PARADIGM REFERENCE Signature Series Hear it. Feel it. See it through the mind's eye.





Signature. Love to listen.

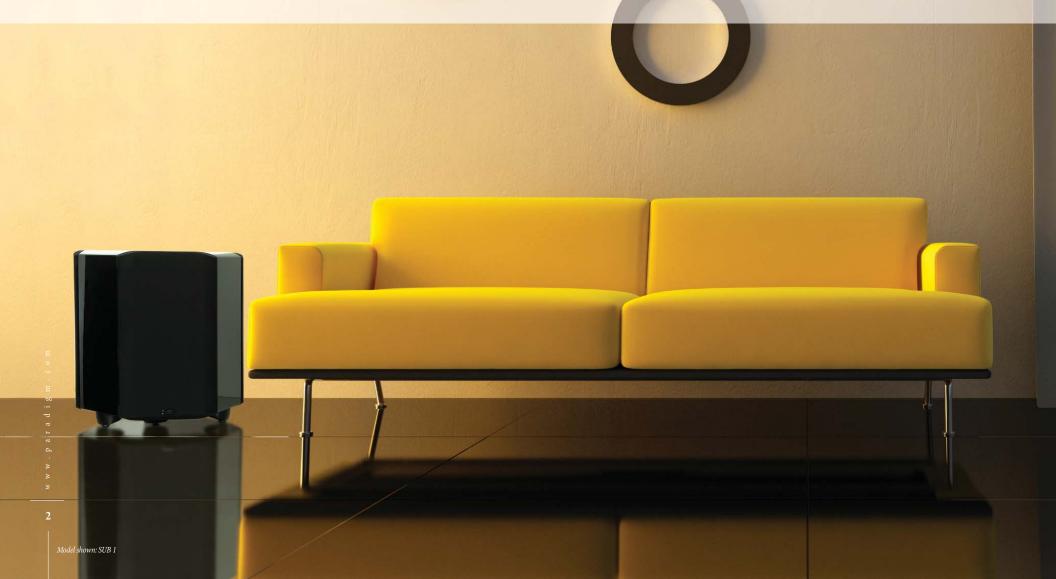
The finest speakers in the world are a medium for the music, an open window on the original performance. They take us from the mundane to the magical, beyond the ordinary to the extraordinary. They are a reflection of character. Not the sonic character of the speaker, since speakers claiming to be the finest must be devoid of acoustic personality. Rather, the finest speakers deliver an intimate unfolding of the songwriter's mood, the composer's message, the director's vision.

For the ultimate in music or home theater there is no more sonically coherent choice than Paradigm® Reference Signature speakers. They allow us to feel the music, hear the magic, and see through the mind's eye, into the very heart of the performance.



"... marvellous ... jaw dropping ... the dominion of the highest end."

Christopher Zell, Audio Video Revolution





What makes Paradigm different ...

"What makes Paradigm different is the way they do things ... in a world in which most speaker makers depend on other manufacturers for the drivers, electronics and other components that go into their speakers, the Paradigm people insist on making most of their own parts—and the parts that make those parts."

- Mark Fleischmann, Home Theater

Paradigm is one of the largest high-end audio companies in the world. Certainly, there are electronics factories overseas that are larger, but Paradigm's focus is not on producing quantity, but rather on delivering quality—the highest quality. And in the case of the Paradigm Reference Signature Series, the *ultimate* quality.

In the speaker building chain, manufacturing is just as important a link as research and design. At Paradigm, we design and build drive units, crossover networks, electronics, amplifiers, plastics and enclosures—and even our own tooling, production and testing equipment—to ensure greater precision and superior quality control. Our concern with sonic accuracy led us to create research and development facilities here in North America that are among the most sophisticated and comprehensive in the world. These facilities allow us almost endless experimentation—an enviable advantage, since genuine improvement in speakers is an ongoing experimental process. The Paradigm Reference Signature Series is the culmination of everything we have learned.

Designed, engineered and manufactured in North America, the Signature Series represents Paradigm's entry into what *Audio Video Revolution* referred to as "the dominion of the highest end."

Paradigm Reference Signature \dots a higher level of transparency.

















P-Be[™] tweeter dome: pure beryllium was chosen for its unique combination of thermal, physical and mechanical properties

Exotic beryllium! The metal of choice in applications where the highest level of performance is required. In the aerospace industry a host of desirable properties—strength-to-weight, stiffness-to-weight, excellent thermal conductivity—have earned beryllium a place in the design of the Hubble Telescope, the Mars Rover and the Space Shuttle. In the medical field, x-ray source tubes and diagnostic equipment take advantage of the metal's low-mass absorption co-efficient—x-rays pass through beryllium where other metals would absorb the rays. In each of these applications the common denominator is the same: beryllium enjoys a unique combination of thermal, physical and mechanical properties. When it comes to designing the ultimate tweeter dome, beryllium gets our designers particularly excited.

Since a tweeter's role is that of a flawless piston, constantly in motion reproducing thousands of cycles per second, choice of dome material is critical. Beryllium, particularly effective at higher frequencies, fits the bill beautifully: a stiffness-to-density ratio superior to aluminum, titanium and even diamond, excellent sensitivity and thermal conductivity (including a higher heat capacity than any other metal) with a velocity of sound twice that of other metals. Where a diamond dome is fragile and needs to be made thicker and heavier, beryllium is tough and can be manufactured thinner and lighter.

Then there's the process. The Signature tweeter dome is "hot formed," a cutting-edge technique that begins with a slab of beryllium rolled down into a foil. The crystal structure of the foil is far superior to the loose association of beryllium atoms achieved in the vapor deposition process (a common method of fabricating tweeter domes). It also results in a dome of measurably higher strength and consistency. As an aside, in powder or vapor form beryllium is toxic. Hot-forming the dome at temperatures well above 700° solidifies the form, removing any likelihood that the dome will shatter as a moving mass.

What emerges is a critically detailed, true and transparent high-frequency presentation. Power response is immediate, with lightning speed and instant reproduction of transient information. Integrity of the upper harmonics remains intact and the tweeter's uncanny accuracy and articulation are a decided advantage in this era of extended bandwidths. Signature tweeters yield an audiophile's dream—clear, uncolored, completely uncompromised high-frequency performance.



The technology behind Paradigm Reference *Signature* High-Frequency Drive Units

1 P-Be[™] Pure-Beryllium Tweeter Domes:

Pure beryllium was chosen for its exceptional thermal, physical and mechanical properties: lighter than diamond or aluminum with unmatched rigidity. Response is instantaneous and extraordinarily uniform. Elevating the dome promoted optimal off-axis dispersion.

2 | ARB™ Aperiodic Resonance Breakup Fins (not visible):

Die-cast aluminum fins in rear damping chamber capture and quickly disperse residual internal resonances, rendering them inert.

3 Unique Exterior Heatsink Fins:

Heat dissipation fins on exterior of chamber promote superior power handling.

4 Proprietary High-Loss Foam Acoustic Dampers:

Provide a markedly higher level of critical damping.

5 Die-Cast Aluminum WaveGuide™ Coupling:

Fosters controlled, uniform dispersion as well as accurate phase response throughout a large listening window.

6 High-Pressure Die-Cast Aluminum Heatsink Chassis:

Exceptionally rigid, eliminating mechanical flexing and ringing while also providing a heat-sink for superior power handling.

7 High-Temperature Copper-Clad Aluminum-Wire Voice Coils:

A rigid, low-mass design wound on Apical™ formers promotes much higher power handling, ultra-low distortion and long-term reliability.

8 Dual Super-Neodymium Ring Magnet Structures:

Dwarf all other neodymium magnet structures found in high-end tweeters, supplying superior sensitivity, ultra-low distortion and far greater power handling. The intense energy created in the magnetic gap (20,000 gauss) allows for overfilling of ferro-fluid effecting superior heat transfer. The tweeter virtually idles under normal operating conditions.

FEA-Optimized Magnet/Motor Assemblies:

Magnets and motor components are computer-optimized using Finite Element Analysis (FEA) for ultimate performance.

9 Integrated Heavy-Walled Shielding Cup:

Critically contoured to eliminate stray magnetic fields from the neodymium superstructure. The cup also acts as a thermal conduit for the rear heatsink.

10 Magnetic Pole Piece:

FEA-optimized.









"... big, bold and beautiful... every bit as powerful and dynamic as they look."

Chris Lewis, Home Theater





Uniform midrange performance has always been the foundation for great sound. This is because the human ear is most sensitive to midrange and lower treble frequencies. In developing Signature drivers, the challenge for Paradigm engineers was to generate supremely accurate and highly predictable frequency response from these very-high-output designs.

The infusion of cobalt into the pure aluminum brings increased rigidity as well as improved damping to the lightweight character of the pure-aluminum cone. However, behind the cone lies an extraordinary feat of engineering, one that incorporates a host of advanced design features—perhaps the most innovative being the rear chamber of the midrange driver.

Tooled to critical tolerances, the chamber's exterior is an ultra-efficient heatsink—large, strategically positioned cooling fins rapidly transfer heat away from the hard-working motor. It is the interior of the chamber, however, where the true magic of Paradigm engineering is revealed. In much the same way a listening room with similar wall and floor dimensions can negatively affect sonic performance, a *symmetrical* chamber behind a driver encourages standing waves, coloring the sound we hear. The Signature midrange chamber boasts our proprietary dual ATC⁻⁻ Asymmetrical Tapered Channels. Their purpose is not only to provide optimal and predictable internal volume, they also break up and disperse cone standing waves before they can stray, or bounce back into the cone, causing sonic mischief.

