Owners Manual and Set-up Guide: Genesis 6.1e Loudspeaker

Contents

A Message from Genesis

Congratulations! You are now the owner of one of the finest loudspeaker systems in the world. Based on technologies developed for our flagship Genesis 1 and the award-wining Genesis 6.1, the Genesis 6.1e is designed for those of us who live in beautiful homes and still want an elegant loudspeaker that will deliver the best sound in its class.

So that it will fit into the décor of any home, the cabinet design is a combination of acoustic, furniture, interior design and architectural principles. Subtle angles and complex curves are used to create an optical illusion that makes the G6.1e look smaller and slimmer than it actually is. The veneers are also carefully chosen to reflect and enhance these curves and angles.

Sound structural engineering principles have been applied to make the G6.1e cabinet rigid and well-damped, with no detrimental vibrations. All construction and even internal braces have been “tongue and grooved” to ensure that the cabinet is the best environment on which to mount the transducers. This results in an absence of cabinet coloration, and excellent sound-staging and imaging.

Mated with a matching Genesis ServoSum™, the G6.1e will deliver the full frequency response of 16Hz to 36kHz. Thus delivering the vital infrasonic and ultrasonic frequencies to deliver the emotive content of music.

The Genesis 6-Series Cinema System can optionally include a full complement of matching surround speakers, center channel, and additional bass modules. Hence the G6.1e is equally at home in an audiophile two-channel music-only system and as a key component in a home theater/multi-channel music environment.

Please read this Owners Manual and Set-up Guide to get the maximum enjoyment out of your purchase. Also, check out our website at www.genesisloudspeakers.com for the latest updates, tips and tricks, and support for our owners.

1 A Quick Start Set-up Guide

Now that you have your new Genesis 6.1e loudspeaker system, we realize that you can't wait to hook it up and start playing! However, please read this quick set-up guide (even if your dealer is setting it up for you) before you proceed.

1.1 Unpacking

Your loudspeakers will come to you in two large shipping cartons. The cartons containing your speakers weigh over 90lbs (41kgs) each, so we suggest a minimum of two strong people to move the speaker cartons around. We will ***not*** be held liable for damage to either the speakers or your backs during unpacking and setting up.

The packaging is designed to ship the speakers vertically, and to be unpacked horizontally. Please observe the "This Side Up" signs when shipping and unpacking.

The carton is designed to unfold to make it easy to remove the speakers. With a sharp knife, cut the tape on the top and two ends of the carton. The sides will fall apart revealing the speaker held in place by a back support box, and two pieces of foam holding on to the top and bottom of the speaker. You will also find the wire grill that will go on the front of the speaker.

Remove the foam on the bottom of the speakers, and slide the plastic and foam wrapping off. Now, tilt up the speaker until it is resting on its bottom. Remove the top piece of foam, and the wrapping. Repeat with the other speaker, and store the packaging in a dry, safe place – just in case you need to transport the speakers.

