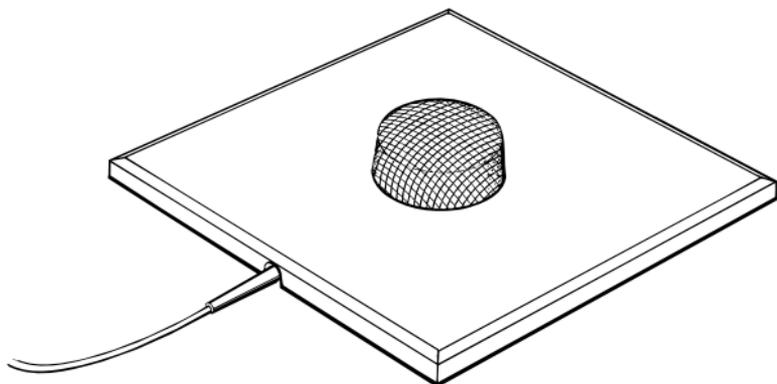


**GEBRAUCHSANLEITUNG
INSTRUCTIONS FOR USE
INSTRUCTIONS POUR L'USAGE**

MKE 212



Acoustical Boundary Microphone MKE 212

The MKE 212 is an acoustical boundary microphone which utilizes the increase in sound pressure on acoustically live surfaces and, due to its flush mounting into the surface, does not pick up reflections on this surface.

In the interest of better understanding, here a few explanations about the working principle of the acoustical boundary microphone:

A microphone with no or only low directivity, positioned in the centre of a room, will show irregularities in frequency response. This, the so-called comb filter effect, is caused by reinforcements and cancellations of sound pressure between direct and indirect, reflected sound. Picking up the sound with the same microphone located a few millimeters from a live surface, e.g. a wall, gives in the ideal case an in-phase addition of direct and reflected sound which results in an increase in sound pressure of 6 dB, independent of frequency. Simulating this wall, or the acoustically live surface with a metal disc or a similar device into which a pressure microphone has been flush mounted creates a microphone which differs in two ways from conventional pressure microphones:

- ▶ **Since there is always a pressure maximum directly at the boundary, the phase relationship remains defined at any time.**
- ▶ **Due to the negligible distance to the boundary, the microphone exhibits no comb filter effect.**

The effectiveness of the pressure zone depends on the size of the surface. On small surfaces, the low-end cutoff frequency is very high; on large surfaces, it drops correspondingly lower. Due to its dimensions of 185 mm x 165 mm, the MKE 212, measured alone in the free field, demonstrates this pressure increase above approx. 1 kHz. In applications on the floor or at a wall, this pressure increase shifts to the lowest frequencies. A characteristic of Sennheiser acoustical boundary microphone is the fact that the microphone capsule is mounted flush with the surface. To eliminate further reflections which again would cause irregularities in frequency response, there are no parts protruding from the surface. Just as in dummy head technology, the acoustical boundary microphone is not a „revolution“ in sound recording, but it provides an extraordinarily detailed impression of the depth of the room with the additional possibility of achieving striking recordings of excellent transparency with only one or two microphones.

- ▶ **Note: Before operating the microphone the first time remove protecting cover.**

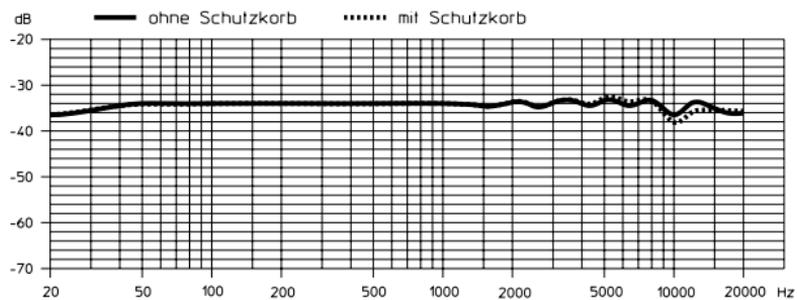
Tips for the use of the acoustical boundary microphone

- 1 The microphone should, if possible, be positioned or mounted on an acoustically live backing surface such as floor, wall or ceiling. Alternately, the MKE 212 can be mounted at the centre of a large wooden board of sufficient size or, if this is impossible for aesthetic reasons, on a transparent acrylic glass panel, which then is mounted on a floor stand. It can also be suspended from the ceiling. The board should be large, as its dimensions determine the point of the microphone's 6 dB accentuation. In the free field, that is without any additional surface, the MKE 212 has a lower frequency roll-off point of 1 kHz. To attain a lower cut-off frequency, e.g. 500 Hz, a board of 350 mm x 350 mm would be necessary.
- 2 When positioned on the floor, the microphone capsule should in any case be protected by mounting the non-crush windscreen, which is supplied as standard accessory. This windscreen does not have any influence on the acoustical characteristics of the microphone.
- 3 Due to its omnidirectional characteristics, the acoustical boundary microphone is of limited suitability for recordings in surroundings with a high level of background noise. Its preferred application is in recording studios and other similarly damped but good acoustical environments.
- 4 If you want to achieve most natural recordings, place the acoustical boundary microphone at the position in front of the instrument or the orchestra, where you have the best aural reception.
- 5 If two acoustical boundary microphones are used as a pair of microphones for stereo recording, the minimum distance between the two microphones should, regardless of the width of the acoustic source, be kept at approx. 1 m to obtain a defined left-right perception.
- 6 The advantages of this microphone become most obvious in recordings of acoustic (classical) instruments.
- 7 Please make sure that neither microphone or windscreen are covered with paper, fabric, etc. as this would affect the acoustical performance of the microphone.

The suggestions given here are confined to be basic application of the MKE 212. We have consciously not given any finished guidelines, because from our point of view they would not be very helpful, bearing in mind that every user has his own ideas about the sound of an instrument or an orchestra or a vocal group, not to mention the ever differing acoustical conditions. The MKE 212 offers a multitude of application options, which can only be revealed by practical work and experimentation with the microphone.

Example for Use

Nominal frequency response



Technical data

Pick-up pattern		hemi-spherical
Frequency response		20 - 20,000 Hz
Sensitivity free field, no load		20 mV/Pa \pm 2.5 dB at 1 kHz
Nominal impedance		50 Ω
Min. terminating impedance		1000 Ω
Equivalent noise level		27 dB A-weighted (DIN IEC 651) 38 dB CCIR-weighted (CCIR 468-3)
Max. sound pressure level		124 dB at 1 kHz (K=1%)
Power supply	MKE 212-P:	Phantom 12 - 48 Volt
	MKE 212-60:	from K6 / K6P
Supply current		ca. 2,6 mA bei Phantomspeisung
Connector	MKE 212-P:	3-pin XLR with integral phantom power adaptor
	MKE 212-60:	Special connector for system K6
Cable length		1.5 m
Dimensions in mm		165 x 165 x 10
Weight		850 g

Pick-up pattern

