Port
In reflex loaded loudspeakers, the opening which is 'tuned' to the box size and main driver characteristics to improve output at low frequencies.

Presence
Alternative terminology for the high frequencies between 4kHz–6kHz.

Reflection
Higher frequencies can be very directional, and their output can easily 'bounce' off reflective walls and ceilings, interfering with the sound directly from the tweeter itself. Room acoustics experts recommend placing absorption at the 'first reflection points' either side of the loudspeaker to limit this interference.

Resonance
A physical property where one vibrating system causes another system to 'sympathetically' vibrate at specific

frequencies. These resonances can happen inside the loudspeaker cabinet, along the walls of the cabinet, across the port of the loudspeaker, or even along the walls, floor, and ceiling of the room itself. Sophisticated measurement and mathematical modelling, damping materials, and even careful design of every aspect of the loudspeaker system help in the former case. Bass traps in a room can help in the latter.

Sensitivity
The amount of output (loudness, expressed in decibels) for a given electrical input (usually 1 watt).

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Separation
The separateness of the left and right channels of a stereo audio system.

Signal-To-Noise, S/N
The difference between maximum level of a signal and the background noise left when the signal is removed.

Stereo
Literally 'solid' – a system which uses two loudspeakers (or a pair of headphones) to create solid spatial sonic images.

Subsonic
Below the audible frequency range, commonly considered to be anything below 20Hz.

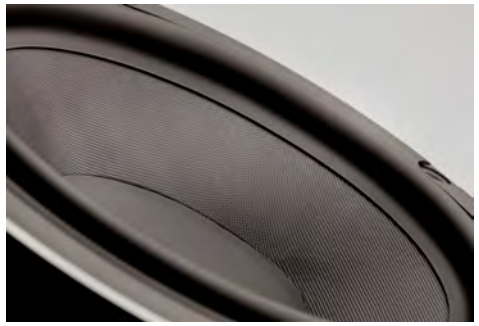
Top Octave
Very high frequencies in the 10kHz–20kHz region.

Treble
Upper part of the audible frequency range. Can be subdivided into lower treble (2kHz–3.5kHz), treble (3.5kHz–6kHz), and upper treble (6kHz–10kHz). Also see Presence and Brilliance.

Transmission Line
Instead of a conventional sealed or ported loudspeaker enclosure, a transmission line takes the sound generated from the back of the bass speaker is directed through a long and labyrinthine damped pathway within the speaker enclosure itself.

Tweeter
Small loudspeaker drive unit used for higher frequency (treble) sounds. Commonly a pistonic dome design, but can be anything from a planar magnetic or folded ribbon of metal foil, to the corona discharge of high-energy electrical plasma. As this last can produce hazardous levels of nitrogen oxides and ozone in a living room, plasma tweeters are relatively rare!

Ultrasonic
Frequencies above the notional limits of audibility, but still considered important in high-resolution audio systems. Typically in the region from 20kHz–100kHz.



Watt
Unit of electrical power (the product of voltage and current).

Woofer
Loudspeaker drive unit that handles lower frequency (bass) sounds. +

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XT-5

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