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STUDIO MONITOR KH 80 DSP



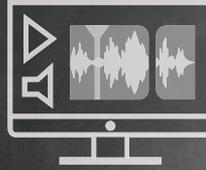
ENGLISH

**KH 80 DSP**

The number 1 for 0 compromises.



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Editing Suites



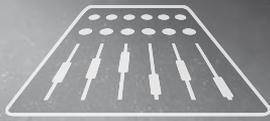
Outside Broadcast



STUDIO MONITOR KH 80 DSP



Computer Desktop



Project/Recording Studio

The art of studio sound  
– digitally remastered.





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### THE ART OF NEUTRAL STUDIO SOUND – NOW DIGITALLY REMASTERED

We have calculated every soundwave. We have perfected low-distortion materials. We have optimised the drivers with our years of experience and hand-selected every component. The system's perfection comes from its digital heart: Our DSP engine converts every sound to a reference quality in every environment – so no detail gets lost on the way.

### THE PERFECT SOUND OF MATHEMATICS AT WORK

We know every nuance, every surface and every angle of the KH 80 DSP. It sounds so pure, because we are directing every soundwave so precisely.

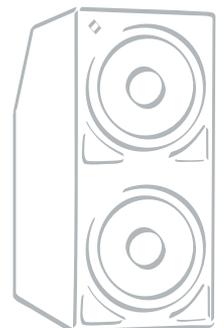
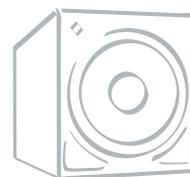
The KH 80 DSP's design is based on computer simulations that calculate with an incredible accuracy. Our Mathematical Modeled Dispersion Waveguide (MMD™) provides our Studio Monitoring series with a solid base for precise sound direction. Doing your sums properly has never sounded so good.

### THE BIGGEST VARIABLE IS YOUR ROOM AND WE HAVE THE SOLUTION.

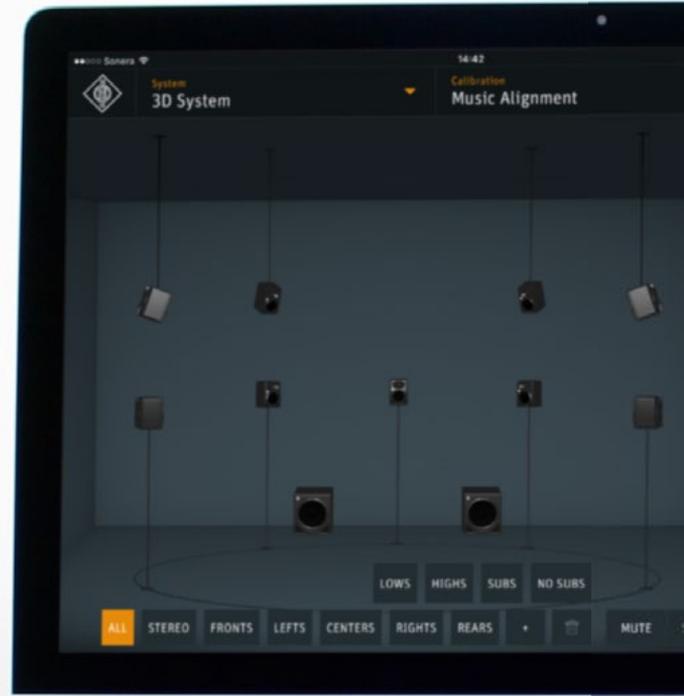
It might be a project studio, an outside broadcast van, or just the corner of a building: The room defines the sound. Surfaces and corners in the room cause interference, diffraction, reflection, and refraction: all are forms of distortion. For a really true sound, you normally need expensive equipment plus plenty of time and expertise to align it correctly – or smart algorithms. Our DSP engine optimizes the sound output, delivering quality way above the price-tag. And you do not need to be an expert use it. The KH 80 DSP is ready for our upcoming software Neumann.Control – which will be available for tablets and computers starting from mid-2017 – allowing you to align and control the monitor with a swipe of your finger or the click of a mouse.

### PROFESSIONAL STANDARDS FOR EVERYONE

Highest quality components, high-end protection systems and performance reserves are what you would expect from this studio class product. Its quality and design makes the KH 80 DSP a flexible near-field studio monitor, which delivers professional-quality sound wherever you need it. It can be used in studios, editing rooms or outside broadcast trucks. Some of our customers like it so much, they use KH 80 DSPs in their living rooms. And why not? Our latest monitor delivers digital precision for a masterpiece of analogue technology: your ears.



