



## Introducing the Lexicon SL-1 and SoundSteer Technology



At first glance, the untraditional hourglass shape of the Lexicon SL-1 speaker system catches one's eye. However, this intriguing design is not purely aesthetic but is essential to the SoundSteer technology that truly distinguishes it from your ordinary loudspeaker. This technology allows the user to control the shape of the speaker's radiation and aim the sound to create a "sweet spot" almost anywhere in the room. This not only allows freeing the sound from room influences by eliminating reflections, but also allows users to place speakers and listeners freely without compromising imaging.

The SL-1 delivers the unique beam-forming ability using an array of 32 drivers plus a subwoofer per speaker. Twenty-three discrete amplifiers control the behavior of the drivers in a single tower to reproduce sound in three primary listening modes; Beam Forming (Direction), Beam Forming (Direction + Width), and Omnidirectional (360-degree sound).

The mobile app, SoundSteer, allows a user to control the size and position of the listening sweet spot in real time to optimize the listening experience to suit your individual needs. User defined presets allow you to save your configuration. The application also provides tone control via Bass and Treble adjustments.

With the speaker placed 20" away from the nearest wall or boundary, the narrow radiation control can extend to below 80Hz. Because bass frequencies are inherently omnidirectional, the shape and size of your room will greatly affect the quality and uniformity of the low frequency response at the listening area. In order to compensate for this problem Lexicon has provided a Bass Calibration function. To use this feature, you can simply connect a USB microphone (sold separately) to the smart phone running the SoundSteer app and after a series of guided measurements the result is optimized bass response for your listening area.

Under the hood, signal processing is done in a single dedicated audio 7-core DSP with an impressive 975 MIPS (millions of instructions per second) of processing power at 96khz. For each of the 23 channels, very long FIR filters are applied up to 1024th order controlling phase response at all different angles. The technology, as explained by Principal Embedded DSP Engineer, John Combs, is similar to phased array radar systems controlling a radar beam. Woofer channels are also doing beamforming, creating a bass cardioid pattern, two performing in parallel in front and two in parallel in the back. The cast aluminum base serves as a subwoofer cabinet while also being the primary heatsink to maintain cooling for the entire system.



Each SL-1 speaker has 12 tweeters, 16 midrange drivers, 4 woofers and 1 subwoofer.

As a brand, Lexicon is widely known for breakthrough innovations in DSP (digital signal processing) engineering. The renowned Lexicon 480L Digital Effects System (circa 1986) continues to reside at the center of legendary recording studios across the globe, helping shape the spatial effects of thousands of chart-topping tracks to this day. Lexicon's spatial effects for both stereo and surround sound were subsequently introduced to the home consumer market in 1988 in multichannel surround processors featuring panoramic, ambient and surround controls which continue today. The legacy continues in the SL-1 with simple elegance and an all-in-one approach, replacing the need for superfluous outboard audio components. Wireless playback is available via Google Chromecast, Bluetooth, as well as wireless connection to the SLC-1 Controller Hub for legacy connections such as HDMI ARC, digital audio via optical in and analog.

The Lexicon SL-1 is now shipping. A complete SoundSteer loudspeaker system consists of two SL-1 loudspeakers and one SLC-1 Wireless Controller Hub.

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