

Axton ATB220: Dual bandpass with great sound and level



BEST PRODUCT
Upper-Class
CAR & HiFi 5/2021

Bandpass subwoofer with fun factor

► With the ATB series Axton has just brought out its new top model subwoofer box. Obviously, we are keen to know how the dual bandpass turned out.

Among subwoofers from Axton we already have active subwoofers on our radar as powerful bass boxes. The active boxes for the spare wheel well, underseat operation or corner of the trunk are very successful on the market. Yet perhaps something 'serious' is not the first thing to look for at Axton. But if you look closely, the ATB216 is a bass box to take really seriously: with two 16 cm speakers this gives a compact yet low cost bass solution. The new ATB220 now goes a step further, following the same concept as the 216, but just a size bigger. The ATB220 belongs to a species of bandpass subwoofer that these days is relatively rare. That is to say the bass driver is located inside the

box and has a chamber in front of and behind the cone. For the sound to come out at least one of the chambers has to be vented with a port. Exactly as with

a bass reflex subwoofer the size of the chambers and the dimensioning of the port determine the frequency response, characteristic sound pressure level and

The 20 cm woofer with paper cone and metal basket is of robust construction





The tunnel widens towards the outside and inside to avoid port flow noise

performance. Here we have all that but doubled with two woofer chassis. The cabinet of the ATB220 is constructed so that both woofer chassis work symmetrically on enclosed chambers outer left and right. In the centre is a common vented chamber that emits the sound to the outside environment via a wooden tunnel. Since a bandpass has no cone that directly emits sound and the entire output passes through the tunnel, it is important that the tunnel is large enough not to draw attention to itself by making port flow noise. Axton has given the ATB220 a port whose cross-section continuously expands along half its length toward the openings. As with a trumpet opening, the sound is emitted evenly without tear-off edges, thus avoiding turbulence. Both built-in woofers together achieve a 4 ohm termination at the binding post terminal so that the box can be operated harmlessly with bridged power amps or with each monoblock. The woofers themselves are very robust fellows, no high-tech magic weapons, but equipped with everything that a good subwoofer needs. The cones are made of paper and are perfectly stable. The drivers work with 50 mm voice coils

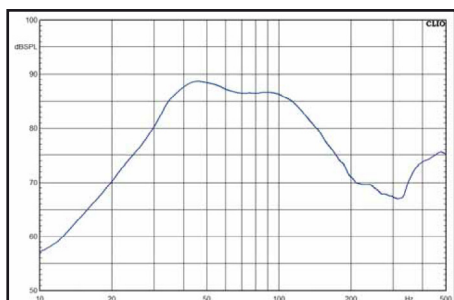
having a decent linear stroke of 5.5 millimeters in each direction. As a dual package like this they are good for really serious bass.

Measurements and Sound

The nice thing about a bandpass system is the many degrees of freedom you have for tuning. Thus with the same bass driver you can build a woofer that plays incredibly deep just as you can build one that is incredibly efficient. The dumb thing though is that these cannot be done together and so you have to decide. You can confidently describe the tuning of the Axton as optimal. It is so well balanced that it can cover the region from 35 to over 100 Hz, while still always working very efficiently. That also works superbly in practice where the ATB220 well and truly blasts the ears of the vehicle occupants. The achievable levels are probably a new record for 20 cm woofers. The ATB220 can easily keep pace with fat 30 cm speakers. What's so nice about this is that sound quality has not been ignored. Bass drums sound clean and with the necessary pressure. The ATB220 is not even fazed by electronic bass beats, which always sound exciting, the woofer never running out of breath.

Conclusion

Thanks to its design the Axton ATB220 sits almost unnoticed out of harm's way in the trunk. Axton has achieved a perfect balance that makes the ATB220 a fun-oriented play partner with a fat sound.



That is textbook bandpass tuning: Superb amplitude response down to almost 30 Hz in the basement with a crisp 88 dB at 1 watt



Axton ATB220

| | |
|-------------|-----------------|
| Price | about 230 Euro |
| Distributor | ACR, CH-Zurzach |
| Hotline | info@acr.eu |
| Internet | www.acr.eu |

Summary

| | | | |
|--------------------|--------|-----|-------|
| ▶ Sound quality | 50 % | 1,1 | ■■■■■ |
| Bass foundation | 12,5 % | 1,0 | ■■■■■ |
| Pressure | 12,5 % | 1,0 | ■■■■■ |
| Accuracy | 12,5 % | 1,0 | ■■■■■ |
| Dynamics | 12,5 % | 1,5 | ■■■■■ |
| ▶ Lab | 30 % | 1,3 | ■■■■■ |
| Frequency response | 10 % | 1,0 | ■■■■■ |
| Efficiency | 10 % | 2,0 | ■■■■■ |
| max. volume | 10 % | 1,0 | ■■■■■ |
| ▶ Practice | 20 % | 1,5 | ■■■■■ |

Technical Data

| | |
|------------------------|----------------------------|
| Chassis diameter | 21,6 cm |
| Mounting cutout | 10 – 20k Hz |
| Mounting depth | 10 – 20k Hz |
| Magnet diameter | -12 – 12 dB/10 – 20k Hz |
| Width | by HP |
| Height | 180°/LZK by DSP |
| Depth | • |
| Weight | •, DC or signal |
| Nominal impedance | 2 x 2 Ohm |
| DC resistance Rdc | 3,71 Ohm |
| Coil inductivity Le | 2,73 mH |
| Coil diameter | 50 mm |
| Cone surface Sd | 194 cm ² |
| Resonance frequency fs | 42 Hz |
| Mechanical quality Qms | 5,91 |
| Electrical quality Qes | 0,63 |
| Total quality Qts | 0,57 |
| Equivalent volume Vas | 6,8 l |
| Moving mass Mms | 111 g |
| Rms | 4,94 kg/s |
| Cms | 0,13 mm/N |
| B*I | 13,14 Tm |
| Pressure 1 W, 1 m | 84 dB |
| Power handling | 200 – 500 W |
| Test chamber | BR 14,5 l |
| Tunnel (d x l) | 25 cm ² x 18 cm |

Axton ATB220

Upper-Class 1,2

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Price/performance: excellent

"Successful dual bandpass that is fun."