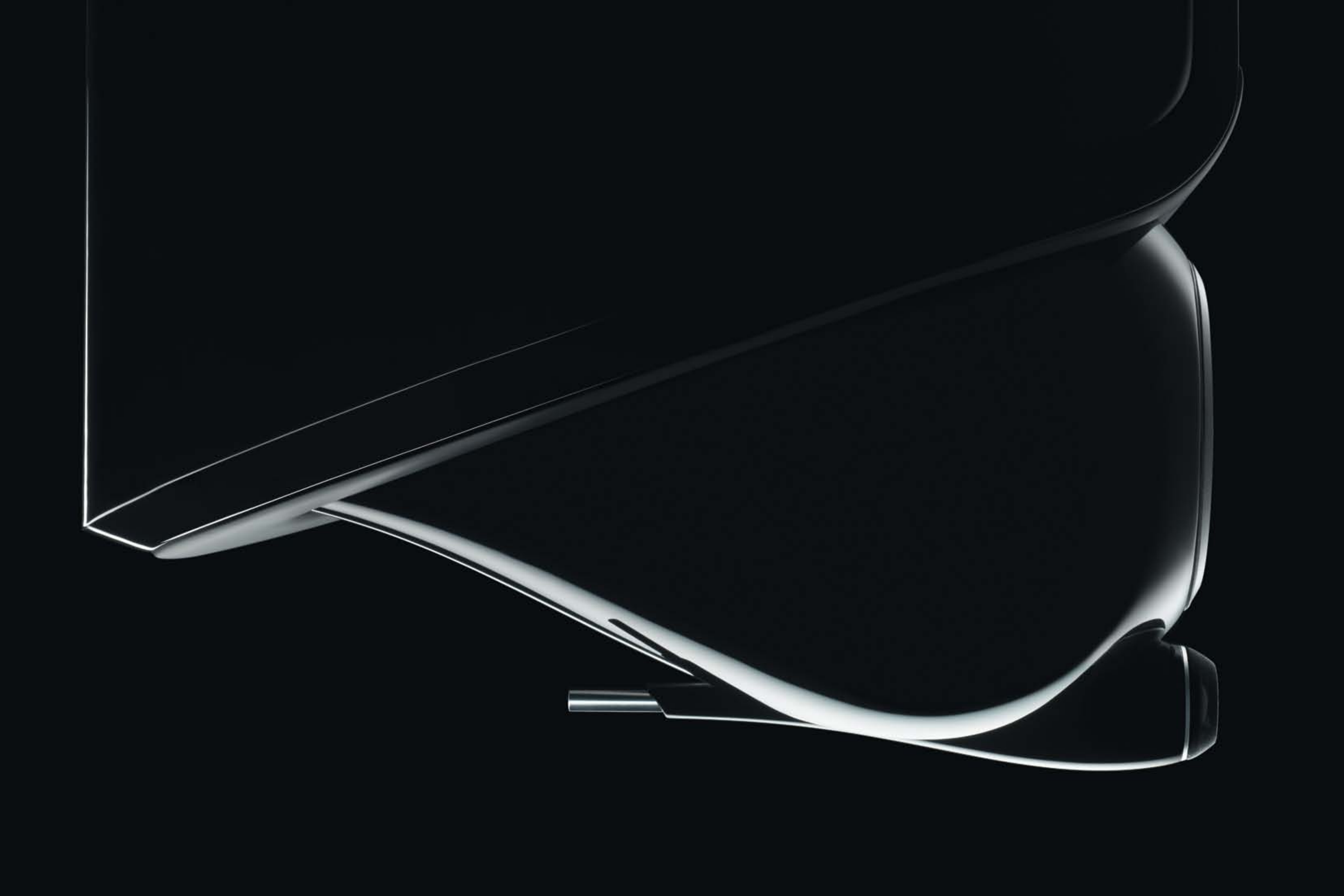
Bowers & Wilkins

800 Series
DIAMOND

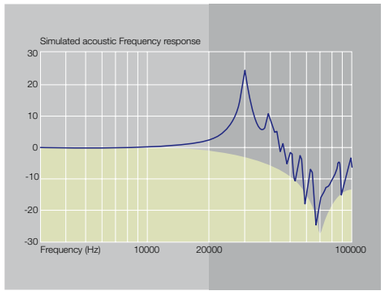
800 Series
DIAMOND

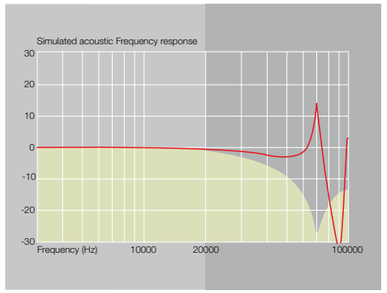


A legend reborn Everything moves on. Even when you've reached the pinnacle of technological achievement, there are always new goals to aim for, new standards to set. In 1979, we redefined what's possible in sound reproduction with the very first 800 Series speaker – the Matrix 800. In 1998, we re-wrote the rulebook all over again with the Nautilus™ 800 Series. But we didn't stop there. We continued to refine and experiment, and now we've raised the benchmark yet again. The 800 Series Diamond harnesses the unique properties of diamond throughout the range, producing a sound of unheard-of accuracy and realism. At Bowers & Wilkins, the quest for perfection never ends.

The evolution of excellence
Introducing superior drive units housed in separate chambers, the Matrix 800's unprecedented sound quality made the speaker a fixture in top recording studios and the homes of discerning audio enthusiasts. With the Nautilus 800 Series and now the 800 Series Diamond, the tradition continues.

The miracle material It can cut stone and grind glass. It's a superb thermal conductor. And it's the magic ingredient in every model in the new 800 Series Diamond range. Our acoustic research expert Dr Gary Geaves explains why diamond is the ultimate tweeter material.





Computer simulations show that the response of a diamond dome (right) more closely matches the behaviour of the hypothetical perfect tweeter than an aluminium dome (left).

Tell us about tweeter design – what are you trying to achieve, and what are the main challenges to overcome?

Our aim here at Bowers & Wilkins has always been to design transducers that accurately reproduce the signal. It's really quite easy to create a sound but it's much more difficult to reproduce a signal accurately. When it comes to tweeters, this aim translates into creating a device that moves as a rigid piston over the audible frequency range – in other words, the range below 20 kHz.

As you go up in frequency, you reach a point where the tweeter stops behaving in a nice, controlled way and it starts to resonate. The frequency at which this occurs is usually called the break-up frequency. As you go beyond the break-up frequency, you encounter more and more resonance. The problem with resonance is that it imparts a character to the speaker, which is obviously not what you want when you're aiming to accurately reproduce a signal.

So the main challenge in tweeter design is to overcome the problem of resonance. And you do this by trying to push the break-up frequency as far above the range of human hearing as it can possibly go.

What have you been doing to get around this problem?

For a long time, Bowers & Wilkins have used aluminium dome tweeters. Aluminium's a really good material to use, because it's relatively light and stiff, and it results in a relatively high break-up frequency. Over the years we've been able to optimise the mechanical design. For example, for the second generation 800 Series, we managed to improve the break-up frequency from about 23 kHz to 30 kHz.

It was then that we noticed something odd. We found that, with each improvement in break-up frequency, the resulting tweeter sounded much cleaner. Not that surprising, you might think – but we found this really curious because, as I've already said, human beings can only hear up to 20 kHz. Improving the break-up frequency from 23 to 30 kHz shouldn't have made any difference to the audible sound quality. And yet it did. So we started to wonder why this was, and if there might be ways of raising the break-up frequency much higher.

How did you go about trying to raise the break-up frequency level? What sort of design approaches did you consider?

We started off by thinking about the size, shape and positioning of the tweeter. Now, the easiest way to improve the break-up frequency is to make the tweeter much smaller. The problem with that approach is that, to get the same output over the same bandwidth, you have to drive the speaker a lot harder. The dome has to move a lot more. And when that happens, you run into problems with linearity, distortion and power compression.