The result is extraordinary midrange performance—smooth, natural, accurate and beautifully balanced, with astounding detail, unprecedented clarity and an authenticity that competes with any high-end speaker, regardless of price.



Dual ATC™ Asymmetrical Tapered Channels break up and disperse cone standing waves before they can cause sonic mischief

The technology behind Paradigm Reference *Signature* Dedicated Midrange Drive Units

1 | Co-PAL $^{\text{\tiny M}}$ Cobalt-Infused Anodized Pure-Aluminum Midrange Cones:

Combine high stiffness-to-mass with superior internal damping for an even greater degree of accuracy. The result is smooth, uncolored frequency response.

2 | Dual ATC™ Asymmetrical Tapered Channels:

Precision die-cast aluminum chamber with tapered dual interior channels provide optimal volume. The asymmetrical design dissipates the back wave while the center of the chamber is direct-coupled to the huge magnet structure, providing an efficient thermal escape path for heat generated by the voice coil. Strategically positioned cooling fins on the rear of the chamber transfer heat away from the motor.

3 | Proprietary High-Loss Felted Dampers:

Provide critical damping of internal resonances.

4 | Advanced Nomex° Spiders and Thermoformed Butyl-Rubber Surrounds:

Foster linear excursion, minimizing compliance-induced distortion. High hysteresis and progressive damping eliminate "edge-hole" distortion occurring when the cone's suspension begins to resonate uncontrollably.

5 Die-Cast Aluminum Heatsink Chassis with AVS™ Cooling:

Exceptionally rigid design eliminates mechanical flexing and ringing. Our own AVS™ Airflow Ventilation System cooling boosts power handling and ensures ultra-low distortion and exceptional reliability. Chassis are CNC-machined to ensure a precision fit.

6 Metallized High-Integrity Dust Caps:

Shaped to promote wide, uniform off-axis dispersion and smooth, extended frequency response, the caps also provide visual continuity with the style of the bass/midrange drivers.

7 | Computer-Optimized Super-Neodymium Ring Magnets:

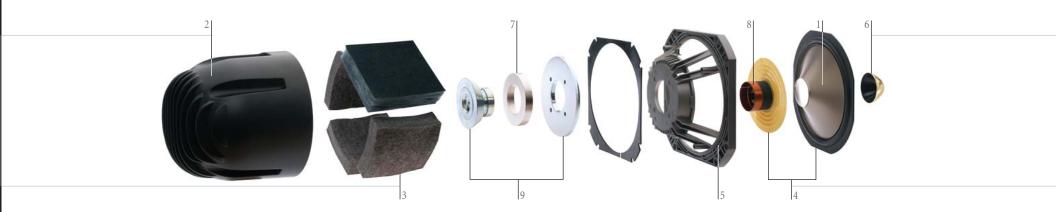
Optimal power in a smaller form factor, it promotes 50% more energy in the magnetic gap, saturating the pole piece and virtually eliminating inductive distortion.

8 High-Temperature Aluminum-Wire Voice Coils:

A rigid, low-mass design wound on a ventilated Kapton* former ensures superb accuracy and exceptional reliability.

9 Magnetic Pole Piece and Metal Top Plate:

FEA-optimized to support cone excursion.







The technology behind Paradigm Reference *Signature* Bass/Midrange Drive Units

1 Co-PAL* Cobalt-Infused Anodized Pure-Aluminum Bass/Midrange Cones: Combine high stiffness-to-mass with superior internal damping for exceptional accuracy. The result is smooth, completely uncolored frequency response.

2 | Overmolded NLC™ Non-Limiting Corrugated TPE Surrounds:

The new cutting-edge TPE Thermoplastic Elastomer was chosen for its unmatched vibration and resonance damping properties, crucial to the optimal performance of a bass/midrange driver (full story at right).

3 | Advanced Nomex[®] Spiders:

Tooled for added depth to accommodate the increase in excursion ... the restorative force is now more accurate than ever.

4 Die-Cast Aluminum Heatsink Chassis with AVS™ Cooling:

Deeper than previous generations to accommodate the new driver technology, the die-cast chassis baskets maintain our trademark AVS[™] Airflow Ventilation System cooling, boosting power handling, ensuring ultra-low distortion and exceptional reliability. CNC-machined to ensure a precision fit.

5 Metallized High-Integrity Dust Caps:

Dust caps proved a better mate with the new driver technology, improving structural integrity and removing any opportunity for air noise to introduce distortion. Shaped to promote wide, uniform off-axis dispersion and smooth, extended frequency response.

6 Cutting-Edge Long-Stroke Split-Coil Motor System:

Intermodulation distortion is virtually non-existent. Lightweight, high-temperature aluminum wire is wound on an Apical" former (more on next page).

7 | Permanent Ceramic (Hard Ferrite) Magnets with Focused-Field Geometry:

Rigid, high-temperature, low-mass design wound on ventilated Kapton° formers ensure superb accuracy and reliability.

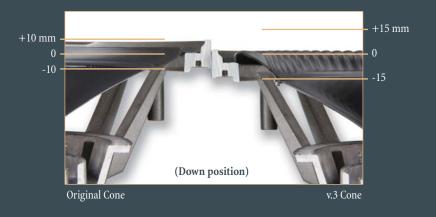
8 Magnetic Pole Piece:

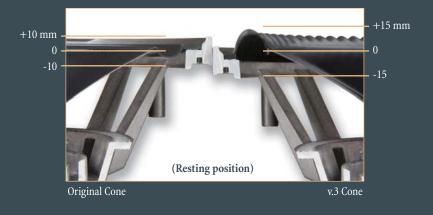
FEA-optimized and tooled to support the 50% increase in cone excursion.

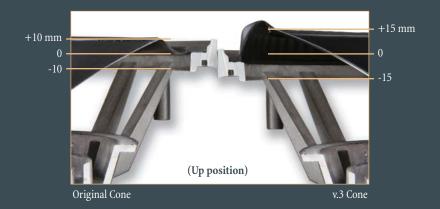
9 Metal Top Plate:

FEA-optimized and tooled to support the 50% increase in cone excursion.

Double the power (+3 dB!) — an incredible achievement!







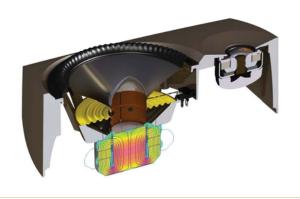


In designing original Signature midrange and bass drivers, our challenge was to generate supremely accurate and predictable response from these high-output designs. In the latest generation our goal was simply more.

Bass/midrange drivers have been fitted with extreme low-density NLC Non-Limiting Corrugated TPE surrounds (see left), FEA-optimized and overmolded onto the cone in house. The new state-of-the-art surround material is ten times more effective than

standard thermoplastic elastomers in damping vibrations and resonances and the new corrugated design has increased peak-to-peak excursion from 20 mm in earlier versions to a full 30 mm. And while the real story is the state-of-the-art surround material, not to be discounted is the new long-stroke split-coil motor system designed to take advantage of the extreme excursion. The motor doubles the linear portion of the stroke without the need for a larger magnet, keeping mass and inductance of the voice coil low (see below). The result? Supremely breathtaking midrange clarity, superior sensitivity and an incredible 50% increase in output (+3 dB!).

Bass cones were also extensively re-engineered. Injection-molded in house they benefit from 30% mineral content—a much stiffer cone has evolved. New NLC" Non-Limiting Corrugated Santoprene" surrounds, optimized using FEA and overmolded directly onto the cone, allow it to travel 50% farther (see photographs, left). Dimpling and wrinkling? Even at peak excursion not a hint of distortion rears its ugly head. To support the extended excursion we also redesigned the motor structure, increasing the linear portion of the stroke through voice coils almost double the original in length. New core parts—yoke and pole piece—were tooled and FEA-optimized and even the magnets were thickened to accommodate double-distance cone travel. As in bass/midrange drivers we achieved a 50% increase in output (+3 dB!).







The technology behind Paradigm Reference *Signature* Bass Drive Units

1 | Injection-Molded Mineral-Filled Polypropylene Bass Cones:

The mineral content, now 30%, and the injection-molding process have resulted in a far more rigid cone. The improvements reveal a dramatic increase in repeatability as well as consistency of performance.

2 Overmolded NLC™ Non-Limiting Corrugated Santoprene® TPV Surrounds:

An advanced thermoplastic vulcanizate, Santoprene was chosen for its extreme flexilibity as well as durability in a variety of environmental conditions. Overmolded for a superior lasting bond (full story on previous page).

3 Advanced Nomex[®] Spiders:

To take advantage of the higher excursion, spiders were tooled for added depth ... the restorative force is even more accurate.

4 Cutting-Edge Long-Stroke Low-Distortion Motor System:

Doubles the linear portion of the stroke to exploit the possibilities inherent in the extended excursion (*full story on previous page*). High-temperature aluminum wire is wound on a Kapton* former.

Models W5 and W5 C differ slightly in driver design—see Specifications page

5 | Massive Dual Permanent Ceramic (Hard Ferrite) Magnets with Focused-Field Geometry:

Breakthrough design and technology yield extremely high power output, remarkably low distortion and excellent power handling. Double the thickness of earlier versions to allow room for the 50% increase in cone excursion.

6 Redesigned Die-Cast Aluminum Heatsink Chassis with AVS™ Cooling:

Deeper than previous generations to accommodate the new driver technology, the die-cast chassis basket maintains our trademark AVS[™] Airflow Ventilation System forced-air cooling to boost power handling, ensure ultra-low distortion and reliability. CNC-machined to ensure a precision fit.

7 High-Integrity Polypropylene Dust Caps:

Molded to promote wide, uniform off-axis dispersion as well as very smooth, extended bass frequency response.

