

SERIES 80

B&W Model 802

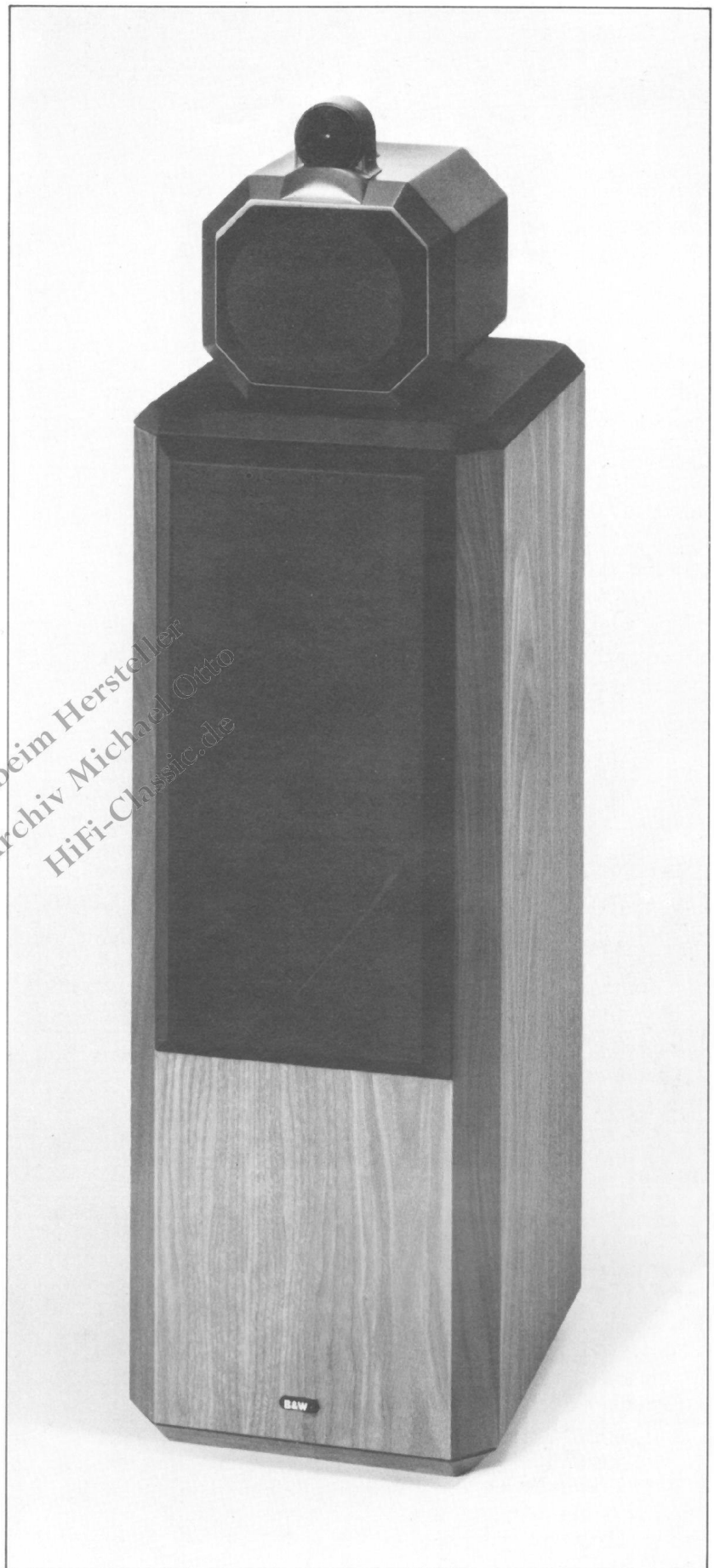
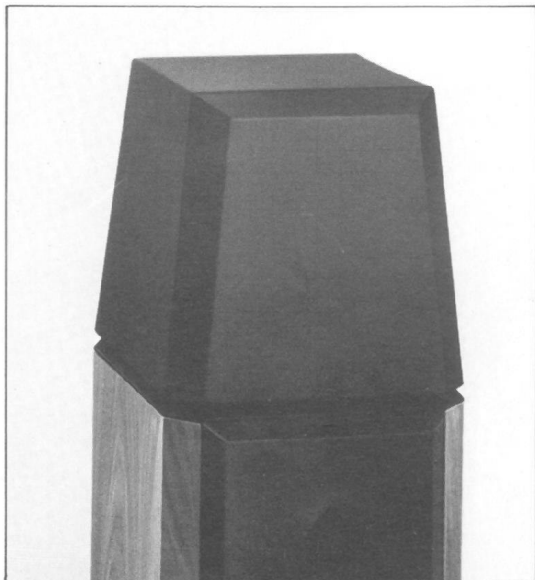
The Design Brief

Model 802, second of the new B&W Series 80 loudspeakers, continues the original concept in that it is a minimum-compromise system, combining the very highest standards of design technology with the finest engineering and production methods.