An alternative approach might be to use a supplementary tweeter in addition to your main tweeter. We did consider this, but we found it just complicated the situation. Instead of compensating for the deficiencies of a main tweeter, the supplementary tweeter just added its own set of problems. There was also the potential for interference between the two tweeters. In the end, this approach just didn't seem consistent with our principle of keeping things simple.

How did you hit on the idea of using diamond as a tweeter dome material?

We discovered the benefits of diamond thanks to a process called finite element analysis. It's a tool that's widely used in the aerospace and automotive industries to create virtual computer prototypes, so you can carry out experiments before committing to a real physical prototype.

By using finite element analysis we were able to look more closely than ever before at how a speaker reproduces sound. We could examine in detail how the whole structure vibrates, and the acoustic field that results from the vibration. We were also able to look at the motor systems in loudspeakers. This allowed us to come up with new ways to optimise sensitivity, improve linearity, and design better shielding.

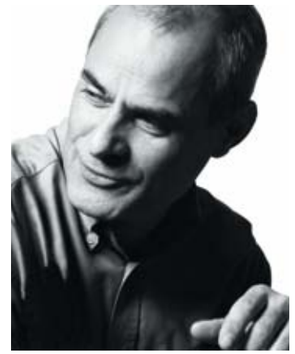
It was by using finite element analysis that we first simulated the response of a perfect, rigid tweeter, made from an infinitely stiff material. This is a material that doesn't exist in reality – but that's another beauty of finite element analysis; you can do things that you can't do in the real world. So we started to look at tweeter dome materials we could use instead of the aluminium – materials that shared similar properties to the hypothetical perfect dome. And we found that the ultimate material – the absolute closest match in terms of its rigidity and dynamic stiffness – is diamond.

So what are the benefits of using diamond tweeter domes?

As I said, with aluminium, we were getting a maximum break-up frequency of about 30 kHz. Pretty amazing, when you consider the human hearing threshold is 20 kHz. But by using diamond, we were able to go far, far higher than that, creating a tweeter that breaks up at 70 kHz.

However, diamond doesn't just have a much higher break-up frequency – it also outperforms aluminium within the range of human hearing. When you compare the response of a diamond tweeter with the perfect hypothetical rigid tweeter, the results are very similar below 20 kHz. And this means that you can hear a dramatic improvement in sound quality.

The resulting tweeter sounds more effortless, and yet more detailed, and has a much more realistic soundstage than the standard aluminium tweeter.



Dr Gary Geaves, Head of Research, Bowers & Wilkins

800 Diamond

802 Diamond

803 Diamond

804 Diamond

805 Diamond

HTM2 Diamond

HTM4 Diamond

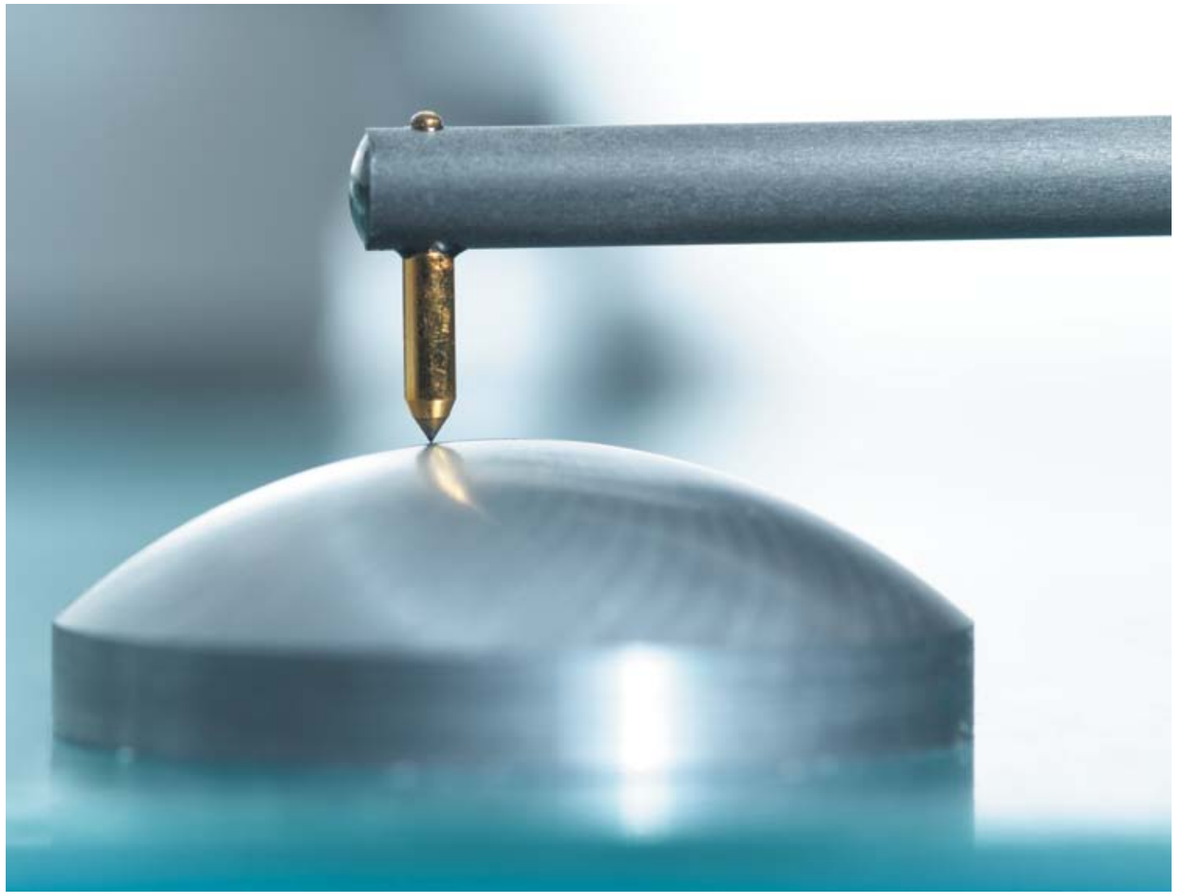
Diamonds all round The 800 Series Diamond family encompasses speakers of all sizes and applications, from mighty studio monitors to bookshelf speakers that will fit snugly into domestic spaces of any size. But while every speaker is different, they have two key features in common: a tweeter made from pure diamond, and sound quality that will leave you speechless.

A diamond is born

Diamond At Work™

Making diamond the natural way takes volcanic temperatures and pressures, and around two billion years. Hardly ideal if you want to produce it for manufacturing purposes, let alone form it into the precise shape required for a tweeter dome. Luckily, scientists have found a way around this. Chemical vapour deposition is a technique that allows diamond to be grown, like a crystal, under laboratory conditions.

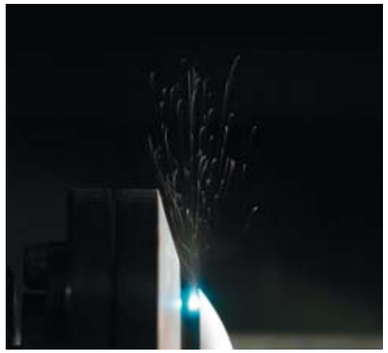
The process starts with the former – the dome of metal on which the thin layer of diamond is grown. Each former is meticulously inspected and weighed before being transferred to a specially designed furnace, where gases are super-heated and pressurised. Out of the gases forms a carbon frost (diamond crystals), which grows on the surface of the former to create a super-fine, ultra-hard diamond dome.

