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SUBWOOFER KH 810 + KH 870

ENGLISH



KH 810 + KH 870



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The Neumann KH 810 + KH 870

As consumer technology advances at ever faster rates, professional technology increasingly finds itself trying to keep up. An example of this is the advent of the Blu-ray and other high definition formats that have increased the audio channel count to 7.1 and beyond.

The KH 810/KH 870 are an answer to these new demands by offering a new 7.1 High Definition Bass Manager™. This is compatible with all standard consumer formats from mono through to the latest 7.1 HD systems. Eight channels of analog ensures flexible interconnectivity for modern studios. Four-mode LFE-channel processing guarantees compatibility across all formats and industries. Forth-order crossovers and flexible acoustical controls allow for seamless system integration. Built-in volume control and a hardware remote control allows for centralized system control independent of the source, and the electronics can be remote located to reduce cabling

The latest amplifier technology and acoustical components have been used to ensure the most accurate sound reproduction possible. Robust 10" drivers, a rock-solid cabinet, and carefully designed ports guarantee a tight, articulate, and distortion-free low frequency reproduction, even at high replay levels. Using the sum output, Plane Wave Bass Array™ (PWBA™) techniques acoustically improves lateral consistency in the listening area. The bass extends down to 18 Hz.

The KH 810/KH 870 subwoofer are designed to complement our extensive range of monitors, and can be used on its own, or daisy-chained to make larger systems capable of higher SPL. The KH 810/KH 870 can be used in music, broadcast, and post production studios for tracking, mixing, and mastering. The cabinet can be positioned next to a wall or flush mounted into a wall due to the front mounted port, and can be mixed freely in multichannel systems with other loudspeakers from our range.





Solid cabinet construction

1 Well-braced cabinet with extremely low tuning frequency minimizes unwanted resonances

2 Long excursion, low distortion, magnetically shielded 10" drivers

3 Bass compression is minimized using large capacity low turbulence dual reflex ports

! Latest efficient low heat dissipation power amplification techniques

▶ Electronics can be remote located (REK 3 + SC nn) for reduced cabling and ease of installation and use



INPUT **OUTPUT**

LEFT CENTER RIGHT LEFT SURROUND RIGHT SURROUND LEFT BACK RIGHT BACK LEFT BACK RIGHT BACK DIRECT IN LFE / SUM SUM

7 PIN 1 CONNECTED

1

8

POWER ON (FLASH-LIMIT) ACTIVE

BASS MANAGEMENT DISABLE

BASS MANAGEMENT REAR CH BASS MANAGEMENT VOLUME CONTROL 5 ACTIVE

TEST SIGNAL ON

SUBWOOFER GAIN OUTPUT LEVEL (dB) 114 INPUT GAIN (dB) 100 0 114

SUBWOOFER PHASE 0° -180° 135° -45° Degrees

PARAMETRIC EQUALIZER BYPASSED ON

GAIN (dB) 0 10 20 30 40 50

Q 1 2 3 4 5 6 7 8 9 10

FREQUENCY (Hz) 60 100 150 200 300 400 600 800 1000

LOW CUT (dB) 0 10 20 30 40 50

4

3 LFE MODE

2 REMOTE CONTROL AND RS-232

DESIGNED IN GERMANY - MADE IN IRELAND

▶▶ ACTIVE STUDIO SUBWOOFER
7.1 CHANNEL HIGH DEFINITION BASS MANAGER

CAUTIONS AND WARNINGS

All safety and warning notices found in the user manual should be observed. Specifically, do not expose to moisture, liquids, flames, heat, vibration, dust, or direct sunlight. Do not block or cover heatsinks or vents, and leave adequate space for ventilation.

Check mains power voltage selection before connecting to correctly earthed mains power.

There are no user serviceable parts inside this product. Repairs should only be performed by authorized service personnel. Options and accessories are fitted at the user's own risk.

