

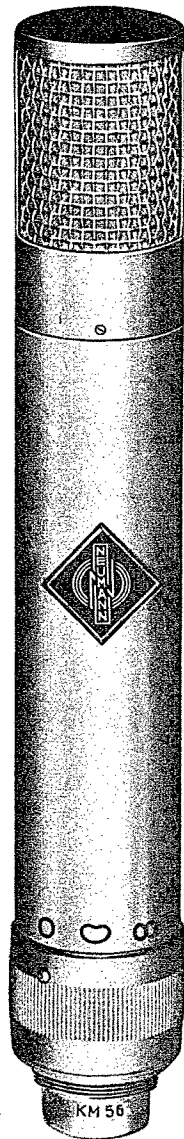
KM 56c - 910-02-01

## A P P L I C A T I O N

The condenser microphone KM 56c belongs to a family of high quality miniature microphones which were developed to meet the special requirements of modern recording techniques.

It is widely used in broadcasting - television - and film studios as well as in disc recording and high quality public address systems. Since the directional characteristics of this microphone can be altered by means of a switch, it is particularly useful where different types of recording problems are to be solved with one and the same microphone. Its small physical size enables it to be used unobtrusively. This makes it ideally suited for use in the centre of a round conference table, as an omnidirectional microphone.

As a cardioid microphone, the KM 56c is capable of rejecting unwanted noises from the back of film and television studios. It will enable first rate recordings to be made in acoustically unfavourable conditions.



## FEATURES

The main feature of the KM 56c is that in spite of its miniature construction, its directional characteristic can be switched to "omni directional", "cardioid" or "figure-of-eight". The switching is effected by turning a ring at the base of the microphone. The direction of operations is radial.

By virtue of the small dimensions of the microphone capsule the directional properties are almost independent of frequency, and the rear rejection ratio does not increase at the high frequency end relative to the middle and lower frequencies. This enables the microphone to be used close up as well as in the more reverberant sound field of a studio.

The high frequency lift which is otherwise needed to compensate for the narrower pick-up angle at the top end of the frequency range, is, therefore unnecessary with this microphone. Its response, as measured in a linear sound field, shows, therefore, only a small rise at the high frequency end. This slight rise is favoured by most people since it enables a smooth response to be obtained in "Close up" as well as in standard recording techniques.

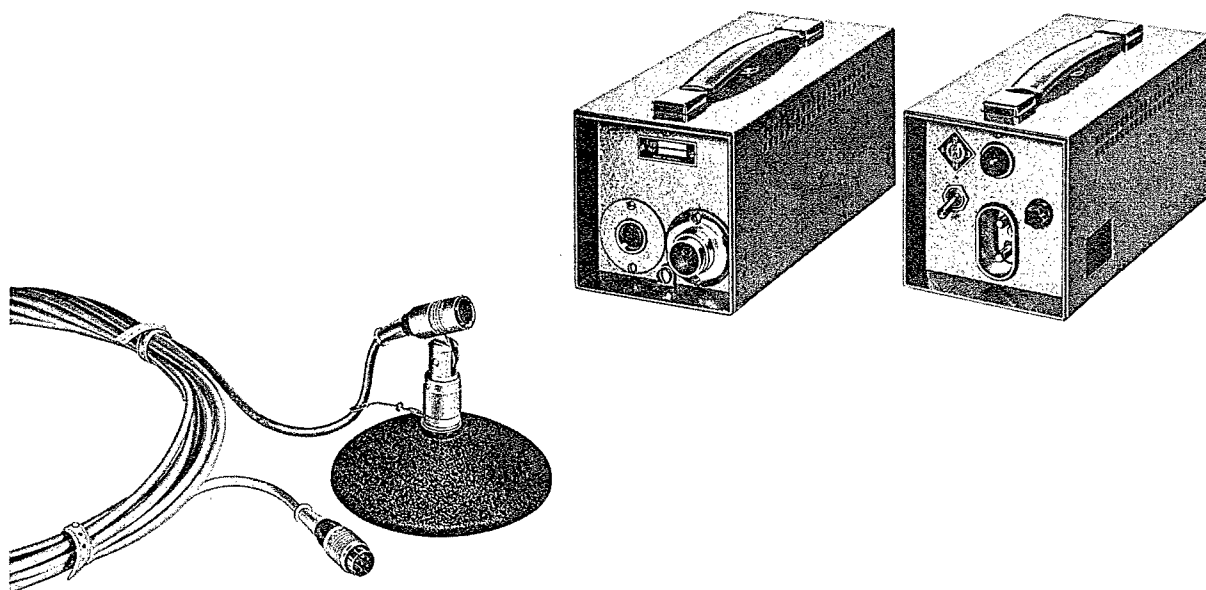
## TECHNICAL DETAILS

The microphone comprises a microphone capsule and a complete amplifier stage. The output transformer is astatically wound and therefore, insensitive to hum pick-up.

