# LEAK Sandwich 150 & 250





\*available in Walnut finish

| Availability   |                |  |
|----------------|----------------|--|
| Order Date:    | September 2023 |  |
| Shipping Date: | October 2023   |  |

Recommended Retail Price: Sandwich 150 £999 / Pair Sandwich 250 £1999 / Pair Sandwich 250 & Stands £2299 / Pair Sandwich 250 Stands £799 / Pair

### OVERVIEW

#### A major loudspeaker invention

Throughout the history of broadcasting and recording, certain exceptional developments have become milstones in the progress of sound reproduction.

One such milestone was the world's very first low distortion amplifier - the famous original Leak Point One, in 1945. Another was the pioneering major breakthrough with the invention of the fantastically rigid Leak sandwich cone diaphragm - which was demonstrably of great strength and many times stiffer than all conventional forms of cone, of its time.



....the first name in high fidelity since 1934

To understand the impact of this innovation, one must remember that to obtain low distortion, the movement of a loudspeaker diaphragm, or cone, should follow as accurately as possible the waveform of the signals applied to its voice coil. The ability of the current to follow these impulses accurately depends upon the lightness and stiffness of the cone assembly. Many conventional cones: paper, impregnated fabric, plastics, aluminium etc all generally suffer from low stiffness. This results in significantly larger areas of the cone vibrating in motion, uncontrolled by the voice coil. These uncontrolled emotions produce transit "hangover", amplitude distortion (peaks and troughs in the frequency response) and intermodulation distortion (lack of clarity of spurious tones). Those shortcomings are inherent in almost all direct radiator loudspeaker systems using conventional cones, irrespective of cost.







All of these shortcomings are overcome by the Leak Sandwich construction. Originally presented in 1961, the Sandwich used engineering and design principles applied to airframe construction. Now, reintroduced and re-engineered with modern-day learnings, the new Leak Sandwich cone comprises of a stiff aluminium skin for the outer surfaces (where the stresses are greatest) bonded to a thick core of a polymethacrylimide (PMI) based structural foam, often used aerospace and the automotive industries. This applied, precision-engineered use of the most suitable materials in optimum proportions and dispositions gives immense rigidity. This means the Leak Sandwich cone reproduces the signal applied to the voice coil, totally free from mechanical break-up and its associated distortions. The result is a remarkably smooth frequency response, free from violent peaks or troughs over a very broad frequency range, indicative of an excellent, transient response.







It is not often sufficiently realised how profound the influence of the loudspeaker housing (the cabinet) is on the overall acoustic performance. Its design requires a great degree of electroacoustic knowledge as a design of the motor units themselves. The new Leak Sandwich cabinet benefits from 60 years of technological development since the original. The structure consists of a composition of MDF and composite board, thus creating a second 'sandwich' reference, with the boards layered for optimum cabinet strength. While the new cabinet fuses intelligent bracing with this 'sandwich' of materials, it also maintains a specific front-rear bracing, with the distinct, visible countersunk screw on the rear - a famous trait of the original.





The technology found within Leak audio devices presents science and innovation in abundance, yet the industrial design often draws favourable attention. Just like the warmly received Leak Stereo 130 and 230 integrated amplifier models, the new Leak Sandwich 150 and 250 loudspeaker models maintain the understated, classic Leak styling. Finished in a sumptuous walnut, real-wood veneer, the cabinet is decorated with an aluminium trim insert matched and finished to the same exemplary standards of the driver trims and cone materials. The decorative grille cloth is purpose chosen to match the classic Leak styling with a specification for maximum acoustic transparency.

A keen eye will also notice that the new Leak Sandwich 150 and 250 are supplied in perfectly matched pairs with a 'handed' array presentation. Much more than continued industrial design traits, the meticulous placement of each driver is considered to the nth degree, thus enabling a projection of a truly precise stereo soundstage.

