

MKH 8000 Series Microphones

SENNHEISER
The Pursuit of Perfect Sound



Sound with a Soul:
Sennheiser's MKH 8000 Series Microphones

A Superb Synthesis of Sound Aesthetics and Engineering Perfection.

Sennheiser has taken its sophisticated MKH series of radio-frequency condenser microphones one step further: the MKH 8020, MKH 8040, MKH 8050 and MKH 8090 fulfil the most exacting demands on sound quality and versatility. Extremely low inherent self-noise, an exceptionally wide frequency response for high sampling rate digital audio formats and a very compact design make them an ideal choice for the most demanding classical music recordings, for broadcast use and for stage and film applications.





The MKH 8000 series has been designed to capture the soul of sound, reproducing the music with an unprecedented warmth and transparency. Without taking away from the unique clarity that MKH symmetrical microphones are famous for, the 8000 series has a natural subtle warmth that has to be heard to be appreciated. Voices will sound rich and detailed; piano, strings and wind instruments will have that special 'character', while percussive instruments benefit from a fast attack and a dynamic, powerful reproduction.

Contents

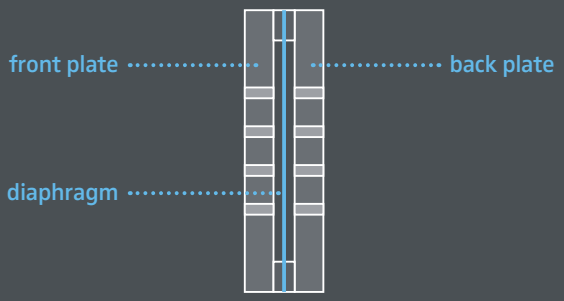
04 Features
05 Microphones
06 Broadcast Shotgun Microphones
06 Special Modules
07 Microphones and accessories overview
08 Accessories
10 Technical data

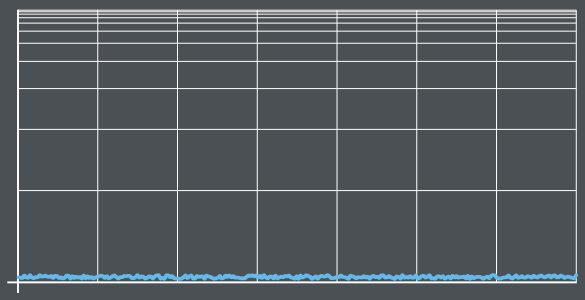
Features
That Make a Difference



Modular design: Extremely compact and elegant, the MKH 8000 series microphones have a diameter of just 19 mm and a length of only 74 mm. Yet, they can become even more unobtrusive. The microphones can be split into the actual microphone head, which contains all acoustic and electronic components, and the XLR module. The small microphone head (only 41 mm long) is attached to one of Sennheiser's special capsule remote accessories, while the XLR connector module is attached outside the camera angle, making the MKHs virtually invisible on stage.

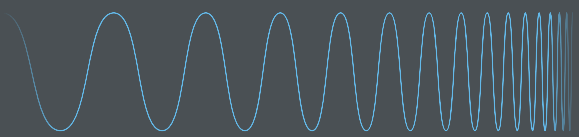
Special symmetrical capsule: The MKH capsules incorporate a symmetrical design with the diaphragm located between the normal back plate and an additional, identical front plate. This design provides both acoustical and electrical symmetry and is the most powerful way to eliminate transducer non-linearity and accompanied harmonic and intermodulation distortion. Their unique symmetrical construction enables the MKH microphones to pick up subtleties in the music lost to other microphones—for instance, the subtle harmonics in an unaccompanied choir, the complex sound patterns of a 12-string guitar and much more.





Extremely low inherent self-noise: While the inherent noise in conventional microphones tends to mask quieter sounds and thus limits the dynamic range, the MKH microphones employ the unique principle of the radio-frequency condenser microphone, resulting in an outstandingly low self-noise. The special capsule design reflects the frequency-dependent response of the human hearing, and provides an excellent signal-to-noise ratio in the frequency range where the human ear is most sensitive to noise. This results in small-diaphragm MKH microphones being quieter even than most large-diaphragm condenser microphones.

Extended high-frequency response: The acoustic properties of the MKH capsule design enable the high-frequency response to be extended beyond the limits of the standard audio CD format, enabling these microphones to fully utilise the potential of digital recording formats with higher sampling rates.

