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STUDIO MONITOR KH 120



ENGLISH

KH 120



Best Input.

▶ Attention to detail

▶ User oriented engineering

▶ Reliability

▶ Accuracy

▶ Precision

▶ Unique quality management

▶ Perfection



Best Output.

▶ Consistency

▶ Authenticity

▶ Transparency

▶ Versatility

▶ Control

▶ Flexibility

▶ The measure of all sound





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Neumann Studio Monitor Systems

Neumann is well-known in the audio industry for its high quality microphones in studios, broadcast, and on stage. Neumann has also been a pioneer in the audio industry for over 80 years with a long history of world-class products. These products have kept Neumann on the cutting edge of technology – from mixing consoles and disc cutting lathes, to more recent innovations in digital technology with the Solution-D system.

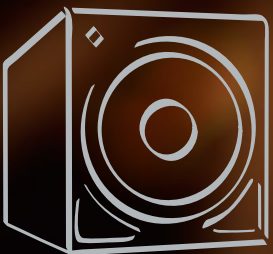
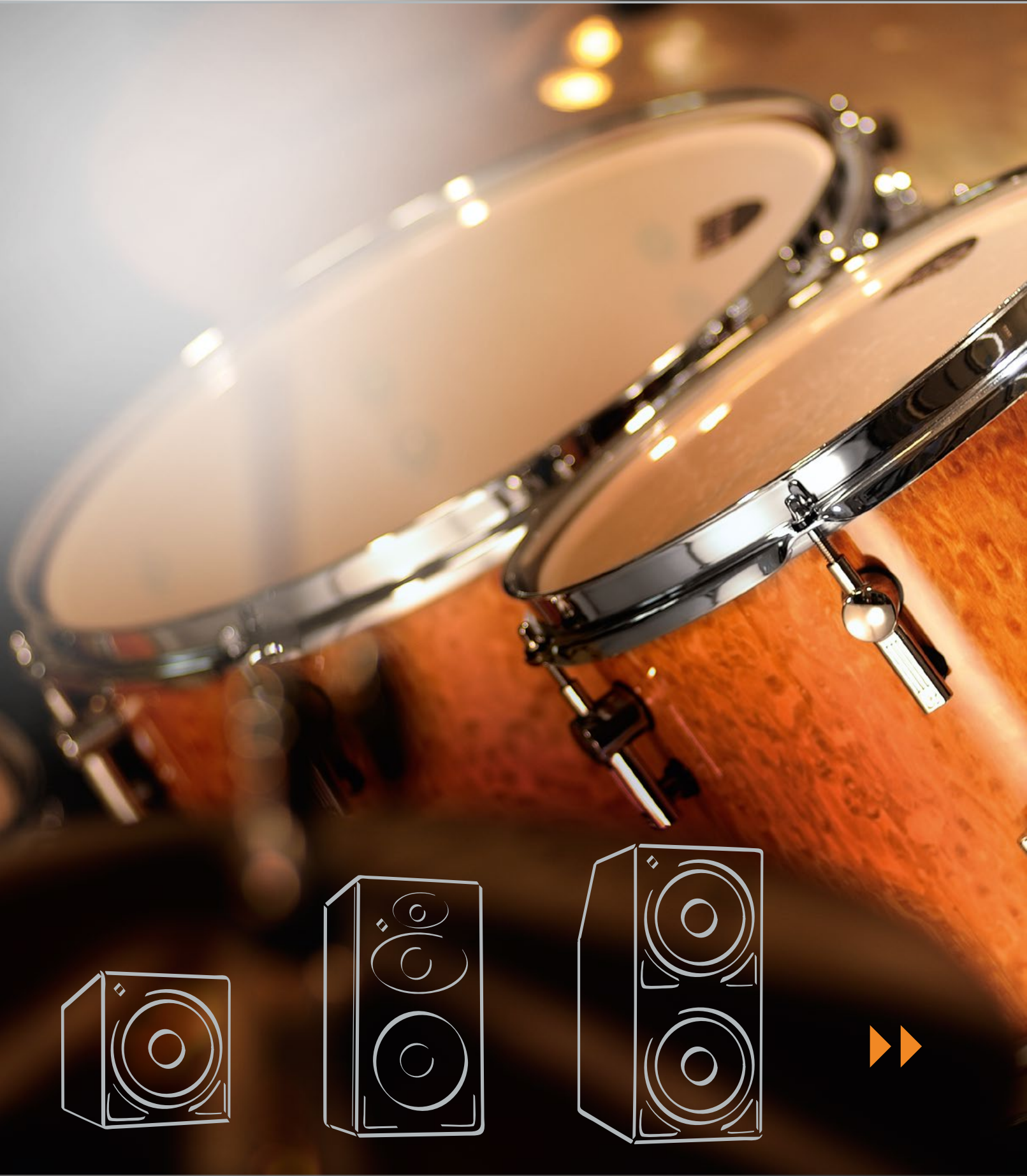
In 2010 Neumann expanded the product portfolio with studio monitor systems, and now stands for highest quality at both ends of the audio production chain: “Best Input and Best Output”.