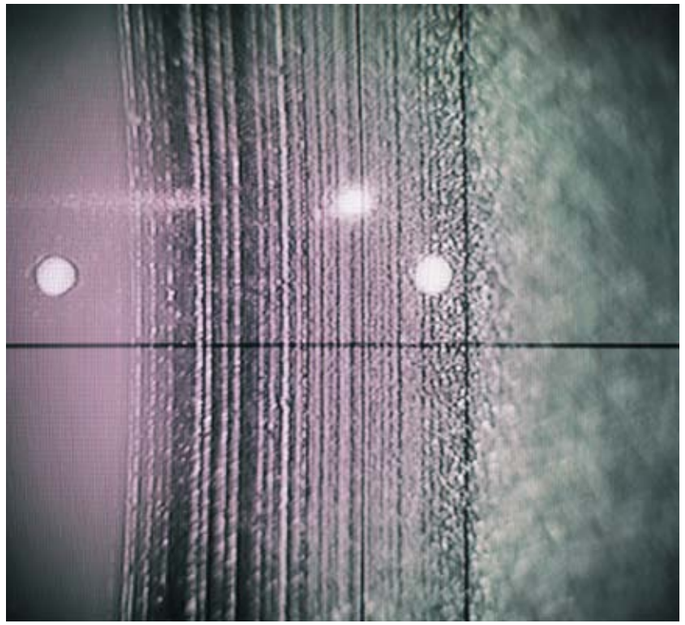


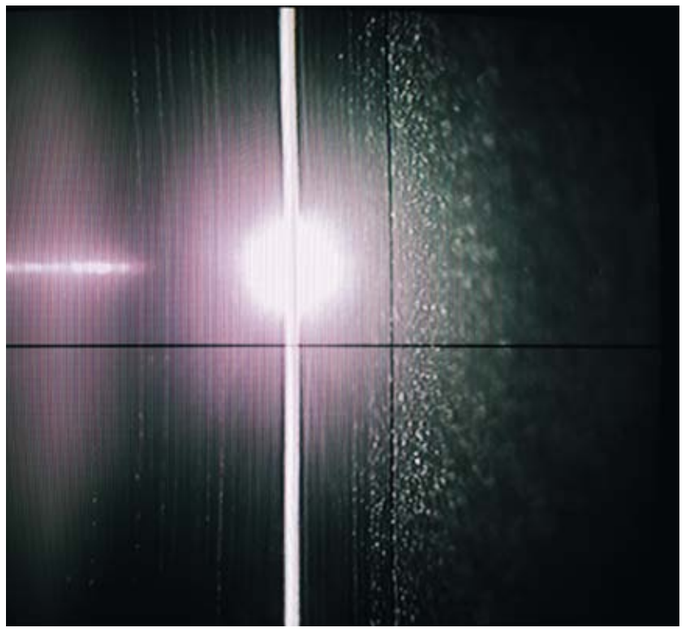
Making the cut

Once the diamond has formed, it is precision-cut by laser to remove any surface irregularities and to make sure that the geometry of each tweeter dome exactly matches the next. The diamond domes are then cleaned in four stages in an ultra-sonic tank, before a protective platinum coating is applied to the surface.

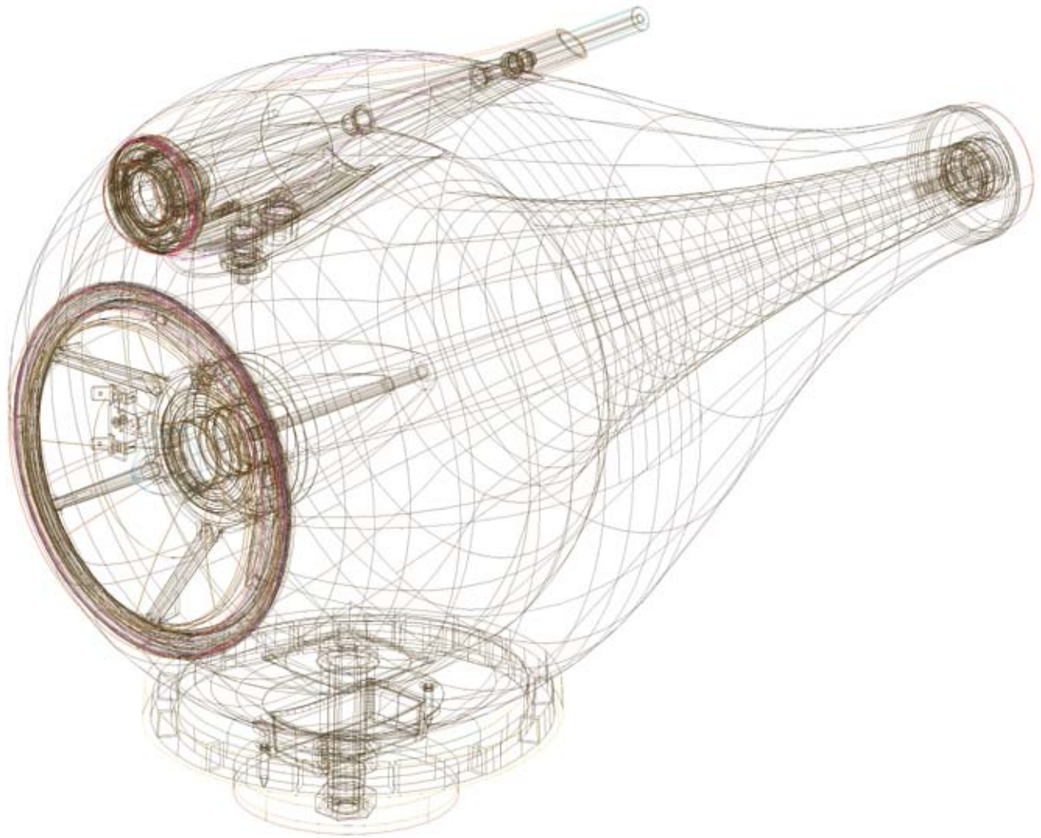
Each diamond dome is rigorously tested and inspected for the tiniest signs of imperfection. Only when a dome has passed every test do we give it the final seal of approval – its own unique serial number. From this number we can trace the entire history of its manufacture, right back to the former on which it was grown.







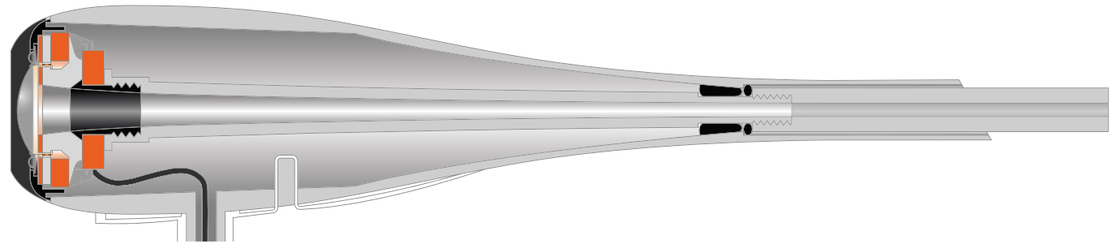
A head for sound



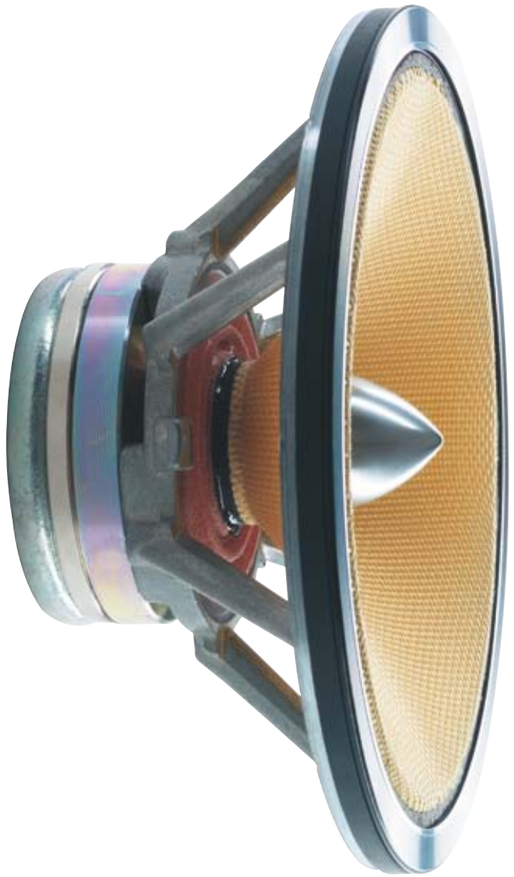
The teardrop-shaped midrange head is a distinctive feature of both the top-of-the-range 800 Diamond and the 802 Diamond. Moulded from Marlan™, a synthetic, mineral filled resin, this granite-hard enclosure is sprayed with seven coats of lacquer and polished by hand until it's as smooth as glass.