8 Magnetic Pole Piece:

FEA-optimized and tooled to support the 50% increase in cone excursion.

9 Metal Back and Top Plate:

FEA-optimized and tooled to support the 50% increase in cone excursion.







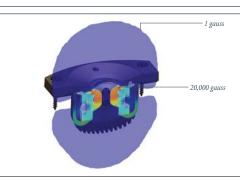
It's big, it plays loud and it's the most spectacular high-end on-wall speaker system ever made.

We're giving you fair warning: Signature W5 is not a speaker for the faint of heart. It's not for those content to simply "watch" a movie or "listen" to a piece of recorded music. W5 is reserved for *committed* audio/videophiles, those dedicated to an intensely "mind-blowing", "wow-your-friends-and-neighbors", "right-in-the-middle-of-it-all" on-wall music and home theater EXPERIENCE! More than three feet in length, powered by SIX "tweaked-for-the-ultimate-in-performance" state-of-the-art drivers backed by every ounce of Signature technology we could fit in, W5 is a sonic behemoth! We can say with certainty that no other on-wall speaker in the world comes close to delivering an experience as powerful, as clear, as clean, as accurate, as believable and as loud as the W5. Think we're kidding? Turn down the lights, hold onto the armrests and immerse yourself in the experience.

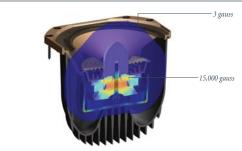




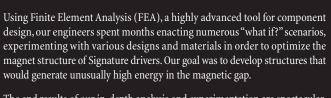
Using FEA, Paradigm engineers optimized the magnet structures of all Signature drivers, resulting in outstanding transient and phase response with superb power handling and output linearity.



High-Frequency Driver: Magnet Structure Design Magnetic energy at the voice coil is an extraordinarily powerful 20,000 gauss.

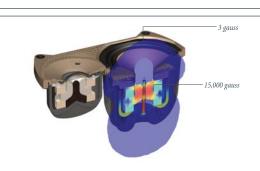


7" Midrange Driver: Magnet Structure Design Magnetic energy at the voice coil is exceptionally powerful at 15,000 gauss.



Signature magnets ... concentrated power.

The end results of our in-depth analysis and experimentation are spectacular. Design results (*see right*) show how Signature drivers produce an incredibly powerful magnetic field, yielding extraordinary energy in the magnetic gap. Consequently, the drivers boast outstanding transient- and phase-response characteristics as well as superb power handling and output linearity.



Unified Driver Assembly: High-Frequency and 4" Midrange Drivers – Magnet Structure Design of 4" Midrange Magnetic energy at the voice coil is exceptionally powerful at 15,000 gauss.

IMS/SHOCK-MOUNT™

It's the attention to (or more correctly, the *obsession with*) details that separates the very best highend speaker designs from the rest. Take, as an example, our IMS/SHOCK-MOUNT[®] butyl-rubber driver fastening system. Developed in response to the nemesis of all speaker designers—cabinet resonances and vibrations—our Isolation Mounting System (IMS) is simply another step on the road to audio perfection. Critically placed isolation inserts and gaskets actually decouple drivers from the speaker enclosure itself. This "baffleless" technology reduces driver/enclosure interactions and their associated enclosure resonances to inaudible levels. In Signature speakers the problem of enclosure resonances is not simply reduced, it is essentially eliminated.

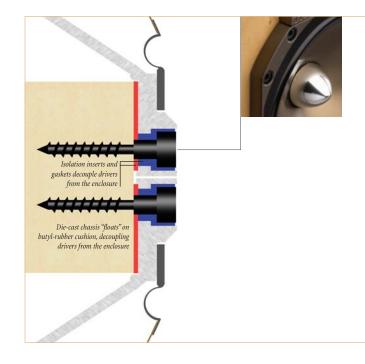
Precision Crossover Networks

In typical Paradigm fashion, Signature drivers are designed with ideal frequency- and phase-response characteristics, allowing for minimalist crossover networks. To ensure the highest precision signal transfer to the drivers, Signature internal wiring is costly S-OFC™ Silverplated Oxygen-Free Copper cable, spiraled to reduce inductive distortion, maintaining the overall integrity of the audio signal.



Only the finest quality parts and materials are used in Signature crossovers—hand-selected close-tolerance air-core inductors, high-power ceramic resistors and superior polypropylene capacitors.

What results is a precise, profoundly seamless reproduction of the original performance across the entire frequency spectrum.



Gorgeous Paradigm Speaker Stands

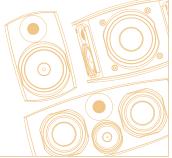
A speaker collection of Signature's caliber deserves the best in stands, both sonically and aesthetically. Paradigm stands, supremely elegant and incredibly solid, complement the Signature Series speakers while also ensuring complete stability. See photos on Specifications pages in the back of this catalog. For more details on these stands, see your Authorized Paradigm Reference Dealer.





The "fully integrated" approach

The beauty of both IMS/SHOCK-MOUNT™ technology and the design of our more compact Signature models (S1, C1, ADP1) lies not only in their functional simplicity. Both approaches to design represent the high-end thinking that exists behind all Paradigm Reference products. A thinking that insists that a fully integrated design—one in which all parts are designed to work together as a whole—is simply better by design.





Paradigm Reference *Signature* Ultra-Compact Lifestyle Models

How do you achieve the performance caliber of Paradigm Reference Signature in such ultra-compact models as the Signature S1, C1 and ADP1? The answer? Enclosure design must play a critical role.

All parts (baffle, rear and shell) on these compact cabinets are die-cast aluminum. The die-cast design also functions as an effective heatsink. Bass/midrange (S1) and bass driver (ADP1) baffles and chassis are physically integrated allowing space for a powerful 155-mm (6 in) driver. Cabinet interiors reveal heavy wall construction and extensive internal bracing. Constrained Layer Damping (CLD), a technique used extensively and with great success across aviation and naval platforms, is used in conjunction with a sophisticated Permacote* Linacoustic* to completely subdue stray residual vibrational energy within the cabinets. The end result? All of the high-end performance found in a much larger Signature Series speaker, in a significantly smaller package.





In the speaker design process it is essential that sound from the left and right front speakers blend as perfectly as possible with that of the center channel. Not only are the three front speakers the heart of a music system, they're also key players in any home theater. Front speakers reproduce off-screen dialog, sound effects and much of the music while the center channel delivers on-screen dialog, sound effects and music. Perhaps more than any other speakers in a music or home theater system, this trio must be designed and engineered to integrate seamlessly. Consequently, Signature center channels enjoy the same state-of-the-art technology that is used with such success in Signature front speakers, modified, of course, to suit the center channel's distinct role.

Achieving optimal sound from our center channels required a physically integrated approach—as you can see (*apposite page*), both tweeter and midrange driver are contained within a low-profile one-piece die-cast aluminum faceplate. In concert with innovative Signature technology, this unique configuration produces an exceptionally uniform frequency response across a wide listening area. It also provides the same precision and accuracy as that of Signature left and right speakers, thereby ensuring extreme timbre matching.





Extreme Timbre Matching[™]

The final frontier in achieving seamless multi-channel music and home theater performance is timbre matching—the identical sonic signature passing smoothly from speaker to speaker. Timbre matching has a profound and fundamental impact on the sound we hear. For true state-of-the-art multi-channel performance, sound must flow from speaker to speaker with "dead-on" accuracy.

Timbre matching center-channel and rear/surround speakers with front speakers is perhaps the ultimate challenge for a speaker designer. How do you make sound from a horizontal center channel blend seamlessly with that from vertically configured front speakers? The mere differences in horizontal and vertical orientation will cause changes in timbre. And to compound the challenge, with their large reverberant soundfield, Paradigm's ADP" surround/rear speakers have an altogether different driver orientation—one which enables them to accurately disperse sound towards the front and back of the room.

Building on Signature's countless advanced design features, Paradigm engineers set to work measuring, listening, testing and re-testing yet again. Their goal was to achieve vastly superior timbre matching. Two critical components lie behind our success—the precision and accuracy of our remarkable unified drive assembly and the sophisticated crossover design itself.

The result is unique to Paradigm Reference Signature—Extreme Timbre Matching™. Properly set up in a good, neutral listening room, the fundamental timbre of each Signature speaker is not just closely matched—it is virtually identical.



Extreme Timbre Matching™ ensures a seamless sonic match with all other speakers in the system.





Paradigm Reference *Signature* SUB 25

SUB 25 is big! Big in an elegant way. Like a Basso Profundo on stage at The Met. And just like a night at The Met, when SUB 25 starts to sing you know you're going to get every note, every nuance, every deep bass thrill you paid to hear. The bottomless rumble in a movie soundtrack. Explosive special effects. That note of menace. The portent of disaster. Recreated with such vivid realism! Such pinpoint accuracy. You're captivated. Floored. Speechless. Bass like you've never heard it before. Deeper and more refined. Smoother and oh, so rich. With perfect pace. Subtle texturing. Impact and weight. 3,000 watts of CONTINUOUS power! That's a full 4 horsepower! An insane amount of current.

And then there's the accuracy. SUB 25 is accurate down to a gruelling 9 Hz! In the average listening room it can reproduce an unbelievable 125 dB without audible distortion. And even at the highest output levels, the transition between SUB 25 and the other speakers in the system is deliciously seamless. The source of the bass, the SUB 25, simply disappears. There was a time when Paradigm's Servos ruled the lower octaves. Now there's a new voice on the big bass block ... and it's destined for greatness.







