



REVIEW JBL STUDIO 180 TOWER SPEAKER

JBL BOLDLY BATTLES THE BANAL BLACK BOX

By Brent Butterworth, June 2011



On my first gig as an electronics journalist, way back in 1989, the magazine's senior editor introduced me to the technical editor with the explanation, "He's in charge of all the black boxes." Twenty-two years later, little has changed. Browse this website and you'll see that audio and video gear still generally takes the form of black boxes that make this look like a radical piece of industrial design.

Into this aesthetic wasteland strides JBL with its new Studio series. View the Studio 180 from any direction but the front and you'll see yet another banal black box. But when you stare the Studio 180 in the face, you confront a distinctive geometric design. The front baffle and grille incorporate the Weave concept found on many other pieces of JBL gear, even low-priced fodder that seems purpose-built for playing Katy Perry MP3s.

When I saw the picture of the Studio 180 included with the introductory press release, I immediately thought, "There's no way that thing can sound good." But as I looked closer, I realized I was wrong. The Weave design cleverly conceals the tweeter, midrange and woofer while mostly getting the hell out of their way so they have a chance to perform properly. The gray areas of the Studio 180's face are speaker grilles, while the dark areas are solid. The top grille hides a 4-inch midrange and a 1-inch tweeter and the bottom grille camouflages a 6.5-inch woofer.

You can expand the Studio 180 into a full 5.1 or 7.1 surround-sound system by adding the Studio 120C center speaker and one or two pairs of Studio 130 bookshelf speakers — plus a subwoofer if you so choose.

SETUP

From an engineering standpoint, the Studio 180 is standard stuff: a rear-ported design in a well-braced MDF enclosure with dual metal binding posts in the back. Thus, setup is typical for a floorstanding speaker. Set it out at least 12 inches or so from the wall behind it. Space the speakers far enough apart to get a wide soundstage without sacrificing a strong center image. If you like, toe the speakers in so they point straight at you — but given the Studio 180's excellent dispersion, this isn't absolutely necessary.

I connected the pair of Studio 180s to my Krell S-300i integrated amp for most of my listening, and also tried them with my Denon AVR-2809CI receiver. With a gentle impedance curve and reasonable 88 dB rated sensitivity, the Studio 180 doesn't demand much from an amplifier.

PERFORMANCE

Six years ago, I asked Floyd Toole, who at the time was VP of acoustical engineering at Harman International (parent company of JBL), what he considered the point of diminishing returns for a loudspeaker — i.e., above what price level would you cease to get large improvements in sound quality by spending more money? As one of the wisest and most important scientists in audio, he qualified his response in numerous ways, but finally answered, "Maybe \$2,000 per pair."

I think if Toole heard the \$700/pair Studio 180, he might revise his answer. Tune after tune, album after album, musical genre after musical genre, I was continually amazed by how good the Studio 180 sounds. In fact, I could find only two flaws in it — one of which is inherent to its form factor, not its engineering.

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...performance continued

Peter Gabriel's *Security* has its weaknesses; it was made during the awkward early-'80s transition from analog to digital audio technology, using then-trendy gated drums as well as synthesizers that sound really cheezy now even if they were state-of-the-art at the time. Still, when I listened to my original vinyl copy through the Studio 180s, the stereo imaging was spectacular. Jerry Marotta's drums, in particular, popped between the speakers like a Whack-A-Mole machine plugged into a 240-volt outlet. The Studio 180s wrapped my listening room with the colossal, portentous sound I'm sure Gabriel was going after but that the relatively unrefined speakers of that era seldom delivered.

Sticking with the same decade, I dropped the needle of my Pro-Ject RM-1.3 on "Come Get It" from Miles Davis's *Star People* LP. I didn't expect to hear great groove from a record player or from a full-range speaker (more on that later), but that's exactly what I got. Marcus Miller's slaphappy bass line thundered from the speakers in perfect, tight sync with Al Foster's kick drum. Maintaining my stone-cold-sober, head-in-a-vise serious audiophile listening pose proved impossible; my head reflexively bobbed with the in-the-pocket rhythm.

By now I knew the Studio 180 could groove, but could it sing? Time to pull out my speaker test CD, which includes snippets of all sorts of singers. The 4-inch midrange (which in this speaker handles frequencies from 800 Hz to 3.2 kHz) got almost every one of them right, from the deep baritone of Johnny Hartman to the smooth tenor of James Taylor to the reedy tones of Donald Fagen to the soaring alto of Laura Nyro. (Only on the raspy voice of Ron Sexsmith did it choke; here, it sounded just a bit edgy and coarse.) Not only did the vocals sound natural, they sounded lush, romantic, and present in the room. Same goes for the alto, tenor, and baritone saxes in "The Holy Men" from the World Saxophone Quartet's *Metemorphosis*.

It's in the treble where I found the Studio 180's greatest strengths — and the one place where I felt it could stand

improvement. Overall, the treble was stunning, and I use that word carefully: I was literally taken aback at how clear it sounded. Not only did the castanets in "Sentenza del Cuore: Allegro" from the Chesky Records CD of The Coryells sound clear; I could actually hear them echoing off the high walls and ceiling of St. Peter's Church in Manhattan, where the CD was recorded. The fact that a recording I've heard on at least 1,000 different audio products, from iPod docks to \$500,000 supersystems, impressed me so much through the Studio 180 speaks volumes.

