

## Boulder 850 Monoblock Amplifier

Perfecting the technique of “deep focus”

Max Shepherd

**W**hile filming *Citizen Kane* in 1941, legendary cinematographer Gregg Toland first perfected the technique called “deep focus.” His goal was to shoot the film in such a way that the audience would feel like it was looking at reality rather than a movie. Shooting with a much smaller aperture setting than had previously been used and hundreds of times more illumination, he was able to photograph the set in such a way that the camera captured space the way the human eye does, i.e., with all of the objects in the scene, whether in the foreground or in the background, simultaneously in focus, thus the term “deep focus.” Toland’s work revolutionized cinematography forever.

Boulder Amplifiers, while not revolutionizing audio forever, has nonetheless achieved an equally dramatic “deep focus” effect with its new entry-level (for Boulder) 850 monoblock amps. The \$10,000/pair 850s recreate the musical reality of a performance by bringing all the performers, whether in the foreground or at the back recesses of soundstage, into sharp focus. Where Toland achieved his effects by using lens settings and illumination, the Boulder 850 amps achieve theirs through remarkable detail, dynamics, and resolution.

Unlike a movie where the camera records the image of a set filled with props and people, an audio system has to create an image in the listener’s mind of an unseen performance space. And this the Boulder does in spades. The 850s consistently created a soundstage that wrapped around my ears and dissolved the walls of my listening room. As I noted at one point in my audition, “the soundstage ate my speakers and then it ate my room.” Not only was the soundstage wide and tall, it was, depending on the piece, deeper than I have ever before heard in my listening room.

But this cavernous, black soundstage was only one aspect of the overriding characteristic of the 850s: its ability to present more musical information more realistically than my reference system ever did before. With the 850s, the way Jennifer Warnes used her breath to create



phrasing on *Famous Blue Raincoat* [Ariola-Eurodisc] was more apparent, better conveying the emotional content of the song. The 850s also consistently revealed more of the timbre of instruments. For example, the shimmer of the cymbal in Keith Jarrett’s *Out of Tonners* [ECM] radiated out like the rings of Saturn. The clarinet in Yo Yo Ma’s *Obrigado Brazil* [Sony] had more apparent woodiness and, thus, three-dimensionality. The soundboards of pianos sang, stretching out the decay of the notes and chords that hung in the air until they became mere whispers. And more importantly, pianos sounded like pianos, which I find to be a good test of any system.

The 850s also excelled at placing performers correctly within its large, black soundstage, highlighting their performances by surrounding each player with a greater sense of air. For example, the 850s clearly separated the members of the Keith Jarrett Trio and Eva Cassidy’s Band in *Live at Blues Alley* [Blix], locating each performer in three-dimensional space and

eliminating any sense of congestion in the middle of the soundstage.

In this same way, the 850s teased out each line of a musical performance—an attribute most noticeable on large orchestral pieces. For example, on track six of *Obrigado Brazil* there is a passage where a violin is playing ever so faintly near the top of its range while the cello and other instruments are playing much more robustly in the foreground. The 850s never lost track of that violin’s voice or of the musical phrase it was playing. This resolution was also apparent with Pierre Fournier’s reading of the Dvorák Cello Concerto [DG], where the oboe is playing quietly toward the back of the orchestra. With the 850s, the oboe’s voice was never lost nor its tonality diminished. It was presented with the same clarity and accuracy as the louder instruments in the foreground. In fact with the 850s it was possible to shift one’s attention to any instrument playing in the orchestra or group, to mentally wander around the soundstage so to speak, and stop and enjoy a given instrument

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wherever it was located in the soundstage. It was this aspect of the 850s' performance that created the sense of "deep focus."

Indeed the 850s' resolution was really its outstanding attribute, because when an amp is able to preserve low-level detail, all aspects of the performance are enhanced. The soundstage is more three-dimensional, instruments are more realistic in timbre, lyrics are better articulated, vocals are more life-like, and the music is ultimately much more engaging. While it is a small thing, being able to hear Jacqueline du Pré's fingers rocking on the strings of her cello while her bow pushed against the strings' resistance greatly increased my enjoyment of and engagement with her version of Dvorák's Cello Concerto on EMI.

The ability of these amps to provide the listener with more, and more realistic, musical information extended to the low frequencies. Bass passages were consistently clean, taut, and weighty. In addition, the 850s' low-level resolution meant that they did not cut off the tails of decaying notes. Bass drum notes, for example, just hung in the air until they drifted away. Treble was airy and accurate without glare. And transients were fast and clean. Overall, the 850s were simply very musical.

I really enjoyed the Boulder 850 amps. They brought a new level of realism to my system. And while they are not cheap at \$10,000, they are certainly worth considering if you're shopping in this price range. **TAS**

## The Technical Scoop

Boulder's 850 amplifier is relatively small, just 8.5" wide, and weighs only about 30 pounds. Though the design is simpler and hence less costly than Boulder's other efforts, the front plate, top cover, and rear plate are all made of machined aluminum. The appearance of the 850 is rather utilitarian, resembling an elongated shoebox with a perforated side. However, Boulder used the same feet on the 850 that it uses on all of its 1000 series products (the feet are made of constrained-layer dampening materials), and, according to Boulder, no additional isolation should be necessary.

The 850 has a three-stage, balanced, instrumentation-style input section. This reputedly lowers noise and reduces distortion while at the same time providing a benign load to any preamp or source driving the amp. The amp is entirely linear and uses no switching circuits, either in the power supply or the output section.

Power output is rated at 200 watts into 8 ohms. The 850 has a maximum output power of 800W. AC power is filtered internally and power-supply common-mode rejection is extremely high to keep power clean, quiet, and optimized. The amplifier is fully protected from over-voltages, current and voltage clipping, DC, under-voltages, thermal overload, and shorted outputs.

The output section is Class AB, using an active bias system: The amplifier detects the load and current draw at the outputs and ramps up bias to match the outputs section's needs accordingly. The bias then slowly ramps down over a period of 30 seconds unless another peak is detected and the bias must be kicked up again. Biasing is not based on the input signal, as it is more important to know what the output section of the amp is doing than what the preamp is passing along. This keeps the amp running as efficiently as possible and holds generated and radiated heat to a minimum. Multiple smaller filter capacitors are used (instead of two large ones) to lower power-supply impedance. Multiple microcircuit gain stages are also used, with the majority of the gain being handled by the first stage to maximize bandwidth.

As much of the amplifier's design as possible was completed with surface-mount parts. This eliminates lead inductance and reduces the overall size of the circuitry, thus reducing capacitance, increasing board-layout efficiency, lowering noise, and allowing for four-layer circuit-board construction. Full external power control (standby/on) by means of Boulderlink or 12V trigger in custom installation applications is possible. MS

## Specs & Pricing

### BOULDER AMPLIFIERS

3235 Prairie Avenue  
Boulder, Colorado 80301  
(303) 449-8220, ext. 101  
sales@boulderamp.com

**Power output:** 200Wpc, 8 ohms

**Number and type of audio inputs:** One XLR-balanced

**Dimensions:** 8.5" x 7.38" x 15.25"

**Weight:** 30 lbs.

**Price:** \$10,000

### ASSOCIATED EQUIPMENT

Esoteric DV-50 digital sources (modified by the Upgrade Company); Aesthetix Calypso preamp; McIntosh MC 402 amplifier; Shunyata Hydra 8 line conditioner; Shunyata Aires Interconnects; Gemini speaker cables, and Anaconda power cords; modified Salamander rack