This loudspeaker is capable of producing a sound pressure level in excess of 95 dB. This may cause permanent hearing damage so user caution is recommended. Noise exposure is a function of SPL and time. DO observe local regulations when listening at high levels for a long time. Hearing protection may be required.

AC 220-240 V

MAINS VOLTAGE SELECTION 6 AC 110 V

MAINS POWER ON OFF

OPTIONAL REMOTE POWER ON / OFF 6

AC 100-120 V / 220-240 V - 50-60 Hz

CAUTION

Internal fuse type and rating: 5x20 mm SB 5.0 A

Max. Power consumption: 290 W (KH 810) / 350 W (KH 870)

CE FC

7.1 High Definition Bass Manager™

- ▶ 7.1 Inputs/Outputs, compatible with all formats from mono to HD, and beyond
- ▶ Bass management with 4th order, 80 Hz crossover: compatible with typical systems

- ▶ Built-in 8 channel system volume control with remote control NRC 1 and RS-232

Installation flexibility

- ▶ 4-mode LFE routing: compatible with music and movie industries
- ▶ Extensive acoustical controls: low cut, parametric EQ, phase (with built-in calibration test tone), input/output level
- ▶ Independent switchable surround/back channel bass management
- ▶ Switchable mains voltage with remote power on
- ▶ Ground lift on all inputs

- ▶ Sum output for multiple subwoofer systems: higher SPL, decreased system distortion, Plane Wave Bass Array™ (PWBA™) to reduce lateral room effects

Additional features of KH 870

- ▶ Large system with 6 dB higher output than KH 810
- ▶ A main loudspeaker can be mounted onto an KH 870 to make a large 4-way column system





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▶ Acoustics

	KH 810	KH 870
-3 dB free field frequency response	18 ... 300 Hz, ± 3 dB	
Pass band free field frequency response	19 ... 300 Hz, ± 2 dB	
Self-generated noise	< 20 dB(A) at 10 cm	
Sine wave output with a THD < 0.5 % at 1 m	95 dB SPL (> 40 Hz)	
Max. SPL in half space at 3% THD (averaged between 40 and 90 Hz)	110.7 dB SPL	116.7 dB SPL
Max. SPL with pink noise in half space at 1m, linear	112 dB SPL	118 dB SPL

▶ Electronics

Amplifier, total cont. (peak) output power*	160 W (200 W)	320 W (400 W)
Controller design	Analog, active	
Main channel crossover frequency	80 Hz	
Crossover slope	24 dB/oct.	
Equalization: Low cut	30 Hz, 0 ... -12 dB	
Parametric Equalizer:	Bypassable	
Gain	+4 ... -12 dB	
Frequency	20 ... 120 Hz	
Q	1 ... 8	
Time of Flight adjustment delay	0 ... -315° in 45° steps	
Volume Control	Hardware remote, software remote, or RS-232	
Calibration Tools	Internal signal generator	
Protection circuitry	Peak and Thermo Limiters	
Infrasonic filter frequency; slope	6.5 Hz; 12 dB/oct.	
Remote control	On a CAT-5	

▶ Analog Inputs and Outputs

Input/Output channels	7.1 / 7 + Sum
Impedance, electrically balanced	XLR, 13 kΩ
Input sensitivity	-8 and +6 dB
CMRR	> 60 dB @ 15 kHz
Interchannel isolation (1 kHz), level matching	< -95 dB, ±0.1 dB
Volume control range, resolution	118 dB, 0.25 dB
Dynamic range, THD+N	119 dB(A), better than 0.001%
LFE Modes	80 Hz + re-routing, 80 Hz, 120 Hz, fullrange
LFE Gain	0 / +10 dB
Gain Control	+2 ... -12 dB