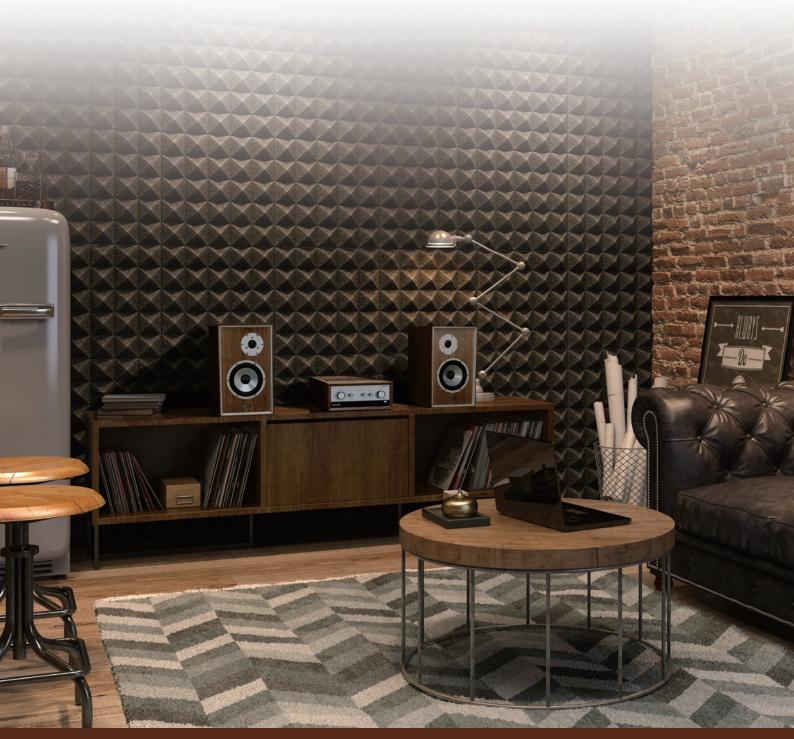
With the Leak Sandwich 150 and 250, the high-frequency driver has been developed, incorporating a rear chamber damped to absorb the output from the back of the dome. This innovation not only isolates the HF unit from the rest of the loudspeaker, it has the added benefit of reducing the resonant frequency of the treble unit. Taking the resonant frequency below the crossover region means the audible spectrum of the bass, mid and high frequencies can be sewn together with an added dimension of detail and harmonics, eliminating the requirement to harshly adjust the definition of the high-frequencies. And that very sewing is conducted by a crossover of the highest order, developed over thousands of hours of listening, not just simulation as is the tendency in modern loudspeaker design.



The Leak Sandwich 150 and 250 are the pinnacle of innovation that commenced in 1961 with the original Leak Sandwich. Those technological advancements are implemented with the utmost regard for tradition, as well as the continual aspiration to forge sound reproduction equipment of the highest quality, accessible to every discerning audiophile.

The Leak Sandwich 150 comes in the format of a 2-way standmount loudspeaker with a combination of 6.5" (170mm) low-frequency 'Sandwich' driver and a 1.2" (30mm) coated textile dome high-frequency driver.

The Leak Sandwich 250 is a larger format, 3-way standmount loudspeaker with a 11" (280mm) low frequency 'Sandwich' driver, a 4.25" (108mm) 'Sandwich' mid-range driver and 1.2" (30mm) coated textile dome high-frequency driver. The Sandwich 250 is available with, or without, a matching custom-specified stand, finished in a matching real-wood veneer.



Such is the format of the Leak Sandwich 250, many traditional stands would not allow for sufficient presentation of this loudspeaker. To address this consideration, the Sandwich 250 is complemented by a precision-measured plinth that positions the loudspeaker's driver array at the optimum level and position. The result is a finely finished loudspeaker and matching stand combination of furniture-grade quality, that eliminates any compromise of the listening experience for the proud owner.







www.leak-hifi.co.uk
LEAKofficial1934
leakaudio
Leak HiFi Official
IAG House, 13/14 Glebe Road, Huntingdon,

Cambridgeshire, PE29 7DL, UK

### Features

#### **High Frequencies**

The isolated compartment for the HF unit prevents modulation from the rear bass and eliminates cavity residences.

A stiff, long voice-coil, powerful magnets and compliant suspensions ensure ample linear excursions of the specifically designed HF unit.

#### Mid and Low Frequencies

The mid-bass and bass-frequency units have a long voice coil, powerful magnet and compliant suspensions to ensure large linear excursions.

The Sandwich cone is many times stiffer, and no heavier than conventional cone materials. The scientifically developed diaphragm gives freedom from colouration and break-up of resonances. The specially shaped dome further strengthens the cone and eliminate interference effects.

