





## Why Acoustic Energy?

- A company with a 35 year old pedigree.
- Born in the studio with the famous AE1 loudspeaker.
- Our sound characteristics offer a neutral balance and the ability to play loud cleanly.
- We design products to match or exceed the performance and finish of the best European-made speakers selling twice the price of ours.
- Comprehensive, streamlined Good, Better, Best product ranges that makes sense to consumers and offer a clear upgrade path.

## General Philosophy

Acoustic Energy speakers are designed to be invisible! ...allowing the discerning listener to enjoy the music at its very best. This may sound like marketing hyperbole but is practically achieved by minimising distortions, resonances and colourations as much as possible from product inception through to final production. Engineering capability increases through the ranges although all models are created from scratch using the same methodologies – and most importantly, hundreds of hours of listening. It's easy to make a speaker which measures well in an anechoic chamber. In the real world however, rooms have floors, walls and ceilings to reflect from made of various materials and result in much hi-fi sounding harsh, sibilant and aggressive. We aim to design for the real world.

All AE speakers feature drive unit materials which match as closely as possible (paper/fabric, all aluminium or all carbon fibre depending on range) – this is to achieve a tonal match, something many companies don't do for some reason (nearly impossible to measure) but vital in producing cohesive sound. An acoustic guitar can have nylon or steel strings, play the same notes with the same guitarist – they won't sound the same!

All AE drive units are bespoke, unique designs including our tweeters housed in custom waveguides to mimic the dispersion of the bass drivers in-room, again for a cohesive tonal balance wherever your listening position.

# Quick Comparison Guide

## 100 Series

- Paper coned mid / bass drivers with steel chassis
- 25mm voice coil
- Soft dome tweeter
- Vinyl finished 15mm HDF cabinets



## 300 Series

- Paper / Coconut husk coned mid / bass drivers with steel chassis
- 29mm voice coil
- Soft dome tweeter
- Walnut or 'silk-touch' matte black or white 18mm RSC cabinets with damped bracing



## 500 Series

- Carbon fibre coned mid / bass drivers with cast aluminium chassis
- 35mm voice coils
- Carbon fibre dome tweeter
- Piano gloss or real wood veneer finished 18mm cabinets using our proprietary RSC material





# 100 Series

**Q:** Why use fabric materials for both high and low frequency drivers?

**A:** We always prefer to match the materials and tonal qualities of our tweeters and woofers. This means our paper cone woofers are matched with fabric dome tweeters, maintaining cohesive sonic characteristics across the frequency band.

**Q:** Why use a Wide Dispersion Technology (WDT) Waveguide on the tweeter?

**A:** All AE tweeters feature our bespoke Wide Dispersion Technology (WDT) Waveguides to match directivity characteristics of the tweeter to the woofer through the critical crossover band, allowing tighter and more seamless integration. We've also taken design cues from our 500 Series and pushed the high and low frequency drivers as close together as physically possible thanks to a cutaway trim. At very high frequencies the waveguide creates wider dispersion from the tweeter, helping to eliminate hotspots in the output. The result means optimal sound quality can be achieved throughout the listening environment and not just condensed into one central "sweet spot".

**Q:** Why use HDF material for the cabinets?

**A:** AE's philosophy on cabinet construction is to prohibit unwanted resonances from contributing to the sound. The basic rule of acoustic insulation being that mass suppresses sound, so even our entry-level 100 Series speakers feature heavy High-Density Fibreboard (HDF) cabinets - feeling weighty compared to most similarly priced competition. Unheard of at this price point, the HDF cabinet construction allows thinner cabinet walls with no loss in mass or stiffness - The result is a small 15% increase in cabinet size but a 30% increase in internal volume gained over the previous 100 Series, meaning larger internal volume providing a deeper bass response for minimal external size increase.

**Q:** Why use a rear firing slot port?

**A:** We use a slot shaped duct port across all ranges for its low turbulence (and associated noise), ability to take high sound pressure levels and a wide tuning range. A more typical circular port tends to be strong at one frequency and quite noisy, the slot works more gently over a wider range, enabling rear positioning with less interference in room positioning.



## 300 Series

**Q:** Why use a paper / coconut husk cone for the mid/bass drivers?

**A:** The newly-developed paper/coconut husk bass-mid drivers are designed for a smooth, natural response. The all-new mid-woofer delivers a warm, natural sound with crystal clarity and dynamic detail. Reinforced with coconut fibers, the cone offers impressive stiffness and reduced breakup modes. The motor structure includes an extended copper pole shield to lower midrange distortion, while a non-conducting voice coil former guarantees impressive bass and dynamic range.

**Q:** Why choose a soft dome tweeter over aluminium or carbon fibre?

**A:** The 300 Series features a new soft dome tweeter developed from the Corinium project. This tweeter offers exceptional speed, clarity, and low distortion, perfectly matched with our new mid-woofer. Enhanced with the latest WDT waveguide, it ensures low baffle diffraction at crossover frequencies and a wide listening sweet spot at higher frequencies, delivering an open, delicate, and natural treble.