Paradigm Reference *Signature* SUB 25 High-Excursion Driver

SUB 25's proprietary 15" (380 mm) bass driver was designed, engineered and manufactured by Paradigm in North America. With unwanted resonances, standing waves and micro-distortions non-existent, SUB 25 displays breathtaking definition and awe-inspiring dynamics with lightning-fast speed and gut-wrenching power.

Mineral-Filled Co-Polymer Polypropylene Cone with RCR™ Resonance Control Ribs: Engineered for very high power, this high-stiffness design is intrinsically low in distortion allowing the bass cone to respond instantly to the starts and stops of even the leading edge of the lowest bass notes.

Advanced Multi-Layer Polyurethane-Composite Elliptical Surround and Dual Oversize Spiders: Optimized using Finite Element Analysis (FEA), a highly advanced tool for component design, the surround's multi-layer composite matrix with its high-tech surface treatment encourages extended cone excursion. A staggering 3" (76 mm) peak-to-peak excursion, while maintaining exceptional linearity and cone control.

Massive Aluminum Shorting Ring: Situated around the voice coil, the ring not only improves linearity and heat dissipation, it helps reduce voice coil inductance as well as odd- and even-order harmonic distortion. The results are apparent in the SUB 25's lightning-fast transient response.

3" (76 mm) 8-Layer Bifilar High-Temperature Aluminum Voice Coil: Wound on a high-temperature composite former in an oversize bifilar configuration, the aluminum coil provides exceptional stability and support for the extended cone excursion.

High-Pressure Die-Cast Aluminum Chassis: Controls flexing and ringing and since aluminum is non-magnetic, stray magnetic losses are eliminated.

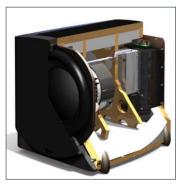
Proprietary AVS™ **Airflow Ventilation System Cooling:** Massive built-in ribs increase heat dissipation surface, providing forced-air cooling during large musical transients and chassis convection cooling at all other times.

Extruded-Aluminum Center Heatsink: Provides internal forced-air cooling to drive heat away from the high-velocity low-turbulence pole piece, increasing power handling and reducing distortion.

Massive 37-lb (16.8 kg) Computer-Optimized Magnet/Motor Assembly with Balanced Field Geometry: Again using FEA, the SUB 25's massive magnet/motor structure has been optimized to produce an incredibly powerful high-density symmetrical magnetic forcefield while minimizing inductive distortion. The results are outstanding transient and phase-response, superb power handling and output linearity.

Eliminating the Possibility of Stray Noise ... With a driver so large and so powerful, how do you prevent cabinet resonances and vibrations from coloring output? What about eliminating stray EMC/EMI and even radio frequency noise? Paradigm's answer? A redesigned 1" (25 mm) thick solid MDF enclosure with extensive internal bracing, including 1-1/2" (37.5 mm) baffle. Then a customdesigned isolation barrier separating amplifier and driver sections. Critically placed isolation inserts, a modified version of our patented IMS/SHOCK-MOUNT® technology, keep the barrier preloaded. The result? Enclosure resonances and stray amplifier noises are simply non-existent.





Input and Control Facilities

Input Facilities:

Low-Level Input – RCA:

Allows connection from the RCA (S/E) Left and Right or Sub/LFE Outputs of your Preamplifier/ Processor or other suitable low-level source.

Low-Level Input – Balanced XLR:

Allows connection from the Balanced XLR Sub/ LFE Output of your Preamplifier/Processor or other suitable low-level source. This input provides the lowest noise and distortion. It is particularly important for long cable runs where noise and distortion could degrade performance.

Control Facilities:

Auto On/Off:

Eliminates the need for a manually operated power switch. Turns the subwoofer on when there is an input signal. If no signal is present, after a period of time it turns off.

Trigger On/Off:

Allows power on/off to be controlled by components that have a trigger output (preamp/processor, etc.).

Subwoofer Cut-Off with Bypass Option:

(Continuously variable 35 Hz – 150 Hz.) Controls the subwoofer's upper frequency cut-off and can be set to match the low-frequency roll-off characteristics of your system's speakers.

Bypass Option:

Bypass the subwofer's built-in cut-off control to let your preamp/processor's or receiver's internal bass management provide the crossover function.

Subwoofer Level Control:

Balances the subwoofer level with that of the other speakers in your system.

Phase Alignment:

(Continuously variable 0° - 180°.) Accurately synchronizes your subwoofer and front speakers through their bass frequency overlap region.

USB Port/PBK Interface (*see right*):

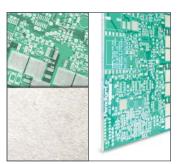
Allows for:

- Connection of the Paradigm Perfect Bass Kit, sold separately.
- Possible future upgrades to software installed in your subwoofer.

Gorgeous 3/8" (9.5 mm) ultra-rigid aluminum panel provides revolutionary heatsinking and mechanical rigidity, improved isolation and lower noise.



PBKM USB



Printed Circuit Board: 1/8" (3.2 mm) thick

Paradigm Reference *Signature* SUB 25 Ultra-Class-D™ Amplifier

SUB 25's amplifier was designed, engineered and manufactured by Paradigm in North America: 7,500 watts Dynamic Peak power; 3,000 watts RMS Sustained. Cutting edge features include:

Comprehensive Heat Dissipation System! Our robust 1/8″ (3.2 mm) thick aluminum circuit board (see inset) is overlaid with insulated metal substrates. Using an aluminum base as opposed to the more typical fiberglass base, while more expensive, encourages exceptionally efficient cooling. Even more mechanically robust than copper or ceramic, the metal substrates increase power density, minimize thermal impedance and conduct heat more efficiently while offering greater mechanical durability. FR-4-rated circuit board designs, widely used because of their exceptional efficiency, typically require larger heatsinks. In the SUB 25 however, the combination of aluminum and overlaid metal substrates allows for a heatsink much reduced in size.

Power Factor Correction (PFC): PFC shapes the current so it is sinusoidal and continuous in time, allowing maximum power (95%) to be drawn and with far less noise on the line. To compare: A unit without PFC draws only 60 to 70% of the available power since the line current is switched on and off by the input rectifier (a noise-inducing process in itself!) at twice the frequency. Current flows at the peak of the line voltage only, effectively choking the line. PFC prevents over-heating/tripping of the circuit breakers. Add to this the highly efficient Ultra-Class-D** design ensuring maximum output and the SUB 25's amplifier becomes an input/output powerhouse that is simply unbeatable.

No Power Transformer: The output stage is Direct-Connected[™] to the power line to provide maximum power.

Advanced Output Stage: Increases switching speed and efficiency. Unlike conventional Class-D designs which use the slow built-in diodes of the output MOSFETS, our Ultra-Class-D $^{\infty}$ design steers circulating currents to ultra-fast diodes (ten times faster!).

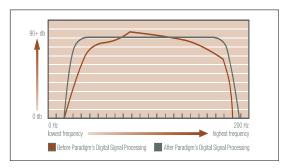
Opto-Coupled Inputs: Offer better isolation and lower noise.

Short-Circuit Protection: Reacts within 10 µs.

And as if all this wasn't enough, add ...

Paradigm's Own Digital Signal Processing (DSP) Design: Monitors the line current and voltage, regulating the long-term average output power. But there's more to this design ...

Sophisticated mathematical algorithms "shape" the frequency response, ensuring accurate, consistent, musical bass without distortion, even when SUB 25 is playing at the loudest level:



Paradigm's Own Digital Signal Processing Design





Paradigm Reference $\it Signature \,$ SUB 1 and SUB 2

The most difficult task in designing SUB 1 and SUB 2 was not just to have these subs play lower AND louder than any other subwoofers in the world, but to do so in a size that wouldn't dominate the average living room. In a cabinet that could be mistaken for a very fine piece of furniture.

And then there are the mind-boggling specs. SUB 2 plumbs the depths to 7 Hz with bloodcurdling output: 112 dB at 10 Hz, 126 dB at 60 Hz (in room). Connected to a 240-volt line, SUB 2 delivers 4,500 watts of continuous RMS Sustained power and a Frankenstein 9,000 watts of Dynamic Peak power through its unique Power Factor Correction system. Talk about bringing your music and movies to life! SUB 1 is no slouch either, delivering 1,700 watts of continuous power and 3,400 watts at peak.

With not one, but six cutting-edge drivers in each sub, transient information is conveyed with pristine clarity and perfect precision. Dynamics come through with lightning-fast speed and a power so shattering that it must be heard to be believed. Bass reproduction is eerily accurate and detailed, in large part a result of the unique Vibration-Canceling (VC) Design Architecture ...





Vibration-Canceling Design Architecture: Physics trumps mechanics with a little help from Paradigm

Typically, subwoofer enclosures contain one large driver. As that driver moves back and forth, the cabinet can vibrate which leads to smeared response, bass that lacks clarity and definition. Well-executed cabinet design, like that on Paradigm Reference subwoofers, typically includes sophisticated and extensive physical bracing inside the enclosure.

So why, when Paradigm puts six drivers in a single cabinet without significant physical bracing, does a martini set on top, while the subs are playing, barely elicit a ripple? Designed, engineered and manufactured by Paradigm in North

America, SUB 1 and SUB 2 are movers, not shakers ... massive air movement, massive output, virtually vibration-free.

Six identical, perfectly balanced state-of-the-art drivers are radially aligned (two on each side) inside the cabinet. As opposing forces of equal magnitude, the powerful vibration-reaction forces (*see the arrows in diagram, left*) effectively cancel each other out. Barely a ripple disturbs the martini placed on top of the cabinet (*see right*), such is the degree to which unwanted, distortion-inducing vibrations are reduced.