Rolls of custom-specified damping provide a dual purpose

- i) eliminate cavity residences and
- ii) extend bass response downwards by converting internal air pressure changes from adiabatic to isothermal

#### Cabinet

The airtight outer cabinet is completely sealed with a specially designed rear porting system. Both the 150 and 250 models are fitted with dual ABS bass ports, with a precision flared design. The cabinet offers efficient air pressure equalisation, without 'chuffing'.

Specially developed with a 'sandwich' construction and front-to-rear bracing ensures 'dead' cabinet walls, giving deep clear bass without "boxiness".

Finished in an exquisite hand-applied, real-wood veneer.

Both the diecast frame and the baffle hole, are shaped and positioned to give a flat response by eliminating diffraction and cancellation effects.

#### Internal Considerations

Rolls of custom-specified damping provide a dual purpose:

i) eliminate cavity residences and

ii) extend bass response downwards by converting internal air pressure changes from adiabatic to isothermal.













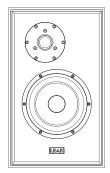


www.leak-hifi.co.uk
LEAKofficial1934
leakaudio
Leak HiFi Official
IAG House, 13/14 Glebe Road, Huntingdon,

Cambridgeshire, PE29 7DL, UK

### SPECIFICATIONS

Model



#### Sandwich 150

| General description                   | 2-way vented-box/standmount                  |
|---------------------------------------|--|
| Design philosophy and core technology |  |
| Enclosure type                        | Bass reflex                                  |
| Transducer complement                 | 2-way  |
| ABR                                   |  |
| Bass driver                           | 6.5"(170mm) Aluminium-Foamcore Sandwich cone |
| Midrange driver                       |  |
| Treble driver                         | 1.2"(30mm) Coated Textile Dome               |
| Full-range driver                     |  |
| AV shield                             | No   |
| Sensitivity (2.83V @ 1m)              | 86.5dB                                       |
| Recommended amplifier power           | 25-150W                                      |
| Peak power handling                   | no peri                                      |
| Peak SPL                              | 0 106dB                                      |
| Nominal impedance                     | 6Ω (8Ω Compatible)                           |
| Minimum impedance                     | 4Ω   |
| Frequency response(+/-3dB)            | 44Hz ~ 26kHz                                 |
| Bass extension(-6dB)                  | 38Hz   |
| Crossover frequency                   | 2.4kHz                                       |
| Cabinet Volume (in litres)            | 19.6L  |
| Dimensions (mm)                       |  |
| Height (on plinth)                    | 415mm  |
| Width                                 | 250mm  |
| Depth (with terminals)                | (290+25)mm                                   |
| Carton size                           | 650*400*530mm                                |
| Net weight                            | 12.3kg/pcs                                   |
| Gross weight                          | 27kg/ctn                                     |
| Finish                                | Real Wood Veneer - Walnut                    |
| Standard accessories                  | Rubber feet                                  |

