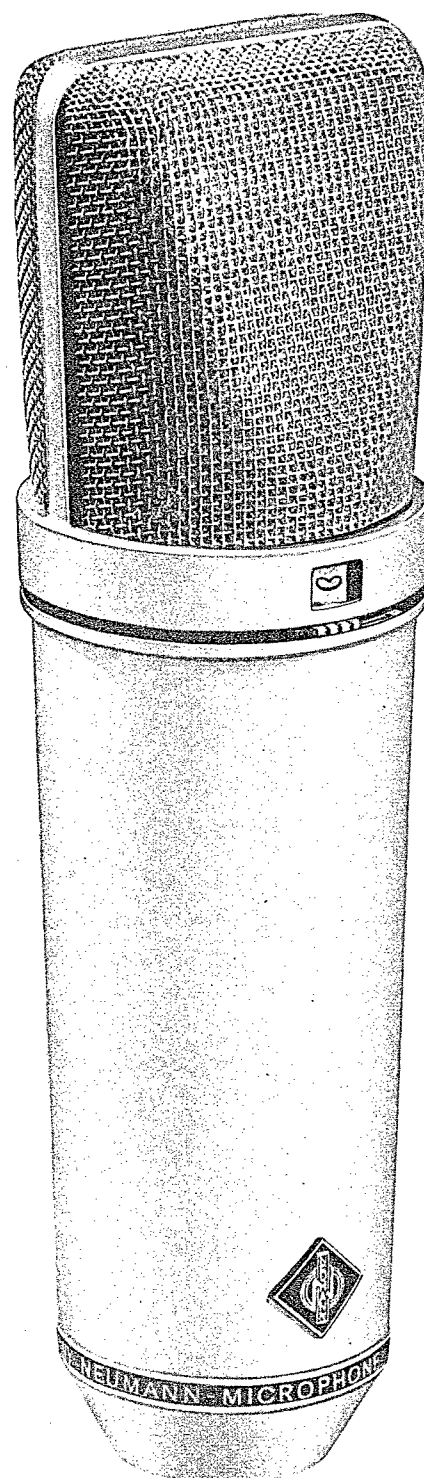


M 269c-910-02-01

APPLICATIONS

The Condenser Microphone M 269c is a high quality studio microphone, characterised by elegant appearance, excellent performance and a number of novel features.

The M 269c is eminently suitable for a great many applications in broadcasting, television, films and disc recording. A special feature is the remote control of the three directional characteristics.



BASIC CHARACTERISTICS

Dimension wise, the M 269c takes an intermediate position between the microphones of the miniature range and the old standard type of condenser microphone. By sacrificing a genuine miniature construction, it is possible to use the more reliable standard components. The amplifier is equipped with the well proven low noise triode AC 701 k.

Below the capsule there are three switches for adapting the directional characteristics, the frequency response and the sensitivity to various requirements.

The switch for the directional characteristic has three positions marked "F", "Cardioid" and "F". There are two positions "F" for technical reasons in manufacture. The functioning is the same in both positions.

With the switch in one of the two positions "F", the directional characteristic can be continuously varied from omni-directional via cardioid to figure-of-8 by means of the potentiometer in the power supply unit which controls the polarising voltage. As the potentiometer is continuously variable, it is possible to obtain any intermediate position between the three directional characteristics.

When the switch is set to cardioid, the rear diaphragm of the capsule is switched off and the microphone works as cardioid only. In this switch position, there is thus no polarising voltage on the rear diaphragm. The sensitivity is about 4 dB better than in the remote control cardioid position and the signal to noise ratio is improved by three phon. Furthermore, as this polarising voltage is no longer needed, the microphone may be fed from a miniature-microphone type power supply unit. For connection to the unit NKMa, adaptor type Z 51 is necessary; to the unit NKMH it may be connected directly.

The frequency response is specially arranged to enable the microphone to be used very close to the sound source without giving rise to any unnatural harshness in the recording.

A novel circuitry attenuates components below 30 cps considerably at the grid of the first valve while frequencies above 40 cps remain unattenuated. The undesirable blocking of the microphone valve due to excessive diaphragm deflections due to wind or floor vibrations, is thus largely eliminated which was not possible with the customary rumble filters in the output.