The Neumann KH 120

The KH 120 studio monitor is designed for use as a near-field loudspeaker or as a rear loudspeaker in larger multi-channel systems. The KH 120 represents the latest in acoustic and electronic simulation and measurement technologies to ensure the most accurate sound reproduction possible. It has a Mathematically Modeled Dispersion™ waveguide (MMD™), flexible acoustical controls, analog class-AB amplifiers, various input formats and an extensive mounting hardware range. All of this provides the user with the maximum versatility over a wide variety of acoustic conditions, source equipment, and physical locations.

A subwoofer, such as the Neumann KH 810, with its 7.1 High Definition Bass Manager™, can be added to deepen the low-frequency response to 18 Hz and increase the system's maximum output level. The KH 120 is perfect for tracking, mixing and mastering in music, broadcast, project and post-production studios.







Powerful alloy fabric dome
▶ Low-distortion high-frequency reproduction

Elliptical Mathematically Modelled Dispersion™ (MMD™) waveguide

- ▶ Smoother off-axis response
- ▶ More forgiving of diverse acoustical environments

Composite sandwich cone
▶ Damping of break-up modes

Long throw bass driver
▶ Low distortions at high sound levels

Two-color + dimmable Neumann logo
▶ Displays operation status and activation of the extensive protection system

Robust metal grille
▶ Protects against mechanical damage

Large front panel ports
▶ Reduced bass compression and easier to mount in tight spaces such as OB vans

Compact aluminum cabinet (magnetically shielded)
▶ Minimizes resonances, better heat dissipation, long life

More features:



Wide horizontal dispersion

- ▶ Freedom of movement across the mixing console

Narrow vertical dispersion

- ▶ Reduces reflections off the mixing console

One-piece front panel with no discontinuities

- ▶ Reduced diffraction and smoother frequency response

Powerful analog amplifiers with large headroom

- ▶ Improved transient response

Separate woofer and tweeter electronic peak limiters and thermal-protection circuitry

- ▶ High reliability

Production consistency

- ▶ Any KH 120 is "pairmatched" to any other KH 120



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A VERSION



D VERSION

1

4-position bass, low-mid and treble acoustical controls
▶ More control in diverse acoustical environments

2

Wide range input gain and output level controls
▶ Easier interfacing with signal sources

3

New mounting hardware options
▶ More flexibility in mounting cabinets in more diverse locations

4

Display dimmer
▶ For low lighting level conditions or behind the screen applications



View of connectors and control switches

5

Ground lift
▶ Reduced noise in electrically noisy environments and overcomes ground loops

6

Universal switched-mode power supply (100 ... 240 V)
▶ One version works in any country and robust to poor quality mains supply

* Digital input version only (KH 120 D)

XLR analog input

7

Lipsync delay
(0 ... 10/12 frames)*
▶ To align audio and
video signals

8

Time-of-flight delay
(0 ... 400 ms)*
▶ To compensate for listening
distance differences

Signal select
▶ Analog, Digital A, Digital B,
Digital A+B (all available with
and without delay)

9

BNC input and
buffered BNC output / 24 bit,
192 kHz, AES3, S/P-DIF*
▶ Compatible with commonly
used digital signals*

10

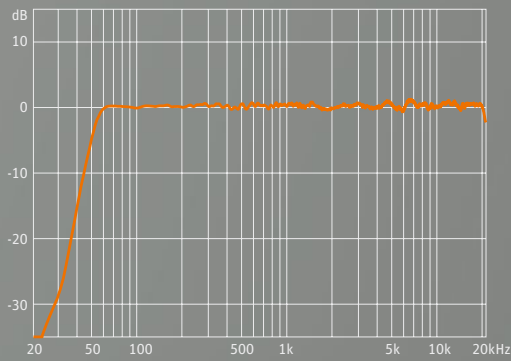
More features:

!