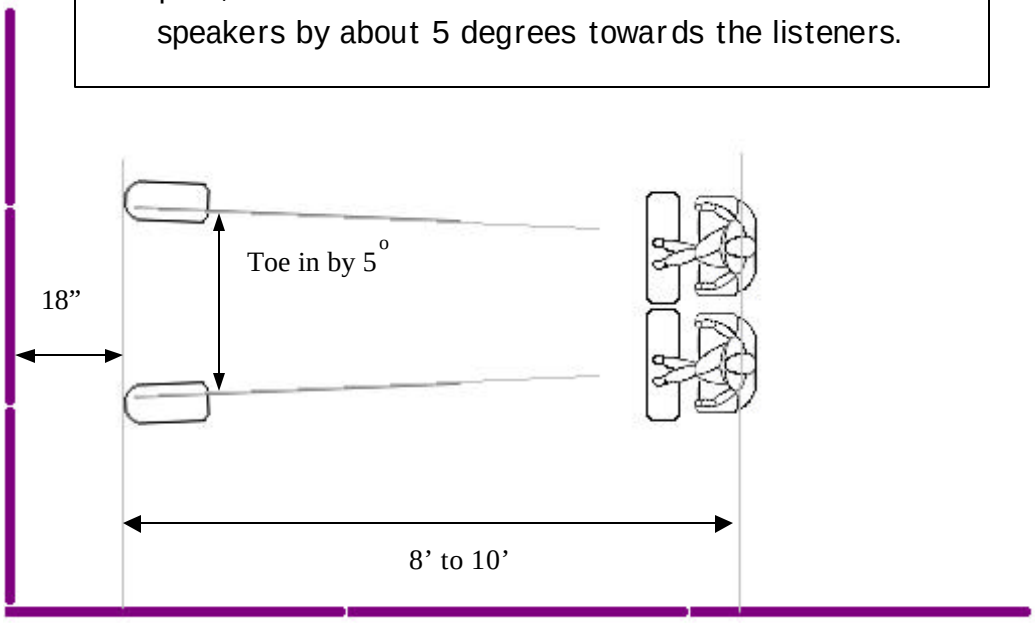
1.2 Room Placement

A good starting position for your G6.1e is about 18 inches (46cm) into the room as measured from the front wall (the wall you look at as you are seated listening to the speakers) to the back of the base of the speakers. Place the speakers about five to six feet (1.8 metres) apart measured between the tweeters. Toe the speakers in slightly towards the listeners – by about 5 to 10 degrees – no more.

This is the best starting point for audiophile two channel stereo set-ups. If you are primarily using these speakers for home theatre enjoyment, the speakers can be placed nearer to the wall. If you are only going to use these speakers for stereo, you may want to pull them further away from the wall.

You will want to sit eight to twelve feet (2.4 to 4 metres) away from the speakers.

Typical room placement: Place speakers about 18 inches into the room, the tweeters on the inside, 5 to 6 feet apart, and 8 to 12 feet from the listeners. Toe-in the speakers by about 5 degrees towards the listeners.



1.3 Connections

For most applications, the speakers should be plugged directly into the output your power amplifiers using high quality speaker cables and the 5-way binding posts. The speakers has a set of Thru-Put binding posts. These are for connecting to an optional ServoSub™. As the Thru-Put binding posts are internally connected in parallel, DO NOT use them for bi-wiring or bi-amping.

1.4 Adjustments

Don’t be too worried by the midrange and tweeter adjustment knobs on the back of the G6.1e. The G6.1e will sound great, straight out of the box, with these both set at the 12 o’clock position. As you play your system for the next hundred hours or so, the speakers will settle in.

Once you familiarize yourself with their performance, putting a little bit of additional effort in tuning the speakers properly into your system (which includes the room) will give you greater long-term enjoyment and benefits.

2 Complete Set-up Guide

2.1 Positioning

A good starting position for the G6.1e is about 18 inches (0.45m) into the room, as measured from the front wall (the wall you look at as you are seated listening to the speakers), to the back of the base of the speaker. Start with the speakers six feet apart with the tweeters placed closest together, and angled in (toed-in) towards the listener by about 5 degrees. You will want to sit eight to twelve feet (2.4 to 4.0 metres) away from the speakers (if you have the space). We will experiment with moving the speakers around later.

As these speakers are dipolar, they are really room-friendly and you are free to move the speakers closer to, or further away from the front and side walls. We do recommend, however, that you give the speakers a little bit of breathing space behind them, so don't push them up tight against the wall. If you do need to push then up tight against the wall, the speakers feature a rear tweeter defeat switch which may make them work better in your room.

If you have the speakers too close to the front wall, you will find that the image depth is not as good - the soundstage becomes a little two-dimensional. If you have the space to move the speakers away from the wall, do so. You will be rewarded with the deep, broad soundstage that this loudspeaker is capable of. You should be able to "see" the soundstage behind, as well as in front of, the loudspeakers. The sound stage will also extend outside the left and right sides of the speakers.

