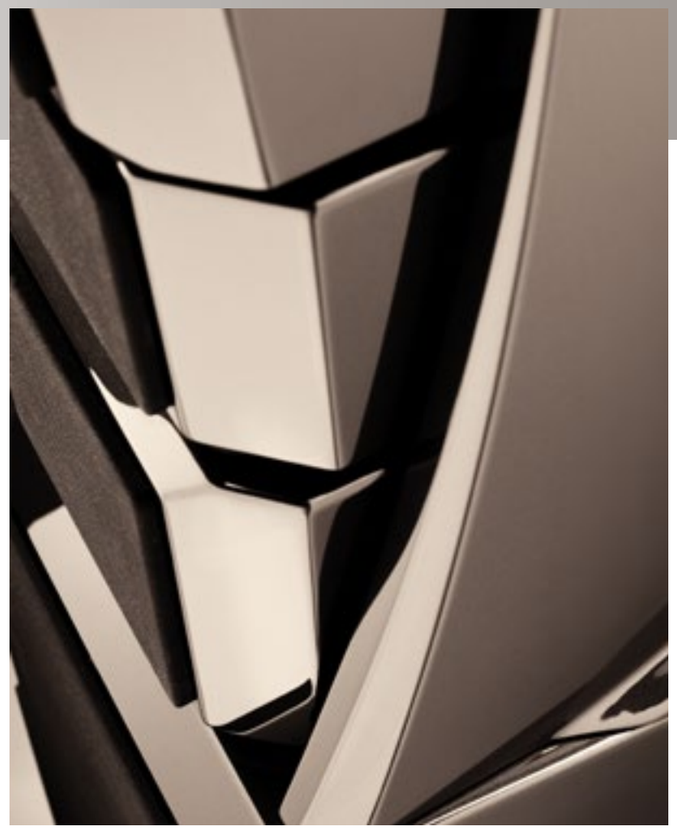


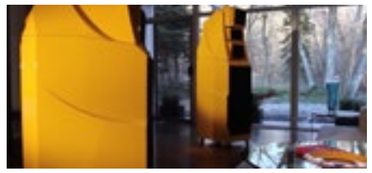
Video Links

[Announcing the Alexandria XLF]

The launch video debuting the loudspeaker prior to its release in early 2012

[Alexandria XLF: Idealism and Technology]

Dave is an idealist, but he is also a disciplined empiricist. Dave the idealist insists that no detail is too small to be scrutinized. Dave the empiricist knows that it's all too easy to be seduced by the technological promise of a given part. See how these two defining characteristics played out in Wilson's new flagship loudspeaker.



[The Observer and the XLF]

From his earliest days as a loudspeaker designer, Dave has been transfixed by this observation: Why don't loudspeakers sound more like live, unampflified music? Despite the obvious fact that a loudspeaker will ultimately be judged by how it sounds, many designers instinctively devalue listening as an objective design tool.

Alexandria® XLF

Alexandria XLF joins the Alexandria family, not as a replacement for the Series 2, but as its measurably more ambitious sibling.

While maintaining the recognizable Alexandria form factor, it is physically larger, with 14% greater bass volume. Thicker cabinet walls and added bracing for an even more inert enclosure.

It introduces passive bass management technology unique in the audio world.

It introduces a new Convergent Synergy tweeter, a new crossover, and a host of parts all chosen through sedulous listening trials.

It builds on the strength and success of the Alexandria Series 2 yet raises the bar on performance in every meaningful parameter: greater dynamic contrast, better harmonic expression, deeper bass, greater linearity.

At the intersection of idealism and empiricism, a new loudspeaker

From the time he started building loudspeakers in his garage, Dave Wilson had one motivating passion: to make the reproduction of music sound as much like the real thing as possible. Although he is acutely aware of the limitations imposed on his dream by available driver technology, cabinet materials and the laws of physics, the goal remains the same. Dave is an idealist.

If one's goal is to reproduce the sound of live music, logic suggests that at some point the designer must listen to his creation in order to understand how much (or how little) it sounds like the live event. Some designers in the industry maintain that making judgments on the success of one's design through listening is subjective and unscientific. They believe that only through the application of the right theories, or the strict adherence to a certain set of measurements can one reliably approach the ideal.

Yet the history of high-end audio is littered with electronics and loudspeakers that achieve sterling performance on the test bench, and yet, to the ears of even the average listener, fail to produce life-like sound. They lack the ineffable sense of rightness that momentarily suspends disbelief.

Dave is unapologetic about using his ears as a design tool because while fidelity of the live event may be difficult to measure, it is not difficult for even the casual listener to hear. But when listening becomes rigorous and disciplined—that is to say, empirical—it can bear even greater benefits.