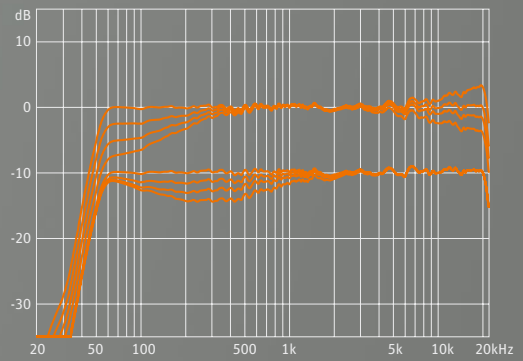
Separate woofer and tweeter
electronic peak limiters and
thermal-protection circuitry
▶ High reliability



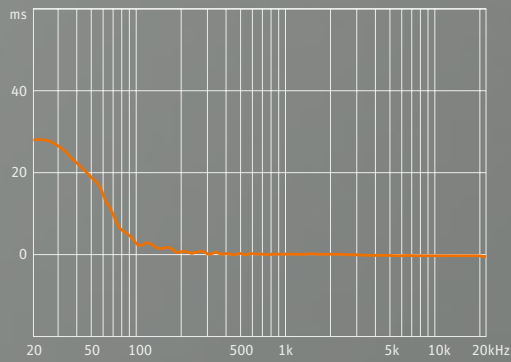
Frequency Response



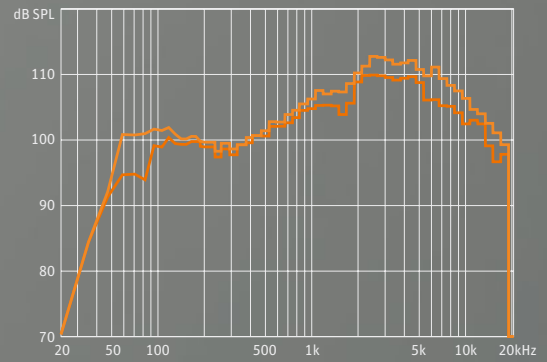
Acoustical Controls (Bass/Low-Mid/Treble)



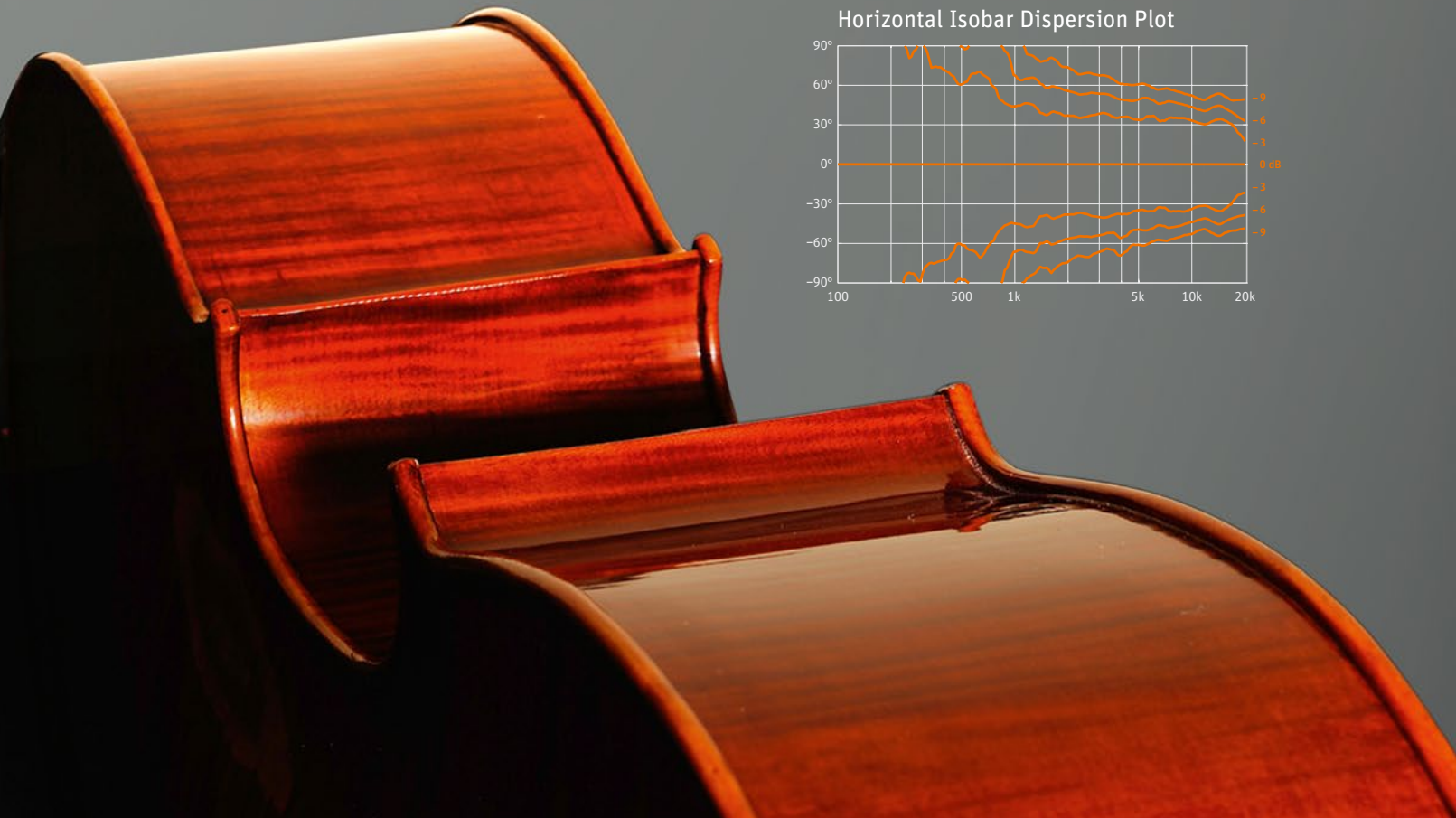
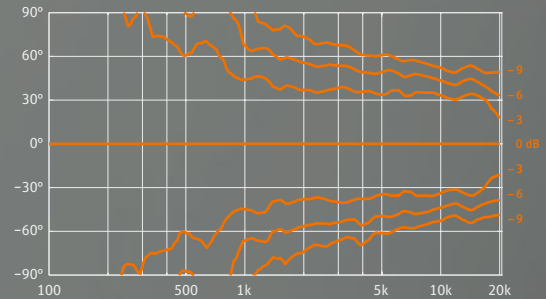
Group Delay