2.2 Source Input Connections

Connect the speaker outputs of your power amplifier to the **INPUTS** binding posts using a high-quality loudspeaker cable.

If you have an optional Genesis ServoSub, connect the subwoofer to the G6.1e using the **THRUPUT** binding posts. Because the subwoofer is a *high impedance* load, you do not need to use a beefy loudspeaker cable for this connection. An interconnect-type cable should be use which will optimise performance of the subwoofer.

Make sure that you have the correct polarity connected for both speakers – the plus(+), positive(+ve) or red terminal on the G6.1e should be connected to the plus, positive, or red terminal on your power amplifier. The minus(-), negative(-ve) or black terminal should be connected to the amplifier's minus(-), negative(-ve) or black output.

2.3 Loudspeaker Controls

The two knobs at the top of the plate on the back of the speaker tailor the mid- and high-frequency response of the G6.1e. They are subtle controls, but they can make a great difference in gaining that last bit of additional performance in tuning your speakers into the room that you are using them in. They can turn your system from very good to exceptional, so take the time to work through this process.

The top left knob marked TWEETER is a volume control for the front tweeter. Turning this control clockwise will increase the level of the tweeters. Use this control if you need a bit more treble, or to increase the apparent space of the soundstage. Too high a tweeter level, and you can feel that crashing cymbals are leaping out at you, and nylon stringed guitars sound steely. Start with this control at the 12 o'clock position. There is about a one dB range for this control.

The top right knob marked MIDRANGE is used to adjust the level of the midrange. Start at the 12 o'clock position. Turning the control anti-clockwise will make the midrange sound leaner, and turning it clockwise will make the midrange sound fuller. A fuller midrange can also can make the soundstage more forward. There is about a one and a half dB range for this control.

3 Tuning the system

Music is the best way to begin your set-up procedure. We suggest that video sources be used only after you have set-up the system to properly reproduce music. There is no “perfect” setting for the G6.1e loudspeaker. Every listening room is different, and we recommend that you take the time to carefully tune the system into the environment it is placed in.

Setting all the knobs at the “12 o’clock” position is “normal” and will be the position from which you can start tuning. With the controls in this position, it may not sound perfect, but your Genesis loudspeaker will sound great straight out of the box.

We suggest that you start with a single vocal with simple instrumental accompaniment because the sound of the human voice is more easily recognizable than many instruments and is a less complex sound to deal with. Use a good recording that you know has atmosphere and good midrange and bass content.

3.1 Imaging and Soundstage

If your vocal selection is a well-recorded audiophile CD or LP with good image information in the recording, the performer should appear to come from behind the loudspeakers and be at the appropriate height for a standing person. If it is not, there are several remedies that will address this shortfall.

If the vocal appears to be larger than life, you should first check the system volume. Is it a volume that would be appropriate for someone actually singing in your room? If there is too much volume the artist will appear too big and the opposite is true for too little volume. If the volume is set correctly and the image is still too big, place the speakers closer together and re-listen. Place the speakers no less than 5 feet apart. If the image is still too big, toe the speakers in a slight amount.

Conversely, if the image is too small, move the speakers apart. The speakers should be no more than eight feet apart. Repeat this process until you have it right. If the voice is too low in height, turn the MIDRANGE control up (turning the knob clockwise) and the image of the voice will move upward slightly. Turning the midrange control up also affects presence and may bring the image too far forward.

If you have the speakers 18 inches into the room, and you are not getting enough front to back depth (the singer not appearing behind the

speaker enough) pull the speakers away from the front wall a little bit at a time. If you do not have them pulled far enough away, you may not have enough front to back depth. However, slightly more than 1/3 of the way into the room is about as far as you want to go. Pulling them half-way into the middle of the room is unlikely to help.