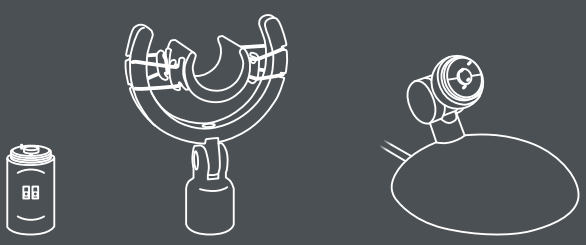




Accurate directional patterns: All directional patterns have been carefully designed for minimal deviation from the ideal patterns over the entire frequency range. The unique technical design characteristics of the MKH symmetrical microphone series means that the designer no longer has to make compromises between frequency response, polar pattern and low noise—now he can have it all: wide frequency response, ultra low noise and a polar response close to the theoretical ideal.

Nextel® coating: All MKH 8000 Series microphones and accessories are coated with black Nextel®, ensuring that there will be no disturbing reflections even in the brightest of film and television lights.





Intelligent accessories: A wide range of accessories enables the microphones to be used under many and varied conditions of the most demanding classical music recordings, broadcast use, filming and any stage application. The accessories are suitable for stereo or dual mono applications and some of them have been designed to carry the audio signal to enable even more compact microphone set-ups. The digital module MZD 8000 transmits audio signals according to the AES 42 standard (24 bit, 192 kHz sampling rate).

Microphones

MKH 8020

The omni-directional MKH 8020 is ideal for recording large and small sound sources, for a 'Decca Tree' or for use in an OSS 'Jecklin Disk' array. As it does not suffer from a proximity effect, it is also a good choice for close-miking. If the acoustic ambience is right, this microphone will provide very impressive recordings. The extra octave at the bottom end makes the MKH 8020 perfect for recording pipe organs, grand piano and acoustic double-bass.



- Omni-directional pick-up pattern
- Frequency response 10 to 60,000 Hz
- Ideal for stereo and surround recordings, as an M microphone and for ambience

MKH 8040

The cardioid MKH 8040 is suitable for almost any application. It considerably reduces pick-up of a reverberant room. This is very helpful in rooms with poor acoustics or when disturbing sounds impinge mainly from the rear.



- Cardioid pick-up pattern
- Frequency response 30 to 50,000 Hz
- Ideal as a spot microphone and for surround recordings

MKH 8050

The super-cardioid MKH 8050 will give higher attenuation of off-axis sound from the side than its cardioid sister model. It is a good choice for recording soloists, where the requirements for lateral acoustic separation are higher.



- Super-cardioid pick-up pattern
- Frequency response 30 to 50,000 Hz
- Provides optimum separation of instruments

MKH 8090

The high-end MKH 8090 is the ideal main microphone when less acoustic impression of space is demanded. And as a support microphone it excels in capturing larger groups of instruments. Among the many advantages of its RF principle are an extremely low inherent self-noise, the capability to handle high sound pressure levels without distortion, and a high resistance to adverse climatic conditions.



- Wide cardioid pick-up pattern
- Frequency response 30 to 50,000 Hz
- Very natural sound
- Ideal as instrument-focussed main microphone or as support for larger group of instruments



Broadcast Shotgun Microphones



MKH 8060

Whether it's a feature film, a documentary, an outdoor shoot or a studio production: the MKH 8060 short shotgun microphone will provide high quality sound to match your great pictures. Handily compact it shows its strengths as a professional shotgun microphone: The MKH 8060 delivers an absolute natural sound and outstanding off-axis linearity, attenuating sound coming from the side without coloration.

- Super-cardioid/lobar pick-up pattern
- Extremely low distortion
- Ideal for camera mounting due to compact design

MKH 8070

The long shotgun microphone MKH 8070 was especially designed for picking up distant sources of sound in best quality. Its very natural sound makes it the ideal choice for major broadcast and sporting events. Featuring extreme directivity and a pronounced lobar pick-up pattern it will reliably capture that magic moment from a distance, even under the toughest sonic and climatic conditions.

- Lobar pick-up pattern
- The specialist for far away sources of sound
- Enhanced directivity

Special Modules



MZD 8000

The MZD 8000 digital module is optimally matched to the 8000 series microphones. It is simply screwed onto the microphone head in place of the XLR module, turning the analogue audio signal into a digital one. Since the converting takes place right behind the microphone head the clear, warm, and vivid sound of the microphones is completely preserved.