Maximum Output Level (at 1% / 3% THD)



Horizontal Isobar Dispersion Plot



► Acoustics

KH 120 A | KH 120 D

-3 dB free field frequency response	52 Hz ... 21 kHz, ± 3 dB
Pass band free field frequency response	54 Hz ... 20 kHz, ± 2 dB
Self-generated noise (with controls set to 100 dB SPL and 0 dB)	< 20 dB(A) at 10 cm
Total harmonic distortion < 0.5 % at 95 dB SPL at 1 m	> 100 Hz
Max. SPL in full space / calc. in half space at 3% THD at 1 m	105.1 / 111.1 dB SPL (averaged 100 Hz ... 6 kHz)
Bass Capability (max. SPL calc. in half space at 3% THD at 1 m)	104.8 dB SPL (averaged 50 ... 100 Hz)
Max. short term SPL with IEC-weighted noise (IEC 60286-5) at 1 m, in typical listening conditions	107 dB(C) SPL
Max. short term SPL with music material at 2.3 m, in typical listening conditions (pair)	97 dB(C) SPL (full range) 104 dB(C) SPL (with subwoofer)
Max. long term SPL with pink noise at 2.3 m, in typical listening conditions (single/pair)	88 / 93 dB(C) SPL (full range) 89 / 94 dB(C) SPL (with subwoofer)

► Electronics

Woofer/Tweeter amplifier, cont. (peak) output power*	50 W (80 W) / 50 W (80 W)
Controller design	analog, active
Crossover frequency	2.0 kHz
Crossover slope	24 dB/oct., 4th order
Equalization: Bass / Low-Mid / High	0, -2.5, -5, -7.5 dB / 0, -1.5, -3, -4.5 dB / +1, 0, -1, -2 dB
Protection circuitry	Peak Limiter: Low; Thermo Limiter: Low, High
Infrasonic filter frequency; slope	30 Hz; 6 dB/oct.