Find the best compromise for your room, your tastes and your space requirements. If you are not getting proper focus on the voice, you may angle the left and right speaker up to about 15 to 20 degrees (toe-in) towards your listening position until you have a properly defined center image. If the speakers are too far apart, the mid-bass will decouple and you will lose the side image, and if they are too close together you will have too small a center stage.

When properly set up, very little sound should appear to come directly from the speaker. Instead, the sound stage should extend far beyond the left and right edge of the loudspeakers and they should have tremendous front to back depth. When the recording is close-miked (when the instrument or performer is very close to the recording microphone), the music may appear to come directly from the loudspeaker. This is normal. Typically, however, the sound should appear to be detached from the loudspeakers.

A simple rule of thumb to follow is that focus will be achieved by placing the speakers closer together or farther apart, and front to back depth can be adjusted by the distance from the rear wall. Further, as the system “breaks in”, the depth and width of the soundspace will increase and so will the “smoothness” of the sound.

3.2 Further adjustments

In some problematic rooms a resonance may develop at one or more frequencies, that is unnatural to the music. By moving the speakers closer to the front wall or farther from the front wall, the resonance may be reduced at the listener’s position. You may have to place the speakers asymmetrically in the room. Bass resonances are caused by speakers exciting room modes, and these are generally symmetrically distributed in the room.

There are no absolute hard and fast rules concerning problematic rooms, so do not be afraid to experiment with speaker placement to determine the best position of the speakers in your room.

4 The Refinement stage

After following the set-up guide above, you may not be completely satisfied with the results. We share with you here some of our observations in setting up these loudspeakers.

4.1 One Change at a Time

One rule of thumb you should always keep in mind. Make one change at a time! Do not, for instance, change position of the speakers and make an adjustment to the amplifier all at once. Make each of these changes separately and note the difference - by listening with each adjustment, then make the next change.

4.2 Defining the Soundstage

A common problem we find with many set-ups is a tendency to separate the speakers too far from each other. This gives an unnaturally wide soundstage between the two speakers, and creates problems beyond the unnatural width of the center stage. The key problem is a lack of soundstage information beyond the left and right sides of the speakers.

If you find that the sound is not spacious enough or you are not getting enough front to back depth, pull the speaker away from the front wall. This is typically preferable to separating the two speakers too far, and will almost always give you better depth and soundstage information. A word of caution though: if you move the speakers too far from the front wall you may lose the focus of the image.

4.3 Appropriate Mid-bass Balance

Another problem is a lack of mid-bass energy. In order for the appropriate amount of mid-bass energy to be present, the speakers should be close enough together to achieve proper "coupling" of the midrange and the mid-bass couplers. Coupling is desirable in the lower frequencies from the mid-bass on down. This simply means that the left and right drivers "work together" as opposed to working separately.

If you find there isn't enough deep bass, you may need an optional Genesis ServoSub. The G6.1e has good bass extension down to 48Hz, and rolls off gently below that. A ServoSub will extend this bass response down to 18Hz.

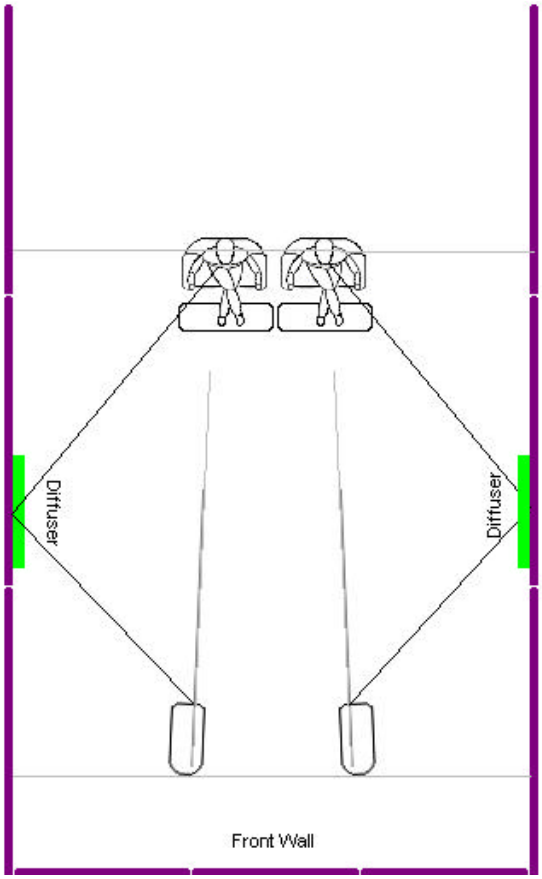
In order to achieve what the speaker is capable of we suggest you focus your efforts on a proper balance of soundstage elements that includes information beyond the left and right sides of the speakers, front to back