However, super-high-frequency percussion instruments, such as the glockenspiel on "Shower the People" from James Taylor's *Live* at the Beacon Theatre and the bell tree in "Once I Wished a Tree Upside Down" from Trilok Gurtu's *Living Magic*, sounded overly crisp and a bit distorted. Given more money to spend on a tweeter, I expect JBL's engineers could have corrected this flaw, but considering how few recordings I (and probably you) have that feature glockenspiel or bell tree, it's not a major concern.

The other flaw in the Studio 180 is simply what it is: a full-range speaker. I'm used to hearing bass reproduced through perfectly positioned subwoofers.

With any full-range speaker, the bass is compromised because you have to position the speakers primarily for the best midrange and treble reproduction — and the position that's best for mid/treble is never going to be the optimum position for bass reproduction. While the Studio 180 delivered even deep synthesizer bass notes with ease, the low bass didn't sound as even as I'm used to. There's an easy fix for that, though: add a sub.

BOTTOM LINE

I've heard some amazingly good, relatively inexpensive tower speakers of late, including the Mordaunt-Short Aviano 6 and the NHT Absolute Tower, but I can't think of a better value in a tower speaker than the Studio 180. This new JBL is iron-clad (well, actually fake woodgrain vinyl-clad) proof that it's possible to improve a speaker's looks without screwing up the sound.





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TEST BENCH

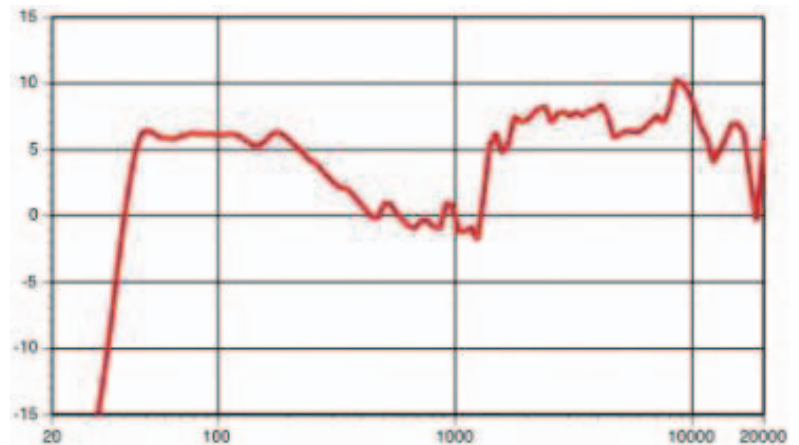
Frequency response (at 2 meters)
39 Hz to 20 kHz ± 6.0 dB

Sensitivity (SPL at 1 meter with 2.8 volts of pink-noise input)
88 dB

Impedance (minimum/nominal)
4.3/9 ohms

Bass output (CEA-2010 standard)

- Ultra-low bass (20-31.5 Hz): NA
- Low bass (40-63 Hz): 110.8 dB



I measured the Studio 180 at a distance of 2 meters, in order to incorporate the effects of cabinet diffraction. This gave quasi-anechoic results down to about 300 Hz. The tower speaker stood atop my measurement turntable, about 2 inches off the ground. The curves in the graph show an averaged response from 0° to 30°, smoothed to 1/12th of an octave. To get the bass response, I close-miked the woofer and port and scaled and summed the results. I then spliced the bass responses to the averaged quasi-anechoic responses to produce the curve you see here.

The Studio 180's frequency response measurements are fairly flat except for one flaw: There's a narrow, deep dip of about 6 dB centered at 1.1 kHz. Because this dip is so narrow, it should be barely audible. However, with our measurement technique, which incorporates reflections from the floor, this narrow dip blends in with what seems to be a floor bounce cancellation effect down to about 600 Hz, a common effect with floorstanding speakers. This is all a long-winded way of saying this speaker sounds a lot better than it might seem from these measurements. Off-axis response is superb, showing negligible response changes from directly on-axis to 30° off-axis, and only a slight deepening of the dip at 1.1 kHz at 45° and 60° off-axis.

Impedance and sensitivity of the Studio 180 are pretty much textbook. Minimum impedance is 4.3 ohms at 15 kHz, +5 degrees; it runs above 8 ohms from 20 to 95 Hz and from 325 Hz to 5.2 kHz (i.e., through about 6 octaves of its range). Impedance phase shift runs within ± 30 degrees except in the low bass, where it maxes out at +57 degrees at 28 Hz. Sensitivity measures 88 dB, so the Studio 180 will deliver plenty of volume from even a low-powered receiver.

Measured as a subwoofer using CEA-2010 methodology (with a mic placed on the ground at 1 meter), the Studio 180 delivers really good average low bass (40-63 Hz) output of 110.8 dB. It actually delivers usable output (89.4 dB) at 31.5 Hz, but no measurable output below that.

—B.B.