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Vandersteen Model 3A Signature



UPGRADEABLE LOUDSPEAKER

Since 1977, Vandersteen Audio has designed and built innovative loudspeakers using advanced design concepts. Minimum-area baffles eliminate virtually all cabinet edge and grille diffraction anomalies while mass alignment of driver elements insures proper time arrival. Vandersteen Audio was the first loudspeaker manufacturer to use the Gen-Rad 2512 FFT (Fast Fourier Transform) Computer Analyzer for in-house research and development and remains a leader in interfacing complex computerized analysis of loudspeaker parameters and performance with practical design and engineering.

The Model Three benefits from our years of experience designing and building loudspeakers of unparalleled value and performance. It couples proven technology with advanced materials, construction and design for a speaker system that is always true to both science and music. The Model Three is completely upgradable. As future improvements in technology and/or materials enhance the capabilities of the speaker, cost-effective updates will be available to upgrade existing speakers to the latest components, performance and specifications.

THE ACTIVE COMPONENTS

The components used in the Model Three Signature combine classic durability and strength with innovative design and construction. The metal-alloy dome tweeter is a dual-chamber design to improve range and linearity. It is critically damped to extend the high frequencies past audibility without the excessive ringing associated with open or underdamped metal dome tweeters. The specific alloy used for the dome was chosen for its superior strength and resistance to break-up.

With our experience in FFT computer analysis and extensive research into the negative effects of diffraction, we developed a unique, proprietary midrange driver (Patent # 5073948) that outperforms previous designs in several significant parameters. In conventional cone midranges, the acoustic energy from the back of the cone immediately strikes the front of the driver's magnet assembly and is reflected back through the cone and into the listening room. This distorted secondary signal created by the internal diffraction smears the sound of the driver and inhibits true transparency. The frontal area of the magnet assembly on the Vandersteen midrange is minimized through the use of advanced materials and construction techniques to reduce internal diffraction and the resultant distortion to inaudible levels. With the elimination of this distortion, the sound of the Model Three is cohesive and smooth with a level of inner resolution unequaled by other loudspeakers.

The active acoustic coupler and woofer use costly cast-metal baskets rather than the more common stamped baskets. The cast-metal baskets' inherent rigidity and superior vibration control increase cone movement accuracy and resist sympathetic resonances for cleaner and more natural sound. Filled polycones are used on the woofer and midrange to insure high stiffness, superior internal dampening and greater neutrality than metal alloy, woven plastic or treated

U L T R A F I D E L I S

H I G H P E R F O R M A N C E A U D I O & V I D E O

paper cones. The stiff, low weight polycones resist flexing under all drive conditions for lower distortion and increased detail.

The dual-spider active acoustic coupler accurately complements the woofer to reduce box loss, thermodynamic loss and active/passive transfer nonlinearities. This novel Electro- Mechanically Optimized Woofer System provides powerful, detailed and extended bass response as the Model Three operates much more closely to the ideal than conventional ported or passive designs.

THE CROSSOVER

The crossover in the Model Three is comprised of transient-perfect, first-order networks designed to preserve the phase integrity of the music. It is compensated to allow the drivers to operate in absolute phase with each other for more precise and stable imaging than in conventional multi-way speakers using out-of-phase drivers. The crossover's computer-grade components, including low impedance air-core inductors and high-quality film capacitors in the signal path, are hand soldered on a double-sided, plated-through PC board tested to insure less than 0.1dB deviation from a reference circuit. Custom SILVER wire with advanced dielectric is used for internal wiring to maximize signal transfer.

The crossover is engineered for bi-wiring with a stereo amplifier or passive vertical bi-amplification with two identical stereo amplifiers. Inputs are heavy-duty screw terminals.

THE ENCLOSURE

The baffles holding the drivers on the Model Three are as small as possible to eliminate virtually all of the early reflections that affect dynamic speakers with conventional flat or low diffraction baffles. Reducing both early reflections and edge diffraction improves the imaging and enhances the openness and transparency of the speaker.

The Model Three's enclosure is constructed of 1 to 1 1/2 inch thick MDF, an advanced material that resists vibration and reduces cabinet resonances. Broad-spectrum, low-Q resonances are controlled so as to cancel rather than become additive.

THE ALIGNED DYNAMIC DESIGN

The Model Three uses the proven Vandersteen Aligned Dynamic Design to optimize the dispersion and transient accuracy of the drivers while maintaining the input signal's time and phase integrity. The drivers, their positioning and their associated minimum baffles were developed with the aid of FFT computer analysis to minimize diffraction, cone break-up, multi-driver interference and out-of-band phase irregularities. The construction, alignment and positioning of the drivers allow a point-source wave front and maximize the phase coherence of the loudspeaker at the listening position.