► Analog Input

Impedance, electrically balanced	XLR, > 10 kΩ
Input gain control (sensitivity)	0 dB to -15 dB
Output level control	94, 100, 108, 114 dB SPL
CMRR	> 56 dB @ 15 kHz

► Digital Input/Output

Format BNC	–	AES3, S/P-DIF
Impedance BNC, unbalanced	–	75 Ω (input/output)
Input switching	–	Analog, Digital A, Digital B, Digital A+B (all available with and without delay)
Digital converter: resolution, design	–	16 ... 24-bit DAC, ΔΣ
sampling rate	–	32 ... 192 kHz
Digital sensitivity	–	-18 dBFS
D-A dynamic range	–	120 dB
Audio-Video/lip sync and Time-of-Flight delay range	–	0 ... 400 ms
Audio-Video/lip sync max. frames	–	0 ... 10 (40 ms) frames 0 ... 12 (33 ms) frames
Resolution: time/distance	–	0.1 ms / 3.4 cm (1 3/8")
Latency D-A (A-D-A)	–	0.22 - 1.85 ms (0.54 ms)

► Displays and Mains Power

Displays and indicators: power on	Neumann logo "White", dimmable: 100%/60%/30%/0%	
limit/clip	Neumann logo "Red", dimmable: 100%/60%/30%	
digital delay setting acknowledgement	–	Neumann logo "Red" 3 flashes
digital error	–	Neumann logo "Red" flash
Mains Power Supply: voltage; frequency	100 - 240 V-; 50 - 60 Hz	
Power consumption: Idle / Full output	20 W / 200 W	40 W / 200 W

► Mechanics

Height x width x depth, mm (inches)	277 x 182 x 220 mm (10 7/8" x 7 1/8" x 8 5/8")	
Internal net volume / external volume	6.5 Liter / 9.7 Liter	
Weight	6.4 kg (14 lbs 2 oz)	6.5 kg (14.3 lbs)
Drivers: Woofer / Tweeter	130 mm (5.25") / 25 mm (1"), both magnetically shielded	
Mounting points	2 x M8 on rear panel	
Cabinet surface finish, color: custom	Painted aluminium, Anthracite (RAL 7021)	

* THD+N <0.1% with limiter deactivated

►► Additional technical information is available at www.neumann.com



Accessories

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

► Order Info

Product	Art. Number	
KH 120 A G Active Studio Monitor with analog input	503930	
KH 120 D G Active Studio Monitor with additional digital input and delay feature	503932	
KH 120 A W Active Studio Monitor with analog input	506179	
Recommended for KH 120		
KH 810 10" subwoofer with 7.1 Bass Manager	503951	

► Neumann also offers a large range of hardware accessories (LH nn) for mounting the loudspeaker cabinet in many ways:

Mounting on a floor stand:

KH 120 + LH 61 or
KH 120 + LH 61 + LH 28 or
KH 120 + LH 61 + LH 29 or
KH 120 + LH 61 + LH 48 + K&M stand 26795

Mounting on a mic stand:

KH 120 + LH 61

Mounting on a meter bridge/table top:

KH 120 + LH 65

Mounting on a wall:

KH 120 + LH 32 or
KH 120 + LH 61 + LH 47 + LH 45

Mounting off a ceiling:

KH 120 + LH 61 or
KH 120 + LH 61 + LH 47 + LH 46 or
KH 120 + LH 61 + LH 47 + LH 43

Mounting off a lighting or truss bar:

KH 120 + LH 61 + LH 29

Mounting on an Omni-mount bracket:

KH 120 + LH 64

Mounting on a VESA mount bracket:

KH 120 + LH 64

► LH 28 Tripod Adaptor for mounting on standard 35 mm (1 3/8") diameter tripods.



► LH 29 TV-spigot for mounting onto a standard TV spigot.



► LH 32 Wall Bracket, can be tilted horizontally and vertically, tightens with bolts.



► LH 43 Surface Mounting Plate Used to spread the weight of a ceiling mounted loudspeaker.



► LH 45 Wall Bracket, L' shaped adaptor for wall mounting.



► LH 46 Adjustable Ceiling Drop Adaptor to vertically position a loudspeaker suspended off a ceiling.



► LH 47 Mounting Adaptor for ceiling and wall mounting.



► LH 48 Tripod Adaptor Plate (115 mm) to mount on König & Meyer tripods No. 26790 and No. 26795.



► LH 61 Adjustable L-Bracket



► LH 64 Omnimount/VESA Adaptor for Omnimount 75 / VESA 75 / VESA 100.



► LH 65 Table Stand with horizontal / vertical / height adjustment.



To aid transportation and storage of the loudspeaker:

► BKH 120 Soft Carry Bag for a pair of KH 120s



► FKH 120 Flight Case for a pair of KH 120s



Please refer to the web site ► www.neumann.com for details of the complete range of accessories currently available. In particular, look for the "Hardware Mounting Matrix" which shows how to connect the various LH brackets and adapters together to make a mounting solution. Detailed mechanical drawings are also available.