- 2-channel 24-bit A/D converter
- Suitable for all MKH 8000 Series microphones
- External synchronization via AES 42, Mode 2

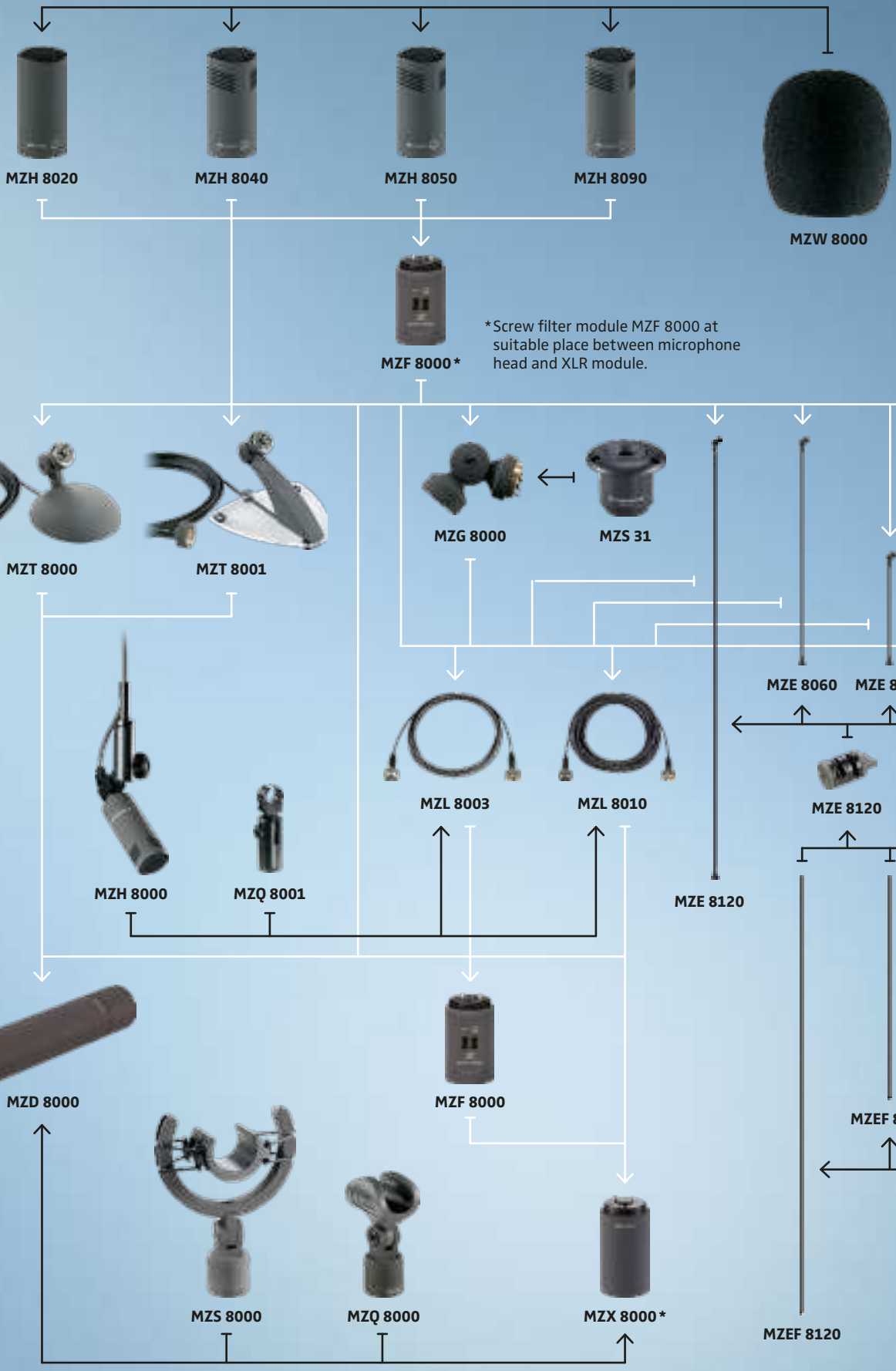
MZF 8000

Especially in the broadcast and film industries, this compact filter module effectively blocks interference caused by infrasound, such as low-frequency noises caused by wind and handling.