**Q:** What's special about the cabinet construction?

**A:** The new 300 Series benefits from the same advanced RSC™ cabinets found on our flagship Corinium and range topping 500 Series speakers. This composite material significantly reduces cabinet radiation compared to traditional MDF or Plywood construction, allowing the drive units to perform without interference.

**Q:** What's special about the cabinet finishing?

**A:** The slimmed-down cabinet is now finished in a modern, 'silk-touch' matte white or black material, a shift from high gloss finishes. With color-coded trims, grilles, and aluminium feet on the floor-standing models, the new 300 Series is more stylish and elegant.





## 500 Series

**Q:** Why use carbon fibre material for both tweeter and mid/bass driver units?

**A:** All models in our flagship 500 Series feature our newly developed carbon fibre tweeter and mid/bass driver, designed to match the pistonic power and accuracy of our legendary ceramic aluminium drivers but with improved self-damping for a smoother, more transparent and refined sound.

**Q:** What are the benefits of using carbon as a material for tweeter?

**A:** The new 25mm carbon fibre tweeter dome is lighter and more damped than typical hard dome materials, providing a lightning fast and accurate sound with optimum neutrality. Our extremely inert, cast aluminium WDT (Wide Dispersion Technology™) waveguide surrounding the tweeter ensures sweet, clear and natural vocals, whilst positioning close to the mid/bass driver improves dispersion and soundstage.

**Q:** What are the benefits of using carbon as a material for mid-bass drivers?

**A:** The new 125mm mid/bass drivers have been designed with oversized 35mm voice coils for low thermal compression and a highly dynamic yet controlled bass response. The woofers also have an optimised motor suspension system for maximum linearity and lowest distortion for mid-range definition, whilst the lightweight nature of the cone material increases transient speed and clarity.

**Q:** How do the cabinets reduce resonance?

**A:** These unique high and low frequency drivers are housed in our new Resonance Suppression Composite (RSC) cabinets evolved from the prestigious Reference Series and feature the same constrained layer composite material to greatly reduce cabinet acoustic radiation. They're finished in high gloss Piano Black, White and American Walnut real wood veneer finishes. Solid aluminium bars are also supplied on the floor-standing models to provide optimum rigidity, stability and room interaction.



# AE1 Active

**Q:** Why create an active version of the legendary AE1 loudspeaker?

**A:** The increasing number of products with integrated pre-amplifiers mean that many customers are searching for an equally convenient speaker to connect them to. Derived from the original, iconic passive monitor, this active version of the AE1 is designed for direct connection with audiophile DAC/ Preamps and Hi-Res streamers to deliver this convenience without trading performance.

**Q:** What characteristics have been carried over from the original version?

**A:** The new Active model offers all the musical insight and detail that has made the AE1 the audiophile's small speaker of choice for 30 years. Key to this success is its unique pure piston ceramic aluminium cone technology. Now in its fifth generation, this 125mm ceramic hard-anodised spun aluminium cone offers exceptional stiffness at low weight. This negates the cone flex and break-up nodes at frequencies typical of paper and plastic cone designs. The AE1 Active has all the refinement and impact you would expect from the original AE1 housed within a self-powered, fully active package.

**Q:** What's special about the new tweeter?

**A:** The tweeter is an all-new Acoustic Energy designed 27mm metal dome unit designed to work in harmony with our Wide Dispersion Technology (WDT) waveguide. The result is perfect integration with the mid/bass driver, with extremely wide and spacious imaging.

**Q:** Why use analogue amplification?

**A:** Electronically, the AE1 Active is proudly an all-analogue design focused on performance without compromise. Fully bi-amped with two pair-matched, high-performance 50Watt class A/B amplifiers per speaker, the design offers unrivalled amplifier speaker integration and class leading dynamics. With a bandwidth from 40Hz to 25kHz, efficiency of 104dB for 1Vrms, and maximum SPL of 115dB, no other small speaker gets close to the AE1 Active's performance. While the design team experimented with wireless inputs, switch mode power supplies, Class D amplification and DSP, none delivered the audio performance befitting of a loudspeaker wearing the legendary AE1 badge.

**Q:** What connections and controls are featured?

**A:** The AE1 Active includes wired analogue inputs, both balanced XLR and standard RCA. Each speaker features a high-quality analogue volume knob for systems without level control on the source component. The design also offers the ability for accurate tuning to the listening room and placement thanks to variable +/- 2dB trim controls for bass and treble response. Each speaker connects to a mains power supply using an IEC connector.

**Q:** How's the cabinet constructed?

**A:** Externally, the AE1 Active gets a wholly re-designed cabinet. This features extensively braced heavyweight fibreboard construction with internal damping panels and the introduction of a slot port to the AE1 design for the first time. With several Acoustic Energy models already benefiting from the company's R&D programme into slot port loading, the AE1 Active's port delivers unrivalled cross-sectional area, reduced baffle space and significantly reduced 'wind-noise' at high volumes.

**Q:** So what are the key benefits of an active AE1 loudspeaker?

**A:** The AE1 Active maximises all the benefits of active loudspeaker design. These include reducing crossover losses, eliminating speaker cable influences and delivering unrivalled dynamic power. The result is a cohesive active loudspeaker with performance rivalling passive speaker / external amplifier set ups at many times its price.