depth well behind the speaker, excellent focus of instruments and voices with proper vertical information and mid bass fill.

A Genesis loudspeaker system correctly set up, can and should provide a soundstage that is wall to wall and with pinpoint focus, the speakers disappearing completely on a recording containing such information.

4.4 Room Treatment

No room is perfect. To optimize your sonic presentation it may be helpful to treat your room. Here are some guidelines:



Front walls. This loudspeaker is a dipole and therefore there is sound coming from both the front and the back of the speaker. How the front wall (the wall you face while listening) is treated or not treated is important. Generally speaking, the Genesis loudspeakers prefer a live (hard reflective) front wall to a dead (soft absorbent) front wall.

By these terms we mean the amount of reflection of sound. A typical wall of glass, brick, cement or drywall material is a reflective surface. A heavily curtained or sound-proofed wall would be considered a "dead wall" or a non-reflective wall. A normal thin curtain across a window causes only a small amount of absorption.

Sidewalls. Because the speaker is a dipole it is less sensitive to the sidewalls. However, as a rule of thumb it is a good idea to keep the speaker as far away from the sidewalls as is practical. In some rooms, it may be helpful to add some damping material or diffuser panels to the point of first reflection. This is a point on the sidewalls between the listener and the loudspeaker. It is where the sound from the loudspeaker first hits the sidewall, then bounces to the listener. This reflection is undesirable because it is slightly delayed from the original sound. This point on the sidewall can be easily determined with the help of a second person and a mirror.

Sitting in your listening position, have an assistant hold a mirror up on the sidewall. Move the mirror until you can see the tweeter. This is the point of first reflection. A diffuser (see your audio dealer), an

absorptive material or even a piece of furniture can help break up this point of first reflection.

Rear wall. In many cases it will be unnecessary to do anything with the wall behind your listening position. However, you may want to experiment with diffusers or absorbers behind you for best sound. Absorption behind the listener is usually beneficial.

4.5 Mastering the Refinements of the system

Fine tuning an audio system is an art that will take time and patience. It can be one of the more rewarding learning experiences you will have in the pursuit of music and its enjoyment.

One of the best pieces of advice we can offer is that you take advantage of your ear's ability to identify similarities in sound. This ability is useful in fine-tuning your system because, if every recording you listen to has a similarity of sound (too much or too little of a certain frequency for instance), then you can be fairly certain that you have yet to perfect your set-up. Keep at it, and remember to enjoy your music as you work on perfecting your set-up.

If you have any questions, feel free to contact us at Genesis. Our website is the first place that you can look to for more information, but you are welcome to either send us an email, or just give us a call!

5 The Genesis 6.1e Technology

5.1 Dipolar Configuration

What a lot of people don't realize is that the room is as big (if not bigger), a part of their music system as is the loudspeakers. At Genesis, we strive to get the loudspeaker and the room to work well together and hence, design loudspeakers that interact with the room, and have enough of adjustment to make them work with most rooms in the world.

