

SECRETS of Home Theater and High Fidelity

Product Review - Osborn "Monumental" Active Subwoofer - May, 2000

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Specifications

Driver

300mm (12 inch)

Sensitivity: 92 dB for 1 Watt @ 1 Meter

Fs: 30 Hz

Impedance: 6.5 Ohms

Amplifier

195 Wrms Continuous Output Power

350 Wrms Short Term Power

Frequency Response: -3 dB @ 1 Hz and adjustable from 20 Hz to 200 Hz with a 12 dB per octave slope.

Input sensitivity: 220mV for 175Wrms

S/N: >110 dB (amp) > 85 dB (overall)

Slew Rate: 35V/uS

Overall

Frequency Response: 20 Hz – 125 Hz (usable bass to 15 Hz)

Variable Active Crossover 20 Hz – 120 Hz

Weight: 55 Kg

Dimensions: 710mm H x 440mm W x 450mm D

MSRP: \$3,300 AUS

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Introduction

Very few people I know really, I mean **really** understand the benefits of having a high quality subwoofer compared with one of lesser or average quality, within their hifi system and home

theater. A lesser quality unit gives the indication that it's reinforcing the bass but generally it feeds you boomy, undefined bass instead of a fast, tight, controlled kick in the guts. Greg Osborn from Osborn Loudspeakers is well renowned for producing full-range loudspeakers that have tremendous amounts of impact as well as loads of well-controlled bass. The Osborn "Monumental" subwoofer, which I have under scrutiny in this review, is the middle choice of 3 such subwoofer units in his range. Does it live up to Osborn's reputation for loads of quality bass? Let's see...

The Speaker

The 300mm (12") "Focal" driver used was selected because it is considered to be one of the world's best. This driver makes up the bottom end of some systems selling for between \$50,000 and \$200,000. The grey coloured, foam-roll speaker surround measured 30mm. The cone actually has a diameter of 260mm measured with my trusty flexi-tape for a total cone area of 531 square cm. The poly-glass cone has a 77mm voice coil former, edgewound with flat copper wire. The cones' overall weight is a miniscule 94.6 grams and the drivers' total weight is 13.5 Kg.

The Amp

Ian Robinson from Redgum Audio has been charged with the responsibility of powering this unit. He produces some of the best power amps available anywhere and at any price. A 300 VA high-speed toroidal transformer was chosen and extremely high-grade power MOSFETS (Metal Oxide Silicon Field Effect Transistors) used for the output stage. The power supply has 18,800uF of capacitance and 63 V DC rail for total energy storage of 76 joules. The amps were produced in 180W, 300W or 500W versions but it was found that the 180W version is more than sufficient.

The amp and associated crossover electronics remain on at all times, (although there is a power switch) and at optimum operating temperature. An auto switching circuit was not an option as its designer has proven them to be troublesome in some units. For example: If no information is fed to a sub with auto switching from the LFE channel for a short period of time, they will switch off and won't be 100% ready for the next piece of information. Power consumption at idle was measured at 410mA.

The built-in active crossover is a simple "frequency feed-back" op-amp (operational amplifier) design attenuating at 12dB/octave above cut off frequency, variable between 20 and 200 Hz. Other "more standard" crossover designs were tried but the op-amp configuration performed and sounded the best. The crossover allows the use of high (speaker) level and low (line) level inputs. This makes the sub able to fit into nearly any audio situation, as it is with most modern subs. Finally, there is a level control and a phase switch. Interestingly, the level control, once setup with the aid of an SPL meter, was set to about 10:30, allowing plenty of adjustment up. In my experience, having this much "available adjustment" just tends to give inexperienced users inaccurate indication of bass levels and response as it is usually set far too high. To be completely accurate, the use of an SPL meter is essential. The fundamental reason for having such a wide level of adjustment is for "matching" sensitivity levels of all loudspeakers.