If, for some special reason, this low frequency cut is not desired, the frequency response can be made flat down to 20 cps by breaking a link S2 in the microphone amplifier.

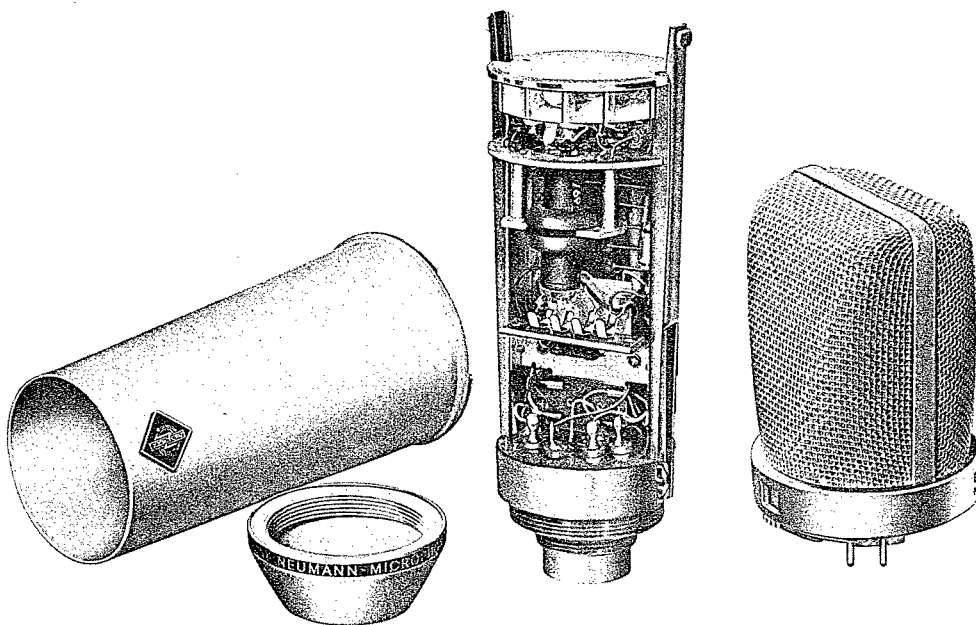
The bass cut-off turnover frequency can be raised to 200 cps by means of a switch on the microphone. This may be useful for speech recordings or in television studios. The bass boost due to proximity of the sound source which is common to all velocity microphones can thus be equalised before the microphone valve, and with cardioid and figure-of-8 characteristics, a flat frequency response is obtained at a distance of 8 to 12 inches from the sound source.

If the sensitivity is reduced by approximately 10 dB by means of the third of the three switches below the capsule, the microphone will be able to handle the highest sound levels likely to be met with in practice, without running into distortion (e.g. for close mike recording of loud solo instruments).

The microphone valve operates as anode amplifier feeding a transformer which is astatically wound to avoid hum pick-up.

TECHNICAL DETAILS

The microphone can be easily dismantled into its main components without any tools by unscrewing the large base ring. This makes a replacement of the valve or of the capsule particularly easy.



The reliability of operation is improved by the following features:

Diaphragms made of vacuum gold plated polyester foil, which is particularly heat resistant and free from aging compared to other similar materials; printed circuit - therefore more solid, shock resistant circuit construction; greater resistance to humidity through potting of the grid components; protection against RF pick-up through a number of devices in the microphone and in the power supply unit, and connectors capable of taking special RF screened microphone cable.

A C C E S S O R I E S

Power Supply Unit NN 48h

The microphone can be fed from the AC mains by means of the portable power supply unit type NN 48h. The plate and heater voltages are stabilised and therefore independent of mains voltage fluctuations. The low frequency output voltage appears on a three pin socket and the unit is equipped with a mains-socket.

Power Supply Unit N 52t

The circuit of this power supply unit is transistorized and printed but is constructed as a plug-in unit, enabling up to ten units to be housed side by side in a rack mounting frame type S 167.

Battery Unit BB 50h

When no mains are available this microphone can be fed from a battery unit type BB 50h. The unit BB 50h has the same dimensions and technical specifications as the mains unit NN 48h but it is equipped with a 4-cell gas-tight accumulator and a transistor DC converter.