All rooms have floors, ceilings and sidewalls that distort sound because of lateral, early-arriving reflections. We aim to suppress undesirable contribution by reflected sound from these four surfaces (which is why a lot of people put sound absorbers or diffusers at the first reflection point of the room). In order to do that with a majority of rooms, we make our loudspeakers dipolar.

Dipoles radiate the same, but out-of-phase, waveform from the front and rear in "push/pull" fashion. Thus, the sound waves from the front and back of the speakers cancel out as they radiate from the sides and tops of the speakers; which means that there is minimum radiation of sound to the sidewalls of the room.

The G6.1e also uses the wall behind the speaker to give more depth to the soundstage and "air" to the speaker without detail robbing room reflections from the sidewalls. Hence, it has the advantages of omni-directional speakers, without the disadvantages.

With fewer spurious reflections to confuse your hearing, the program source emerges more clearly. Imaging is stable, sharply focused, deeper, and spacious. Transients are clearer, and sharper.

5.2 The Transducers

The transducers in the 3-way G6.1e are all proprietary Genesis-designed drivers manufactured to our exacting standards.

5.2.1 The Genesis Ribbon Tweeter

Reviewers in the audiophile press have often remarked that the Genesis circular ribbon tweeter is the world's best. It is a one inch circular planar ribbon design crafted from an extremely thin membrane of Kapton with a photo-etched aluminium "voice coil" that is a mere 0.0005 inch thick. The entire radiating structure has less mass than the air in front of it! That is why it will reproduce accurately, frequencies beyond 35k Hz.

The result of this design is a driver that has a rapid and uniform response to high frequencies and has the speed of the best

ribbon/electrostatic designs, without the high distortion and poor dispersion that is typically associated with them.

The G6.1e uses two of these tweeters per channel. One front-firing, and the other rear-firing wired to the crossover out of phase to the front tweeters, creating a dipole.

5.2.2 Titanium Midrange

We sometimes say that the midrange is a window into the mind of a composer or a singer. And indeed, the midrange is where the “magic” is in a well-recorded musical event.

The G6.1e uses a Genesis-designed proprietary 5 inch titanium coned midrange to cover this critical frequency spectrum. Manufactured out of one of the lightest and stiffest materials known, this low mass cone driver is one of the best midrange transducers ever made with nearly instantaneous transient response, enabling the G6.1e to sound lifelike and effortless.

5.2.3 Mid-Bass Couplers

In order to create and deliver the spectacular dynamics and concert-level listening that is available in all Genesis 6-series loudspeakers, the G6.1e incorporates two front-firing 6.5 inch metal cone mid-bass couplers as woofers.

Made of aluminum, this metal cone is extremely light and stiff. The driver is hence capable of handling the huge dynamic range demands of the system while maintaining extremely low coloration and excellent transient response.

5.3 Crossover

At Genesis, we believe that the crossover is the brain of the loudspeaker. In order to manage and maximize the performance of the extensive complement of transducers used in Genesis loudspeakers, we spend more money on the crossover than many other manufacturers put in their entire speaker.

Each crossover is designed by computer modelling plus years of knowledge and experience. The inductors are made for Genesis with OFC copper windings. The capacitors used are also custom made for Genesis, using high-quality polypropylene-film and tin-foil. The crossover of each G6.1e weighs over five pounds (2.2kg)!

More importantly, the crossovers are designed with many, many hours of music listening, and constant refining, tuning and tweaking of the

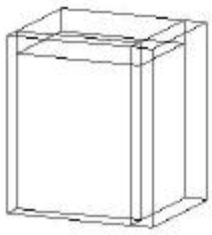
circuit. Out of this comes the “magic” that is a Genesis designed loudspeaker system. For example, by going the more expensive route of using several smaller capacitors in parallel instead of a single big one, transparency and musicality were improved.

5.4 Vibration-free Cabinet

The cabinet was designed for aesthetics, but with an obsession to sonic quality, vibration control, structural strength, and rigidity.