The Aligned Dynamic Design is used for the Model Three due to its many potential advantages:

- Precise, more dimensional imaging and a wider listening area.
- A greater flexibility of placement options within the listening room and better transient response.
- A high level of genuine transparency and detail typical of planar speakers without the distortions and response variations of multi-directional dynamic loudspeakers.
- Increased efficiency and improved dynamic range.

Page 2 of 4

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U L T R A F I D E L I S

HIGH PERFORMANCE AUDIO & VIDEO

QUALITY CONTROL

Each Vandersteen Audio Model Three undergoes rigorous testing and retesting during each phase of construction. Each driver and crossover is tested for proper operation and computer matched to within 0.1dB. After final assembly, each pair is high-power sweep tested for structural integrity and FFT computer analyzed for correct response and performance compared to a model reference. This intense commitment to product quality and reliability is unsurpassed in the audio industry.

DIMENSIONAL PURITY

Music is pure in its dimensions. Vandersteen loudspeakers are true to the original dimensions of the music. They preserve its carefully crafted proportions and weight. They accurately convey the composition, shading and timing that build an involving experience. They reveal the power, the authority, the subtlety and the intimacy of the music.

This dimensional purity is the essence of the Model Threes. It allows them to recreate the music's original scope and passion. You hear deeper into the music and better understand the feelings forming its foundation. You become more involved in the music as its complex inner structure is revealed with increased clarity and realism.

At Vandersteen Audio, we believe that these qualities are fundamental to your enjoyment of your music. We are pleased to have embodied these qualities in a speaker whose simple, but elegant, physical presence complements the decor of your listening room. We are devoted to continue building distinguished loudspeakers that make a statement about the importance of music in your life.

THE VANDERSTEEN 3A "SIGNATURE" IMPROVEMENTS

The application and integration of advanced Vandersteen Model Five technology and components set the 3A Signature apart from the standard Model 3A. The 3A Signature features Model Five grade crossover components and hand-tuned compensation networks that improve the speaker's linearity and phase accuracy.

The tweeter in the 3A Signature is the same type used in the Model Five and contributes to the speaker's improved definition and transparency. Like other Vandersteen Signature models, all the drivers are hand selected after extensive testing and carefully matched to each other. The enhanced stability of the image and soundstage is obvious on high-quality recordings.

Listening to 3A Signatures is an enlightening experience. Sounding more like Model Fives than Model 3As, the 3A Signatures reveal inner details of music and movies with incredible clarity. They reproduce the nuances, background sounds, and minute effects that convey the essence and emotion of the music or movie.

Richard Vandersteen's signature on the input plate is a reminder that the 3A Signature is the best Vandersteen Model 3 series loudspeaker ever built.

SPECIFICATION CHANGES COMPARED TO THE STANDARD MODEL 3A

DRIVERS:

Model Five series tweeter.

U L T R A F I D E L I S

HIGH PERFORMANCE AUDIO & VIDEO

Matched premium drivers, carefully selected for their phase and frequency characteristics in the 3A Signature application.

ACTIVE ACOUSTIC COUPLER

Long excursion, dual-spider 10" with die-cast basket and aluminum alloy cone
Heavy-duty 1 1/2" four-layer voice coil with ventilated aluminum former
60 oz. linear excursion magnet structure with focused field pole piece and copper rings
Range of operation: 26Hz - 35Hz¹ critically damped metal alloy dome

WOOFER

Long excursion 8" with die-cast basket and curvilinear polycone
1 1/2" two-layer voice coil with ventilated aluminum former
40 oz. linear excursion magnet structure with focused field pole piece
Range of operation: 35Hz - 600Hz

MIDRANGE

4 1/2" with linear surround and curvilinear polycone
Proprietary high performance die-cast basket and magnet structure
Ferrofluid voice coil cooling
Range of operation: 600Hz - 5kHz

TWEETER

Dual-chamber design
Ferrofluid voice coil cooling
Range of operation: 5kHz - 30kHz

CROSSOVER:

First-order. Model Five quality components.
Hand-tuned phase and frequency compensation networks.

FREQUENCY RESPONSE:

30Hz to 22kHz + or - 1.2dB by FFT step function.

PHYSICAL:

103 pounds gross, 91 pounds net.

7/2002