

Adire Audio Brahma Owner's Guide



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Thank you for purchasing the Adire Audio Brahma! You own the most advanced subwoofer on the market today, featuring the patent-pending XBL² Technology that drastically reduces driver distortion. Brahma can provide more clean and deep bass than any other subwoofer on the market. We believe it is the current state-of-the-art in low distortion, extreme sound quality subwoofers for the autosound market available today.

This short manual is meant to introduce you to the features and care of your new sub. Read this manual over prior to use of the Brahma; it contains invaluable advice and will help your sub perform its best over a long time.

Parameters

Param	10"	12"	15"
F_s	35 Hz	28 Hz	26 Hz
Q_{ms}	4.4	5.05	5.3
Q_{es}	0.45	0.5	0.52
Q_{ts}	0.41	0.45	0.47
V_{as}	19.2 liters	37.2 liters	99.1 liters
Z_{nom}¹	1 Ohm parallel		
Re²	0.65 Ohms parallel		
Le³	0.9 mH parallel		
BL	14.42	14.38	14.33
S_d	330 cm ²	436 cm ²	749 cm ²
X_{max}	27.32mm one way linear		
P_{max}⁴	1600W RMS, 4800W peak		
SPL⁵	84.5 dB @ 1W, 1m	84.1 dB @ 1W, 1m	87.1 dB @ 1W, 1m
Diameter	10.5"	12.5"	15.5"
Cutout	9"	11.125"	14"
Depth	6.5"	7.25"	8.25"
Weight	37 pounds	39 pounds	41 pounds

1 - This is the nominal impedance of the driver. Each voice coil is 2 Ohms nominal; series connection would be 4 Ohms nominal

2 - Each voice coil is 1.3 Ohms; series connection would be 2.6 Ohms

3 - Each voice coil is 0.9 mH; series connection would be 1.8 mH

4 - P_{max} is the maximum continuous electrical power; mechanical power handling is COMPLETELY dependent upon the application, and can be considerably lower than the electrical power handling. P_{max} is NOT a "required" level of power for a driver. We rate per IEC 268-5.

5 - This is true reference efficiency; for voltage sensitivity at 2.83V_{rms}, add 3 dB for series (4 Ohm) wiring and 9 dB for parallel (1 Ohm) wiring

Typical Uses

Application	10"	12"	15"
Sealed Car	0.7 ft ³ (0.35 to 1)	1.0 ft ³ (0.65 to 1.5)	2.5 ft ³ (1.75 to 3)
Vented Car	1 ft ³ / 36 Hz	2.25 ft ³ / 30 Hz	3.5 ft ³ / 26 Hz
Sealed Home	1.25 ft ³	2 ft ³	1.5 to 3 ft ³
Vented Home	0.75 ft ³ / 32 Hz	3 ft ³ / 20 Hz	5 ft ³ / 20 Hz
Infinite Baffle	YES	YES	YES

Note that these are simply suggested applications; you can use boxes other than those listed. Some applications will benefit from active circuitry to extend and enhance the response of the driver. Contact your dealer, or see the Adire Audio forums or your own favorite web site for additional ideas and/or guidelines for alternative applications.

Power Handling

Power handling of Brahma is rated at 1600W continuous, 4800W peak. This was rated with the IEC 268-5 ratings method, which uses a band-limited test signal with a 6 dB crest factor. The subwoofer is powered with a signal meeting the IEC 268-5 criteria for 2 hours, with less than 3 dB of compression measured over that duration. The 1600W rating is NOT a steady-state sine wave rating!

Note that the power handling is a THERMAL power handling rating! It is NOT a guarantee, guideline, or recommendation on the amount of power actually needed or that can be mechanically handled in a given box. The actual power required depends upon the application, and the mechanical power handling is heavily dependent upon the box used. When in doubt, it's best to err on the low side. **Overpowering drivers is the surest way to kill them!**

Warnings

Brahma is an extremely low distortion, high sound quality driver. It will NOT start to sound "full" or "stressed" until it is at or beyond its limits. Do NOT turn the driver up until you hear distortion! It is tempting to turn up a driver until you hear it start to change, and then try to run it there. Brahma will not complain until you are killing it. If you hear distortion or the sonic character of the driver changes at all, TURN IT DOWN IMMEDIATELY. You are most likely beyond the limits.

Brahma's efficiency rating is deceiving. Because of the extremely flat and extended BL curve, the driver does not suffer from BL compression. In many drivers, this can result in as much as 1.5+ dB loss in output before even half the rated Xmax is reached. Brahma does not drop SPL as it moves more and more. As a result, it maintains extreme linearity – dynamics are not compressed. This also means that you often times need LESS power to reach a given SPL level, even though the "1W" efficiency is lower.

Brahma is built tough. However, like all drivers, you can still destroy them by pushing well beyond their limits. Rattles, bumps, buzzes and the like coming from the driver are a sure sign you're pushing it too far. Don't think "well, I'll only do it for a few seconds" – you ARE damaging the driver. Remember, Brahma is an extreme sound quality driver, and should NOT have any extraneous noises. If you hear something, you're pushing the driver to its limits and beyond. **TURN IT DOWN.**

SPL competitions are hard on subs - REALLY hard. Ask most of the top competitors, and they'll tell you they go through a few subwoofers each season. Because SPL competitors often run their subs at or beyond the limits in the goal of reaching that last 0.1 dB SPL output, it is understood that you are purposely abusing the driver. As such, use in an SPL competition is not recommended or advised. You can do it, and it may work really well. However, if the driver dies, there's a reason – it was pushed too far. Use of your driver in an SPL competition voids your warranty.