The Package

The cabinet is constructed of 32mm (1 ¼ ") custom-wood, veneered with a 6mm (¼ ") solid piece of Australian Redgum. As with all Osborn products, the "Monumental" is also available in Tasmanian Blackwood and a South African Bubinga. There is a 5% extra charge for the quilted Bubinga veneer. The veneer samples are available for perusal on the Osborn Web page. <http://www.osbornloudspeakers.com/files/veneers.html>

The cabinets are heavily braced with the whole package coming in at a heavy 55 Kg or 121 lbs. NB. this subwoofer package has a 12" driver. The Velodyne FSR18 (considered by many as one of the best available) comes in at a lesser 48Kg or 105 lbs with an 18" driver.

The solidity of the cabinet ensures that there are not any spurious vibrations, completely isolating the baffle (the board that speaker is mounted on) and the port at the rear. "Any spurious cabinet vibration will result in a lack of definition and sonic purity" says its designer and builder Greg Osborn. **The overall appearance of the Redgum cabinet is nothing short of spectacular. I only wish the photographs I took of it did it as much justice as they truly deserve.**

The Sound

After the obvious but reasonably minor difficulties I had removing and positioning such a heavy speaker box, I was setup and ready to go in no time (kid with the new toy syndrome). At first I used the AVIA test DVD to generate the various tones required to set the levels, crossover point and phase between my mains (JBL 4410's) and the sub. After about 15 minutes of futzing (Author's note: This is great verb from the Dr John E Johnson collection) I was happy with the overall levels. Not a single rattle or buzz out of the box was heard while sweeping frequencies down below 20Hz at uncomfortably loud levels. Time to play some music. The "Rockmelons" CD "Form One Planet" is usually the first disc I play. I listened... and... **"I love this sub"** is all I want to say. But seeing you guys, my Editor-in-chief, and the Monumental's designer will read this, I had better elaborate.

Seeing I am quite fond of the sound of my main speakers (JBL 4410 Studio Monitors), I was very impressed at the lack of colouration adding the sub made to the bottom end. The sub blended in seamlessly with them. In adding the bottom octave (20 – 40Hz) it gave my main speakers a whole new dimension. The "Monumental" was just as accurate, distortion free, speedy and musical as my mains.

I played several pieces of classical. Fast paced Baroque was handled exceptionally well. "Classic Beethoven", a new disc from the DTS collection (20-bit 5.1 channel) was enjoyed in its fullest splendour, the sub having no problems in expertly reproducing the .1 LFE channel. Shane Howard's (a well-known Australian artist of the band named "Goanna") solo album "River" has fantastic warmth in the bass section. Most lesser quality subs I've heard tend to make this a rather warm or too bassy sounding recording. The "Monumental" masterfully handled the bass on this album, giving me a wonderfully accurate representation of what the producer actually had in mind when he mixed the album down.

This unit should first and foremost be used for its musical qualities, with home theater usage being an optional extra. In this area I was just as excited. The DVD-movie "The Matrix" literally had me on the edge of my seat again. (Quite amazing seeing that I have seen it many, many times before.) The scene where the helicopter crashed into the building actually scared me when it exploded. With all this available "sub level" at my fingertips, it was hard not to give the level knob a little tweek up the increase the bass level and make the room shake more. This was less than ideal for accurate reproduction, but nice to have in reserve for explosions and car crashes in action movies.

At no point did I drive the sub hard enough to hear any noticeable distortion. Bass distortion is defiantly harder to pick up than other types but is still noticeable as a "boomy" sound. I really gave it a work out but the Monumental just kept on delivering.

Conclusion

I was a little reluctant to hand this review in at first as this would mean completion, and I would have to send the "Monumental" back to the manufacturer. The fact is, I'm not done enjoying the sound from this beautiful piece of equipment. This is as close to the finest all round subwoofer that I have ever heard. Do yourself a favour and have a listen!

- *David Wurtz* -

<http://www.hometheaterhifi.com>