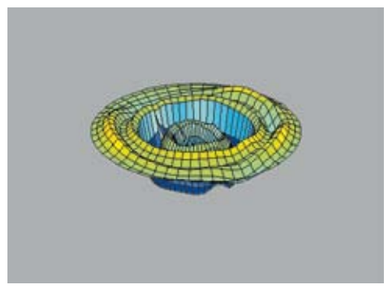
Nautilus tubes

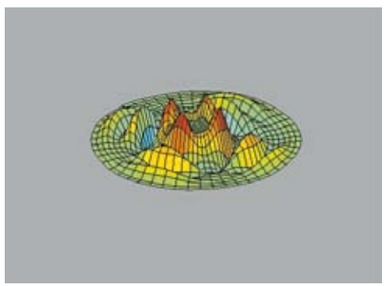
Not all the sound generated by tweeter drive units is good sound. To soak up wayward sound energy and reduce resonances to a minimum, every tweeter in the 800 Series Diamond is mounted on top of the cabinet, and uses the tapering tube design from Bowers & Wilkins' trailblazing Nautilus speaker. Added to this, our new quad-magnet design improves sensitivity, which reduces compression and brings music to life. So all the sound you hear is good sound.



Quad magnets For the 800 Series Diamond we have redefined the science of magnet motor design. In the tweeter, a unique quad magnet design (in red, above) focuses the magnetic energy right where the voice coil sits, and keeps the driver running cool and smooth.

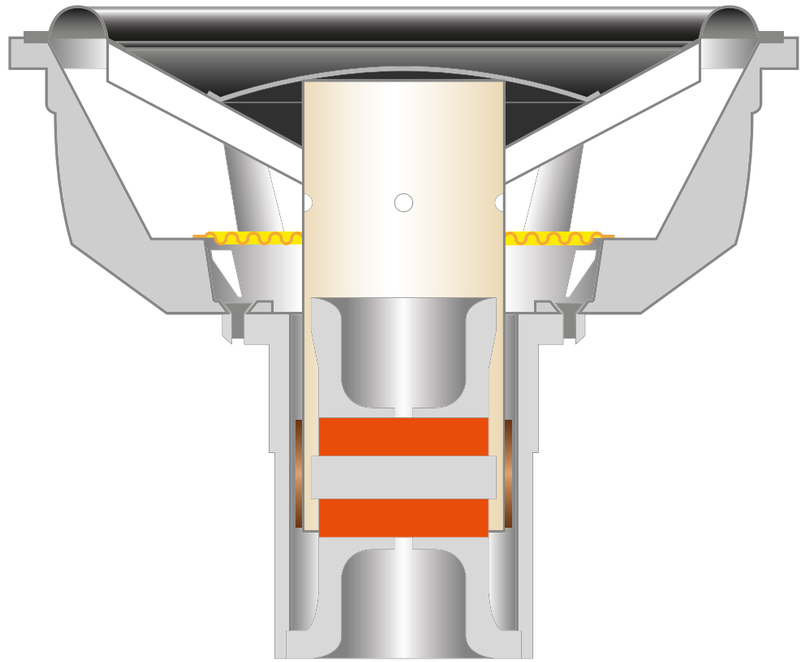






Kevlar® is known as the wonder fabric in bulletproof vests. But, as Bowers & Wilkins discovered, no material is better suited to disrupt the standing waves that cause distortion and coloration in the midrange. To enhance the properties of Kevlar yet further, we've added something very special. The FST™ acts like a circular shock absorber around the cone, almost totally absorbing the sound-smudging bending waves that travel outwards to the cone's perimeter. A midrange driver never sounded cleaner, or more responsive.

Rock solid



Force of attraction The bass drivers in the 800 Series Diamond range are powered by a brand new dual magnet motor system (in red, top) creating a more symmetrical magnetic field and reducing harmonic distortion.

The 800 Series Diamond bass driver is a formidable piece of engineering, designed to preserve the speed and ‘slam’ of the most demanding bass lines. The cone material is Rohacell®: a sophisticated composite of the kind normally used for aircraft and performance cars. The new dual magnet design reduces distortion for more natural and consistent bass character. For unshakable bass, it’s the bottom line.

Deep breath

Bass needs air to breathe. But if turbulence occurs as air moves in and out of a speaker's reflex port, you'll hear extraneous noise – and, as you turn the volume up, the bass won't be as tight or well-timed as it should be. The Flowport™ in the 800 Series Diamond minimises turbulence in the same way as a golf ball. Dimples on the surface generate tiny eddy currents, over which air can flow smoothly and, above all, silently.

Deceptively simple

Gold/Silver/Oil Mundorf capacitors in the high-frequency crossovers, for improved signal to tweeters and superior sound quality.

The way a speaker's crossover is constructed speaks volumes about the quality of its mechanical components. What to look for is simplicity. The rule is, the better the design of the drive units, the simpler the design of the crossover can afford to be. And the quality of the 800 Series Diamond drive units is such that we've been able to make the speaker's first-order crossover one of the simplest – and best – we've ever produced.

You won't find many straight lines in nature – for good reason. Continuous, curving surfaces create stronger structures with the same amount of material. In the 800 Series Diamond, the curving cabinet forms a solid outer shell that shrugs off vibrations and resonance. Add an internal Matrix™ system that braces the structure like the ribs of a ship's hull, and you have a speaker that's more than capable of standing firm under pressure.

An ear for quality Developing and assembling great drive units is one thing. But it's up to the crossover to make sure those drivers are singing harmoniously together. According to top development engineers John Dibb and Tom O'Brien, designing the perfect crossover is a job that requires patience, fine judgement and many hours of listening.

Why is simplicity so important in crossover design?

John Dibb: John Bowers once said that we're not trying to give the most in a loudspeaker, we're trying to lose the least. That was many years ago, but it's just as relevant today. The key to loudspeakers is not losing the fine detail in the sound.

Our aim is to create an illusion of reality by giving the listener accurate auditory clues – and to remove the distortion and colouration that can mask this information. We've been able to enhance our measurement techniques to the point where we know more than ever about the factors that cause distortion and colouration in drive units. Nowadays, drive unit design has become so advanced that it has virtually eliminated these phenomena. In turn, this has allowed us to keep crossover design as pure and simple as possible.

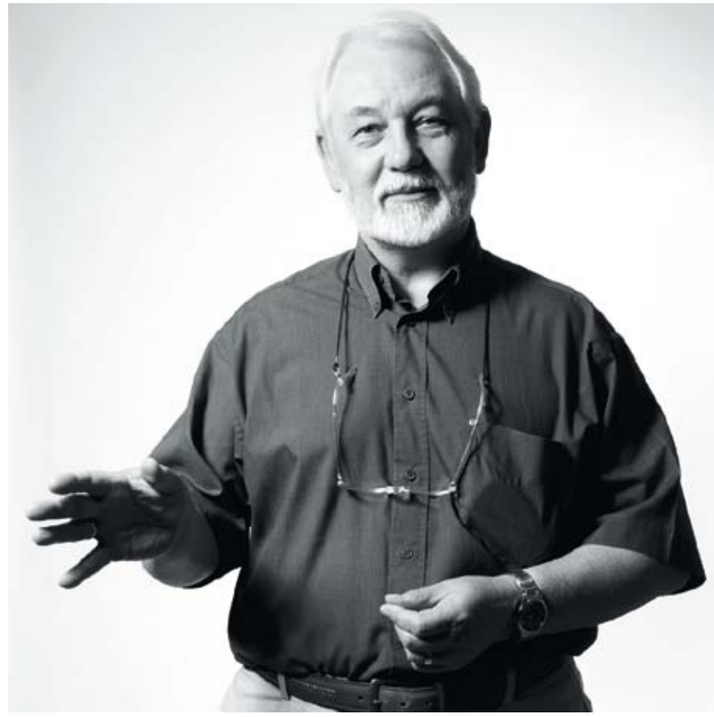
However, when drive units are working so well, this highlights another potential challenge: the difference in the sound of the different components within the crossover. We need to make sure that the components we choose for a speaker's crossover are the very best ones for the job.