The design had to be bounced around our Chief Scientist, a structural furniture engineer, an interior designer, an architect, and our CEO who supplied the final “eye” to get the angles right on the cabinets. Consultants on veneers, glues, and a German consultant on CNC machining were used in its development.

Joinery on G6.1e



Square Box

The cabinet required incredible precision in manufacturing as the cabinet is made of complex curves and subtle angles that need to be joined seamlessly and perfectly.

For example, there is not a single right-angled joint in the entire construction! In order to achieve the optical illusion to make the cabinet look slimmer than it actually is, the sides of the cabinet are sloped 1degree top to bottom, and also angled 3degrees front to back, and leans backwards by 5degrees. Joints and braces had to be cut *precisely* at 1degree, 3degree, and 5degree angles.

The result is that the cabinet is not only beautiful, but exceedingly well damped and vibration-free – contributing to a loudspeaker that is extremely low in coloration. It uses subtle angles, complex curves, and contrasting colors to transform a loudspeaker into a beautiful piece of sculpture or musical instrument.

The structural principle used in the construction is this: when any loudspeaker is operating, ALL the components of the speaker are set into vibration to a larger or smaller extent. The goal of the cabinet is to reduce this vibration to a minimum, distribute it, and damp it so that there is no energy storage in the cabinet itself. This then eliminates the boxy coloration that is evident in many loudspeakers.

In some parts of the cabinet where vibration would have been the greatest, two inches (52mm) of multi-layer bonded MDF was used to provide the damping, structural integrity, as well as a rigid platform for the drivers to be located. In other parts of the cabinet, extensive bracing was carefully incorporated using 25mm slabs of MDF to eliminate cabinet flex and panel resonance.

Incidentally, MDF was chosen as the material of choice for its damping properties and its consistency in hardness, density and rigidity. It would actually have been cheaper and easier to make the cabinet of solid wood, but that would have been a compromise.

Genesis locates the mid-bass, midrange and high frequency transducers on a gently sloping front. Constructed of two layers of 25mm MDF, this provides a damped, vibration-free structure to rigidly locate these critical elements. This locates the transducers in the perfect environment for the best imaging and soundstaging, and with the lowest distortion.

Extensive bracing is also used to even further reduce vibrations. The bracing is also directly coupled to the cabinet walls using tongue and groove construction – the braces are not just glued in!

The sides of the cabinet also gently slope to the vertical. Like a pyramid, the shape of the cabinet makes it exceptionally stable. This stability ensures that the cabinet is well-grounded (like a sumo wrestler ☺!) no matter what surface you put it on. The shape of the cabinet effectively puts the center of gravity of the cabinet over the heavy transformer in the base.

The results of this obsession in cabinet design and construction is low coloration, stable imaging, and a wide soundstage. It is also something you can feel! By playing a loud piece of music, and running your fingertips on the surface of the cabinet, you will feel very few places (if any) where there is vibration. On the front baffle, there are no vibrations at all around the critical region that is the mounting environment for the tweeter and mid-range.

Try doing that on other loudspeakers which do not have as well constructed cabinets, and you'll understand why we are so proud of our design and manufacturing.

6 Specifications

- Frequency Response: 48Hz to 36kHz, +/- 3dB
- Sensitivity: 89 dB 1 watt 1 meter
- Min/Max Power (Tube): 75/500 watts per side
- Min/Max Power (Solid State): 100/1000 watts per side
- High Level Input Impedance: 4 ohms (Nominal)
- HF Transducers: Two Genesis 1” Circular Ribbon Tweeters (front & rear)
- Midrange Transducers: One Genesis 5 “ titanium cone midrange
- Bass Transducers: Two Genesis 6.5” aluminium cone
- Controls: Upper Midrange Contour, Tweeter level
- Inputs: High-level with 5-way binding posts
- Outputs: High-level with 5-way binding posts
- Dimensions: H 41 ¾ x W 10 ¼” x D 14”
- Weight: 79 lbs (36kg) per side