Dave makes an annual pilgrimage to the great concert halls of Europe, particularly Vienna's Musikverein, as he puts it, "to recalibrate his ears." It is more than personal taste that justifies live classical music as the *summum bonum* of his musical reference. Besides the sophisticated interplay of tonal and harmonic color and wide dynamics typical of the orchestral repertoire, classical music performed in a hall such as the Musikverein takes on the quality of the venue itself. By luck or design, the builders of this concert hall created a space that enlivens the sound of musical instruments in a particularly beguiling manner.

Dave spent a great deal of time analyzing the Musikverein's acoustics. He discovered its sonic signature was largely defined by the length of time between the orchestra's initial sound and the earliest reflections in the hall. He then set out to build a new midrange driver that was capable of resolving these subtle time-domain cues. The result was the Wilson midrange driver, first deployed in Alexandria Series 2. Since then, a modified version has been designed into every other Wilson floorstanding loudspeaker.

Regardless of the type of music played through it, Wilson's midrange driver reveals new layers of detail and subtlety that the ear recognizes as qualities of live music. It was the direct result of meticulous scientific research and experimentation followed by comparative listening on the macro scale.

Years of design experience taught Dave Wilson that practically no detail is too trivial to examine. What about the twist ratios in the internal wiring? Or the metallurgy of the resistor heat sinks, since eddy currents in the mount can induce currents in neighboring resistors. He's meticulously tested capacitors and inductors—and even the solder used to bind all these parts together. After all these tests, he listens to each part in a controlled and repeatable environment.

Intricate dynamic passages were more coherent and defined, without a sense of blur or smear. This was true over the entire frequency range, from the midbass through the treble. The XLF sounded "lighter on its feet" and more agile dynamically.

Robert Harley, *The Absolute Sound*

The Alexandria XLFs were quieter—even compared to the very quiet X-2—the music emerging from a deeper, more silent place. Along with this, the treble was more composed; by this I mean that it seemed to display less energy and more detail at the same time. This quality meshed even better with the speaker's midrange, which has much the same character.

Mark Mickelson, *The Audio Beat*

Developing the Convergent Synergy Tweeter

Tweeter technology evolved in the first decade of the new century, with new designs using exotic materials such as diamond and beryllium. Proponents of these designs extolled their ultra-wide bandwidth, in some cases extending to beyond 50 kHz. The engineering rationale was that pushing the tweeter's resonant frequency (or break-up mode) well above the audible spectrum would produce greater linearity within the audible range.

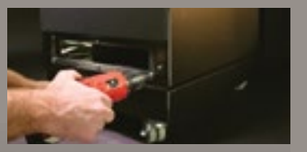
Dave Wilson and his engineering team began a three-year process of testing and evaluating new designs coming on the market. To match the demands of its standard-setting midrange, Wilson had already redesigned its titanium tweeter with great gains made in lowering the high-frequency noise floor. This was achieved primarily through enhanced control of back-wave reflections. At the same time, work on an all-new design began, borne of the desire to follow any path that would potentially lead to technologies that enhanced the consanguinity of Dave's speakers to the live event.

Their testing quickly revealed that tweeters able to play to 50kHz frequently did so by lowering the mass of their drivers. This, in turn, imposed at least two limitations on their performance. They failed to achieve the dynamic contrast required of a Wilson loudspeaker. Second, they couldn't play low enough to cross over at the 1.2 kHz point demanded by the Wilson midrange driver. Most interestingly, none of the new exotic designs matched the dynamic contrast and harmonic expression of Wilson's existing titanium design.

Dave's frustration with off-the-shelf units led to the decision to design his own tweeter. The result of that effort is the Convergent Synergy tweeter. It maintains all the strengths of the existing Wilson driver: great dynamic contrast, harmonic expression, exceptional power handling, and low distortion. The Convergent Synergy is much flatter in its frequency response and has exemplary off-axis dispersion characteristics. With somewhat lower moving mass, it adds frequency extension to 37 kHz. As the name implies, these qualities converge with the advantages of the ultra-wide-bandwidth designs, with none of their sonic or technical disadvantages. It is an extremely synergistic companion to the Wilson midrange driver.

Dave said about the Alexandria XLF project: "If there was going to be any improvement, it had to come at no compromise to any other performance area." The Convergent Synergy tweeter is a tangible result of that dictum, and an important part of the XLF's audible advance toward the ideal.

The Cross Load Firing Port System



It's easy to achieve flat frequency response in an anechoic chamber. But, in the real world, the sound of loudspeakers is highly dependent on the room they're in. Room-induced bass nonlinearities are a problem that has generated lots of solutions. One of the most common is active equalization, often processed in the digital domain. The downside is that insertion of an electronic equalizer into the audio signal produces deleterious audible effects in the rest of the frequency spectrum.