▶ Displays and Mains Power

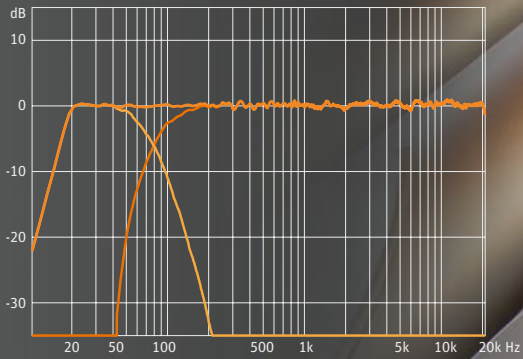
Displays and indicators: power on	Red LED (and remote control logo)
limit / clip / digital audio error	Red LED "Flashing" (and remote control logo)
bass management active	Green LED
Mains power	220 ... 240 V- or 100 ... 120 V-, switchable
Power consumption – Idle / Full output	20 W / 290 W

▶ Mechanics

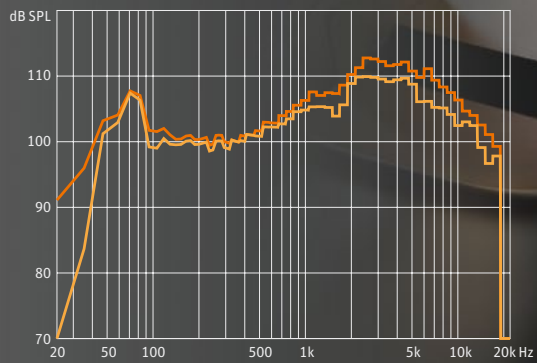
Height x width x depth	360 x 330 x 645 mm (14.2" x 13" x 25.4")	735 x 330 x 645 mm (28.9" x 13" x 25.4")
Internal net volume / External volume	41.5 liters / 76.6 liters	86 liters / 156 liters
Weight	26.0 kg (57.2 lbs)	47.1 kg (103.6 lbs)
Drivers	Magnetically shielded	
Woofers	265 mm (10")	2 x 265 mm (10")
Cabinet surface finish, color: custom	Painted, Metallic Anthracite (RAL 7021)	
Baffle cover	Included metal grille	

