



Technically Speaking

A Glossary of SpeakerCraft Terms

AcoustaCell: Exclusive SpeakerCraft wall dampening system. Creates a Precision Sonic Chamber helping in the reduction of drywall resonance, Helmholtz resonance, and aids in the reduction of sound transfer to adjacent rooms.

AIM Technology: SpeakerCraft's patented technology which allows for you to pivot the woofer and the tweeter assembly towards the listening area while the speaker remains hidden behind a flush mounted grille, bringing the sound directly to the listening area.

Accu-Grille: Dramatically reduces unwanted acoustic reflections. This is done by having a dampening material connected to the speaker grille thus helping to direct the waves outward and not letting them bounce off of the speaker baffle.

Baffle: The plastic structure that holds the drivers of an in-wall or in-ceiling speaker.

Bass Augmentation System (BAS): the BAS enhances the low-frequency response of any in-ceiling or in-wall speaker system. The BAS speakers have built in stereo crossovers allowing you to connect your other speakers to the BAS, which will in turn pick up the lower frequencies allowing your other speakers to handle the higher frequencies.

Co-axial tweeter mount: The traditional method for mounting a tweeter in front of a woofer. The tweeter is mounted on a structure at the center of the woofer and stands alone.

Custom Round Series (CRS): Great whole home in ceiling architectural speaker. The majority of this series uses our WavePlane Technology allowing for greater dispersion and better clarity.

Dog-legs: Common term used for the mounting feet on SpeakerCraft architectural speakers. When tightened, they swing into place and secure the speaker flange against the drywall. Superior way to mount speakers vs. the "bar" method.

Dual Tweeter (DT): SpeakerCraft DT speakers play in stereo from a single speaker. Ideal for locations where it is impractical to have a stereo pair of speakers, i.e. closet, bathroom, small bedroom.

Fast Connect: Terminals featured on SpeakerCraft volume controls with "fc" in the description. Fast Connect terminals are installed on speaker cables at the job site and simply plug into the volume control after construction is complete. Speeds up installation.

Flange: The outside edge of the speaker, visible in all SC architectural models besides the Profile Series.

LCR (Left, Center, Right): Any speaker designed to be used as a left channel, center channel or right channel in a home theater application.



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Mounting feet: See "Dog-Legs".

MT: SpeakerCraft's Mirror Image Technology series of speakers. The speakers form a matched pair of two unique speakers with offset tweeters/midrange, one for left and one for right. Used on many high-end cabinet speakers, mirror imaging is superior to the competition because it improves sound performance.

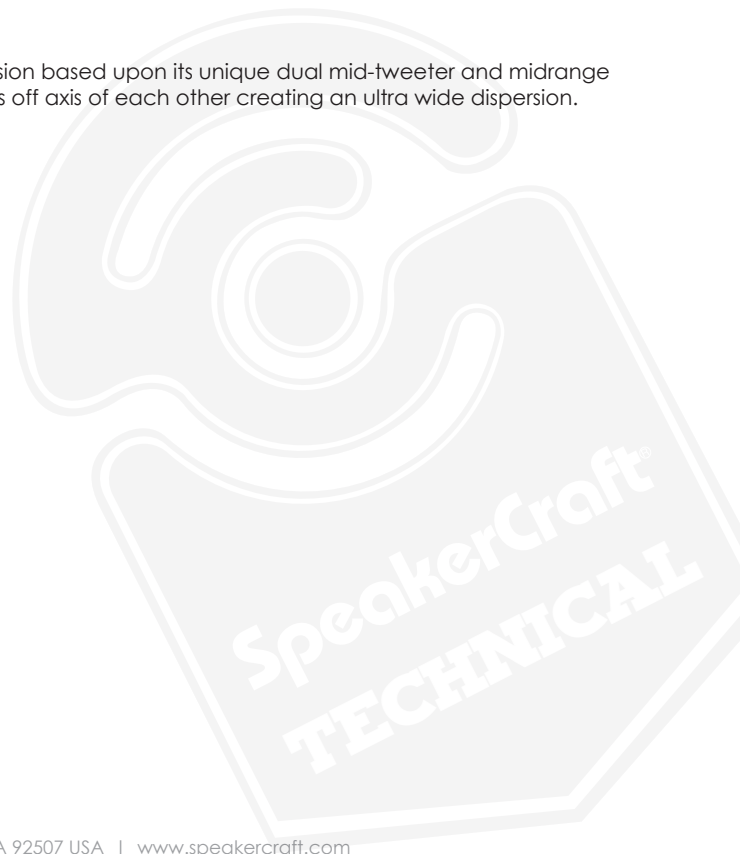
Sound Enclosures: Metal boxes manufactured to reduce the sound transfer between floors and walls and to meet requirements for Fire Rating UL Standard ASTM E119.