Microphone Connecting Cables

- | | |
|--------|--|
| KC 5 | Extensions cable 10 m, with Tuchel connectors T 3460 and NT 3461 |
| KC 7 | Extensions cable 10 m, RF screened with Tuchel connectors T 3468 and T 3469 |
| KC 9 | 10 m microphone cable with connector for swivel mounting on stand with Tuchel connectors T 3460 and NT 3461 |
| C 228s | 10 m microphone cable with connector for swivel mounting on stand, RF screened with Tuchel connectors T 3468 and NT 3469 |

TECHNICAL DETAILS

Accoustical operation	Combination of two pressure transducers which can be electrically switched to omni-directional, cardioid and figure-of-8 characteristic
Frequency range	30 ... 16 000 cps
Output levels	Omni app. .9 mV/ μ b into 1 k Ω Cardioid "F" app.1.0 mV/ μ b into 1 k Ω Figure-of-8 app.1.1 mV/ μ b into 1 k Ω Cardioid app.1.55 mV/ μ b into 1 k Ω
Electrical load resistance	$\geq$ 1 000 Ω
Electrical source resistance	200 (50) Ω $\pm$ 20 % (60 ... 15 000 cps)
Capacitance of capsule	app. 1 x 50 pF (Cardioid) app. 2 x 50 pF (omni, figure-of-8)
Total noise voltage	$\leq$ 8 μ V
Weighted noise voltage	$\leq$ 4 μ V measured according to DIN 45 405
Equivalent loudness	$\leq$ 25 dB (Cardioid) $\leq$ 22 dB (Cardioid "F") $\leq$ 26 dB (Omni) $\leq$ 24 dB (Figure-of-8) (dB re 2 x 10 ⁻⁴ μ b)
Maximum sound pressure for .5 % distortion at 40 cps, 1 kc/s and 5 kc/s in position in position -10dB	100 μ b $\geq$ 114 dB 320 μ b $\geq$ 124 dB (dB re 2 x 10 ⁻⁴ μ b)
Gain of microphone amplifier at 1000 cps	- 2 dB (Omni, Figure-of-8) - 3.5 dB (Cardioid)
Switchable attenuation (Switch position -14db)	12 ... 16 dB
Valves	1 x AC 701 k
Tuchel connector	NT 3470
Dimensions	length 201 mm, diameter 56 mm
Weight	.59 kg

Switching symbols on the switches below the microphone capsule:

	Flat frequency response		Full gain
	Bass cut below 200 cps		Reduced gain (for high sound levels)

Power Supply Unit NN 48 h

Mains voltage 117, 127, 220, 240 V
 $\pm 10\%$ 50 / 60 cps

Fuses 80 mA for 117, 127 V
50 mA for 220, 240 V
DIN 41 571

Valves 1 neon stabiliser
150 B 2 - (VALVO)