The microphone capsule has two metal diaphragms which are mounted on either side of two fixed electrodes. Each half of the capsule separately produces a cardioid response. By putting an appropriate DC voltage onto the two electrodes the two cardioid responses can be combined in different ways in order to obtain the three different directional characteristics, i.e. omni-directional cardioid and figure-of-eight.

The amplifier has a normal output impedance of 200 ohms. If desired, it can be connected for 50 ohms resulting however, in a 6 db reduction in output voltage. Microphones connected for 50 ohms output have a red dot beside the number plate.

## STANDARD ACCESSORIES



### Power Supply Unit N K M a

The portable power supply unit NKMa provides the necessary supplies for the microphone from the mains. The heater and plate voltages are stabilised. The audio output socket is a three-pole connector (Tuchel T 3081). The appropriate line connector (T 3080) will be supplied upon request. The unit is fitted with a standard equipment type mains socket.

### Power Supply Unit N N 4 8 b

The power supply unit NN 48b can be used instead of the power supply unit NKMa; the difference being that the unit NN 48b is also capable of feeding the larger microphones of the type M 49c and M 50c.

### Battery Supply B B 1 2 and B B 5 0

When no mains are available the microphones may be fed from a battery supply type BB 12 or BB 50. These battery supplies have the same technical specifications as the portable power supply unit NKMa. The unit type BB 50 is suitable for M 49c and M 50c while the unit type BB 12 is only suitable for miniature microphones.

## PLUG-IN POWER SUPPLY UNIT N 5 2 t

The power supply unit N 52t has the same technical specification as the unit NKMa but it is constructed as a plug-in unit to fit into mixing consoles or racks. Up to ten of these units may be rack-mounted side by side in a plug-in shelf type S 167.

## MICROPHONE INTERCONNECT CABLES KC 1 AND KC 2

The microphone is connected to the power supply unit by means of a cable, type KC 1 or KC 2. The cable KC 2 is fitted with a special six-pole screw-on connector for the microphone with a universal joint connecting stud for screwing onto stands having 1/2" or 5/8" 27 TPI threads. The cable type KC 1 has no fixing stud and is used, primarily as an extension cable or in conjunction with the elastic suspension type Z 38.

## SPECIAL ACCESSORIES

Z 29/56	.....	High intensity overload protector
MF 1	.....	Table stand with 1/2" threaded stud
T 60	.....	Table tripod with universal joint
M 31c	.....	Floor tripod with flexible neck and microphone interconnect cable
M 32	.....	Folding stand with 1/2 threaded stud
Z 118	.....	Wind shield
Z 38	.....	Elastic suspension
Z 56	.....	KM 56 test capacitance for calibrating purposes
M 73k	.....	Test apparatus for testing microphone amplifier and power supply unit
SG 5	.....	Coupling for fixing cable type KC1 to stand

Further details about special accessories and adaptors are to be found in our main catalogue.

MAINS UNIT N K M a

Mains voltage .....	117/127/220/240 Volts AC $\pm 10\%$
Fuses .....	80 mA for 117/127 V or 50 mA for 220/240 V mT according to DIN 41 571
Valves .....	Stabiliser 150 B 2 (Valvo)
Power consumption .....	App. 11 Watts
DC outputs .....	120 V (.5 mA) 4 V (100 mA)
Hum voltages .....	$\leq 10 \mu\text{V}$ and $\leq 8 \mu\text{V}$
Pilot Lamp .....	Rafi 110 V No. 2855
Dimensions .....	220 x 100 x 100 mm
Weight .....	2.2 kg