SpeakerCraft Pro: SpeakerCraft line of commercial speakers. All SpeakerCraft Pro Commercial series models feature a rotary switch on the baffle and behind the grille allowing the installer to select multiple taps for 70/100 operation or to bypass the transformer entirely and use the speakers in 8 ohm mode.

Uni-Pivot: The unique structure featured in 8"MT series that allows the tweeter and midrange to pivot and rotate to a desired location.

WavePlane Technology: Only SpeakerCraft offers the exclusive WavePlane tweeter baffle which is located just behind the tweeter of most in ceiling SpeakerCraft speakers. The WavePlane creates better high frequency dispersion by allowing the tweeter to reflect off a solid surface instead of the vibrating woofer. Ordinary speakers only sound their best when you are directly underneath them. This is because high frequencies are directional. The WavePlane assures optimal high frequency dispersion throughout the listening area.

Wide Dispersion: Series of AIM speakers which provide an ultra wide dispersion based upon its unique dual mid-tweeter and midrange drivers mounted directly over an 8" woofer. The drivers are mounted 70 degrees off axis of each other creating an ultra wide dispersion.





Timbre Matching

TIMBRE

According to Merriam Webster, the definition of Timbre is: the quality given to a sound by its overtones: as

- a: the resonance by which the ear recognizes and identifies a voiced speech sound
- b: the quality of tone distinctive of a particular singing voice or musical instrument

Sonic Fingerprint

Every loudspeaker has its own unique sound, which is determined by the design, the types of materials used and the engineer's personal preferences. The reason a person picks one speaker over another is because of these differences. At SpeakerCraft we have many different series of loudspeakers, each with its own specific purpose. However we have designed the individual models in each series to match each other's sonic fingerprint. The result is the ability for you to choose speakers from different series and maintain a uniform sound throughout a home theater or from room-to-room in a whole-house system.

In a home theater this is critical as the original sound tracks are mixed on a system with five identical speakers. This is why it is recommended to use five, six or seven identical speakers in a home theater for optimum response. However, in a home the aesthetics play a very important role. For example, in-wall speakers may be fine for the front, left, center and right channels but in the rear the homeowner often prefers in-ceiling speakers that are less physically obtrusive. In this case you simply need to select the same model from two different series. For example, if you have selected the AIM LCR Three for the front channels you could match them to a pair of AIM8 Three's for the rear speakers in the ceiling. Now the "timbre" or sonic fingerprint is the same in all five speakers. This holds true throughout the SpeakerCraft line.

Matched by Design

In designing a speaker the materials used play a major role in the resulting performance. With the cones of woofers and, to a smaller degree, the domes of tweeters the idea is to use the lightest and strongest materials available. These materials are, in large part, the reason for the difference in price in the various models. At SpeakerCraft it is easy to see the differences in the various models and since the differences are the same from series to series it is easy to mix and match speakers across the line.

Models and Materials

Below is an example of the different materials used for woofers and tweeters of four different models. Although the examples below are from the AIM8 series, these same materials are used in every series by the corresponding models.

AIM8 One



Woofer: Polypropylene
Tweeter: Silk

AIM8 Two



Woofer: Glass Fiber
Tweeter: Silk

AIM8 Three



Woofer: Aluminum
Tweeter: Aluminum

AIM8 Five



Woofer: Kevlar®
Tweeter: Aluminum/Magnesium

Differences in Materials

As you move up the ladder from a 1 to a 5, you will notice that the higher the number the more expensive the speaker. Why is that? The reason is that each material gets lighter, stronger and faster, thus being able to handle more power with less work providing the greatest reproduction possible at both low and high volumes.



Profile™



Profile™ with AIM™ Technology

It has long been the goal of SpeakerCraft to manufacture the best sounding and most aesthetically pleasing loudspeakers. In fact, the reason that we are the pioneers of an industry is because of our acute attention to detail and manufacturing the products that our customers demand, thus Profile™ was born.

The Sound

SpeakerCraft has been producing loudspeakers for the past three decades that allow the listener to be immersed in sound and substance. The Profile series continues this tradition with realism and dynamics that deliver every nuance that the original artists intended. This is accomplished by a combination of our most successful and innovative technologies.

1 WavePlane™ Tweeter Baffle

Unlike box speakers where the tweeter and the main driver can be separated into two distinct areas, architectural speakers typically share the space due to the limits on size. Traditional architectural speakers position the tweeter on a single post thus causing diffraction and other interferences. SpeakerCraft has improved performance by creating the WavePlane™ Tweeter Baffle. The WavePlane™ Tweeter Baffle is a series of concentric circular rings that spread across the surface of the speaker onto which the tweeter is mounted.