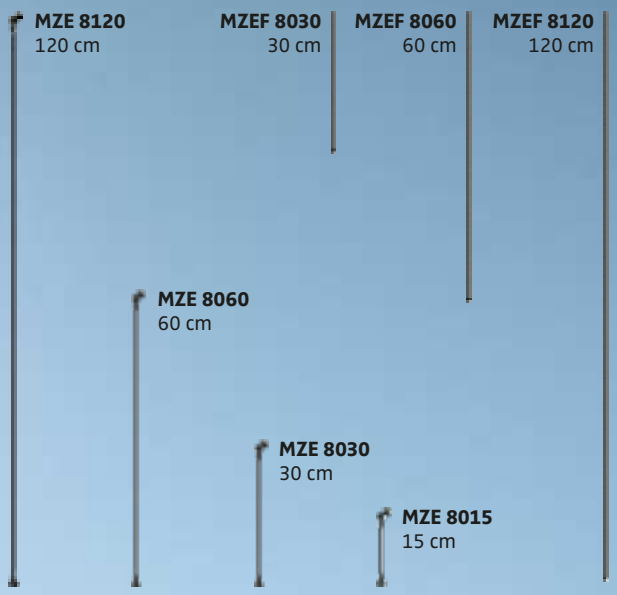
- Extremely low inherent noise
- Complex acoustic details are preserved
- High quality 10 dB pad protects against overdriving
- Very compact design

Microphones and Accessories Overview

audio signal →
mounting accessories →



Accessories











Floor Stand Components

MZE 8015, MZE 8030 MZE 8060, MZE 8120 extension tubes

Special bar that carries the audio signal. The microphone head is attached to the front, the XLR module to the end. Available in lengths of 15, 30, 60 and 120 cm.

MZEF 8030, MZEF 8060, MZEF 8120 vertical bars

Available in lengths of 30, 60 or 120 cm; standard 3/8" thread.

MZGE 8000, MZGE 8002 bar connectors

Joins vertical bars with one or two extension tubes.

MZFS 8000 floor stand

Heavy design; insensitive to structure-borne noise.

Table Stands

MZT 8000

Classic metal table stand, sturdy and robust.

MZT 8001

Elegant table stand with acrylic base.

Remote Cables

MZL 8003, MZL 8010
Connects between the microphone head and the XLR module to make the microphone extremely unobtrusive (ideal for almost invisible use hanging from the ceiling). Available in lengths of 3 and 10 meters.

Mounting Accessories

MZS 8000 shock mount
Flexible suspension in a very compact design. Effectively suppresses the transmission of structure-borne noise.

MZQ 8000 microphone clip
Standard clip (included in the delivery of the MKH 8000 microphones).

MZQ 8001 mini clip
Miniature clamp. Ideal if the microphone is used with a remote cable. 3/8″ standard thread.

MZH 8000 ceiling mount
With cable guide. Adjustable for optimum alignment of the microphone with the sound source.

MZG 8000 Swivel joint with MZS 31 elastic suspension
Designed for desktop mounting. Carries the audio signal and provides the connector for the XLR module.