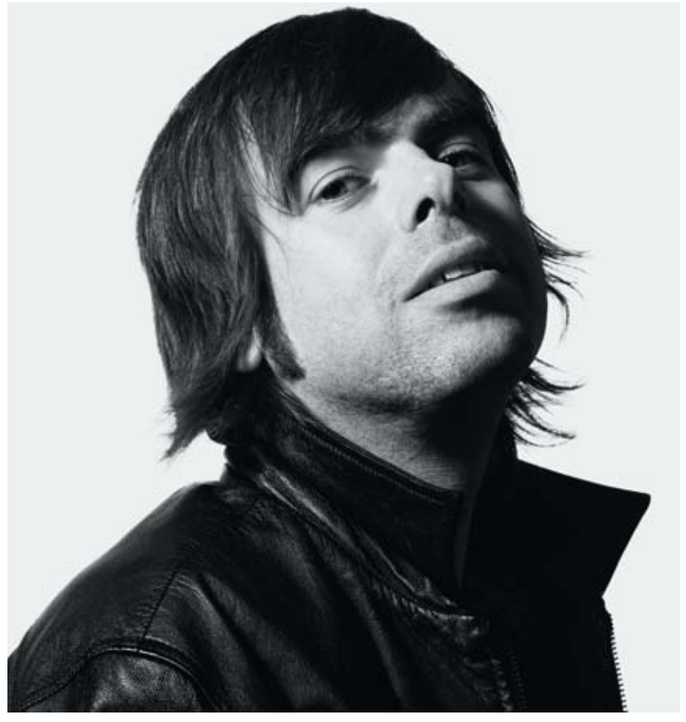
What role does listening play in the design process?

Tom O'Brien: You can get two identical-looking components, specified exactly the same way on paper, but one will have a completely different sonic characteristic to the other. And the only way that it's possible to pick out the ones that sound the best is by listening to them one at a time, over and over again.

This listening process can take a long time. It can take weeks, sometimes months, to fully balance the system and fine-tune it until we're happy with it. We have to try the systems out in many different rooms, and on different equipment, with a huge variety of music.

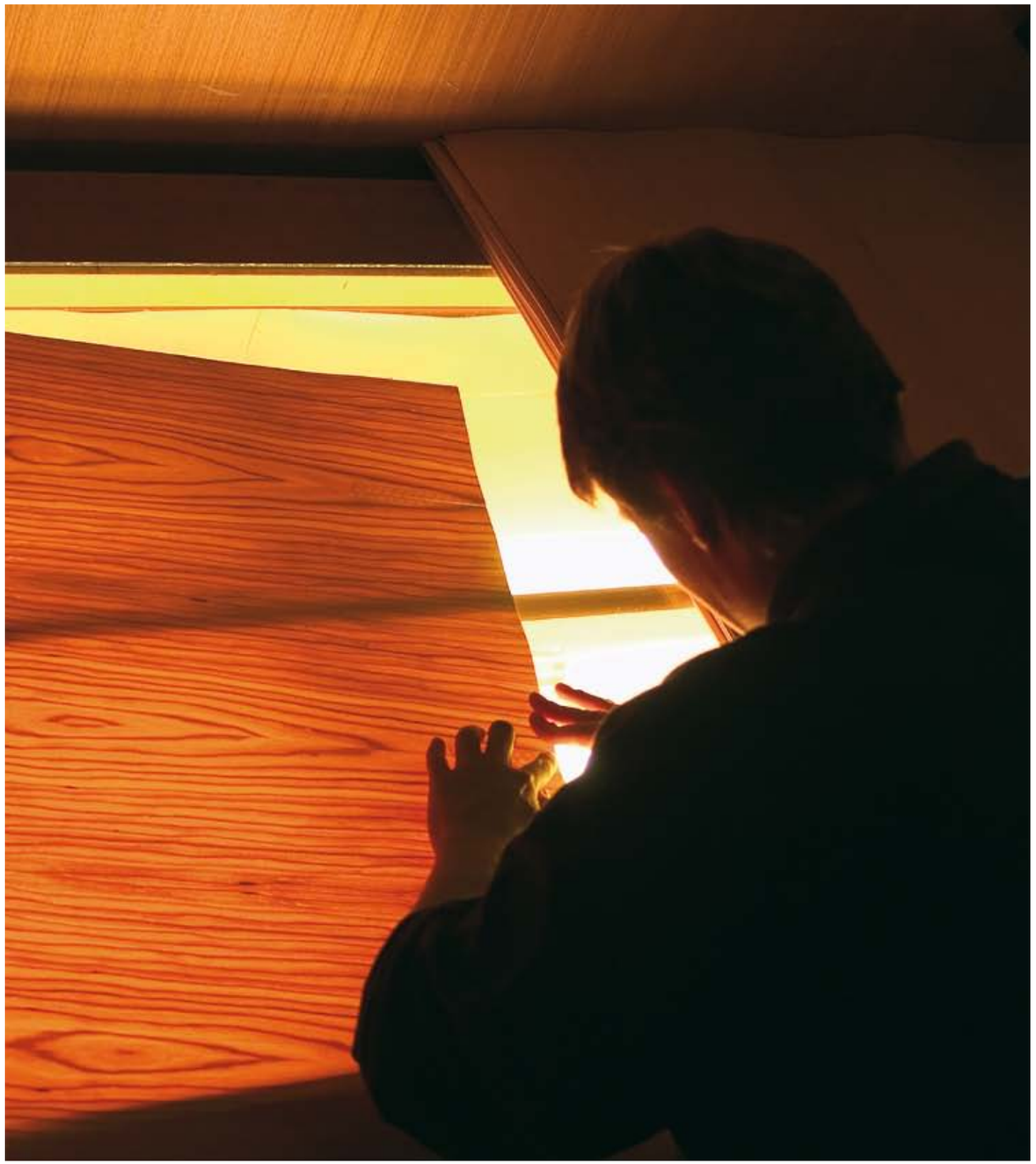
I think it's a great testament to our attention to detail that recording studios such as Abbey Road, Deutsche Grammophon and Decca, among others, have used our speakers for a long time to monitor their music. It's the ultimate test to hear the master tape of a recording that's been done minutes ago, and check that it's close to reality of the performance in the studio.