How do they compare? SUB 1: The best subwoofer in its price range! | SUB 2: The best subwoofer in the world, period.

These Subs are Movers, not Shakers ... Massive Air Movement, Massive Output, Vibration Free

Our Vibration-Canceling (VC) Design Architecture (see above) is only part of the story. There's still no replacement for displacement: In a small, compact form factor, six 10" drivers in SUB 2 move more air than a pair of 15" woofers! SUB 1's six 8" drivers move as much air as two 12" woofers. The other part of the story lies in the cutting-edge design of the bass drivers:

Mineral-Filled Co-Polymer Polypropylene Cones: A 30% mineral content has introduced additional cone stiffness for a measurable increase in repeatability and consistency. Response is instantaneous—low, loud, fast and tight, unveiling layers and layers of low-frequency detail, with consistently perfect pace.

Overmolded NLC" Non-Limiting Corrugated TPE Surrounds and Nomex* Cloth Spiders: These extreme low-density NLC" surrounds on SUB 1 were FEA-optimized and overmolded onto the cones in house. Ten times more effective than standard thermoplastic elastomers in damping vibrations and resonances, the corrugated material works in tandem with our Vibration-Canceling Design Architecture to ensure not a hint of distortion exists, even at peak-to-peak excursion (almost 2" / 50 mm in SUB 2!) and full-on output.

RCR[™] Resonance Control Ribs: NLC[™] surround technology was not required in SUB 2 since the six 10[™] drivers already allow for larger surrounds. The cones' resonance control ribbing simply reinforces the new VC design architecture. As in SUB 1 cone excursion on each driver is extreme.

3" (76 mm) 10-Layer (SUB 2) and 1-1/2" (38 mm) 4-Layer (SUB 1) Long-Travel Aluminum Voice Coils: Wound on high-temperature composite polyamide formers in an oversize configuration, the coils provide exceptional stability and support for the extremely high cone excursion.

High-Pressure Die-Cast Aluminum Chassis with AVS Airflow Ventilation System Cooling: Large built-in ribs increase the heat dissipation surface providing forced-air cooling during large musical transients and chassis convection cooling at all other times. CNC-machined to ensure a precision fit.

Magnetic Pole Piece: FEA-optimized, tooled to support the extreme excursion.

Extruded Aluminum Center Heatsink (SUB 2): Provides internal convection and forced-air cooling to wick heat away from the high-velocity low-turbulence pole piece, increasing power handling and reducing distortion.

Computer-Optimized Ceramic (Hard Ferrite) Magnet Assemblies with Balanced Field Geometry: Using Finite Element Analysis, the magnet structures were optimized to yield the most powerful output in a Signature subwoofer to date. Transient and phase-response are exceptional with superb power handling and output linearity.







or an elegant piece of high-end furniture ... at first glance, it's difficult to say.





Paradigm Reference *Signature* SUB 1: Dual Ultra-Class-D™ Amplifiers



Rear-Panel Interface

BIG POWER! Compact Package.

Two cutting-edge Ultra-Class-D™ amplifiers, designed, engineered and manufactured by Paradigm in North America, are housed inside the SUB 1's compact hexagonal cabinet. State-of-the-art amplifier parts include:

Switching Power Supplies: More than 90% efficiency! Optimized to completely and simultaneously control the operation of all six bass drivers. Prodigious total output: 3,400 watts Dynamic Peak Power; 1,700 watts (850 watts each amp) RMS Sustained Power.

More Power from a Compact Package: Our low-noise, ultra-high-power compact transformer (0.4 lb / 0.18 kg) is ideal for SUB 1's compact cabinet. Unlike the large and heavier transformers in a linear power supply, its ETD-core was developed specifically for applications that deliver very high power from a compact form factor. Highest quality MOSFET transistors, noise-suppression networks and an advanced control circuit result in tremendous current with ultra-quiet operation.

Full-Bridge Ultra-Class-D Design Output Stage: Operating from split power supply rails it ensures exceptionally low distortion. The high-quality output filter inductors with super-efficient toroidal cores, four high-quality MOSFET transistors on each amplifier (each can carry 65 amps of continuous current), and a noise-suppression network play a significant role. Not only does this design increase the speed of the switching, it also increases switching efficiency.

Precision Components and Dual-Sided Military Spec (FR-4 rated) Glass/Epoxy Circuit Boards: Superior "Reference" quality performance with an enviable degree of reliability over the long term.

Proprietary Amplifier Temperature Sensors: Maintain the safe operating temperature of the dual amplifiers, even under extreme operating conditions.

Advanced Short-Circuit Protection: If current through the MOSFETs exceeds an internally preset limit, a Silicon Controlled Rectifier (SCR) disables the output stage. Essentially a "latching" device, the SCR will not allow the output stage to be re-enabled until power is reset. Reaction time is typically within $10~\mu s$.

Novel Adaptive PWM (Pulse Width Modulation) Power Processor: Minimizes distortion and optimizes efficiency. Conventional Class-D designs have very low power supply rejection, however Paradigm's Ultra-Class-D[®] design inherently rejects variations in the power supply.

Paradigm's Digital Signal Processing (DSP): Sophisticated mathematical algorithms "shape" response, ensuring accurate, consistent and musical bass without distortion, even when the sub is playing at the loudest level. (*See graph on page 27*)

Gorgeous 5/8" (16 mm) Ultra-Rigid Aluminum Amplifier Panel: Provides revolutionary heat-sinking and mechanical rigidity as well as improved isolation and lower noise.



SUB 1/SUB 2 Input and Control Facilities

Input Facilities:

Low-Level Input – RCA:

Allows connection from the RCA (S/E) Left and Right or Sub/LFE Outputs of your Preamplifier/ Processor or other suitable low-level source.

Low-Level Input – Balanced XLR:

Allows connection from the Balanced XLR Sub/LFE Output of your Preamplifier/Processor or other suitable low-level source. This input provides the lowest noise and distortion. It is particularly important for long cable runs where noise and distortion could degrade performance.

Control Facilities:

Auto On/Off:

Eliminates the need for a manually operated power switch. Turns the subwoofer on when there is an input signal. If no signal is present, after a period of time it turns off.

Trigger On/Off:

Allows the subwoofer's power on/off to be controlled by components that have a trigger output (preamp/processor, etc.).

Subwoofer Cut-Off with Bypass Option:

(Continuously variable 35 Hz – 150 Hz) Controls the subwoofer's upper frequency cut-off and can be set to match the low-frequency roll-off characteristics of your system's speakers.

Bypass Option:

Allows you to bypass the subwoofer's built-in cut-off control to let your preamp/processor's or receiver's internal bass management system provide the crossover function.

Subwoofer Level Control:

Balances the subwoofer level with that of the other speakers in your system.

Phase Alignment:

(Continuously variable 0° – 180°) Accurately synchronizes your subwoofer and front speakers through their bass frequency overlap region.

Paradigm Perfect Bass Kit included:

USB Port/PBK Interface (see above):

- Connection of the Paradigm Perfect Bass Kit.
- Possible future upgrades to software in your sub.



Paradigm Reference *Signature* SUB 2: State-of-the-Art "Kilomax" Amplifier

3-Kilowatt Amplifier Platform: Designed, engineered and manufactured by Paradigm in North America, the SUB 2's state-of-the-art Ultra-Class-D" amplifier design premiered to rave reviews and great success in the Signature SUB 25. Motivated by their success, our engineers went back to work, tweaking, testing and modifying the amplifier's circuit board and software. The result is the most powerful subwoofer amplifier we (or anyone else for that matter) have ever produced. We call it the "Kilomax" design because when connected to a 240-volt line, it delivers a monster 4,500 watts of RMS Continuous power and a Frankenstein 9,000 watts of Dynamic Peak power.

Comprehensive Heat Dissipation System: The robust 1/8" (3.2 mm) thick aluminum circuit board (see inset, below left) is overlaid with insulated metal substrates. Using aluminum rather than a fiberglass base, while more expensive, encourages exceptionally efficient cooling. Even more robust than ceramic, the aluminum substrates increase power density, minimize thermal impedance and conduct heat more efficiently while also offering greater mechanical durability. FR-4-rated circuit board designs typically require larger heatsinks. In SUB 2, a combination of aluminum and overlaid metal substrates allowed for a heatsink much reduced in size.

Power Factor Correction (PFC): PFC shapes the line current so that it is sinusoidal and continuous in time. This allows the maximum amount of power (95%) to be drawn and with far less noise on the line. To compare: A unit without PFC draws only 60 to 70%

of the available power since the line current is switched on and off by the input rectifier (a noise-inducing process in itself!) at twice the frequency. Current flows at the peak of the line voltage only, effectively choking the line.

No Power Transformer: The output stage is Direct-Connected[™] to the power line to provide maximum power.

Advanced Output Stage: Increases switching speed and efficiency. Unlike conventional Class-D designs which use the slow built-in diodes of the output MOSFETS, our Ultra-Class-D[™] design steers circulating currents to ultra-fast diodes (ten times faster!).

Opto-Coupled Inputs: Offer better isolation and lower noise.

Short-Circuit Protection: Reacts within 10 µs.

Paradigm's Digital Signal Processing (DSP): Sophisticated mathematical algorithms "shape" response, ensuring accurate, consistent and musical bass without distortion, even when the sub is playing at the loudest level. (See graph on page 27)

Gorgeous 5/8" (16 mm) Ultra-Rigid Aluminum Amplifier Panel: Provides revolutionary heat-sinking and mechanical rigidity as well as improved isolation and lower noise.





Printed Circuit Board: 1/8" (3.2 mm) thick

Beauty ... and the Beast Within!