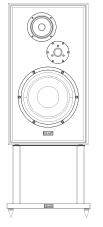


www.leak-hifi.co.uk
LEAKofficial1934
leakaudio
Leak HiFi Official

IAG House, 13/14 Glebe Road, Huntingdon, Cambridgeshire, PE29 7DL, UK

### SPECIFICATIONS

#### Model



#### Sandwich 250

| Treble driver1.2"(30mm) Coated Textile DomeFull-range driverNoAV shieldNoSensitivity (2.83V @ 1m)88.5dBRecommended amplifier power25-250WPeak power handling112dBPeak SPL112dBNominal impedance6Ω (8Ω Compatible)Minimum impedance4ΩFrequency response(+/-3dB)42Hz ~ 26kHzBass extension(-6dB)32HzCrossover frequency470Hz & 3.1kHzCabinet Volume (in litres)2.7L,45.5L   | General description                   | 3-way vented-box/standmount                   |
|---|---------------------------------------|---|
| Transducer complement   3-way     ABR   11"(280mm) Aluminium-Foamcore Sandwich cone     Midrange driver   4.25"(108mm) Aluminium-Foamcore Sandwich cone     Treble driver   1.2"(30mm) Coated Textile Dome     Full-range driver   1.2"(30mm) Coated Textile Dome     AV shield   No     Sensitivity (2.83V @ 1m)   88.5dB     Recommended amplifier power   25-250W     Peak power handling   112dB     Nominal impedance   6Ω (8Ω Compatible)     Minimum impedance   4Ω     Frequency response(+/-3dB)   42Hz ~ 26kHz     Bass extension(-6dB)   32Hz     Crossover frequency   470Hz & 3.1kHz     Cabinet Volume (in litres)   2.7L,45.5L | Design philosophy and core technology |   |
| ABR   11"(280mm) Aluminium-Foamcore Sandwich cone     Midrange driver   4.25"(108mm) Aluminium-Foamcore Sandwich cone     Treble driver   1.2"(30mm) Coated Textile Dome     Full-range driver   1.2"(30mm) Coated Textile Dome     AV shield   No     Sensitivity (2.83V @ 1m)   88.5dB     Recommended amplifier power   25-250W     Peak power handling   0     Peak SPL   112dB     Nominal impedance   6Ω (8Ω Compatible)     Minimum impedance   4Ω     Frequency response(+/-3dB)   42Hz ~ 26kHz     Bass extension(-6dB)   32Hz     Crossover frequency   470Hz & 3.1kHz     Cabinet Volume (in litres)   2.7L,45.5L                  | Enclosure type                        | Bass reflex                                   |
| Bass<br>Bass<br>driver11"(280mm)Aluminium-Foamcore Sandwich coneMidrange driver4.25"(108mm)Aluminium-Foamcore Sandwich coneTreble driver1.2"(30mm)Coated Textile DomeFull-range driver7AV shieldNoSensitivity (2.83V @ 1m)88.5dBRecommended amplifier power25-250WPeak power handling9Peak SPL112dBNominal impedance6Ω (8Ω Compatible)Minimum impedance4ΩFrequency response(+/-3dB)32HzBass extension(-6dB)32HzCrossover frequency470Hz & 3.1kHzCabinet Volume (in litres)2.7L,45.5L  | Transducer complement                 | З-way   |
| Midrange driver4.25"(108mm) Aluminium-Foamcore Sandwich coneTreble driver1.2"(30mm) Coated Textile DomeFull-range driverAV shieldNoSensitivity (2.83V @ 1m)88.5dBRecommended amplifier power25-250WPeak power handlingPeak SPL112dBNominal impedance6Ω (8Ω Compatible)Minimum impedance4ΩFrequency response(+/-3dB)32HzGass extension(-6dB)32HzCrossover frequency470Hz & 3.1kHzCabinet Volume (in litres)2.7L,45.5L  | ABR                                   |   |
| Treble driver1.2"(30mm) Coated Textile DomeFull-range driverNoAV shieldNoSensitivity (2.83V @ 1m)88.5dBRecommended amplifier power25-250WPeak power handling112dBPeak SPL112dBNominal impedance6Ω (8Ω Compatible)Minimum impedance4ΩFrequency response(+/-3dB)42Hz ~ 26kHzBass extension(-6dB)32HzCrossover frequency470Hz & 3.1kHzCabinet Volume (in litres)2.7L,45.5L   | Bass driver                           | 11"(280mm) Aluminium-Foamcore Sandwich cone   |
| Full-range driver     AV shield   No     AV shield   No     Sensitivity (2.83V @ 1m)   88.5dB     Recommended amplifier power   25-250W     Peak power handling   112dB     Peak SPL   112dB     Nominal impedance   6Ω (8Ω Compatible)     Minimum impedance   4Ω     Frequency response(+/-3dB)   42Hz ~ 26kHz     Bass extension(-6dB)   32Hz     Crossover frequency   470Hz & 3.1kHz     Cabinet Volume (in litres)   2.7L,45.5L   | Midrange driver                       | 4.25"(108mm) Aluminium-Foamcore Sandwich cone |