How this benefits me: The WavePlane stops high frequencies from wrapping around the tweeter and bouncing off the vibrating woofer cone behind it. This improves the dispersion of the sound and increases the clarity and definition of the speaker while creating optimal high-frequency dispersion throughout the listening area.

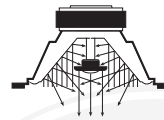


2 AIM™ pivoting technology

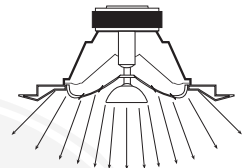
In most installations architectural speakers will be positioned a good distance from the listener and will commonly be off axis. To combat this issue we implemented our AIM™ pivoting technology. The AIM™ pivoting technology allows the woofer of the speaker to independently pivot and can be rotated up to 17 degrees in any direction, thus allowing the sound to be focused on the listening area or reflected off adjacent surfaces.

How this benefits me: Creating a proper sonic image means controlling the direction of the sound. This is achieved in a cabinet speaker by repositioning it inwards with relationship to the listener. A ceiling speaker is installed in a fixed position and often a position that is less than ideal. AIM™ technology allows the installer to focus the sound at the listening area and create the optimum sonic experience for the homeowner.

Ordinary Speaker



AIM with WavePlane



3 Independently pivoting tweeters

High frequencies are highly directional sounds and need to be aimed directly at the listening area to have their full effect. We have done this by incorporating a pivoting tweeter. This tweeter can pivot 30 degrees in any direction allowing high frequencies to be aimed independently of the woofer.

How this benefits me: This creates greater flexibility and offers even more adjustment options when setting up a system.

4 Front mounted EQ adjustments

No house or home theater environment is perfect, but to make up for these imperfections we have placed Bass and/or treble adjustments. These adjustments are easily accessible behind the grille on the front of the loudspeaker, and allow for +/- 3dB control.

How this benefits me: The sound of a speaker is directly affected by its placement in a specific room. Since speakers are rarely placed the same distance from walls, ceilings, furniture or draperies each speaker may need subtle adjustments to insure uniform output. These front-mounted switches allow for this very adjustment. (Refer to Technically Speaking document)



Profile™



Accu-Grille anti-reflection technology

The higher end ceiling speakers feature this high density foam ring that rests invisibly behind the grille.

How this benefits me: This reduces reflections off the interior surfaces of the loudspeaker baffle and improves the overall sound of the speaker by reducing distortion and smoothing out the frequency response.

Timbre-matched inter-series compatibility

Each SpeakerCraft model has a specific sonic signature and can be matched to the same model number in other series.

How this benefits me: When designing a system you may want to use a rectangular, in-wall speaker in the wall next to the video display but a round, in-ceiling speaker for the rear channels. Since a home theater sound system should ideally have the same speaker in all 5 or 7 positions, timbre matching allows you to use speakers from different series that all have an identical tonal balance resulting in the optimum listening experience for the customer. (Refer to Technically Speaking document)

THE LOOK

All of this impressive sonic performance is only valuable if the loudspeaker is attractive enough to live in the space where the music will be enjoyed. Having created and manufactured the first in-wall speakers for residential applications, we understand how important the speaker's appearance is to the homeowner. Once again, the Profile series delivers.

Profile™ Grille

The most eye-catching feature of our Profile line is the Profile Grille which uses rare earth magnets around the edge of the flange to create a flawless look. There's no bezel or visible flange and all you see is the grille.

How this benefits me: The Profile Grille makes painting simple, with no flange to paint, just grille. Also, no more special tools are needed to remove the grille.



The Installation

Non Visible Flange

Aesthetics is and will always be an important aspect in the psyche of a buyer, but many times a flawless look may be attained, but the practicality of the product is lost. With Profile we have managed to blend both aesthetics and practicality into one product.

How this benefits me: Unlike most manufacturers we have kept the flange, hidden behind the grille, to aid in the installation processing giving flexibility during installation. This speaker installs with the same ease of all AIM Products, but has a grille that simply snaps into place, no more fighting with an over/under tightened speaker.

Paintable Grille

One of the leading selling points of architectural speakers is that the speaker can be painted to blend into the environment. With Profile this tradition continues, but we make it much easier.

How this benefits me: Because the only aspect of the speaker that is visible is the grille, this product does not require the painting of the flange, but only the grille itself. Another benefit is if a speaker needs to be replaced, and the speaker grille was painted, the installer and customer can save time and money by reusing the already painted grille. Painting the grille of the Profile Speaker has never been easier. (Please refer to painting instructions)



The Story Behind SpeakerCraft

Our Beginnings

In 1976 two recent college graduates decided to open a stereo store in Riverside, California. Both held technical degrees, but neither in the area of acoustics. They quickly learned how to apply science and the art of design to manufacture and sell their own loudspeakers to a loyal customer base. This was the beginning of a continuous cycle of engineering, innovation and customer satisfaction.