Power consumption 11 watts

DC output voltages 4 V
120 V
0 ... 120 V

Hum voltages $\leq 10 \mu\text{V}$ and $\leq 8 \mu\text{V}$
respectively

Neon pilot lamp Rafi 110 V no. 2855

Dimensions 220 x 100 x 120 mm

Weight 2.2 kg

Microphone Connecting Cables
KC 5, KC 7, KC 9 and C 228 s

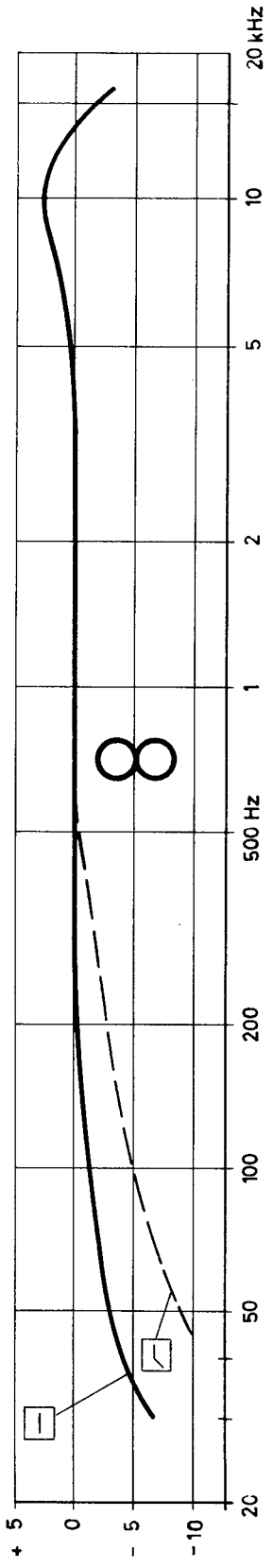
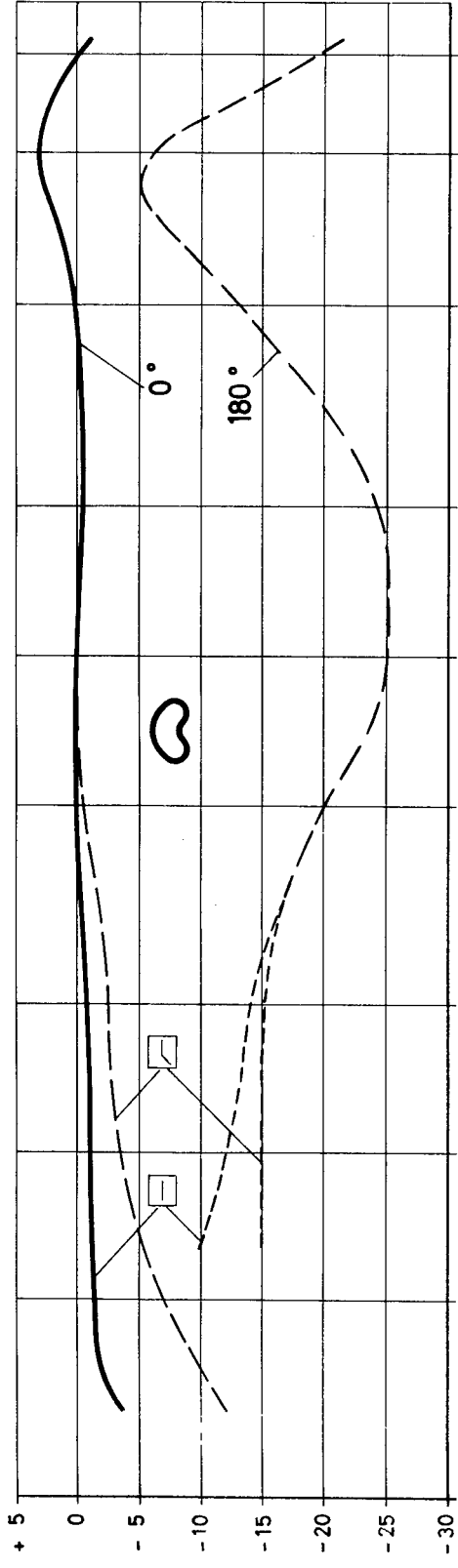
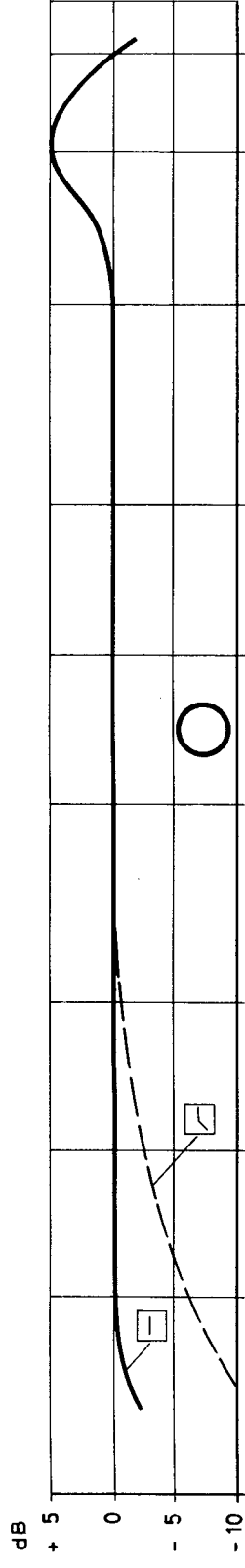
Diameter app. 7 mm