Beginning with a beautiful veneer, each cabinet is hand sanded, edges are made flush and exquisitely rounded and lacquer is applied. Cabinets are then left to cure for the better part of a week. Following this, multiple coats of lacquer are again applied. The cabinet is then hand-buffed with a high-end glaze and hand-polished to a high-gloss shine. A pain-staking process indeed, but well worth the time it takes. The most powerful subwoofer in the world and an elegant piece of fine furniture . . . in this case, both descriptions are apt.





Paradigm Perfect Bass Kit[™] (PBK)

Even when the world's finest subwoofers are perfectly placed, the room can still have a dramatic impact on performance. Room dimensions, dead spots, archways, and even furniture placement can turn a room into an additional instrument, playing alongside musicians or movie scores with unwanted contributions of coloration and resonance. Bass can sound bloated or boomy, with poor definition. Paradigm's Perfect Bass Kit digital room correction system is the answer . . .

PBK is unlike anything previously available: With the Paradigm Perfect Bass Kit, the negative effects of room boundaries on sound quality are a thing of the past. This state-of-the-art "bass perfecting" system analyzes the subwoofer's response in your room, then sets the correct equalization parameters to attain optimal sound.

The frequency response of each PBK microphone is measured precisely and the data is used to create the microphone's calibration file included on the PBK software disk.

PBK applies Super-Efficient Infinite Impulse Response (IIR) Filters in addition to Paradigm's Custom Filter Topology: This minimizes delay and reduces processing gain noise. The combined approach of limiting the width of IIR filters and applying custom topology means that any artifacts that might have resulted from the filtering process are so small as to be completely inaudible.

PBK allows for Multiple Microphone Measurements: Most room equalization methods work from a single point source, taking one measurement at the primary listening position. PBK however, provides for multiple user-selected measurement points (we suggest a minimum of five, but up to ten positions can be measured).

Unlike many "Room EQ" systems, PBK applies Correction to Peaks (modes) and Dips (anti-modes): Tackling both allows us to achieve a far more accurate and natural room response. And to limit the demands on the amplifier as well as maximize signal-to-noise ratio, PBK applies appropriate limits to this correction.

PBK is **Ultra-Accurate:** The connected PC's 64-bit floating-point processor does the hard work of calculating the correction curves, which greatly minimizes the rounding errors of a less sophisticated "calculator".

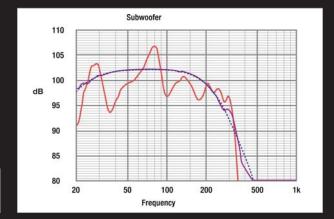
It's Easy-to-Use (at least your part is!): Three years of intensive research and development on our part have made it a snap to attain "Perfect Bass" performance in any room! All that's required is a PC running Windows XP, Windows 7, or Vista, two USB ports and the Paradigm Perfect Bass Kit. Paradigm even includes the two USB cables you'll need: one for the PBK microphone and one for the subwoofer.

How does PBK do what it does?

The process begins when your computer signals the subwoofer to play the test signal, which is then picked up by the individually calibrated microphone. The system puts the subwoofer through a frequency sweep to highlight problem areas and determine necessary adjustments. It asks you to position the microphone in at least five different locations, although measurements can be taken in up to ten locations. Configurations are then saved on the connected PC. The optimized solutions are calculated, then uploaded to the subwoofer and the calculated room corrections are put in place. An audiophile solution to the problem of "the room"!

Measured Calculated Target Response

PBK in action – Sample Analysis/Correction







"Audibly better bass through science."

Chris Martens, AVGuide.com



Most room equalization methods work from a single point source but PBK allows for multiple measurements

PBK and the National Research Council (NRC)

PBK is a derivative of the critically acclaimed Anthem* Room Correction (ARC**) system, based on research conducted by the NRC. The NRC's goal was to identify the correct "in-room" target response for a loudspeaker (in this case, the subwoofer) and then develop a way to achieve that same response in any listening room. Using proprietary processing, PBK measures your subwoofer's frequency response and then computes the target response to yield optimal bass performance in your room. Each PBK can be used with multiple Paradigm Reference subwoofers.



Technical Specifications





Design 2-driver, 2-way, ultra-compact bookshelf / stand-mounted, shown on GS-30 stand

S1

Crossover

3rd-order electro-acoustic at 2.1 kHz

High-Frequency Driver

25-mm (1 in) P-Be™ dome, ferro-fluid damped / cooled, rear damping chamber with ARB™ fins and integrated heatsink, dual super-neodymium ring magnets, die-cast enclosure / integrated heatsink chassis

Bass / Midrange Driver

155-mm (6 in) Co-PAL™ cone, overmolded NLC™ surround, 38-mm (1-1/2 in) split voice coil, superneodymium ring magnet, integrated AVS™ baffle / die-cast heatsink chassis

Low-Frequency Extension* 43 Hz (DIN)

Frequency Response *On-Axis:*

±2 dB from 65 Hz - 45 kHz

30° Off-Axis:

±2 dB from 65 Hz - 20 kHz

Sensitivity – Room / Anechoic 90 dB / 87 dB

Suitable Amplifier Power Range 15 – 175 watts

Maximum Input Power† 100 watts

Impedance

Compatible with 8 ohms

Height, Width, Depth

27.0 cm x 17.0 cm x 22.0 cm 10-1/2 in x 6-3/4 in x 8-3/4 in

Weight (unpacked) 5.8 kg / 12.5 lb each

Finishes

Cherry, Natural Maple, Piano Black

Matching Paradigm® Speaker Stand GS-30

*S*2

Crossove

3rd-order electro-acoustic at 1.8 kHz

High-Frequency Driver

25-mm (1 in) P-Be[™] dome, ferro-fluid damped / cooled, rear damping chamber with ARB[™] fins and integrated heatsink, dual super-neodymium ring magnets, die-cast heatsink chassis, IMS/SHOCK-MOUNT[™]

Bass / Midrange Driver

178-mm (7 in) Co-PAL™ cone, overmolded NLC™ surround, 38-mm (1-1/2 in) split voice coil, hard ferrite magnet, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Low-Frequency Extension* 36 Hz (DIN)

Frequency Response *On-Axis:*

±2 dB from 52 Hz – 45 kHz

30° Off-Axis:

±2 dB from 52 Hz – 20 kHz

Sensitivity – Room / Anechoic 91 dB / 88 dB

Suitable Amplifier Power Range 15 – 225 watts

Maximum Input Power† 140 watts

Impedance

Compatible with 8 ohms

Height, Width, Depth 38.1 cm x 21.0 cm x 35.6 cm

15 in x 8-1/4 in x 14 in

Weight (unpacked) 12.7 kg / 28 lb each

Finishes

Cherry, Natural Maple, Piano Black

Matching Paradigm® Speaker Stand I-29 *S*6

Crossovers

3rd-order electro-acoustic at 2.0 kHz, 2nd-order electro-acoustic at 190 Hz (bass drivers)

High-Frequency Driver

25-mm (1 in) P-Be[™] dome, ferro-fluid damped / cooled, rear damping chamber with ARB[™] fins and integrated heatsink, dual super-neodymium ring magnets, die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Midrange Driver

178-mm (7 in) Co-PAL™ cone, ferro-fluid damped / cooled, ATC™ chambers, 38-mm (1-1/2 in) dual-layer voice coil, super-neodymium ring magnets, AVS™ die-cast heatsink chassis. IMS/SHOCK-MOUNT™

Bass Drivers

Two 178-mm (7 in) mineral-filled polypropylene cones, overmolded NLC™ surrounds, 38-mm (1-1/2 in) four-layer bifilar long-excursion voice coils, massive hard ferrite magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Low-Frequency Extension* 26 Hz (DIN)

Frequency Response On-Axis:

±2 dB from 45 Hz - 45 kHz

30° Off-Axis:

±2 dB from 45 Hz – 20 kHz

Sensitivity - Room / Anechoic 91 dB / 88 dB

Suitable Amplifier Power Range 15 – 400 watts

Maximum Input Power† 200 watts

Impedance

Compatible with 8 ohms

Height, Width, Depth

111.0 cm x 21.0 cm x 34.5 cm 43-3/4 in x 8-1/4 in x 13-1/2 in

Weight (unpacked) 31.8 kg / 70 lb each

Finishe

Cherry, Natural Maple, Piano Black

58

Crossovers

3rd-order electro-acoustic at 2.0 kHz, 2nd-order electro-acoustic at 230 Hz (bass drivers)

High-Frequency Driver

25-mm (1 in) P-Be[™] dome, ferro-fluid damped / cooled, rear damping chamber with ARB[™] fins and integrated heatsink, dual super-neodymium ring magnets, die-cast heatsink chassis, IMS/SHOCK-MOUNT[™]

Midrange Driver

178-mm (7 in) Co-PAL™ cone, ferro-fluid damped / cooled, ATC™ chambers, 38-mm (1-1/2 in) dual-layer voice coil, super-neodymium ring magnets, AVS™ die-cast heatsink chassis. IMS/SHOCK-MOUNT™

Bass Drivers

Four 178-mm (7 in) mineral-filled polypropylene cones, overmolded NLC™ surrounds, 38-mm (1-1/2 in) four-layer long-excursion voice coils, massive hard ferrite magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Low-Frequency Extension* 24 Hz (DIN)

Frequency Response On-Axis:

±2 dB from 39 Hz - 45 kHz

30° Off-Axis:

±2 dB from 39 Hz – 20 kHz

Sensitivity - Room / Anechoic 92 dB / 89 dB

Suitable Amplifier Power Range 15 – 500 watts

Maximum Input Power† 250 watts

Impedance

Compatible with 8 ohms

Height, Width, Depth

123.2 cm x 21.0 cm x 52.1 cm 48-1/2 in x 8-1/2 in x 20-1/2 in

Weight (unpacked) 45.3 kg / 100 lb each

Finishes

Cherry, Natural Maple, Piano Black











Crossovers

3rd-order electro-acoustic at 2.2 kHz, 2nd-order electro-acoustic at 560 Hz (bass drivers)

High-Frequency Driver

25-mm (1 in) P-Be™ dome, ferro-fluid damped / cooled, rear damping chamber with ARB™ fins and integrated heatsink, dual super-neodymium ring magnets, die-cast enclosure / integrated heatsink chassis

Midrange Driver

85-mm (3-1/2 in) Co-PAL™ cone, ferro-fluid damped / cooled, ATC™ chambers, 25-mm (1 in) dual-layer voice coil, super-neodymium ring magnets, AVS™ die-cast heatsink chassis

Bass Drivers

Two 127-mm (5 in) mineral-filled polypropylene cones, overmolded NLC™ surrounds, 38-mm (1-1/2 in) two-layer split voice coils, super-neodymium ring magnets, AVS™ die-cast heatsink chassis

Low-Frequency Extension* 58 Hz (DIN)

Frequency Response On-Axis:

 ± 2 dB from 73 Hz - 35 kHz

30° Off-Axis:

±2 dB from 73 Hz - 20 kHz

Sensitivity - Room / Anechoic 88 dB / 85 dB

Suitable Amplifier Power Range

15 - 225 watts Maximum Input Power†

140 watts

Impedance

Compatible with 8 ohms

Height, Width, Depth

18.0 cm x 43.0 cm x 22.5 cm 7 in x 17 in x 9 in

Weight (unpacked)

10.5 kg / 25 lb each

Finishes

Cherry, Natural Maple, Piano Black



Crossovers

3rd-order electro-acoustic at 1.8 kHz, 2nd-order electro-acoustic at 370 Hz (bass drivers)

High-Frequency Driver

25-mm (1 in) P-Be™ dome, ferro-fluid damped / cooled, rear damping chamber with ARB™ fins and integrated heatsink, dual super-neodymium ring magnets, die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Midrange Driver

102-mm (4 in) Co-PAL™ cone, ferro-fluid damped / cooled, ATC™ chambers, 25-mm (1 in) dual-layer voice coil, super-neodymium ring magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Bass Drivers

Two 178-mm (7 in) mineral-filled polypropylene cones, overmolded NLC™ surrounds, 38-mm (1-1/2 in) four-layer voice coils, massive hard ferrite magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Low-Frequency Extension* 30 Hz (DÍN)

Frequency Response On-Axis:

 ± 2 dB from 46 Hz - 35 kHz

30° Off-Axis:

±2 dB from 46 Hz - 20 kHz

Sensitivity - Room / Anechoic

91 dB / 88 dB

Suitable Amplifier Power Range

15 – 325 watts

Maximum Input Power†

180 watts

Impedance

Compatible with 8 ohms

Height, Width, Depth

24.1 cm x 67.3 cm x 33.0 cm 9-1/2 in x 26-1/2 in x 13 in

Weight (unpacked)

20.4 kg / 45 lb each

Cherry, Natural Maple, Piano Black

Matching Paradigm® Speaker Stand

J-18C



Crossovers

3rd-order electro-acoustic at 2.1 kHz, 2nd-order electro-acoustic at 600 Hz, 2nd-order electro-acoustic at 350 Hz (outer bass drivers)

High-Frequency Driver

25-mm (1 in) P-Be™ dome, ferro-fluid damped / cooled, rear damping chamber with ARB™ fins and integrated heatsink, dual super-neodymium ring magnets, die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Midrange Driver

102-mm (4 in) Co-PAL™ cone, ferro-fluid damped / cooled, ATC™ chambers, 25-mm (1 in) dual-layer voice coil, super-neodymium ring magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Bass / Midrange Drivers

Two 178-mm (7 in) Co-PAL™ cones, overmolded NLC™ surrounds, 38-mm (1-1/2 in) dual-layer long-excursion voice coils, massive hard ferrite magnet, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Bass Drivers

Two 178-mm (7 in) mineral-filled polypropylene cones, overmolded NLC™ surrounds, 38-mm (1-1/2 in) dual-layer long-excursion voice coils, massive hard ferrite magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Low-Frequency Extension*

24 Hz (DÍN)

Frequency Response

On-Axis:

±2 dB from 43 Hz - 35 kHz

30° Off-Axis:

±2 dB from 43 Hz - 20 kHz

Sensitivity - Room / Anechoic

93 dB / 90 dB

Suitable Amplifier Power Range

15 - 500 watts

Maximum Input Power†

250 watts

Impedance Compatible with 8 ohms

Height, Width, Depth 24.1 cm x 95.3 cm x 44.4 cm

9-1/2 in x 37-1/2 in x 17-1/2 in

Weight (unpacked) 36.7 kg / 81 lb each

Finishes

Cherry, Natural Maple, Piano Black

Matching Paradigm® Speaker Stand J-18C





6-driver, 3-way, on-wall left / right



Design W5 C 6-driver, 3-way, on-wall center channel

W5

3rd-order electro-acoustic at 2.0 kHz, 2nd-order electro-acoustic at 300 Hz (bass drivers)

High-Frequency Driver

25-mm (1 in) P-Be™ dome, ferro-fluid damped / cooled, rear damping chamber with ARB[™] fins, dual super-neodymium magnets, die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Midrange Driver

115-mm (4-1/2 in) Co-PAL™ cone, ferro-fluid damped / cooled, anodized solid-aluminum phase plug, 25-mm (1 in) dual-layer voice coil, dual super-neodymium magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Bass / Midrange Drivers

Two 178-mm (7 in) Co-PAL™ cones, metallized high-integrity dust caps, 38-mm (1-1/2 in) dual-layer voice coils, super-neodymium magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Bass Drivers

Two 178-mm (7 in) mineral-filled polypropylene cones, 38-mm (1-1/2 in) four-layer voice coils, super-neodymium magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Low-Frequency Extension* 44 Hz (DÍN)

Frequency Response On-Axis:

±2 dB from 70 Hz - 45 kHz

30° Off-Axis:

±2 dB from 70 Hz - 20 kHz

Sensitivity - Room / Anechoic 94 dB / 90 dB

Suitable Amplifier Power Range 15 - 450 watts

Maximum Input Power† 225 watts

Impedance

Compatible with 8 ohms

Height, Width, Depth

95.0 cm x 22.7 cm x 14.3 cm 37-3/8 in x 9 in x 5-5/8 in

Weight (unpacked) 17.7 kg / 39 lb each

Cherry, Natural Maple, Piano Black

On-Wall Mounting Brackets

Included

W5 C

Crossovers

3rd-order electro-acoustic at 2.0 kHz, 2nd-order electro-acoustic at 300 Hz (bass drivers)

High-Frequency Driver

25-mm (1 in) P-Be™ dome, ferro-fluid damped / cooled, rear damping chamber with ARB™ fins, dual super-neodymium magnets, die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Midrange Driver

115-mm (4-1/2 in) Co-PAL[™] cone, ferro-fluid damped / cooled, anodized solid-aluminum phase plug, 25-mm (1 in) dual-layer voice coil, dual super-neodymium magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Bass / Midrange Drivers

Two 178-mm (7 in) Co-PAL[™] cones, metallized high-integrity dust caps, 38-mm (1-1/2 in) dual-layer voice coils, super-neodymium magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Bass Drivers

Two 178-mm (7 in) mineral-filled polypropylene cones, 38-mm (1-1/2 in) four-layer voice coils, super-neodymium magnets, AVS[™] die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Low-Frequency Extension* 44 Hz (DÍN)

Frequency Response

On-Axis:

 ± 2 dB from 70 Hz - 45 kHz

30° Off-Axis:

±2 dB from 70 Hz - 20 kHz

Sensitivity - Room / Anechoic 94 dB / 90 dB

Suitable Amplifier Power Range 15 – 450 watts

Maximum Input Power†

225 watts

Impedance

Compatible with 8 ohms

Height, Width, Depth

22.7 cm x 95.0 cm x 14.3 cm 9 in x 37-3/8 in x 5-5/8 in

Weight (unpacked) 17.7 kg / 39 lb per each

Finishes

Cherry, Natural Maple, Piano Black

TV-Top / Shelf-Mounting Supports

Included



Design 5-driver, 3-way, ultra-compact surround / rear



Design 5-driver, 3-way, surround / rear

ADP1

Crossovers

3rd-order electro-acoustic at 2.0 kHz, 2nd-order electro-acoustic at 300 Hz

High-Frequency Drivers

Two 25-mm (1 in) P-Be™ domes, ferro-fluid damped / cooled, rear damping chambers with ARB™ fins and integrated heatsinks, dual super-neodymium ring magnets, die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Midrange Drivers

Two 85-mm (3-1/2 in) Co-PAL™ cones, ferro-fluid damped / cooled, ATC[™] chambers, 25-mm (1 in) dual-layer voice coils, super-neodymium ring magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Bass Driver

155-mm (6 in) mineral-filled polypropylene cone, overmolded NLC[™] surrounds, 38-mm (1-1/2 in) dual-layer long-excursion voice coil, massive hard ferrite magnets, integrated AVS™ baffle / die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Low-Frequency Extension* 60 Hz (DÍN)

Frequency Response

±2 dB from 100 Hz – 45 kHz (optimized reverberant soundfield)