Wilson has always taken a purist approach to bass management, focusing on designs that inherently sound right in a wide range of rooms. Critical room placement by trained salespeople and installers has proved to be the most successful and efficient way to overcome most room-induced colorations.

In most rooms.

With over 500 Alexandrias in use around the world, Dave observed that there were certain kinds of rooms in which the Alexandria X-2 could sound lean in the deep bass. This was often apparent in rooms with a lot of glass, and where the desired listening position was close to the center of the room—where a natural null zone exists for low frequency sound waves.

Dave conceived of the Cross Load Firing Port as an effective remedy for this room artifact. An elegantly simple idea, the (patent pending) Cross Load system allows the user to choose either a front or rear firing port configuration.

On the front of the XLF, below the woofers, is a distinctive brushed aluminum plate with the Alexandria XLF logo. In rooms where the rear-firing option will tend to overload the bass, it is simply a matter of removing the front plate and port plug, switching those items to the rear, and attaching the low-turbulence trim to the front, moving the port exit to the front of the Alexandria XLF.

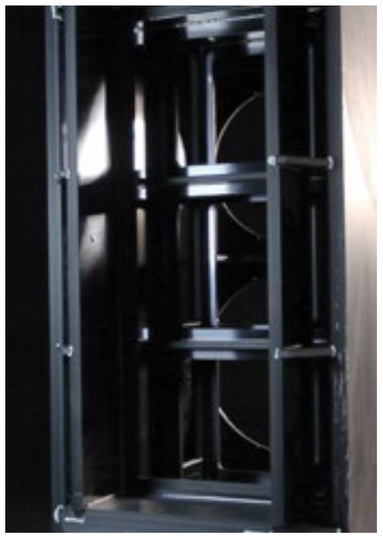
An Engineering Challenge

Although the new loudspeaker retains the unmistakable form and lines of Alexandria Series 2 (seen on the left), the architecture of the XLF (on the right) has evolved to support new technology.

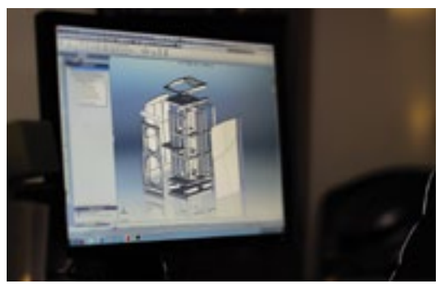
The Cross Load Firing port system (XLF) dictated a larger bass enclosure. It is 14% larger than the Series 2. The increased volume enabled the engineers to carefully shape the XLF's bass response to be even more linear and room-friendly.

Using the latest analysis technology, Wilson's mechanical engineers reworked the woofer cabinet, thickening the enclosure walls and redesigning the internal bracing geometry. Cabinet contribution in the bass region is extremely low in the Alexandria X-2. The Alexandria XLF is even more inert.

Wilson has a long tradition of cross populating advancements from one design to the rest of the line. This sometimes means that a more expensive model benefits from technology introduced in a less expensive loudspeaker. First introduced in Wilson's venerable WATT/Puppy replacement, the Sasha W/P, S-material is a highly rigid, critically damped, epoxy-based composite. It was developed specifically for midrange beauty and ultra-low resonance. In combination with X-material, S-material reduces measurable and audible noise and coloration in the midrange.



Without question, Alexandria XLF is the most complex loudspeaker Wilson Audio has ever produced. According to mechanical engineer, Blake Schmutz, CNC milling the pieces for an XLF requires an entire week of eight-hour shifts just to complete one channel.



But for Dave Wilson the idealist, size, weight, and manufacturing complexity are all of little consequence when the task at hand is to make a loudspeaker that outperforms the Series 2 Alexandria in every significant measure, and brings the listener an unmistakable step closer to the exhilaration of a live musical event.

Specifications

Enclosure Type Woofer:	XLF port, adjustable rear or front firing
Enclosure Type Midrange:	Rear Ported
Enclosure Type Tweeter:	Sealed
Woofers:	One – 13 inch, (33.0 cm)
	One – 15 inch, (38.2 cm)
Midrange:	Two – 7 inch (17.78 cm)
Tweeter:	One – 1 inch silk dome (2.54 cm)
Super Tweeter:	One – I inch silk dome (2.54 cm)
Sensitivity:	93.5 dB@ 1 watt (2.83V at one meter)
Nominal Impedance:	4 ohms, 3 ohms minimal
Minimum Amplifier Power:	7 Watts per channel
Frequency Response:	+0, -3 dB 19.5 Hz - 33 kHz
Overall Dimensions:	Height – 70 1/4 inches, (178.44 cm)
	Width – 19 13/16 inches, (50.38 cm)
	Depth – 27 7/8 inches, (70.80 cm)
System Weight Per Channel:	655 lbs each (297 kg)
Total System Shipping Weight (approx.):	1910 lbs pair (866 kg)