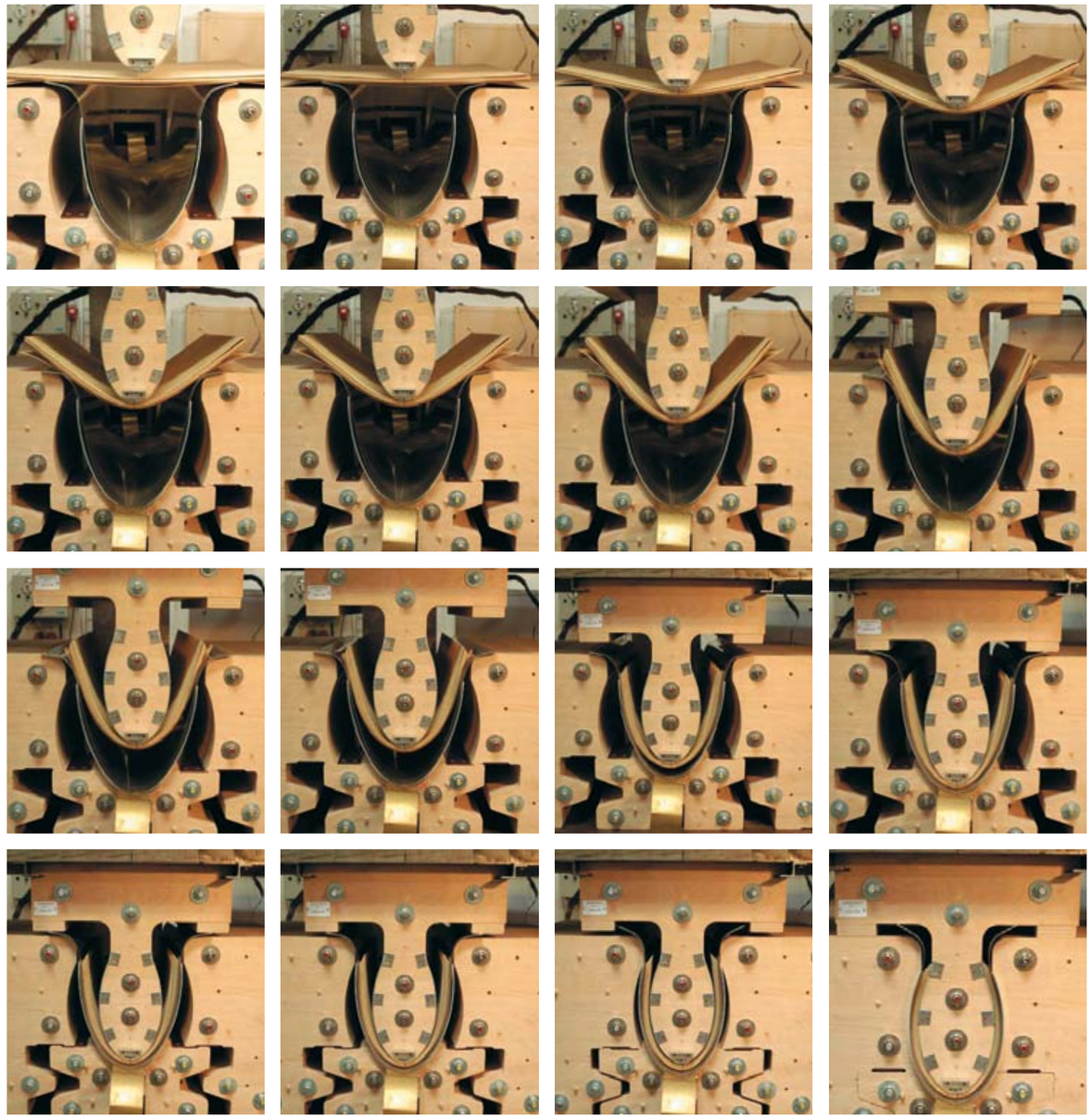




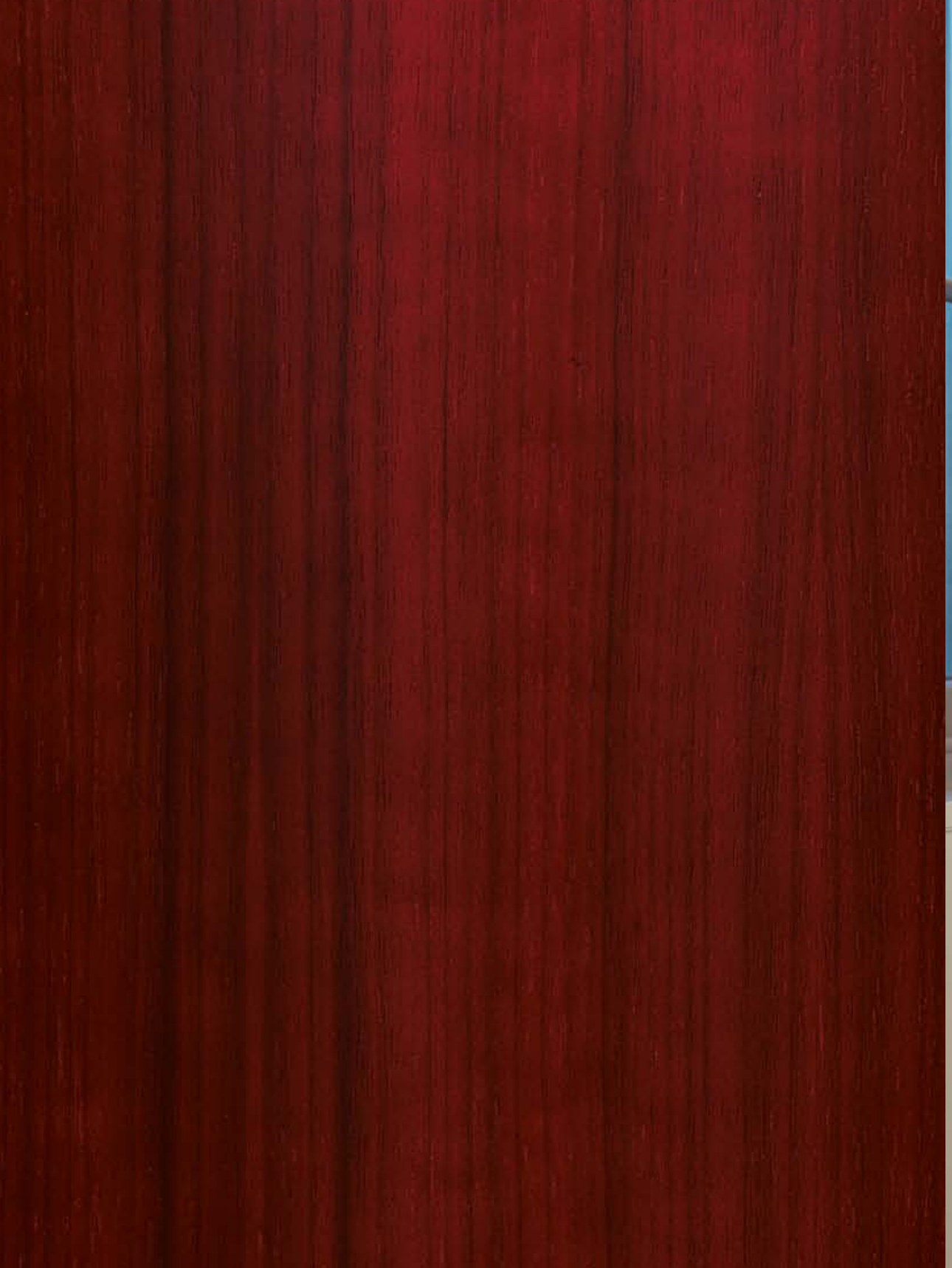
John Dibb (above) and Tom O'Brien (left), Bowers & Wilkins development engineers

Art meets science





At our dedicated cabinet-making factory in the UK, state-of-the-art technology is fused with traditional craftsmanship. While a single 35mm thick sheet of ply is pressed into shape for the main cabinet body of the 800 Series Diamond, its final skin of real wood veneer is selected by hand from only the top 10% of veneers available. All of the wood we use is sourced from sustainable forests.



Perfect partner

If you're planning to use the 800 Series Diamond as part of a home theatre set-up, there's every chance that you take your film viewing enjoyment very seriously indeed. In which case, you're also going to need a seriously good subwoofer. One with the power needed to deliver the mightiest movie sound effects, but also one with the finesse and precision to match the incredible realism of the 800 Series Diamond. Not an easy balance to strike. But one that the DB1 subwoofer handles with ease.

Despite its relatively compact size, the DB1 delivers awesome bass power, thanks to a unique design incorporating two opposing 12 inch drivers, and its own built-in 1000W digital amplifier. Digital Signal Processing keeps the output dynamic and accurate, while equalization software fine-tunes the speaker to match the character of your listening room. Power. Responsiveness. Control. Put them together, and you've got a subwoofer that's the ideal match for the 800 Series Diamond.

Take control The DB1 allows you to make minute adjustments depending on your personal listening preferences, or optimise the speaker for whatever you are listening to: music, movie or games. Adjustments can be made on the DB1's OLED display, or via a computer with the downloadable SubApp software.

Where it all begins

In leading recording studios around the world, music that will soon be heard everywhere is heard first through 800 Series speakers. At Abbey Road, sound engineers depend on the speakers, safe in the knowledge that what they hear in the control room is as close as possible to the sound of the performance in the studio. In California, Skywalker Sound is where Hollywood puts music to movies. And they do it on the ultimate surround sound system, featuring Bowers & Wilkins 800 Series speakers.

Peter Cobbin, recording engineer, Abbey Road Studios: "The B&W 800 Series is the only speaker I have found that allows me to accurately listen to how the original performance has been recorded."

AbbeyRoad™

SKYWALKER SOUND
A LUCASFILM COMPANY

800 Diamond

The speaker of choice for the world's most demanding recording studios, and a legend among serious sound enthusiasts everywhere, the 800 Diamond is the top speaker in the range – and very probably the finest speaker you will ever hear.