STUDIO MONITOR KH 80 DSP





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**1**  
Powerful alloy fabric dome  
▶ Low-distortion high-frequency reproduction

**2**  
Elliptical Mathematically Modelled Dispersion™ (MMD™) waveguide  
▶ Smoother off-axis response  
▶ More forgiving of diverse acoustical environments

**3**  
Two-colour + dimmable Neumann logo  
▶ Displays operation status and activation of the extensive protection system

**4**  
In-house modelled long-throw composite sandwich cone bass driver with Extremely Linear Force Factor™ (ELFF™)  
▶ Damping of break up modes  
▶ Low distortion at high sound levels

**5**  
Robust metal grille  
▶ Protects against mechanical damage

**6**  
Large front panel ports  
▶ Reduced bass compression and easier to mount in tight spaces such as OB vans and small studios

**7**  
Compact polycarbonate composite cabinet  
▶ Robust package for a long life  
▶ No standing wave resonances

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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 highly efficient amplifiers with large headroom**

- ▶ Improved transient response
- ▶ Low heat dissipation

**Separate thermo limiters for woofer and tweeter to protect the voice coils and power amplifiers. Woofer soft clip and excursion limiters.**

- ▶ Fast acting and highly reliable
- ▶ Allows extraction of the maximum performance from the system

**Production consistency**

- ▶ Any KH 80 DSP is "pair matched" to any other KH 80 DSP





View of connectors

**Standby function**

- ▶ Reduces power consumption when product is not in use

**Control function**

- ▶ Use the back panel controls or the control set defined by the Neumann.Control software

**4-position low-mid acoustical control**

- ▶ Compensates for nearby desktops
- ▶ Fast acoustical set up in mobile applications

**Wide range input gain and output level controls**

- ▶ Easier interfacing with signal sources

**Mounting hardware options**

- ▶ More flexibility in mounting cabinets in more diverse locations
- ▶ Backwards compatibility with previous models

**Universal switched-mode power supply (100 ... 240 V)**

- ▶ One version works in any country and robust to poor quality mains supply
- ▶ Ground loops are impossible

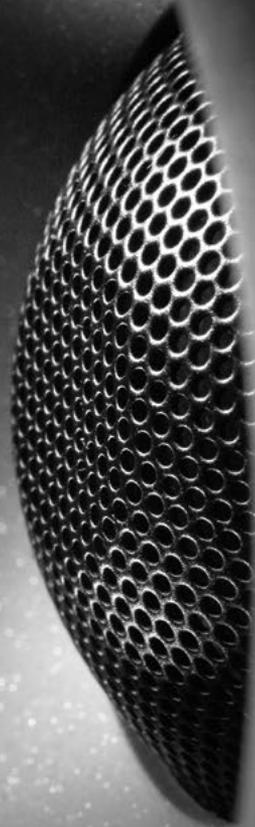
**Network connector**

- ▶ Uses standard IP protocol and your existing network infrastructure
- ▶ Loudspeaker system be controlled via the Neumann.Control software

**Analogue input socket can accept XLR or 6.3 mm (1/4") Jack plugs, electronically balanced**

- ▶ Completely symmetrical internal signal routing for suppression of interfering signals

STUDIO MONITOR KH 80 DSP



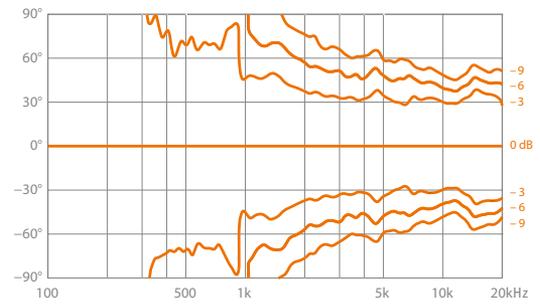


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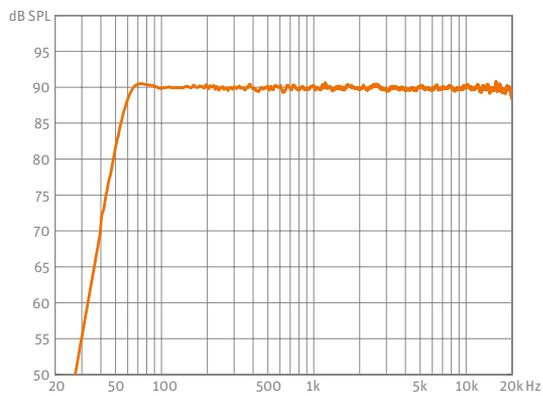