Sensitivity - Room / Anechoic 88 dB / 85 dB

Suitable Amplifier Power Range

15 – 225 watts

Maximum Input Power†

140 watts

Impedance

Compatible with 8 ohms

Height, Width, Depth

19.0 cm x 30.5 cm x 15.5 cm 7-1/2 in x 12 in x 6 in

Weight (unpacked)

7.0 kg / 15.5 lb each

Finishes

Cherry, Natural Maple, Piano Black

Matching Paradigm® Speaker Stand

GS-30

ADP3

Crossovers

3rd-order electro-acoustic at 1.8 kHz, 2nd-order electro-acoustic at 260 Hz

High-Frequency Drivers

Two 25-mm (1 in) P-Be[™] domes, ferro-fluid damped / cooled, rear damping chambers with ARB™ fins and integrated heatsink, ceramic / ferrite magnets, die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Midrange Drivers

Two 102-mm (4 in) Co-PAL™ cones, ferro-fluid damped / cooled, ATC™ chambers, 25-mm (1 in) dual-layer voice coils, super-neodymium ring magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

210-mm (8 in) mineral-filled polypropylene cone, overmolded NLC™ surrounds, 38-mm (1-1/2 in) dual-layer long-excursion voice coil, massive ceramic / ferrite magnets, AVS™ die-cast heatsink chassis, IMS/SHOCK-MOUNT™

Low-Frequency Extension*

55 Hz (DIN)

Frequency Response

±2 dB from 82 Hz – 45 kHz (optimized reverberant soundfield)

Sensitivity - Room / Anechoic 89 dB / 86 dB

Suitable Amplifier Power Range

15 – 250 watts

Maximum Input Power†

180 watts

Impedance

Compatible with 8 ohms

Height, Width, Depth

33.7 cm x 35.9 cm x 19.1 cm 13-1/4 in x 14-1/8 in x 7-1/2 in

Weight (unpacked)

16.8 kg / 26 lb each

Finishes

Cherry, Natural Maple, Piano Black

Matching Paradigm® Speaker Stand

I-29





Design

Single high-excursion driver, sealed enclosure, patented built-in Ultra-Class-D™ power isolation amplifier with Power Factor Correction, USB port

NOTE: Due to the incredibly high power and tremendous output the SUB 25's grille is non-removable

Universal Input Power

SUB 25's Universal Input Power feature allows the subwoofer to operate connected to any line voltage between 108 volts and 265 volts. However, in order to achieve maximum continuous performance we highly recommend connecting to a 240-volt line. (See Dealer for additional information.)

SUB 25

Amplifier

High-Current Discrete-Output, 7,500 watts Dynamic Peak / 3,000 watts RMS Sustained

Amplifier Features

Auto-on / off, Trigger-on / off, soft clipping, electrical shorting protection, thermal protection

Bass Driver

380-mm (15 in) RCR™ mineral-filled co-polymer polypropylene cone, oversize FEA-optimized elliptical surround, dual spiders, massive aluminum shorting ring, 76-mm (3 in) eight-layer bifilar voice coil, high-temperature composite former, 37-lb (16.8 kg) triple ceramic / ferrite magnet / motor structure, AVS™ die-cast heatsink chassis

Low-Frequency Extension*

9 Hz (DIN)

Subwoofer Cut-Off Frequency

Variable 35 Hz – 150 Hz, Bypass Option

Sub / Sat Phase Alignment

Variable 0° - 180°

Line-Level Input

RCA (S/E) Left and Right or Sub-Out / LFE or Balanced XLR. From Sub-Out / LFE-Out of preamp / processor or other line-level source

Line-Level Input Sensitivity

100 mV mono

Line-Level Input Impedance

RCA: 10k ohms, XLR: 20k ohms

AC Voltage (see note on Universal Input Power below left) 120v – 240v: 50/60 Hz

Height, Width, Depth†

51.0 cm x 46.0 cm x 55.0 cm 20-1/8 in x 18-1/8 in x 21-1/2 in

Weight (unpacked)

51.7 kg / 114 lb each

Finishes

Cherry, Natural Maple, Piano Black



Design

Hexagonal cabinet with multiple high-excursion drivers radially aligned in a Vibration-Canceling Design Architecture, patented built-in Ultra-Class-D™ power amplifier, sealed enclosure, PBK interface, removable grille



Design

Hexagonal cabinet with multiple high-excursion drivers radially aligned in a Vibration-Canceling Design Architecture, patented built-in Ultra-Class-D™ power amplifier with Power Factor Correction, sealed enclosure. PBK interface

NOTE: Due to the incredibly high power and tremendous output the SUB 2's grilles are non-removable

Universal Input Power

SUB 2's Universal Input Power feature allows the subwoofer to operate connected to any line voltage between 108 volts and 265 volts. In order to achieve maximum output, connect to a 240-volt line. (See Dealer for additional information.)

SUB 1

Amplifier

High-Current Discrete-Output, 3,400 watts Dynamic Peak / 1,700 watts RMS Sustained

Amplifier Features

Auto-on / off, Trigger-on / off, soft clipping, electrical shorting protection, thermal protection

Bass Drivers

Six 203-mm (8 in) mineral-filled co-polymer polypropylene cones, overmolded FEA-optimized NLC™ surrounds, 38-mm (1-1/2 in) four-layer long-excursion voice coils, high-temperature composite Nomex® formers, advanced spiders, 9.2-lb (4.16 kg) hard ferrite magnet / motor structure, AVS™ die-cast heatsink chassis

Low-Frequency Extension* 12 Hz (DIN)

Subwoofer Cut-Off Frequency Variable 35 Hz – 150 Hz, Bypass Option

Sub / Sat Phase Alignment Variable 0° – 180°

Line-Level Input

RCA (S/E) Left and Right or Sub-Out / LFE or Balanced XLR. From Sub-Out / LFE-Out of preamp / processor or other line-level source

Line-Level Input Sensitivity

100 mV mono

Line-Level Input Impedance RCA: 10k ohms, XLR: 20k ohms

Accessory Included

Paradigm Perfect Bass Kit

Height, Width, Depth†† 51.6 cm x 50.5 cm x 45.5 cm 20-1/4 in x 19-7/8 in x 17-7/8 in

Diameter of Hexagonal Cabinet 50.5 cm / 19-7/8 in

Weight (unpacked)

49.4 kg / 109 lb each

Finishes

Cherry, Piano Black

SUB 2

Amplifier**

High-Current Discrete-Output, 9,000 watts Dynamic Peak / 4,500 watts RMS Sustained

Amplifier Features

Auto-on / off, Trigger-on / off, soft clipping, electrical shorting protection, thermal protection

Bass Drivers

Six 254-mm (10 in) RCR™ mineral-filled co-polymer polypropylene cones, FEA-optimized overmolded thermoplastic foam surrounds, 76-mm (3 in) ten-layer long-excursion voice coils, high-temperature composite Nomex® formers, dual advanced spiders, 25.2-lb (10.5 kg) hard ferrite magnet / motor structure, massive center heatsink and oversize pole piece, AVS™ die-cast heatsink chassis

Low-Frequency Extension*

7 Hz (DIN)

Subwoofer Cut-Off Frequency

Variable 35 Hz – 150 Hz, Bypass Option

Sub / Sat Phase Alignment

Variable 0° - 180°

Line-Level Input

RCA (S/E) Left and Right or Sub-Out / LFE or Balanced XLR. From Sub-Out / LFE-Out of preamp / processor or other line-level source

Line-Level Input Sensitivity

100 mV mono

Line-Level Input Impedance

RCA: 10k ohms, XLR: 20k ohms

AC Voltage (See note on Universal Input Power below left)

120v (at 3,000 watts) – 50/60 Hz 240v (at 4,500 watts) – 50/60 Hz

Accessory Included

Paradigm Perfect Bass Kit

Height, Width, Depth††

62.2 cm x 60.4 cm x 57.8 cm 24-1/2 in x 23-3/4 in x 22-3/8 in

Diameter of Hexagonal Cabinet

60.4 cm / 23-3/4 in

Weight (unpacked)

106 kg / 230 lb each

Finishes

Cherry, Piano Black



The Last Word in Elegance

Anti-Diffraction Grille Assemblies:

All Paradigm Reference Signature Series speakers are meant to be played with their grille assemblies in place. Elegant, softly sculpted grille assemblies fit flush with the drivers, their curved outer edges designed to eliminate the sound reflections that otherwise occur at the front outer edges of the enclosure. These reflections, called edge diffraction, interfere with the primary sound output coming from a driver.

High-Velocity Low-Noise Die-Cast Aluminum Ports:

Bass efficiency and minimum turbulence distortion result in exceptionally clean and articulate bass response.

Premium Finishes (color options vary by model):

Signature Series enclosures are enhanced by a choice of three stunning wood veneer finishes—Cherry, Natural Maple and Piano Black.

Elegant Outrigger Feet and Floorstanding Spikes:

Elegant die-cast aluminum outrigger feet are included on Signature floorstanding and selected center-channel models, providing added stability, not to mention a truly elegant finishing touch. Optional spikes, used in conjunction with outrigger feet, are also included with floorstanding models.





Paradigm's commitment to sonic accuracy led us to create research and development facilities that are among the most sophisticated and comprehensive in the world. These facilities allow us almost endless experimentation—an enviable advantage, since genuine improvement in speakers is an ongoing experimental process.

With rave reviews from around the world and nearly 300 product awards over the past decade, Paradigm is an international leader in speaker design. Our products are chosen by even the most critical listeners. We have remained true to our original philosophy—to design speaker systems that are fundamentally accurate, speakers that transparently reproduce all of the sound in the original source recording. Nothing more, nothing less.













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