* THD+N < 0.1 % with limiter deactivated

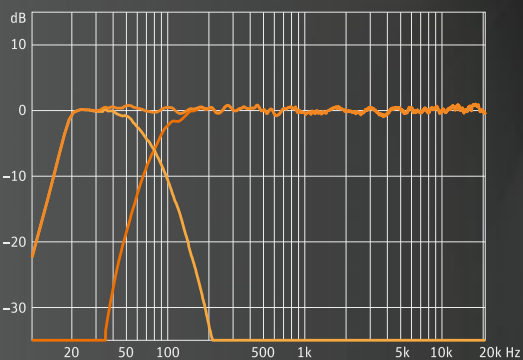
Frequency Response KH 810 + KH 120



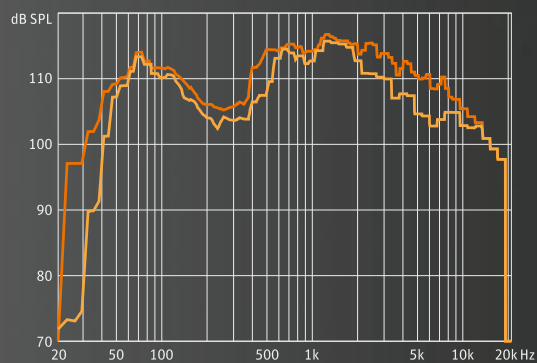
Maximum SPL KH 810 + KH 120 *



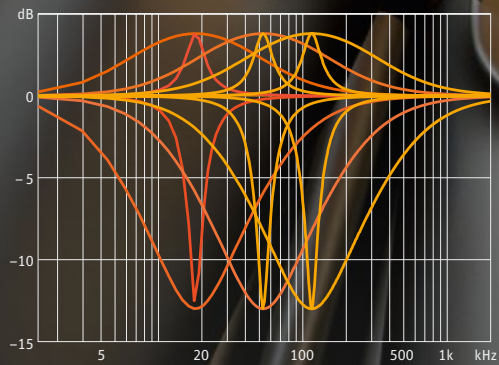
Frequency Response KH 870 + KH 310



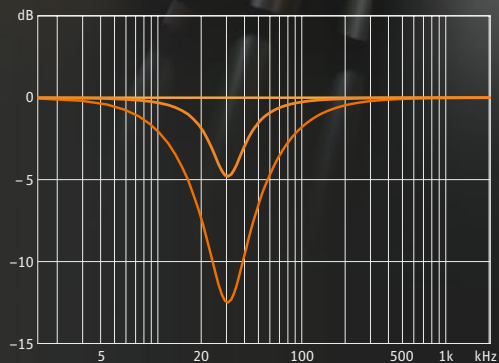
Maximum SPL KH 870 + KH 310 *



Parametric EQ



Low Cut Filter



* at 1% / 3% THD

Accessories

As a full service provider, Neumann offers an extensive range of accessories:

► The mounting hardware can be used in different combinations to locate the subwoofer in many places:

Mounting a KH 120 on a KH 870:

KH 120 + LH 61 + LH 28 + pole + KH 870 or
KH 120 + LH 61 + LH 37 + KH 870

Mounting a KH 310 on a KH 870:

KH 310 + LH 25 + LH 28 + pole + KH 870 or
KH 310 + LH 25 + LH 37 + KH 870 or
KH 310 + LH 41 + LH 28 + pole + KH 870 or
KH 310 + LH 41 + LH 37 + KH 870 or
KH 310 + LH 41 + LH 36 + LH 28 + pole + KH 870 or
KH 310 + LH 41 + LH 36 + LH 37 + KH 870

Mounting an KH 420 on a KH 870:

KH 420 + LH 41 + LH 28 + pole + KH 870 or
KH 420 + LH 41 + LH 36 + LH 28 + pole + KH 870 or
KH 420 + LH 41 + LH 36 + LH 37 + KH 870 or
KH 420 + LH 41 + LH 37 + KH 870

Accessories KH 810 + KH 870

► NRC 1 Remote Control
used to control the system volume, LFE gain, and bass management bypass. A remote cable (RC nn) must be purchased separately.



► REK 3 Remote Elektronik Kit
to locate the electronics panel up to 30 m (90°) away from the subwoofer cabinet. A driver cable is required (SC nn).



► SEA 1 Subwoofer EtherCon Adapter
enables the connection of multiple subwoofers to a single remote controller: NRC 1 or any other source of RS-232 data. Up to 3 subwoofers can be driven off one SEA 1. A remote cables (RC nn) must be purchased separately.



Accessories KH 810

► FO 810 Flight Case
for use when storing or regularly transporting a KH 810 subwoofer between locations



Accessories KH 870

► LH 37 Subwoofer Adaptor
for mounting onto a subwoofer with top panel flange.



► FO 870 Flight Case
for use when storing or regularly transporting a KH 870 subwoofer between locations



► Order Info

Product	Art. Number
KH 810 G 10" Active Studio Subwoofer with 7.1 Bass Manager, Metallic Anthracite	503951
KH 810 G CCC 10" Active Studio Subwoofer with 7.1 Bass Manager, CCC/KC certified, Metallic Anthracite	505545
KH 870 G 2 x 10" Active Studio Subwoofer with 7.1 Bass Manager, Metallic Anthracite	503947
KH 870 G CCC 2 x 10" Active Studio Subwoofer with 7.1 Bass Manager, CCC/KC certified, Metallic Anthracite	505566



Please refer to the website ► www.neumann.com for additional technical information. Furthermore, look for the extensive range of accessories that turn individual products into a complete monitoring system. Detailed mechanical drawings are also available together with remote electronics kits.