The fully professional monitor Model 801 — first in this series — has not only received the most enthusiastic acclaim from technical journals everywhere; it has also been adopted by major recording companies around the world. First by EMI as classical music monitor for their Abbey Road Studios in London and on location; then by their associated companies in France and Germany. As this leaflet goes to press, Decca have been using the 801 when recording Mahler II in Chicago.

So Model 801 has proved itself to be the professional's choice for use under the most critical conditions when producing recordings of outstanding excellence. And the signs are that Model 802 is already acquiring a similar reputation.

In our design brief for Model 802 we laid down that it should follow the technical excellence of the 801 as closely as possible, but within more compact physical dimensions and at somewhat lower cost, to appeal to a wider spectrum of home users.



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The Drivers

Model 802 employs four active drivers in a three-way system where mid-range and high frequencies are covered by drivers and moulded head enclosure identical to those employed in Model 801. Both mid-range and high-frequency drivers are computer-matched and paired, with typical tolerances within ± 0.25 dB. The complete head assembly is isolated from the low frequency unit to avoid colouration and can be rotated relative to the low-frequency enclosure if desired. Frequencies below 400 Hz are handled by two 200 mm Bextrene cone drive units operating in parallel with vertical in-line configuration.

The Crossover Network

The identical fourth order Butterworth Squared crossover networks developed for Model 801 are also employed in the 802—using no fewer than 46 components (including overload circuit). The detailed advantage of this highly complex configuration is discussed in the paper "Computer-Aided Design of Loudspeaker Crossover Networks" by Dr G. J. Adams and S. P. B. Roe.

The Overload Protection

B&W pioneered electronic overload protection for Model 801 and a similar device (with the exception that it is audio-powered) is employed in Model 802. This Audio Powered Overload Circuit (APOC) renders Model 802 completely safe against all forms of AC or DC overload condition.

The Enclosure Design

In designing for the ultimate in domestic loudspeakers, enclosure size and floor area are often determining factors to the potential user. Due to the 802's unique bass driver configuration, it has been possible to produce a system which occupies less than half the floor space of Model 801 with only a marginal reduction in the extension of low frequency response. The entire enclosure employs the same techniques which were pioneered for the 801 and again a detailed account of this research is covered by Dr Adams' Paper

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SPECIFICATION**Frequency response**

55 Hz to 20 kHz ± 2 dB at centre of the listening window at 2 m.

Low-frequency system

Closed box acoustic suspension with system resonance of 49 Hz and system Q of 0.7 (ie: minus 3 dB at resonant frequency).

Dispersion

Vertical: ± 1 dB over 10° of centre window.

Horizontal: +0, -3 dB over 60° of centre window, 20 Hz to 13 kHz.

Drive units

Vertical in-line configuration corrected for minimum inter-unit time delay. Computer-matched in pairs ensuring accuracy typically better than 0.25 dB.

Bass drivers (two)

Diaphragm: 165 mm dia. thermo-plastic cone with p.v.a. compound coating. Ultra long-throw suspension.

Voice Coil: 38 mm dia. high-temperature Nomex.

Magnet System: 2.25 kg, ceramic.

Mid-range driver

Diaphragm: 100 mm dia. aromatic polyamide fibre matrix cone, critically formed and p.v.a. impregnated following a laser interferometry computer-linked pattern.

Voice Coil: 25 mm dia. phenolic bonded and aluminium lined.

Magnet System: Ceramic.

High-frequency driver

Diaphragm: 26 mm dia. multi-filament polyester weave dome, mechanically damped.

Voice Coil: 26 mm dia. high-temperature epoxy impregnated.

Magnet System: high-energy nickel cobalt, centre pole.

Total moving mass less than 0.3 g.

Quality Control

Model 802 will be subjected to the same uniquely rigid quality control procedures as Model 801—so all drivers will be computer-matched and paired, typically bettering less than ± 0.25 dB between matching samples.

Conclusion

It is felt that the unobtrusive styling and minimal space occupied by Model 802 will extend the professional monitor facility to many home users who are unable, due to space restrictions, to accommodate Model 801. It must be stressed however, that Model 802 in no way supersedes or replaces Model 801, which will remain the reference standard both for professional and home users for many years to come.

Distortion

For a nominal s.p.l. of 95 dB at 1 m.

Second harmonic: less than 3.0% 20 Hz to 100 Hz.

less than 1.0% 100 Hz to 20 kHz.

Third harmonic: less than 3.0% 20 Hz to 100 Hz.

less than 1.0% 100 Hz to 20 kHz.

Impedance

8 ohms nominal throughout entire operating range.

Sensitivity

1 watt into 8 ohm load for a s.p.l. of 85 dB at 1 m, sinewave input at 300 Hz.

Power handling

Minimum amplifier 50 watts into 8 ohms.

No upper limit because of overload protection device.

Dimensions

Height: 1040 mm (41 in).

Width: 300 mm (11 3/4 in).

Depth: 370 mm (14 1/2 in).

Weight

32 kg (70 lb).

Cabinet finish

Standard: selected veneers of teak or walnut.

Special: selected veneers of rosewood or black ash.

Lacquer: a limited selection of colours, hand-finished in exquisite laquer, are available to order.

B&W Loudspeakers Ltd reserve the right to amend details of their specifications in line with technical developments.



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