

AUDIOMOBILE Elite 2212 12" Woofer REVIEW

WORDS AND MEASUREMENTS BY GARRY SPRINGGAY

For anyone who has been around since the early days of car audio, the name Audiomobile brings back fond memories of the first real car audio amplifiers. I think it was back in the early 1980s when I bought a used Audiomobile amplifier to power a pair of 10s which had been repurposed from some old Altec home stereo speakers. Not only did Audiomobile build one of the first true car audio amplifiers, the brand can be credited with basically starting the whole trend in the mid 1970's, with Rich Coe's mind blowing 1kW VW, featuring 1000 watts and a pair of 15" woofers. Everyone thought he had lost his mind. Little did they know...



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The brand has come and gone twice since those glory days, but the company today is still very aware of the legacy they represent. Today's Audiomobile products are geared

toward sound quality and engineered to fit into the small spaces found in modern vehicles. This time we are going to take a look at their new Elite 2212 subwoofer.

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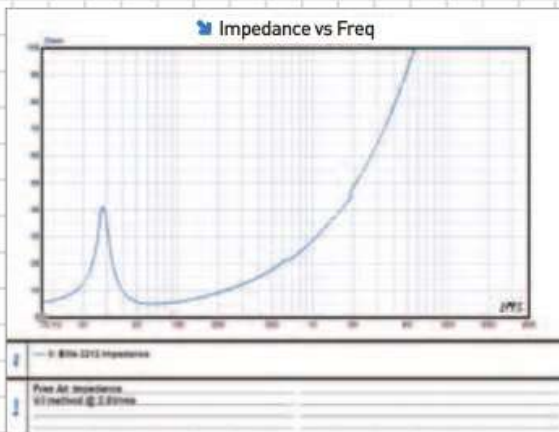
FEATURES

The Audiomobile Elite 2212 is designed to work in either sealed or vented applications, with smaller than usual enclosure requirements. Power handling is rated at 600 watts continuous, so you know the woofer is not only built to sound good, but also to be very reliable. Retail price in the U.S. is \$399.95, and the woofer comes with a one year warranty.

Built around a familiar looking rugged cast aluminum alloy basket assembly, the Elite 2212 is a fairly shallow woofer compared to others in this price and power handling range, with a mounting depth requirement of only 5.8 inches. This is a very deliberate feature, because the woofer also uses a special machined aluminum plate between the

QUICK TECH SPECS

▶ Power Handling	600 Watts RMS
▶ Frequency Range	20-250Hz
▶ Sensitivity	86dB/SPL @ 1.0W [2.0V @ 4 ohms]
▶ Nominal Impedance	(1) 4 ohm coil



AUDIOMOBILE PRODUCTS ARE GEARED TOWARD SOUND QUALITY AND ENGINEERED TO FIT INTO THE SMALL SPACES FOUND IN MODERN VEHICLES.

top plate of the motor and the basket. This feature is called I-CAR, which stands for Inter-cooled Conduction Aluminum Radiator. The real advantage is that it allows the motor assembly to be a solid unit rather than the typical vented designs used by almost every other manufacturer in the category. With no vented back plate coming out the back of the motor, the design allows the woofer motor to be in very close proximity to the enclosure back wall, which

further reduces the required mounting depth.

The 70 ounce motor is comprised of a pair of high quality stacked ceramic ferrite magnets, and provides the magnetic energy to drive the 2 inch diameter voice coil. To provide the long throw excursion the voice coil is 1.3 inches in length. In the interests of sound quality it's important to keep the moving mass as light as possible, so the multi-layer coil is wound using premium quality copper

clad aluminum on a lightweight and vented Kapton former.

To keep the voice coil centered in the magnetic gap, an 8 inch composite Nomex and cotton linear-type spider is riveted to a special mounting ring that is fastened to the basket.