Because of the product innovation and manufacturing expertise, SpeakerCraft was soon able to take advantage of opportunities far beyond the retail counter of its small store. The pivotal innovation was the creation of a quality loudspeaker that could be mounted directly into a wall. The invention of the in-wall speaker led to a key business relationship with Fleetwood Industries; manufacturing in wall speakers for Fleetwood's motor homes. In the early 80's SpeakerCraft soon became the development and manufacturing partner for almost every notable American loudspeaker company: JBL, Polk, Bang & Olufsen, Niles Audio, amongst others. Using their new facilities in Riverside, and an expanded workforce, they engineered and produced thousands of high quality speaker products throughout the early 90's.

The small stereo store that they founded had flourished alongside the manufacturing part of the business. The store was an innovator in the installation and design of whole house audio and video systems, creating business models and installation techniques long before the industry's first custom installation trade group CEDIA was founded. In 1994 SpeakerCraft released a series of custom installed loudspeakers under their own brand and the result of that effort has been nothing short of incredible. The key to their success was in the selection of an enthusiastic young man who had cut his teeth in the business on the retail floor and spent countless hours selling and installing audio systems. As the National Sales Manager, Jeremy Burkhardt not only forged alliances with the top dealers in the country but he was also a major force in new product development. Through his incredible energy and determination he set new standards in the industry from pivoting woofers to a Lifetime Warranty.



Jeremy Burkhardt
CEO



Jeff Francisco
VP of Product Development

Jeremy has surrounded himself with a team of industry professionals. One such professional is the man who first helped bring Jeremy into SpeakerCraft, Jeff Francisco, SpeakerCraft's VP of Product Development. They have worked together for more than 20 years combining their expertise to help shape an industry. These critical players are responsible for the dramatic growth, industry domination and superior technical reputation that are all part of the SpeakerCraft legend.

Today, under Mr. Burkhardt's leadership, the company has become the world leader in custom installed loudspeakers and electronics. From our humble beginnings in 1976 the company has been developing products that allow you to enjoy music and movies throughout the home with incredible fidelity and realism, but our goal remains the same; to constantly engineer the best audio and electronics while providing world class customer service.

A History Of Firsts

SpeakerCraft's innovation is second to none. By listening carefully to the feedback from countless dealers and end users in the field, the company has responded with unique solutions offering the broadest line of architectural and speaker products on the market.

A few of the landmark innovations include:

- Pioneered the first in-wall loudspeaker
- The first speaker with a pivoting tweeter
- AIM™ technology featuring the first fully pivoting baffle to allow for the entire speaker to be aimed at the listening area
- The first dual-tweeter configuration that plays both channels from a single speaker, simply put "A Stereo Speaker"
- The first dog-leg speaker mounting system
- MODE, the first system to send iPod® metadata throughout the home
- First lifetime warranty on speaker products.

SpeakerCraft continues to innovate and develop new products that set the standard for audio/video performance in the custom installation industry.



The Story Behind SpeakerCraft

Testimonials

"I would give the SpeakerCraft AIM series an A-plus rating! It positively changed the way we were able to do business. It was the theater solution we were waiting for, for several years. It gave us the opportunity to give the front wall back to the builder and designer without losing the audio quality from the front channel. An entirely aim-able speaker in a flushmount enclosure was pure genius. It helped us sell thousands of additional speakers." -**Greg Simmons, VP Eagle Sentry, Las Vegas, NV**

"SpeakerCraft treats their dealers as partners, not customers. SpeakerCraft AIM Cinema has been a great product line for us. It provides our clients superior performance in almost any type of room without the need for big box speakers. We use AIM Cinema for locations where the speakers must sound above average and be off the floor or out of the ceiling. We like to use them in theaters with bedrooms directly above (staying out of the ceiling is a simple way to help keep the sound from waking up a sleeping family member). Having the sound come at you from behind a perforated screen is the perfect scenario. And it gives us so much flexibility; we can tackle any room properly. It has really helped us close deals." -**Steve Ambrogio, At Home Theater Systems, Carlsbad, California**

"We use SpeakerCraft partly for the worldwide support and lifetime warranty. Although actually we've never had to replace one – no, wait, we once had one come back to us with fish guts all through the speaker. And the local SpeakerCraft guy replaced it straight away." -**Stephan Goodhue, director, Liquid Automation, Auckland, New Zealand**, on why SpeakerCraft is his top choice for marine and yacht installations.

"SpeakerCraft's TIME speakers motor down from the ceiling. We just love the product. Instead of a speaker with internal pivoting baffle, the whole speaker recesses and rotates. One button operation activates the SpeakerCraft TIME (which stand for Theater in Motion Experience) to drop down silently, in concert with the projector and screen." -**Todd DeAngelis, founder and president of Signals AV**, an integration firm based in Los Angeles, California