Diamond tweeter Diamond dome. Nautilus tapering tube design. Quad magnet motor system. Tweeter-on-top geometry.

Kevlar Midrange Woven Kevlar midrange driver. FST surround. Spherical head enclosure moulded from Marlan.

Matrix Internal bracing system for cabinet stability.

Rohacell bass drivers Rohacell foam/ carbon fibre composite bass driver. Dual magnet motor system. 75mm voice coil.

Terminal Oxygen Free Copper (OFC) terminals for improved signal quality.

Crossover Gold/Silver/Oil capacitors in high-frequency crossovers, for improved signal to tweeters and superior sound quality.

Flowport Reflex port technology for optimum bass performance and minimum turbulence distortion.

Rosenut | Cherrywood | Piano Black Gloss

802 Diamond

If you're looking for a speaker with the power, clarity and presence of the mighty 800 Diamond, but your listening area can't quite accommodate its studio-sized proportions, the 802 Diamond is the answer. Retaining the groundbreaking spherical head design of its bigger brother, it's the closest you'll get to true studio sound at home.

Diamond tweeter Diamond dome. Nautilus tapering tube design. Quad magnet motor system. Tweeter-on-top geometry.

Kevlar Midrange Woven Kevlar midrange driver. FST surround. Spherical head enclosure moulded from Marlan.

Matrix Internal bracing system for cabinet stability.

Rohacell bass drivers Rohacell foam/ carbon fibre composite bass driver. Dual magnet motor system. 38mm voice coil.

Terminal Oxygen Free Copper (OFC) terminals for improved signal quality.

Crossover Gold/Silver/Oil capacitors in high-frequency crossovers, for improved signal to tweeters and superior sound quality.

Flowport Reflex port technology for optimum bass performance and minimum turbulence distortion.

Rosenut

Cherrywood

Piano Black Gloss

803 Diamond

The 803 Diamond might look almost as imposing as the 802 Diamond, but thanks to its smaller footprint and more traditional cabinet design, it will fit more easily into a home environment. With three massive 7 inch Rohacell bass drivers, it delivers almost as much bass as the 802 Diamond, filling even the largest of domestic rooms with rich, stunningly lifelike sound.

Diamond tweeter Diamond dome. Nautilus tapering tube design. Quad magnet motor system. Tweeter-on-top geometry.

Kevlar Midrange Woven Kevlar midrange driver. FST surround.

Rohacell bass drivers Rohacell foam/ carbon fibre composite bass driver. Dual magnet motor system. 38mm voice coil.

Matrix Internal bracing system for cabinet stability.

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Flowport Reflex port technology for optimum bass performance and minimum turbulence distortion.

Rosenut

Cherrywood

Piano Black Gloss

804 Diamond

The elegant floorstanding 804 Diamond offers a commanding acoustic presence, and incorporates diamond tweeter technology for the first time. A true three-way design, it also features two Rohacell bass units and a woven Kevlar FST midrange driver. This combination ensures that it delivers pin-sharp clarity all the way up the frequency range.

Diamond tweeter Diamond dome. Nautilus tapering tube design. Quad magnet motor system. Tweeter-on-top geometry.

Kevlar Midrange Woven Kevlar midrange driver. FST surround.

Rohacell bass drivers Rohacell foam/ carbon fibre composite bass driver. Dual magnet motor system. 38mm voice coil.

Matrix Internal bracing system for cabinet stability.

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Rosenut

Cherrywood

Piano Black Gloss

805 Diamond

You asked for it. And now you've got it. The 805 Diamond is an industry world-first for a speaker of this size and at this price point – the only one of its kind to incorporate true studio-grade technology in the form of a diamond dome tweeter. Experience remarkable, lifelike sound from a discreet speaker that fits almost anywhere.

Diamond tweeter Diamond dome. Nautilus tapering tube design. Quad magnet motor system. Tweeter-on-top geometry.

Matrix Internal bracing system for cabinet stability.

Kevlar Bass/Midrange Woven Kevlar bass/ midrange driver.

Flowport Reflex port technology for optimum bass performance and minimum turbulence distortion.

Terminal Oxygen Free Copper (OFC) terminals for improved signal quality.

Crossover Gold/Silver/Oil capacitors in high-frequency crossovers, for improved signal to tweeters and superior sound quality.

Rosenut

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Piano Black Gloss

HTM2 Diamond

If you're looking for a centre-channel dialogue speaker to use as part of an 800 Diamond home theatre set-up, HTM2 Diamond provides all the clarity and richness you need for larger viewing spaces. That's down to a three-way design featuring two dedicated bass drivers – and, of course, a diamond dome tweeter.

Terminal Oxygen Free Copper (OFC) terminals for improved signal quality.

Crossover Gold/Silver/Oil capacitors in high-frequency crossovers, for improved signal to tweeters and superior sound quality.

Diamond tweeter Diamond dome. Nautilus tapering tube design. Quad magnet motor system. Tweeter-on-top geometry.

Kevlar Midrange Woven Kevlar midrange driver. FST surround.

Rohacell bass drivers Rohacell foam/carbon fibre composite bass driver. Dual magnet motor system. 38mm voice coil.

Matrix Internal bracing system for cabinet stability.

Flowport Reflex port technology for optimum bass performance and minimum turbulence distortion.

Rosenut

Cherrywood

Piano Black Gloss

HTM4 Diamond

Perfect for smaller viewing areas, the HTM4 Diamond centre-channel speaker will seamlessly balance the sound in an 800 Diamond home theatre set-up, thanks to highly advanced, complementary technology like a Kevlar bass/midrange driver and – for the first time ever – a diamond dome tweeter unit.

Terminal Oxygen Free Copper (OFC) terminals for improved signal quality.

Crossover Gold/Silver/Oil capacitors in high-frequency crossovers, for improved signal to tweeters and superior sound quality.

Diamond tweeter Diamond dome. Nautilus tapering tube design. Quad magnet motor system. Tweeter-on-top geometry.

Kevlar Bass/Midrange Woven Kevlar bass/midrange driver.

Matrix Internal bracing system for cabinet stability.

Flowport Reflex port technology for optimum bass performance and minimum turbulence distortion.

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Piano Black Gloss

Specifications

	800 Diamond	802 Diamond
Technical features	Free-mounted diamond dome tweeter Nautilus tube tweeter loading Quad magnet tweeter motor Kevlar brand fibre cone FST midrange Sphere/tube midrange enclosure Rohacell cone bass Dual magnet bass driver motor Matrix cabinet Flowport	Free-mounted diamond dome tweeter Nautilus tube tweeter loading Quad magnet tweeter motor Kevlar brand fibre cone FST midrange Sphere/tube midrange enclosure Rohacell cone bass Dual magnet bass driver motor Matrix cabinet Flowport
Description	3-way vented-box system	3-way vented-box system
Drive Units	1x ø25mm (1in) diamond dome high-frequency 1x ø150mm (6in) woven Kevlar cone FST midrange 2x ø250mm (10in) Rohacell cone bass	1x ø25mm (1in) diamond dome high-frequency 1x ø150mm (6in) woven Kevlar cone FST midrange 2x ø200mm (8in) Rohacell cone bass
Frequency range	-6dB at 25Hz and 33kHz	-6dB at 27Hz and 33kHz
Frequency response	32Hz – 28kHz ±3dB on reference axis	34Hz – 28kHz ±3dB on reference axis
Dispersion	Within 2dB of reference response Horizontal: over 60° arc Vertical: over 10° arc	Within 2dB of reference response Horizontal: over 60° arc Vertical: over 10° arc
Sensitivity	90dB spl (2.83V, 1m)	90dB spl (2.83V, 1m)
Harmonic distortion	2nd and 3rd harmonics (90dB, 1m) <1% 45Hz – 100kHz <0.5% 80Hz – 100kHz	2nd and 3rd harmonics (90dB, 1m) <1% 40Hz – 100kHz <0.5% 70Hz – 100kHz
Nominal impedance	8Ω (minimum 3.1Ω)	8Ω (minimum 3.5Ω)
Crossover frequencies	350Hz, 4kHz	350Hz, 4kHz
Recommended amplifier power	50W – 1000W into 8Ω on unclipped programme	50W – 500W into 8Ω on unclipped programme
Max. recommended cable impedance	0.1Ω	0.1Ω
Dimensions	Height: 1180mm (46.5in) including rollers Width: 450mm (17.7in) Depth: 645mm (25.4in)	Height: 1135mm (44.7in) not including feet Width: 368mm (14.5in) Depth: 563mm (22.2in)
Net weight	102kg (225 lb)	72kg (159 lb)
Finishes	Cabinet: Cherrywood Rosenut Piano Black Gloss Grille: Black cloth	Cabinet: Cherrywood Rosenut Piano Black Gloss Grille: Black cloth

