

# SOUND & VISION®

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## IN THE LAB

	JAMO A210PDD	JM LAB SIB & CUB	TANNOY FX5.1	VELODYNE DECO
<b>Frequency response</b> (at 2 meters)				
front left/right	198 Hz to 13.6 kHz ±4.6 dB	115 Hz to 17.2 kHz ±6.5 dB	135 Hz to 14.5 kHz ±4.1 dB	158 Hz to 15.4 kHz ±2.7 dB
center	198 Hz to 14.4 kHz ±3.8 dB	115 Hz to 17.5 kHz ±6.6 dB	135 Hz to 17.5 kHz ±4.1 dB	158 Hz to 15.6 kHz ±2.7 dB
surround	198 Hz to 12.8 kHz ±3.7 dB	115 Hz to 16.7 kHz ±4.7 dB	135 Hz to 14.3 kHz ±3.2 dB	158 Hz to 14.7 kHz ±3.1 dB
subwoofer	45 Hz to 135 Hz ±3.0 dB	44 Hz to 145 Hz ±3.3 dB	49 Hz to 135 Hz ±2.4 dB	32 Hz to 93 Hz ±2.5 dB
<b>Sensitivity</b> (SPL at 1 meter with 2.8-volt pink-noise input)	87 dB	92 dB	84 dB	89 dB
<b>Impedance</b> (minimum/nominal)	6/12 ohms	2.5/7 ohms	4.4/10 ohms	3.9/8 ohms
<b>Bass limits</b> (lowest frequency and maximum SPL with limit of 10% distortion at 2 meters in a large room)				
satellite	100 Hz at 64 dB SPL	80 Hz at 72 dB SPL	80 Hz at 68 dB SPL	80 Hz at 70 dB SPL
subwoofer	32 Hz at 69 dB SPL	25 Hz at 63 dB SPL	25 Hz at 67 dB SPL	25 Hz at 85 dB SPL
average SPL	85 dB from 32 to 62 Hz	82 dB from 25 to 62 Hz	87 dB from 25 to 62 Hz	95 dB from 25 to 62 Hz
maximum SPL	101 dB at 62 Hz	96.2 dB at 62 Hz	102 dB at 62 Hz	104 dB at 62 Hz

All of the response curves in the graphs are weighted to reflect how sound arrives at a listener's ears with normal speaker placement. Because each of these systems uses the same satellite speaker for front left/right, center, and surround channels, the different curves simply reflect how we weight the response for different applications.

The bass limits for the subwoofers were measured with them set to maximum bandwidth and placed in the optimal corner of a 7,500-cubic-foot room. The Jamo subwoofer was affixed to a thick fiberboard plate that was, in turn, fastened to the wall in the optimal corner. This was equivalent to mounting it on a bare floor. With all these subs, listeners in a smaller room can expect 2 to 3 Hz deeper extension and up to 3 dB higher sound-pressure level (SPL).

Jamo's tiny A210 satellite had very limited low-frequency capability and moderate sensitivity. An octave-wide elevation centered on 1.5 kHz can be seen in all traces. The notches at 2.5 and 6 kHz widened and deepened at all off-axis angles. Performance was similar whether the speaker was used vertically or horizontally. The A2Sub measured better than it will probably perform if mounted to drywall in a home theater or if it was sitting on a carpeted floor.

JM Lab's Sib satellite had relatively good sensitivity and nicely uniform directivity. Traces of the 800-Hz to 3-kHz roughness, the 6-kHz peak, and the deep notch above 8 kHz were evident at all radiating angles. The Sib had limited low-

frequency capability and fairly severe port noise when it was driven too hard, and its 2.5-ohm minimum impedance was unusually low. The Cub subwoofer can put out a true 25 Hz at modest levels. Clean output above 40 Hz was limited by port noise. The internal crossover closely matched the 150 Hz marked at the top of the dial, although the 50 Hz marked at the bottom of the dial was actually 75 Hz.

The unmarked 12 o'clock position produced a 95-Hz turnover, and there was practically no level/crossover interaction.

The Tannoy FX5.1 satellite had about the most uniform directivity of any speaker I've measured. The curious 3.5-kHz peak appeared in all traces, but the 6- to 8-kHz peak did smooth out considerably at wider radiating angles. The FX5.1 sub had good extension and relatively strong output. Maximum SPL between 40 and 62 Hz was limited by port noise.

Velodyne's Deco satellite had smooth response despite the 2-kHz glitch. Directivity was well controlled. The response curves were virtually identical at all angles inside 30° off-axis. Wider angles displayed no additional anomalies save for smoothly falling upper frequencies. The Deco 8 had strong output for such a

tiny sub. All positions on the crossover control delivered turnover frequencies of 100 Hz or below. The "Deco" marking had a 90-Hz turnover. There was little crossover/level-control interaction except at the lowest setting.

— Tom Nousaine