Technical Data

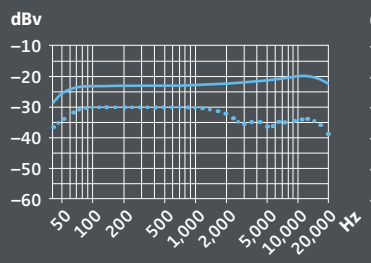
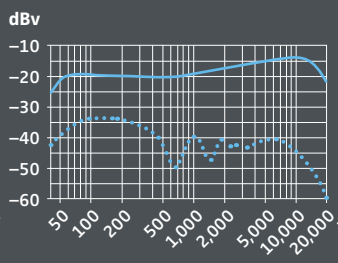
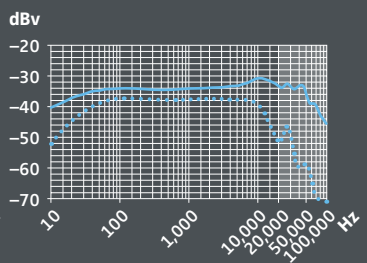
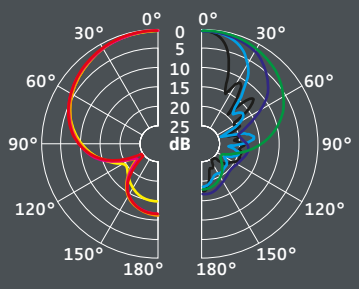
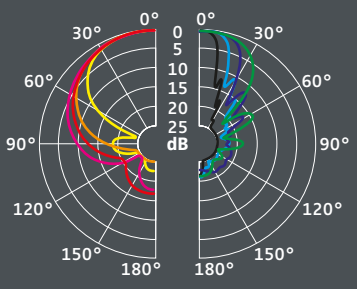
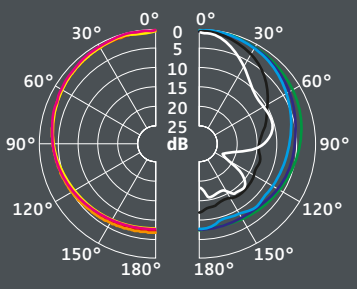
Product	MKH 8020	MKH 8040	MKH 8050
Pick-up pattern	omni-directional	cardioid	super-cardioid
Frequency response	10 – 60,000 Hz	30 – 50,000 Hz	30 – 50,000 Hz
Sensitivity in free field, no load (1kHz)	–30 dBV/Pa (31 mV/Pa)	–34 dBV/Pa (20 mV/PA)	–34 dBV/Pa (20 mV/PA)
Sound pressure level	138 dB	142 dB	142 dB
Equivalent noise level	10 dB (A) (A-weighted, DIN 651), 21 dB (CCIR-weighted, CCIR 268-3)	13 dB (A) (A-weighted, DIN 651), 22 dB (CCIR-weighted, CCIR 268-3)	13 dB (A) (A-weighted, DIN 651), 22 dB (CCIR-weighted, CCIR 268-3)
Output signal	balanced, transformerless, floating	balanced, transformerless, floating	balanced, transformerless, floating
Output impedance	25 Ω	25 Ω	25 Ω
Min. terminating impedance	1,000 Ω	1,000 Ω	1,000 Ω
Phantom power supply	48 V ± 4 V	48 V ± 4 V	48 V ± 4 V
Supply current	3.3 mA	3.3 mA	3.3 mA
Diameter	19 mm	19 mm	19 mm
Length of microphone module	41 mm (74 mm including XLR module)	41 mm (74 mm including XLR module)	41 mm (74 mm including XLR module)
Weight	25 g (55 g including XLR module)	25 g (55 g including XLR module)	25 g (55 g including XLR module)

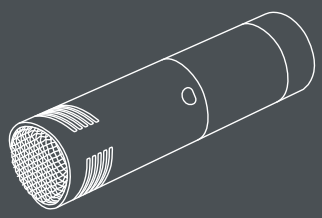
Nominal frequency response at 1 m distance

0° ——

90° ·····



Product	MKH 8060	MKH 8070	MKH 8090
Pick-up pattern	super-cardioid/lobar	lobar	wide cardioid
Frequency response	50 – 25,000 Hz	45 – 20,000 Hz	30 – 50,000 Hz
Sensitivity in free field, no load (1kHz)	–24 dBV/Pa (63 mV/PA)	–19 dBV/Pa (112 mV/PA)	–34 dBV/Pa (20 mV/PA)
Sound pressure level	129 dB	124 dB	142 dB
Equivalent noise level	11 dB (A) (A-weighted, DIN 651), 23 dB (CCIR-weighted, CCIR 268-3)	8 dB (A) (A-weighted, DIN 651), 21 dB (CCIR-weighted, CCIR 268-3)	13 dB (A) (A-weighted, DIN 651), 23 dB (CCIR-weighted, CCIR 268-3)
Output signal	balanced, transformerless, floating	balanced, transformerless, floating	balanced, transformerless, floating
Output impedance	25 Ω	25 Ω	25 Ω
Min. terminating impedance	2,000 Ω	2,000 Ω	2,000 Ω
Phantom power supply	48 V ± 4 V	48 V ± 4 V	48 V ± 4 V
Supply current	3.3 mA	3.3 mA	3.3 mA
Diameter	19 mm	19 mm	19 mm
Length of microphone module	145 mm (178 mm including XLR module)	432 mm (465 mm including XLR module)	41 mm (74 mm including XLR module)
Weight	80 g (112 g including XLR module)	300 g (332 g including XLR module)	25 g (55 g including XLR module)
Nominal frequency response at 1 m distance 0° —— 90° ·····			
			



SENNHEISER

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