

# amina loudspeakers

## AIW4X plaster-in-wall loudspeaker

### AIW4X In-Wall Pro-Panel Loudspeaker



The Amina® AIW Plaster In-Wall Loudspeaker Series is the world's first high performance loudspeaker that is designed to be skimmed over with 2mm of normal finishing plaster, providing a completely concealed audio solution whilst allowing designers and builders a very high quality wall finish ready to accept a decoration of choice (paint, paper, textured plaster etc).

The Amina® AIW4 Plaster In-Wall loudspeaker is a two channel device. It has two electrical connections. The different electrical signals are combined mechanically in the vibrating sound-board structure. The listener will here both set of information. In a stereo listening situation the left channel is connected to one input, the right channel connected to the other. The listener will hear the audio recording, but of course, the depth and width of sound stage will be limited, because the physical separation of the two channels is very small.

The product can also be used within special rooms such as curved spaces, and once plastered in become completely 'invisible' to humidity and other solvents. It is therefore ideal for wet areas such as pools and bathrooms, and for clean rooms where walls and ceilings need to be regularly washed or wiped down.

The Amina® AIW4 Plaster In-Wall loudspeaker comprises a spe-

cialist lightweight yet very rugged composite panel material, the surface of which, after receiving a 2mm skim of plaster, vibrates to generate acoustic energy. However this type of product has also been very specifically engineered to have a rigid perimeter panel section to ensure no possibility of cracks forming in the surface plasterwork between the product and the surrounding wall structure.

At the heart of the Amina® AIW4 is its acoustic 'engine' using a two of the very latest rare earth magnet, high power vibrational excitation drivers for each of the two electrical channels, allowing it to handle 40W of continuous power per channel. Generating an astonishing 105dB of sound (measured 1m away and assuming both channels played the same information), even after plaster is applied, the AIW4 has the ability to cope with the highly dynamic sounds, from individual notes of the classical guitar to the explosions in a modern action movie. The excitation drivers set up tiny but powerful vibrations, (you can feel them, but you cannot see them) in the panel. These are then transferred through the plaster, paint or wallpaper that is placed on top of it, which then excite air molecules at the surface of the wall, which in turn excite other air molecules until the sound reaches our ears. The rigidly held perimeter of the panel means that the vibrations cannot cause cracking around the edge of the product.

Operating in the same way as natural musical instruments such as the acoustic guitar, violin or piano, these vibrations recreate sounds far more evenly and less directional than a conventional cone based speaker. This creates a very wide area in which the surround sound or stereo sound field is heard properly, even when seated right against the active wall.

The width of the product (345mm) allows it to fit well within 400mm centred wood or metal stud-work commonly used today in walls and ceilings. However, for special cases (for example for setting in the plaster work between old wooden ceiling beams in heritage properties), narrower units can be made to order. Please contact Unique Automation for details.

The product is supplied with fixings for easy installation into plasterboard stud walls and ceilings and for dot and dab plasterboard faced walls. The product is fixed to the plasterboard and not to any rear wall structure or studwork. These fixings are fixed with two dry wall screws to the surrounding plasterboard (see installation review), and set all the levels required to ensure the panel sits flush with the front of the plasterboard. In solid

### unique automation

12-14 Orion Business Centre, Surrey Canal Road, London SE14 5RT, United Kingdom  
T: +44 (0) 20 7740 3910 • F: +44 (0) 20 7232 0972  
info@bathovision.tv • www.bathovision.tv

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block, brick or concrete walls, a metal back box is available to ease the installation process.

A powered sub woofer is recommended for applications requiring low bass frequencies. For the very best results, your system electronics should comprise in-line equalisation to enable 'voicing' of the completed room.

#### Applications:

The Amina® AIW4 is a very high performance concealed two channel audio source for use in parts of the home where it is not justified to install more than one device and where a wide sound-

stage is not necessary. Examples include bedrooms, kitchens, bathrooms and hallways. It produces high quality audio at very high levels without compromising style or design.

In commercial applications (an example would be individual hotel room) the device can be used to convey two completely different signals. One channel can reproduce local entertainment within the room, while the second channel can be connected via a high impedance (100v or 70v line) transformer to the hotels central information system. In the event of an emergency the central channel can relay verbal information directly to each room, whether or not the local in-room entertainment system is switched on.

### Specifications: AIW4X

|                                      |   |
|--------------------------------------|---|
| No of electrical channels:           | 2   |
| Nominal Impedance*:                  | 4 ohms per channel<br>8 ohms both channels connected in series                  |
| Power Handling (Continuous):         | 40W per channel<br>80W both channels combined                                   |
| Sensitivity (with 2mm plaster skim): | 84dB 1m/1w single channel<br>87dB 1m/1w both channels combined                  |
| Maximum SPL (with 2mm plaster skim): | 99dB 1m/20W per channel<br>105dB 1m/40W both channels combined                  |
| Frequency Range:                     | 100Hz ~ 20KHz   |
| Dispersion Angle:                    | 180°  |
| Electrical Connection:               | Professional butt splice crimp for permanent connection                         |
| Dimensions:                          | 450 x 345 x 40 mm   |
| Product Weight:                      | 1810g   |
| Minimum Aperture Depth:              | 60mm from front of panel  |
| Fixings Provided:                    | Suitable for 12.5mm thick plasterboard. Please state if other sizes required.   |
| Box Quantity:                        | Pairs   |
| High Pass Filter Requirement:        | 100Hz at 24dB / Octave (Minimum external required e.g. Amina AF2 active filter) |

\* External tapped 100V line transformer available for commercial installations

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