The cone of the Elite 2212 has also received some attention to make it as light and stiff as possible. The actual cone that attaches to the former is made of a material Audiomobile refers to as CLS, or Composite Laminated Sandwich. No less than six layers of synthetic fiber, Kevlar, and natural fibers are pressed into a rigid parabolic shape, and then a one piece dustcap is glued on top to increase overall strength and stiffness. The outer diameter of the cone is attached to the basket via a nitrile butadiene rubber (NBR) surround. The woofer comes with an integrated frame gasket that can also accommodate an optional grille to protect the speakers moving parts from damage

the preferred type for the intended customer - transparent jazz and classical from some of the world's best audiophile labels. On these exceptional recordings from Sheffield Lab, DMP, Telarc and others, the Audiomobile woofer sounded impressive. I was tickled with the woofers musical timbre and definition. Chord changes and other low frequency nuances were distinct and easily apparent, including the tight and intense energy of Michael Arnpol's double-bass during the introduction to "Too Rich for My Blood." During my listening session I experimented with the crossover settings, and found that the woofer sounded best to me when using either a 80Hz crossover point at -12 dB/Oct or a little higher frequency if I steepened the slope. It pays to experiment with this stuff when tuning your vehicle.

Moving the woofer to a 1.3 cubic foot vented enclosure, I found the subwoofer system really came to life, with significantly more output through the normal passband. After listening to the same tracks I used in the sealed enclosure and enjoying them even more, I switched to 50 Cent, Cake, Storyville, Slipknot and Pussycat Dolls. On these intentionally bass-heavy tracks, the Audiomobile Elite woofer not only had great output but it also played very deep, and handled the power well. The bass was strong, smooth and powerful, and the sound of the woofer could best be described as "musical." And in the end, it's all about the music.

A lot of times manufacturers suggest a certain type of enclosure simply because that happens to be what's popular, regardless if it's the best choice for that particular woofer or not. But in this case, I can certainly attest to the suggestion in the Elite 2212 manual to use it in a vented enclosure. The sound remains articulate and musical, and this is one of only a handful

LISTENING

Before I began my listening sessions, the woofer was exercised for 8 hours to break in the suspension and allow the full performance of the woofer to show. For my evaluation I began with the 2212 in a 1 cubic foot sealed enclosure. Amplifier power was 500 watts, and I initially listened with the crossover adjusted to 80Hz at -24dB per octave. I start with some music I thought might be



of woofers I actually prefer in a vented enclosure. Interestingly, the eight inch and ten inch versions in the 2200 series are suggested for sealed enclosures, so I suppose it's Audiomobile's way of having something for everyone. In any case, it's certainly working for the 2212!

ON THE BENCH

The next morning, after the woofer had completely cooled down and normalized, I measured the Thiele-Small parameters. My measurements turned out to be almost spot on the published numbers, which is always a good thing. My 1 watt measurements were as follows:

THIELE-SMALL PARAMETERS AUDIOMOBILE ELITE 2212

▶ $R_{eVC} = 3.550 \text{ Ohm}$	▶ $Q_{ms} = 4.669$
▶ $F_o = 27.669 \text{ Hz}$	▶ $Q_{es} = 0.535$
▶ $S_d = 0.499 \text{ M}^2$	▶ $Q_{ts} = 0.480$
▶ $V_{as} = 2.385 \text{ Ft}^3 (67.5\text{L})$	▶ $L_{eVC} = 2.391 \text{ mH}$
▶ $C_{ms} = 0.191 \text{ mm/N}$	▶ $\eta_o = 0.259 \%$
▶ $M_{md} = 166.852 \text{ g}$	▶ $SPL_o = 86.146 \text{ dB}$
▶ $M_{ms} = 173.262 \text{ g}$	▶ $EBP = 51.71$
▶ $BL = 14.143 \text{ T-M}$	



CONCLUSION

When I had completed all my testing and listening, it felt good to see that one of the original names in car audio has returned to build a top quality product.

The Audiomobile Elite 2212 is a woofer worthy of your consideration whether you are a sound quality aficionado or simply someone who likes loud, musical

bass. It's not cheap, but to quote Benjamin Franklin, "The bitterness of poor quality remains long after the sweetness of low price is forgotten." With the Elite 2212, there is no bitterness... just sweet musical bass. **PAS**



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