





**Brave the elements** For those who want to bring impeccable Bowers & Wilkins sound quality to places where conventional speakers fear to tread, we've come up with the ideal solution: the AM-1 architectural monitor. This ultra-durable, weather resistant speaker is designed with the outdoors in mind – perfect for patios, gardens and poolsides – but its robust design and sleek looks also make it a great choice for public indoor spaces.



**Use anywhere** With its rust-proof aluminium grille and super-rigid cabinet, AM-1 is our most durable speaker ever. To make sure every AM-1 is highly resistant to the elements, each speaker must pass a range of rigorous weather tests, including UV exposure and testing inside an accelerated salt-spray chamber. Indoors or outdoors, at home or in a restaurant, it's guaranteed to perform whatever the weather.

**Technology** AM-1 takes everything we know about high performance audio and adapts it to meet the demands of a versatile, all-weather monitor. The speaker combines tried and trusted technologies with new innovations – like an inverted driver array for optimum sound dispersion when the speaker is mounted high on a wall, and an advanced bass radiator design that maximises low-frequency performance while keeping the speaker sealed from the elements.



**ABR** With AM-1, we've come up with an ingenious solution to the problem of producing powerful bass from a weatherproof speaker. Instead of the Flowport™ found in our traditional speakers, AM-1's cabinet integrates a rear-mounted auxiliary bass radiator (ABR). As well as maintaining the cabinet's weather-tight seal, the ABR gives the AM-1 truly remarkable bass response for a speaker of its kind.

## **Behind the scenes** Our senior development engineer Dr John Dibb explains how AM-1 overcomes the acoustic limitations of traditional all-weather speakers.



Dr John Dibb, senior development engineer

**We know that different speakers can produce different results depending on the acoustics of the space they're used within. How do you approach that particular challenge when designing an all-weather loudspeaker?**

Speakers designed for use outdoors are generally subject to less performance variation caused by their surroundings, as these tend to be larger, more open and less room-like. The results of our own outdoor tests were very positive in this respect. The sound was better than expected in every way, particularly at the low frequencies. We were especially pleased with the attack and the even nature of the bass.

Of course, AM-1 is also suitable for use indoors, so we also needed to take into account the changes in the acoustic environment when the speaker is used in this way, particularly at the low-frequency end. What we have done is engineer a carefully judged balance that delivers optimum results in all possible applications.

**Do loudspeakers intended for outdoor use require any technologies not employed in conventional designs? If so, how do these technologies impact on sound quality?**

In general outdoor speakers don't require any special technologies compared with 'normal' systems. However, you do need UV-resistant structural materials and paints. And of course, any parts of the speaker that are exposed to the weather need to be waterproof and corrosion-proof. Hence the use of aluminium in our grille design.

The enclosure has to be completely waterproof, but it should also have a slight, long-term, air leak. This is because outdoor speakers can undergo much greater temperature changes (leading to internal air expansion or contraction) than indoor speakers. This is one of the key reasons for our decision to give the AM-1 an auxiliary bass radiator (ABR), which offers most of the advantages of a reflex system whilst delivering the other design criteria we need.

**Unlike other Bowers & Wilkins loudspeakers, AM-1's tweeter sits below the bass/midrange driver. Why the change in orientation?**

When used outdoors, speakers tend to be mounted above the listener, and so we wanted to angle the AM-1's optimum listening axis (i.e. the point where the units operate exactly in phase) down by around 10 degrees. With limited front-to-back driver positioning on this baffle, it was easier to achieve the downward tilt with the tweeter-below configuration.

**The design of the AM-1's enclosure, which integrates the ABR, is very unusual. What are the acoustic advantages of this engineering approach?**

Every aspect of AM-1 is optimised for the best possible bass performance. The ABR approach allows us to achieve close to the performance of a ported system while maintaining all the structural advantages of a sealed box design. Combine this with high-quality Bowers & Wilkins drive units plus a simple crossover, and we think the AM-1 sounds better than any weatherproof speaker we've yet produced.

**Model of discretion** AM-1 has been carefully designed to be easy to install, and its elegant cast aluminium wall bracket incorporates an ingenious one-plug mounting system. Combine this with minimal wall projection and a design that allows the speaker to be angled through 220 degrees, and you have a discreet, versatile monitor that can provide you with pristine sound almost anywhere.

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|---------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Technical features                    | Nautilus™ tube loaded aluminium dome tweeter<br>Glassfibre cone bass/midrange<br>Auxiliary Bass Radiator (ABR) |
| Description                           | 2-way system with Auxiliary Bass Radiator (ABR)                                                                |
| Drive units                           | 1x ø25mm (1in) aluminium dome high-frequency<br>1x ø130mm (5in) glassfibre cone bass/midrange                  |
| Frequency range                       | -6dB at 46Hz and 50kHz (wall mounted)                                                                          |
| Frequency response                    | 51Hz - 22kHz on reference axis (wall mounted)                                                                  |
| Sensitivity                           | 86dB (2.83V, 1m)                                                                                               |
| Total harmonic distortion             | <1% 200Hz - 20kHz (86dB, 1m)                                                                                   |
| Nominal Impedance                     | 8Ω (5.2 Ω min)                                                                                                 |
| Recommended amplifier power           | 20W - 100W into 8Ω on unclipped programme power                                                                |
| Dimensions<br>(Includes wall bracket) | Height: 310mm (12 1/4in)<br>Width: 180mm (7in)<br>Depth: 210mm (8 1/4in)                                       |
| Net weight                            | 4kg (8.8lb)                                                                                                    |
| Finishes                              | White<br>Black                                                                                                 |



Bowers & Wilkins