Just because a driver is rated at 1600W does not mean it NEEDS 1600W, or that it can handle that 1600W in your application! How much power do you need? In many situations, 200-400W is plenty. Do not over-estimate what you need! **You can easily get loud enough to cause permanent hearing damage with a Brahma 12 in a 1 cubic foot sealed box and 600W of power.** If you value your hearing, and want to simply have a sub that sounds great, then be judicious about the amount of power you're going to use. Use the power you will actually need, not what you think you want.

Thermally, Brahma can take a lot of power. Mechanically, it depends upon the box and application. The larger the box, the LESS power is required to reach a given SPL level. The system – box and driver – becomes more efficient. For example, a Brahma 12 in a 1 cubic foot sealed box will reach full Xmax at 1300W at 20 Hz. In a 2 cubic foot sealed box will require around 800W to push full Xmax at 20 Hz. In 2.25 cubic foot ported and tuned to 30 Hz, 500W will reach full Xmax at 20 Hz. Choose your power based upon your application! Too much power doesn't gain you more output, but can easily destroy your subwoofer.

Once again: a power rating is just that – a power RATING. It is NOT a requirement, or recommendation of power! You only need as much as your application requires and can safely handle; more power is the quickest way to destroying your subwoofer, and definitely constitutes abuse. If you're not sure how much power you need, ask around, or use a good modeling program like WinISD Pro (not the regular/original version – the Pro version is what we want!) or other accurate modeling tool that shows excursion of the driver, and look at the results. If the excursion breaks 50-55mm peak-to-peak, you're pushing it too far.

Installation

First, **READ THIS MANUAL THROUGH PRIOR TO USING THE DRIVER!**

Brahma is packaged to avoid shipping damage. Be careful in unpackaging the driver – do not use razor blades to open it, or let a screwdriver slip when disassembling the shipping crate.

Once Brahma is unpackaged, please keep all the packaging. In the unlikely event you need to return your Brahma for service, you will need to use the original packaging. Brahmas shipping in boxes other than the original packaging will not be covered – keep your packaging!

Brahma can highly pressurize even large boxes. As a result, leaks in the box will be heard. And often leaks sound exactly like a driver rattle/problem; in fact, if the leak is from around the driver, it will sound as if the noise is coming from the driver! Make sure all the seams in the box are caulked air-tight, that there are no leaks around any terminal cups or wires, and that the seal around the driver (including the bolt mounting holes) is extremely tight.

If you have ANY questions about the install or use of this driver, please visit our online car audio forum at <http://forums.acoustic-visions.com>. If you have ANY doubts at all about what you're doing, please contact a professional installer for assistance. Peace of mind is worth a few dollars, and often the installer's training and expertise will save you major headaches down the road.

We suggest mounting Brahma on a baffle of at least ¾" thickness; 1" thick or better is preferred. Use at least #10 screws (at least ¼" longer than the baffle thickness) or #10 T-Nuts and Cap Screws. Use all 8 bolt locations; fewer fasteners can compromise your install.

Break-in is best accomplished once the driver is installed. The first 2 days of use, keep the volume way down. Over 99% of all break-in problems are not from the driver, but from the setup of the system. Any time you change out any piece of gear in your system – including a driver – there is the chance that wires will be knocked loose, gains/controls bumped and set wrong, etc. Spend the first few days finding all these problems. Only after the system has proven to be very reliable and solid (no cutouts as you go over bumps, well balanced, etc) for a minimum of 48 hours should you begin turning it up.

If in the future your Brahma requires service, please contact your original dealer and arrange for your service. Your dealer is your primary contact – they have all your contact information and are committed to your satisfaction. Do not contact Adire Audio directly unless directed to do so by your dealer.

Warranty

Limited Warranty

Adire Audio warrants its products to be free from defects in material and workmanship for a period of 3 years from the date of purchase. Adire Audio and/or its designated representatives shall have all final determination about the validity of a warranty claim.

This warranty shall not apply to any product that has been subject to misuse, neglect, accident, or abnormal conditions of operation, including but not limited to use in professional sound/PA systems and car stereo SPL competitions. Under no circumstances are burnt voice coils covered as a warrantable item. This warranty is limited to the original owner, and is not transferable.

Adire Audio's obligation under this warranty is limited to repairing, replacing or refunding the original purchase price (exclusive of shipping charges), at Adire Audio's option, any product returned to the factory within 3 years of the date of purchase, provided that Adire Audio determines that the unit is defective and has been used in compliance with the terms of this warranty.

For products that failed due to manufacturing defects Adire Audio will reimburse shipping costs. Shipping costs will be limited to delivery by UPS Ground or US Parcel Post surface, whichever is lower. Costs incurred above and beyond these levels will not be reimbursed.

If the failure has been caused by misuse, neglect, accident, or abnormal conditions of operation repair or replacement will be billed at a nominal cost, pursuant to customer agreement to such repair or replacement fees. No shipping costs will be reimbursed.

The foregoing warranty is exclusive and in lieu of all other warranties, expressed or implied, including, but not limited to, any warranty of merchantability or fitness for any particular purpose. Adire Audio shall not be liable for any special, incidental or consequential damages, whether in contract, tort, or otherwise.

See the Adire Audio website for a complete description and statement of our Warranty, Return, and Satisfaction Guarantee.