

# KMR 81/82 i

▶ **Shotgun  
Microphones**



[www.neumann.com](http://www.neumann.com)



The KMR 81 and KMR 82 are shotgun microphones with a high directivity that remains within the acceptance angle independent of the frequency.

The advantage is that a sound source, for example an actor on stage, will not change its apparent tonal balance when moving within this area.

### Applications

Shotgun microphones are particularly useful in recording situations where a microphone cannot be positioned within the desired distance of the sound source to produce a sufficiently loud signal level.

Typical applications are film and video recordings, where the microphone should not appear in the picture.

The KMR 82 is very often used on stage. The KMR 81 has been specifically designed for electronic news gathering.



### Acoustic features

In principle, Neumann shotgun microphones use a combination of a pressure gradient transducer and an interference tube. If the wavelength of the frequency is longer than the tube

length, the microphones work as pressure gradient transducers. At higher frequencies they operate as interference transducers for lateral sound. Off-axis sound sources are picked up with reduced level, but without coloration.

Therefore, the microphones are well suited to record individual instruments of an orchestra. The pickup areas of several shotgun microphones may even overlap as, for example, during recordings on a large stage, without causing any problem.

The KMR 81 and KMR 82 are less sensitive to wind and pop noise when compared to the KM 150 miniature microphone with a similar high directivity. Both shotgun microphones feature extremely low self noise, good impulse response, and high output level.

### Polar pattern

KMR 81 and KMR 82 are shotgun microphones with a very directional characteristic.

The microphone capsule is positioned inside a housing tube that is acoustically open but has a high flow resistance.

The directional patterns of the microphones are lobe shaped. The attenuation of lateral sound is practically independent of the frequency.

The KMR 82 has a frequency independent directivity within a pickup angle of 45° for audio signals that determine the tonal balance of the program material. For the KMR 81, this angle is 90°.



### Features

- Interference tube microphones with shotgun directional characteristic
- Interference/pressure-gradient transducer
- High lateral and back attenuation
- 90°/45°-recording angle
- Switchable filter or preattenuation features
- Extensive accessories for outdoor use
- Light weight: 145 g/250 g



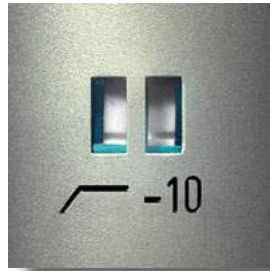
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### Filter and attenuation KMR 81 i

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The microphone has a 10 dB attenuation switch to prevent the input of the following unit from overloading.

A second switch activates a 200 Hz high-pass filter. Toward the lower frequencies the sensitivity of the microphone is attenuated by approximately 15 dB at 50 Hz. The frequency range above 200 Hz is unaffected.




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### Filter KMR 82 i

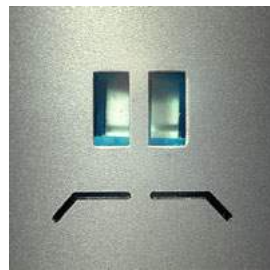
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Between 2 kHz and 15 kHz the KMR 82 has a boost to compensate for HF transmission losses in air when recording distant sound sources.

This may overemphasize any sibilance if the microphone is used close-up.

Therefore, a two-position slide switch allows to select the setting that is best for balanced upper frequencies.

The KMR 82 has a high-pass filter to suppress subsonic interference. The cutoff frequency may be raised to 120 Hz (-3 dB) with a built-in two-position slide switch.




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### Use on location

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The shotgun microphones feature very high output capability and a remarkably low self-noise level.

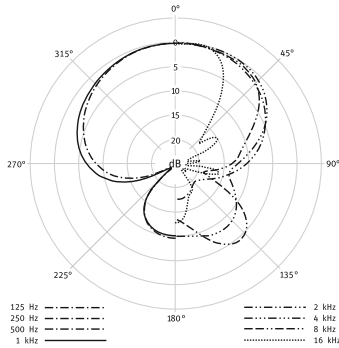
Their low power consumption, light weight, and low sensitivity to wind and handling noise, make them ideal tools for news gathering on location.

Small dimensions, together with a balanced center of gravity, make handling easy without any whiplash effect.

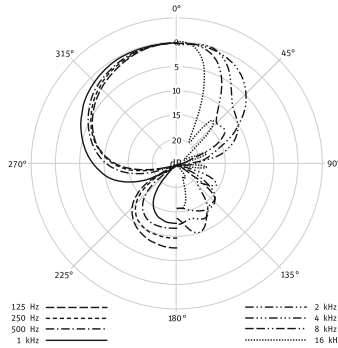
However, when on location and during strong wind conditions, we recommend using an additional wind screen (included as standard accessory). The wind screen is made of polyurethane foam.