KH 80 DSP

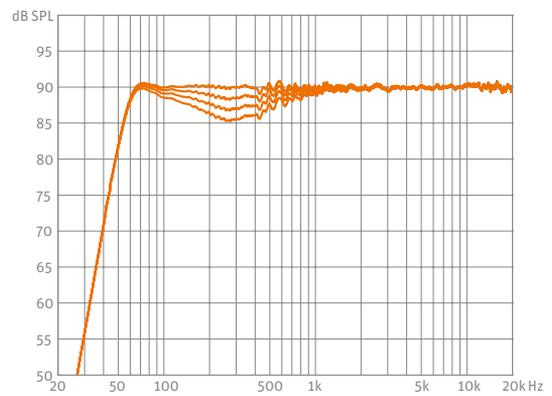
HORIZONTAL ISOBAR DISPERSION PLOT



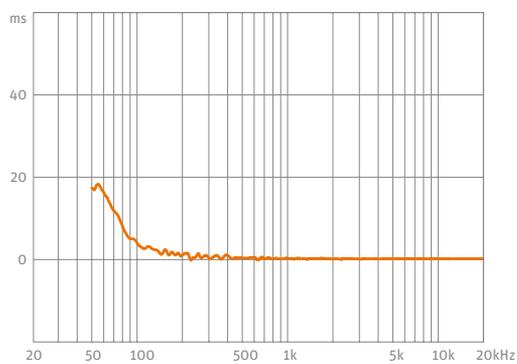
FREQUENCY RESPONSE



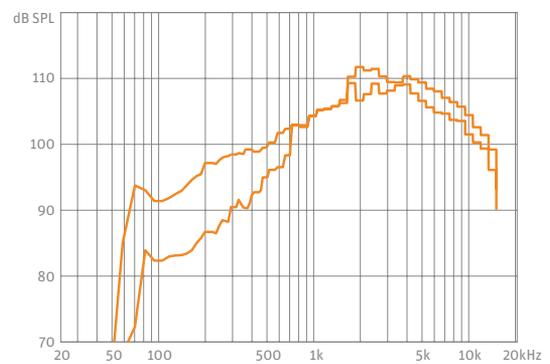
ACOUSTICAL CONTROLS (LOW-MID)



GROUP DELAY



MAXIMUM OUTPUT LEVEL (AT 1% / 3% THD)



## ACOUSTICS

-6 dB free field frequency response	53 Hz ... 22 kHz, ± 6 dB
-3 dB free field frequency response	57 Hz ... 21 kHz, ± 3 dB
Pass band free field frequency response	59 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 90 dB SPL at 1 m	> 200 Hz
Max. SPL in full / half space at 3% THD at 1 m	102.8 / 108.8 dB SPL (averaged between 100 Hz and 6 kHz)
Bass capability: Max. SPL in half space at 3% THD at 1 m	92.1 dB SPL (averaged between 50 Hz and 100 Hz)

## ELECTRONICS

Woofer/Tweeter amplifier, cont. (peak) output power*	90 W (120 W) / 50 W (70 W)
Controller design	digital, active
Crossover frequency	1.8 kHz
Crossover slope	48 dB/oct, 8th order with phase correction
FIR phase correction	Linear phase (170 Hz ... 16 kHz, ± 45°), Analogue emulation
Latency A-D-A – linear phase, analogue emulation mode	2 ms; 0.65 ms
Equalization: Low-Mid	0; -1.5; -3; -4.5 dB
Protection circuitry	Independent soft clip, peak and thermo limiters for woofer and tweeter. Woofer excursion limiter.
Infrasonic filter frequency; slope	61 Hz; 12 dB/oct

## ANALOGUE INPUT

Impedance, electrically balanced	XLR / 6.3 mm (1/4") Jack, >14 kΩ
Input gain control (sensitivity)	0 dB to -15 dB
Output level control	94; 100; 108; 114 dB SPL
CMRR	> 56 dB @ 100 - 16 kHz
Max input level	+24 dBu for 94 dB SPL setting

## DIGITAL SIGNAL PROCESSING

Digital converter: resolution, design	24-bit DAC, ΔΣ
Digital internal sampling rate	48 kHz
Dynamic range D-A; woofer, tweeter	114 dB; 117 dB
User adjustable delay range	0 ... 70 ms
Audio-video/lip sync max. frames	1.75 (40 ms frames) or 2.1 (33 ms frames)
Time-of-flight max. distance	24 m (79 ft)
Resolution – time/distance	0.1 ms / 3.44 cm (1 3/8")