| AV shieldNoSensitivity (2.83V @ 1m)88.5dBRecommended amplifier power25-250WPeak power handling112dBPeak SPL112dBNominal impedance6Ω (8Ω Compatible)Minimum impedance4ΩFrequency response(+/-3dB)42Hz ~ 26kHzBass extension(-6dB)32HzCrossover frequency470Hz & 3.1kHzCabinet Volume (in litres)2.7L,45.5L   | Treble driver                         | 1.2"(30mm) Coated Textile Dome                |
| Sensitivity (2.83V @ 1m)   88.5dB     Recommended amplifier power   25-250W     Peak power handling   112dB     Peak SPL   112dB     Nominal impedance   6Ω (8Ω Compatible)     Minimum impedance   4Ω     Frequency response(+/-3dB)   42Hz ~ 26kHz     Bass extension(-6dB)   32Hz     Crossover frequency   470Hz & 3.1kHz     Cabinet Volume (in litres)   2.7L,45.5L   | Full-range driver                     |   |
| Recommended amplifier power   25-250W     Peak power handling   112dB     Peak SPL   112dB     Nominal impedance   6Ω (8Ω Compatible)     Minimum impedance   4Ω     Frequency response(+/-3dB)   42Hz ~ 26kHz     Bass extension(-6dB)   32Hz     Crossover frequency   470Hz & 3.1kHz     Cabinet Volume (in litres)   2.7L,45.5L   | AV shield                             | No  |
| Peak power handling     Peak SPL   112dB     Nominal impedance   δΩ (8Ω Compatible)     Minimum impedance   4Ω     Frequency response(+/-3dB)   42Hz ~ 26kHz     Bass extension(-6dB)   32Hz     Crossover frequency   470Hz & 3.1kHz     Cabinet Volume (in litres)   2.7L,45.5L   | Sensitivity (2.83V @ 1m)              | 88.5dB  |
| Peak SPL 112dB   Nominal impedance 6Ω (8Ω Compatible)   Minimum impedance 4Ω   Frequency response(+/-3dB) 42Hz ~ 26kHz   Bass extension(-6dB) 32Hz   Crossover frequency 470Hz & 3.1kHz   Cabinet Volume (in litres) 2.7L,45.5L   | Recommended amplifier power           | 25-250W                                       |
| Nominal impedance6Ω (8Ω Compatible)Minimum impedance4ΩFrequency response(+/-3dB)42Hz ~ 26kHzBass extension(-6dB)32HzCrossover frequency470Hz & 3.1kHzCabinet Volume (in litres)2.7L,45.5L   | Peak power handling                   | o er  |
| Minimum impedance 4Ω   Frequency response(+/-3dB) 42Hz ~ 26kHz   Bass extension(-6dB) 32Hz   Crossover frequency 470Hz & 3.1kHz   Cabinet Volume (in litres) 2.7L,45.5L   | Peak SPL                              | 112dB   |
| Frequency response(+/-3dB)42Hz ~ 26kHzBass extension(-6dB)32HzCrossover frequency470Hz & 3.1kHzCabinet Volume (in litres)2.7L,45.5L   | Nominal impedance                     | 6Ω (8Ω Compatible)                            |
| Bass extension(-6dB) 32Hz   Crossover frequency 470Hz & 3.1kHz   Cabinet Volume (in litres) 2.7L,45.5L  | Minimum impedance                     | 4Ω  |
| Crossover frequency 470Hz & 3.1kHz   Cabinet Volume (in litres) 2.7L,45.5L  | Frequency response(+/-3dB)            | $42Hz \sim 26kHz$                             |
| Cabinet Volume (in litres) 2.7L,45.5L   | Bass extension(-6dB)                  | 32Hz  |
|   |                                       | 470Hz & 3.1kHz                                |
|   | Cabinet Volume (in litres)            | 2.7L,45.5L                                    |
| Dimensions (mm)   | Dimensions (mm)                       |   |
| Height (on plinth) 655mm  | Height (on plinth)                    | 655mm   |
| Width 370mm   | Width                                 | 370mm   |
| Depth (with terminals) (300+30)mm   | Depth (with terminals)                | (300+30)mm                                    |
| Carton size 500*430*790mm   | Carton size                           | 500*430*790mm                                 |
| Net weight 27.3kg/pcs   | Net weight                            | 27.3kg/pcs                                    |
| Gross weight 30.2kg/ctn   | Gross weight                          | 30.2kg/ctn                                    |
| Finish Real Wood Veneer - Walnut  | Finish                                | Real Wood Veneer - Walnut                     |
| Standard accessories Rubber feet  | Standard accessories                  | Rubber feet                                   |
| Optional accessories Leak Sandwich 250 stand  | Optional accessories                  | Leak Sandwich 250 stand                       |