For mobile use a handle and an elastic suspension are available.

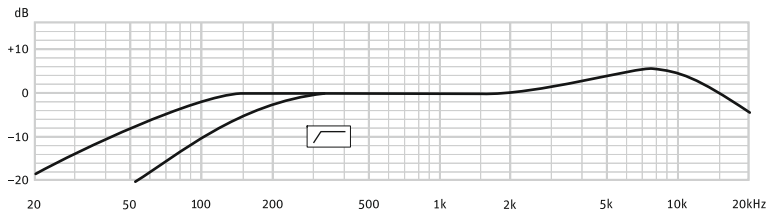




**KMR 81 i**

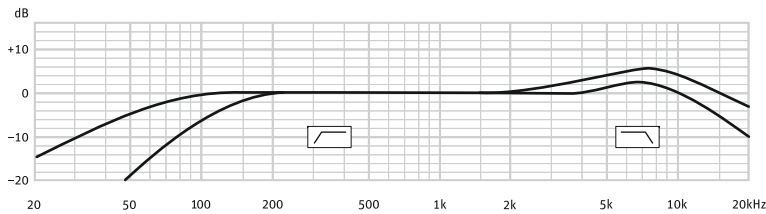


**KMR 82 i**



**KMR 81 i**

measured in free-field conditions (IEC 60268-4), tolerance ±2 dB



**KMR 82 i**

**Technical Data**

**KMR 81 i      KMR 82 i**

Acoustical operating principle .....	Interference transd. ....	Interference transd.
Directional pattern .....	Supercard./lobe .....	Supercard./lobe
Frequency range .....	20 Hz...20 kHz .....	20 Hz...20 kHz
Sensitivity at 1 kHz into 1 kohm .....	18 mV/Pa .....	21 mV/Pa
Rated impedance .....	150 ohms .....	150 ohms
Rated load impedance .....	1000 ohms .....	1000 ohms
Signal-to-noise ratio, CCIR <sup>1)</sup> (rel. 94 dB SPL) .....	71 dB .....	71 dB
Signal-to-noise ratio, A-weighted <sup>1)</sup> (rel. 94 dB SPL) .....	82 dB .....	82 dB
Equivalent noise level, CCIR <sup>1)</sup> .....	23 dB .....	23 dB
Equivalent noise level, A-weighted <sup>1)</sup> .....	12 dB-A .....	12 dB-A
Maximum SPL for THD 0.5% <sup>2)</sup> .....	128 dB .....	128 dB
Maximum SPL for THD 0.5% with preattenuation <sup>2)</sup> .....	138 dB .....	-
Maximum output voltage .....	900 mV .....	1050 mV
Dyn. range of the mic. amplifier (A-weighted) .....	116 dB .....	116 dB
Supply voltage (P48, IEC 61938) .....	48 V ± 4 V .....	48 V ± 4 V
Current consumption (P48, IEC 61938) .....	0.8 mA .....	0.7 mA
Matching connector .....	XLR3F .....	XLR3F
Weight .....	145 g .....	250 g
Diameter .....	21 mm .....	21 mm
Length .....	226 mm .....	395 mm

<sup>1)</sup> according to IEC 60268-1; CCIR-weighting according to CCIR 468-3, quasi peak;  
A-weighting according to IEC 61672-1, RMS  
<sup>2)</sup> measured as equivalent el. input signal

**Application Hints**

- Recordings for
  - broadcasting/ENG,
  - film and video productions
- Medium length shotgun spot mic in noisy surroundings
- Balanced weight during handheld and boom/fishpole operation

These are just some of the most common applications. We recommend additional experimentation to gain maximum use from this microphone.

**Delivery Range KMR 81 i**

Microphone KMR 81 i (mt),  
Windscreen WS 81

**Delivery Range KMR 82 i**

Microphone KMR 82 i (mt),  
Windscreen WS 82

**Catalog No.**

KMR 81 i .....	ni .....	006961
KMR 81 i mt .....	blk .....	006962
KMR 82 i .....	ni .....	006878
KMR 82 i mt .....	blk .....	006879

**Selection of Accessories**

Battery supply, BS 48 i .....	blk .....	006494
Power supply, N 248 .....	blk .....	008537
Auditorium hanger, MNV 21 mt .....	blk .....	006802
Microphone cable, IC 3 mt .....	blk .....	006547

**for KMR 81 i only:**

Windscreen set, WKE 81 Set .....	gr .....	539381
Elastic suspension, EA 2124 A mt .....	blk .....	008433

**for KMR 82 i only:**

Windscreen set, WKE 82 Set .....	gr .....	539382
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A complete survey and detailed descriptions of all accessories are contained in the accessories catalog.

Meaning of color codes:

- blk= black,
- ni = nickel,
- gr = gray