## DISPLAYS AND MAINS POWER

Displays and indicators: normal operation	Neumann logo "White"
Identification	Neumann logo "Rosé"
Limit / clip / errors	Neumann logo "Red"
Mains Power Supply: voltage; frequency	100 - 240 V-; 50/60 Hz
Power consumption (230 V / 100 V): standby	<330 / <50 mW
idle	9 / 8 W
full output	180 W
Standby functionality	Disabled, 90 mins (default), or user defined in software

## MECHANICS

Height x width x depth, mm (inches)	233 x 154 x 194 mm (9 1/8" x 6" x 7 5/8")
Internal net volume / external volume	3.7 liters / 7.0 liters
Weight	3.5 kg (7 lbs 11 oz)
Drivers: Woofer / Tweeter	100 mm (4") / 25 mm (1") with integrated black metal grilles
Mounting points	2 x M6 on rear panel
Cabinet material and surface finish	Painted composite polycarbonate material, Anthracite front (RAL7021) / Black back (RAL9005)

\* THD+N &lt;0.1% with limiter deactivated

▶▶ Additional technical information is available at [www.neumann.com](http://www.neumann.com)

## MOUNTING HARDWARE:

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

- |   |  |                                     |
|---|--|-------------------------------------|
| ▶ LH 28<br>Tripod stand adapter               | ▶ LH 43<br>Surface mounting plate          | ▶ LH 48<br>Tripod adapter plate     |
| ▶ LH 29<br>TV spigot (lighting stand adapter) | ▶ LH 45<br>Wall bracket                    | ▶ LH 61<br>Adjustable L-bracket     |
| ▶ LH 32<br>Wall bracket                       | ▶ LH 46<br>Adjustable ceiling drop adapter | ▶ LH 64<br>Omnimount / VESA Adaptor |
| ▶ LH 37<br>Subwoofer adapter                  | ▶ LH 47<br>Mounting adapter plate          | ▶ LH 65<br>Table stand              |



LH 65

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

On a floor stand (e.g. K&M 26750, 26735)	KH 80 DSP + LH 61 + LH 28 + stand	Off a lighting or truss bar	KH 80 DSP + LH 61 + LH 29 + G-clamp + bar
On a design monitor stand (e.g. K&M 26795)	KH 80 DSP + LH 61 + LH 48 + stand	On a wall	KH 80 DSP + LH 32 + wall KH 80 DSP + LH 61 + LH 47 + LH 45 + wall
On a lighting stand	KH 80 DSP + LH 61 + LH 29 + stand	On a surface (desktop or floor)	KH 80 DSP + LH 61 + surface KH 80 DSP + LH 61 + LH 43 + surface KH 80 DSP + LH 61 + LH 47 + LH 43 + surface KH 80 DSP + LH 61 + LH 47 + LH 46 + surface KH 80 DSP + LH 65 + surface
On a microphone stand	KH 80 DSP + LH 61 + microphone stand	Off a ceiling	KH 80 DSP + LH 61 + ceiling KH 80 DSP + LH 61 + LH 43 + ceiling KH 80 DSP + LH 61 + LH 47 + LH 43 + ceiling KH 80 DSP + LH 61 + LH 47 + LH 46 + ceiling
On a subwoofer	KH 80 DSP + LH 61 + LH 28 + pole + KH 870 KH 80 DSP + LH 61 + LH 37 + KH 870		
On a OmniMount or VESA mount	KH 80 DSP + LH 64 + OmniMount KH 80 DSP + LH 64 + VESA mount		

## ORDER INFO

Product		Art. Number	
KH 80 DSP A G EU	Analogue input, metallic anthracite (RAL 7021), EU mains cable	506834	<p>KH 80 DSP</p>
KH 80 DSP A G US	Analogue input, metallic anthracite (RAL 7021), US mains cable	506835	
KH 80 DSP A G UK	Analogue input, metallic anthracite (RAL 7021), UK mains cable	506836	
KH 80 DSP A G CCC	Analogue input, metallic anthracite (RAL 7021), CCC/KC certified	506840	
Recommended for KH 80 DSP		Art. Number	
KH 805 A G	10" subwoofer with 2.0 / 0.1 Bass Manager	506770	<p>KH 805</p>
KH 810 G	10" subwoofer with 7.1 Bass Manager	503951	<p>KH 810</p>
KH 810 G CCC	10" subwoofer with 7.1 Bass Manager, CCC/KC certified	505545	

Please refer to the website ▶ [www.neumann.com](http://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.