

SUBWOOFER

Matterhorn 18S

An eighteen-inch drive unit in a sealed enclosure, carrying the LFE channel and the bass-managed content from every other channel in the system. Specified in pairs.

RP-22 asks the subwoofer system for 95dB reference at the primary listening position with headroom for 115dB peaks. The 18S is built for that target with two units per room in rooms from 12×18ft to 18×30ft.

The enclosure is sealed and tuned to a Butterworth alignment, Qtc 0.70. Measured alone it is 3dB down at 42Hz and rolls off at 12dB/octave — a gentle slope that boundary gain in a closed room rises to meet, so in-room response typically runs flat to 20–25Hz without bass boost.

What sealed costs is efficiency in the bottom octave. The eighteen-inch driver, with 17mm of linear excursion and a motor that keeps the voice coil in the magnetic field across all of it, is what buys that back.



MATTERHORN 18S

SPECIFICATION

Type	Sealed subwoofer, passive — external amplification
Driver	18-inch, 4-inch voice coil, 17mm linear excursion (one way)
Alignment	Butterworth, Qtc 0.70; system resonance 42Hz
Low-frequency response	–3dB at 42Hz anechoic, 12dB/octave below; flat to 20–25Hz in-room (estimated)
Operating band	15–80Hz
Sensitivity	92dB (2.83V at 1m)
Power handling	1200W AES, 2400W programme
Impedance	4Ω nominal, 3.3Ω DC resistance
System crossover	80Hz from the Matterhorn 12 and 8
Cabinet	18mm MDF, 36mm double front baffle; window brace, front-to-rear struts, corner bracing
Internal volume	100litres net
Connection	speakON NL4, rear panel, pins 1+ / 1–
Dimensions	610 × 560 × 420mm (24.0 × 22.0 × 16.5in), W × H × D
Weight	42kg (93lb), approx.

Anechoic figures describe the subwoofer on its own. In-room extension is an **estimate**: it depends on the room’s dimensions, its construction and where the units stand, and is confirmed by measurement at commissioning.

AMPLIFICATION

Channels	One dedicated channel per subwoofer
Load	4Ω, continuous-rated
Recommended power	1000–1500W RMS at 4Ω (600W minimum)
Maximum programme	2400W
Amplifier type	Class D recommended; damping factor above 200 at 4Ω

PROCESSING

FUNCTION	SETTING	PURPOSE
Low-pass	80Hz, LR4 (24dB/octave)	System crossover, set at the processor
High-pass	15Hz, Butterworth 24dB/octave	Infrasonic protection — required
Linkwitz transform	42Hz / Q0.70 → 21Hz / Q0.707	Optional; rooms with little boundary gain only
Limiting	RMS, frequency-weighted; 5–10ms attack, 100–200ms release	Excursion and thermal protection; threshold set at commissioning

In most rooms boundary gain alone brings the 18S close to flat at 20Hz, so the processing asks for little. Measure in-room response before applying any equalisation.

IN THE SYSTEM

TWO PER ROOM

A pair averages out room modes, so bass is even across every seat rather than correct at one and wrong a metre away. It also raises headroom and lowers distortion at any given level.

PLACEMENT

Preferred: the front wall, behind the screen, boundary-loaded. Otherwise the front quarter-points of the side walls. The final position comes from the room's modal behaviour.

INTEGRATION

Crossed over at 80Hz LR4 from the Matterhorn 12 and 8, whose sealed cabinets roll off predictably into it. In-room response is then set with the processor's room correction after placement.

COMMISSIONING

A new driver's resonance can read 2–3Hz high until the suspension has run in. Allow around 30 hours of moderate use before final measurement.

ABOUT AUDIO DYNAMICS

Audio Dynamics designs and builds the Matterhorn range in Bangalore, India. Every model starts from the performance a finished room has to demonstrate under CEDIA RP-22 and works backwards to the drive units and cabinet needed to reach it with margin in hand. Enquiries, and where the range can be heard, at audiodynamicsglobal.com/listen.