	803 Diamond	804 Diamond
Technical features	Free-mounted diamond dome tweeter Nautilus tube tweeter loading Quad magnet tweeter motor Kevlar brand fibre cone FST midrange Rohacell cone bass Dual magnet bass driver motor Matrix cabinet Flowport	Free-mounted diamond dome tweeter Nautilus tube tweeter loading Quad magnet tweeter motor Kevlar brand fibre cone FST midrange Rohacell cone bass Dual magnet bass driver motor Matrix cabinet Flowport
Description	3-way vented-box system	3-way vented-box system
Drive Units	1x ø25mm (1in) diamond dome high-frequency 1x ø150mm (6in) woven Kevlar cone FST midrange 3x ø180mm (7in) Rohacell cone bass	1x ø25mm (1in) diamond dome high-frequency 1x ø150mm (6in) woven Kevlar cone FST midrange 2x ø165mm (6.5in) Rohacell cone bass
Frequency range	-6dB at 28Hz and 33kHz	-6dB at 30Hz and 33kHz
Frequency response	35Hz – 28kHz ±3dB on reference axis	38Hz - 28kHz ±3dB on reference axis
Dispersion	Within 2dB of reference response Horizontal: over 60° arc Vertical: over 10° arc	Within 2dB of reference response Horizontal: over 60° arc Vertical: over 10° arc
Sensitivity	90dB spl (2.83V, 1m)	90dB spl (2.83V, 1m)
Harmonic distortion	2nd and 3rd harmonics (90dB, 1m) <1% 50Hz – 100kHz <0.5% 90Hz – 100kHz	2nd and 3rd harmonics (90dB, 1m) <1% 90Hz – 100kHz <0.5% 120Hz – 100kHz
Nominal impedance	8Ω (minimum 3.0Ω)	8Ω (minimum 3.0Ω)
Crossover frequencies	350Hz, 4kHz	350Hz, 4kHz
Recommended amplifier power	50W – 500W into 8Ω on unclipped programme	50W – 200W into 8Ω on unclipped programme
Max. recommended cable impedance	0.1Ω	0.1Ω
Dimensions	Height: 1164mm (45.8in) not including feet Width: 306mm (12in) Depth: 457mm (18in)	Height: 1020mm (40.2in) not including feet Width: 238mm (9.4in) Depth: 351mm (13.8in)
Net weight	41kg (90 lb)	27kg (59 lb)
Finishes	Cabinet: Cherrywood Rosenut Piano Black Gloss Grille: Black cloth	Cabinet: Cherrywood Rosenut Piano Black Gloss Grille: Black cloth

	805 Diamond	HTM2 Diamond
Technical features	Free-mounted diamond dome tweeter Nautilus tube tweeter loading Quad magnet tweeter motor Kevlar brand fibre cone bass/midrange Matrix cabinet Flowport	Free-mounted diamond dome tweeter Nautilus tube tweeter loading Quad magnet tweeter motor Kevlar brand fibre cone FST midrange Rohacell cone bass Dual magnet bass driver motor Matrix cabinet Flowport
Description	2-way vented-box system	3-way vented-box system
Drive Units	1x ø25mm (1in) diamond dome high-frequency 1x ø165mm (6.5in) woven Kevlar cone bass/midrange	1x ø25mm (1in) diamond dome high-frequency 1x ø150mm (6in) woven Kevlar cone FST midrange 2x ø180mm (7in) Rohacell cone bass
Frequency range	-6dB at 42Hz and 33kHz	-6dB at 35Hz and 33kHz
Frequency response	49Hz – 28kHz ±3dB on reference axis	41Hz – 28kHz ±3dB on reference axis
Dispersion	Within 2dB of reference response Horizontal: over 60º arc Vertical: over 10º arc	Within 2dB of reference response Horizontal: over 60º arc Vertical: over 10º arc
Sensitivity	88dB spl (2.83V, 1m)	90dB spl (2.83V, 1m)
Harmonic distortion	2nd and 3rd harmonics (90dB, 1m) <1% 100Hz – 100kHz <0.5% 150Hz – 100kHz	2nd and 3rd harmonics (90dB, 1m) <1% 80Hz – 100kHz <0.5% 100Hz – 100kHz
Nominal impedance	8Ω (minimum 4.7Ω)	8Ω (minimum 3.1Ω)
Crossover frequencies	4kHz	350Hz, 4kHz
Recommended amplifier power	50W – 120W into 8Ω on unclipped programme	50W – 300W into 8Ω on unclipped programme
Max. recommended cable impedance	0.1Ω	0.1Ω
Dimensions	Height: 418mm (16.5in) Width: 238mm (9.4in) Depth: 351mm (13.8in)	Height: 329mm (13in) Width: 841mm (33.1in) Depth: 387mm (15.2in)
Net weight	12kg (26 lb)	31kg (68 lb)
Finishes	Cabinet: Cherrywood Rosenut Piano Black Gloss Grille: Black cloth	Cabinet: Cherrywood Rosenut Piano Black Gloss Grille: Black cloth

	HTM4 Diamond
Technical features	Free-mounted diamond dome tweeter Nautilus tube tweeter loading Quad magnet tweeter motor Kevlar brand fibre cone bass/midrange Matrix cabinet Flowport
Description	2-way vented-box system
Drive Units	1x ø25mm (1in) diamond dome high-frequency 1x ø165mm (6.5in) woven Kevlar cone bass/midrange
Frequency range	-6dB at 42Hz and 33kHz
Frequency response	49Hz – 28kHz ±3dB on reference axis
Dispersion	Within 2dB of reference response Horizontal: over 60º arc Vertical: over 10º arc
Sensitivity	88dB spl (2.83V, 1m)
Harmonic distortion	2nd and 3rd harmonics (90dB, 1m) <1% 100Hz – 100kHz <0.5% 150Hz – 100kHz
Nominal impedance	8Ω (minimum 4.7Ω)
Crossover frequencies	4kHz
Recommended amplifier power	50W – 120W into 8Ω on unclipped programme
Max. recommended cable impedance	0.1Ω
Dimensions	Height: 279mm (11in) Width: 486mm (19.1in) Depth: 287mm (11.3in)
Net weight	12.5kg (27 lb)
Finishes	Cabinet: Cherrywood Rosenut Piano Black Gloss Grille: Black cloth

	DB1
Technical features	Rohacell cone drivers Balanced drive Digital Signal Processing Room acoustics compensation 1000W Class-D amplifier
Description	Active balanced-drive closed-box subwoofer system
Drive Units	2x ø300mm (12in) Rohacell cone long-throw
Frequency range	-6dB at 15Hz and 250Hz
Frequency response	±3dB 17Hz – 145Hz
Amplifier power output	1000W continuous
Rated power consumption	300W
Standby power consumption	1W
Input impedance	15kΩ
Signal/noise	>100dB
Functions	5 Presets Input sensitivity Gain Low-pass filter frequency slope phase Graphic equalisation Room compensation Auto on/standby Trigger on/standby Trigger preset switching RS-232 automation control
Inputs	Stereo Line In (2x RCA Phono) Mono (LFE) Line In (RCA Phono) Mono (LFE) Line In (XLR balanced)
Dimensions	Height: 490mm (19.3in) Width: 460mm (18.1in) Depth: 410mm (16.2in)
Net weight	44kg (97lb)
Cabinet finish	Cherrywood Rosenut Gloss black
Grille	Black cloth

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