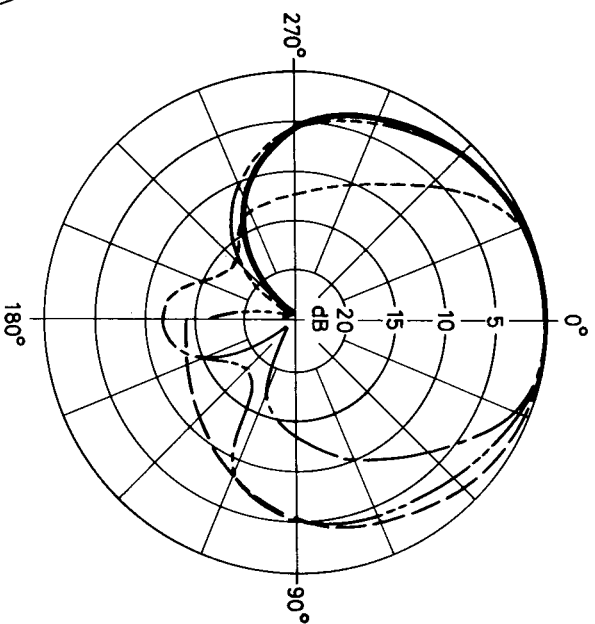
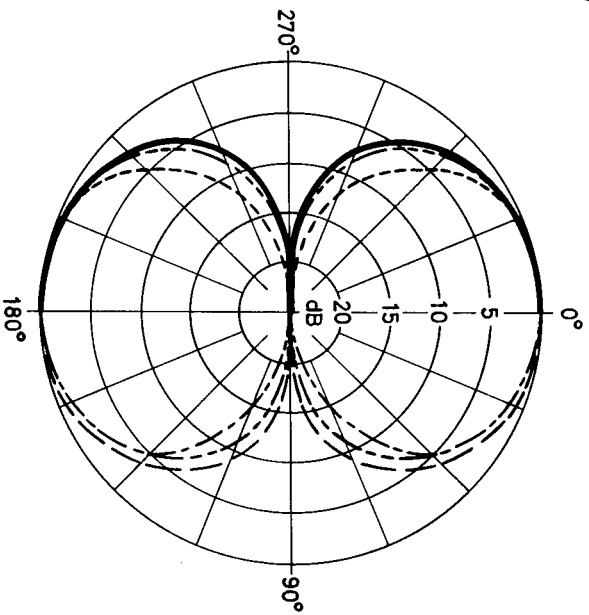
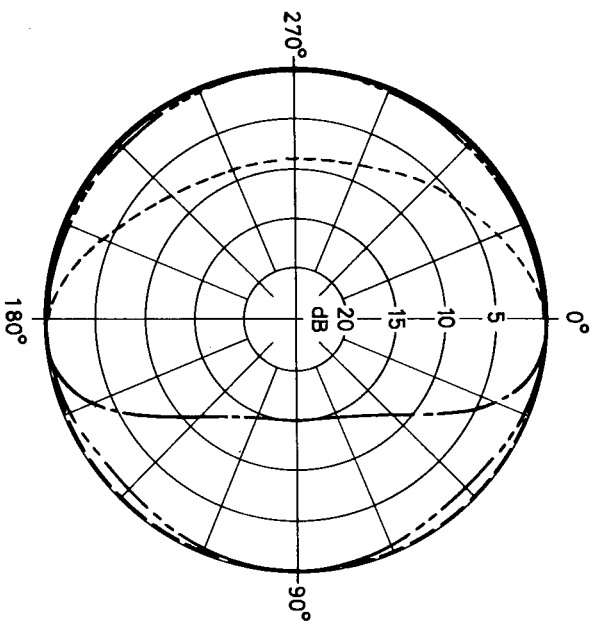
Weight:

KC 5; KC 7 app. 1 kg

KC 9; C 228 s app. 1.4 kg

Thread of stand connector 1/2" (others upon request)





- 125 Hz
- 1 kHz
- 4 kHz
- 8 kHz
- 10 kHz
- 125 kHz