

# MICROTECH GEFELL

microphones & acoustic systems - founded 1928 by Georg Neumann



## M 221 ○

### STUDIO CONDENSER MICROPHONE

with  
Phantom powering P 48 V

- Small diaphragm capsule
- Metal diaphragm
- Pressure transducer
- Free field equalization
- Transformerless



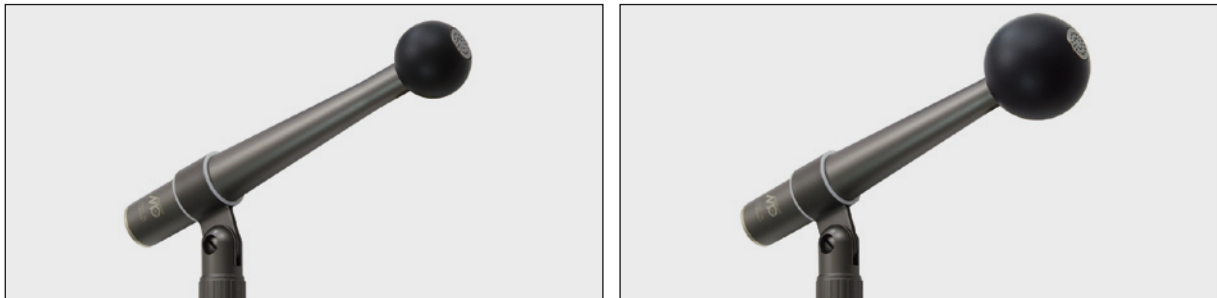
## STUDIO CONDENSER MICROPHONE

### M 221 with omni directional pattern

The condenser microphone M 221 unifies universal small diaphragm capsule technology with a metal diaphragm and a modular preamplifier. The use of a certificated measurement capsule combined with a preamplifier with 48 V phantom powering reaches a constant magnitude and phase response and transmission properties which are long-term stable.

### APPLICATION

Because of the small capsule dimensions the M 221 is ideally suited for applications where a low interference with the sound field is demanded. It is usable as a main microphone for recordings which should include a certain amount of the room response. As well the M 221 is suited as a spot microphone for recording instruments very close where the low frequencies should be transmitted in detail and original. Moreover it can be used for multichannel main microphone arrangements like AB stereophony or decca tree. For these applications the microphone is ideal because of its precise and long-time stable transmission properties. The M 221 has an excellent transient response because of the pressure transducer capsule and is really suitable to record instruments with extreme transients. With the both different sized spherical corpuses a high frequency accentuation can be produced in an acoustical way to increase the presence and to compensate the high frequency roll-off in the diffuse sound field. The M 221 can operate also in unfavorable climate conditions especially referring the temperature and air humidity for which the accessory humidity adaptor TA 202 is purchasable.



### ACOUSTICAL SPECIFICATIONS

The pick-up pattern is equivalent to the longitudinal direction of the microphone. As sound transducer a condenser capsule with a diameter of 12,5 mm and a very thin metal diaphragm is used. The pressure transducer capsule exhibits an omni-directional polar pattern without proximity effect. Because of the free field equalization the M 221 has a constant frequency response from 20 Hz up to 20 kHz ( $\pm 2$  dB). The static pressure equalization between the capsule interior and the atmosphere goes through a vent to the preamplifier. Therefore the humidity adaptor TA 202 is usable to protect the microphone in application with high air humidity. The use of the M 221 with the spherical corpus KA 3 effects a frequency response accentuation which begins at approximately 1 kHz and goes constant at 3 dB from approximately 4 kHz up to 12 kHz. With the spherical corpus KA 4 the accentuation of the high frequencies starts also at approximately 1 kHz and goes constant at 3 dB between 3 kHz and 12 kHz.

## ELEKTRICAL SPECIFICATIONS

The transformerless circuit design of the electronic impedance converter with symmetrical output facilitates an output capability for sound pressures from 15 dB(A) up to 136 dB with a maximum of 0,5 % THD (total harmonic distortion). The microphone is connected by a standard 3-pin XLR-male plug with gold-plated pins which realizes the powering by an external 48 V phantom supply according to IEC 61938 with a current consumption of 6 mA.

## MECHANICAL SPECIFICATIONS

The M 221 consists of a microphone capsule and a microphone preamplifier as independent mechanic parts which are connected to a complete microphone through a screw thread. Microphone capsule and microphone preamplifier have an identical overall diameter of 12,7 mm which enlarges to 21 mm over the length of the microphone preamplifier to the connection side of the microphone. The shape of this enlargement is designed for a minimum interference with the sound field. Microphone capsule and microphone preamplifier have together a length of 170,4 mm. On the connection side of the M 221 there are standard microphone holders mountable. To reach a higher attenuation against solid-born sound and impulses there are elastic holders and suspensions usable. The weight of the M 221 is 123 g what allows to use the microphone with stand mountings as well as to hang up the microphone from the ceiling without any problems.

## DELIVERY

Microphone **M 221** with the microphone holder MH 93.1 and spherical corpuses KA 3 and KA 4 in a wooden case

L x B x H 275 x 90 x 70 mm

dark bronze

Order-No. 211103



## ACCESSORIES, optional

Windscreen, anthracite	W 2	Order-No. 202407
Elastic suspension, dark bronze	EH 93	Order-No. 202328
Microphone holder, turnable, dark bronze	MH 93	Order-No. 202326
Connection cable	C 70	Order-No. 202212

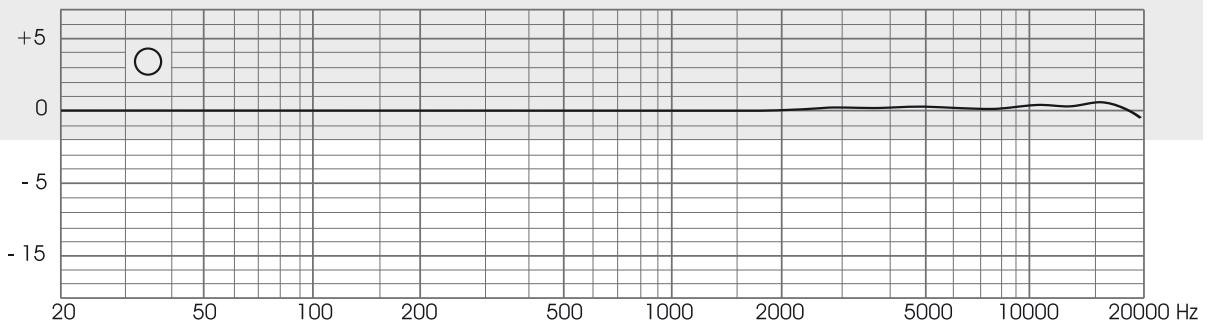
# TECHNICAL SPECIFICATIONS

CE Certificate

Polar pattern		Omni
Acoustic operating principle		Pressure transducer
Frequency range		20 ... 20000 Hz
Sensitivity at 1 kHz		50 mV/Pa
Output impedance		100 Ω
Noise level	CCIR 468-4	28 dB
	DIN EN 60268-4	15 dB(A)
Signal-to-noise ratio	A-weighted	79 dB
Max. SPL for K < 0,5 %		136 dB
Max. output level	Ri = 1 kΩ	18 dBu
	Ri = 10 kΩ	19 dBu
Dynamic range		121 dB
power supply		48 V ± 4 V
Current consumption		5,5 mA
Output connector		XLR3M
Weight		123 g
Length		170,4 mm
Diameter connection side		12,7 mm
Diameter capsule side		21 mm

# DIAGRAMS

dB Frequency response M 221



Polar Patterns M 221