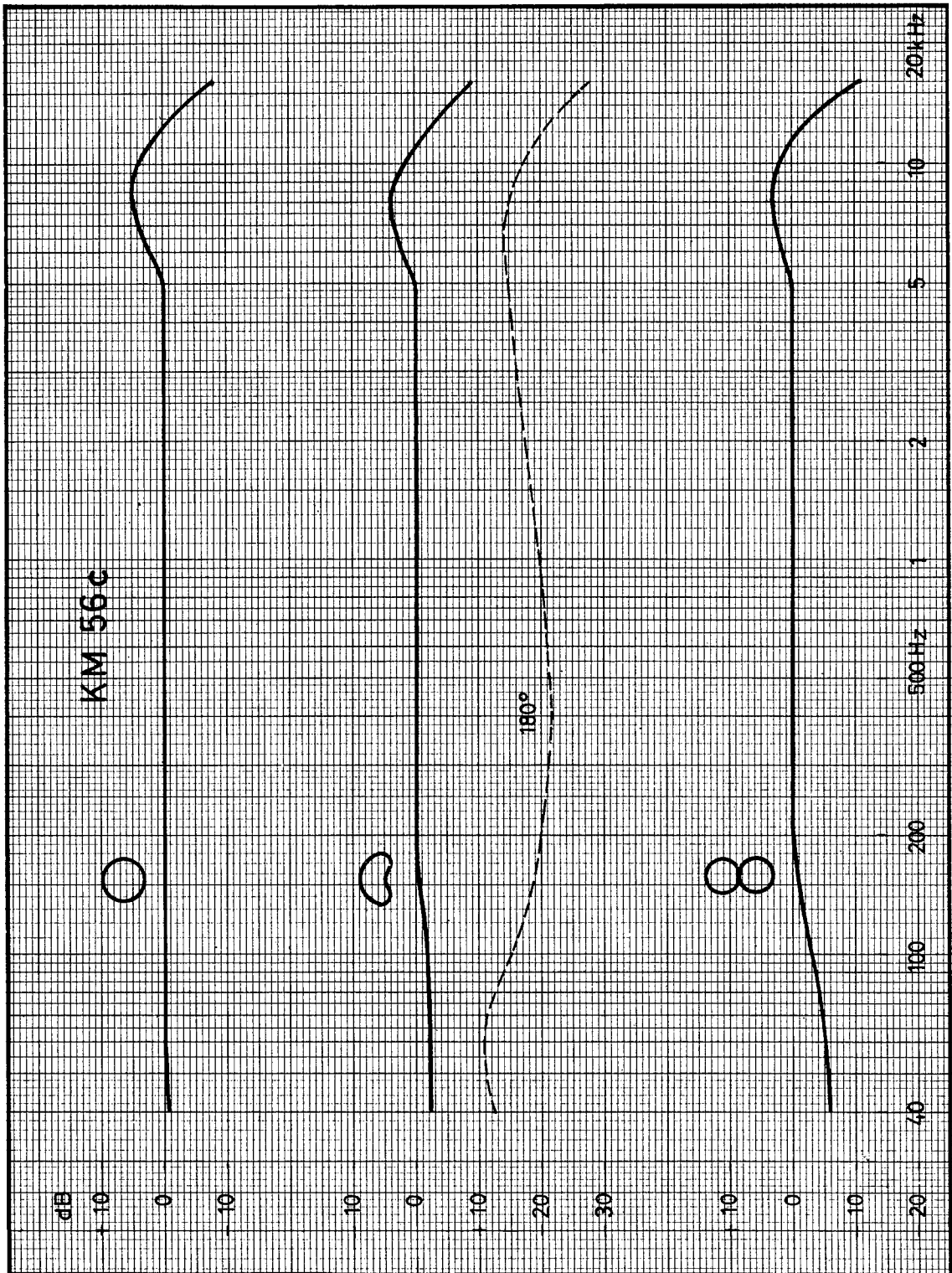
MICROPHONE INTERCONNECT CABLE K C 2

Standard length .....	10 m
Diameter .....	App. 5 mm
Weight .....	420 g
Connector .....	T 3400/1 (Tuchel)
Connector with universal joint coupling for screw- ing onto stand .....	NT 3401 (Tuchel)
Thread .....	1/2" and 5/8" 27 TPI

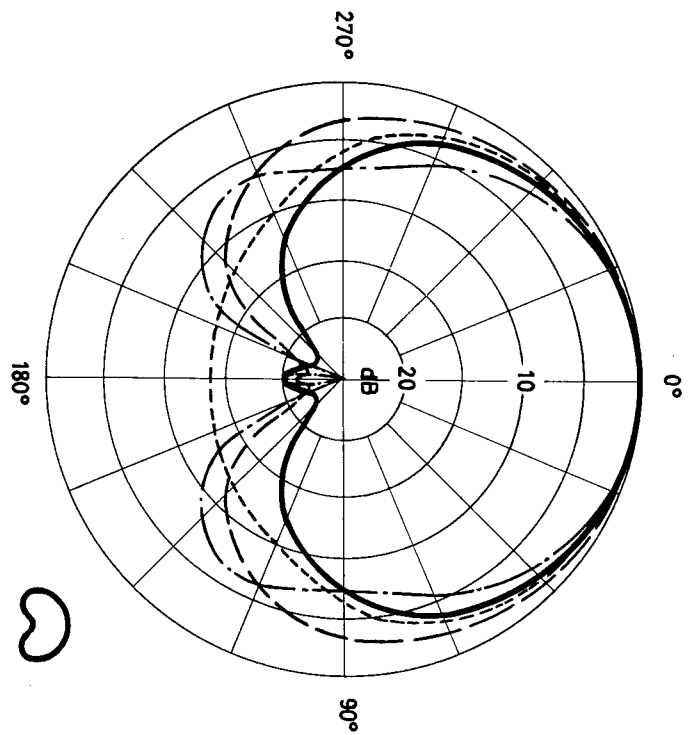
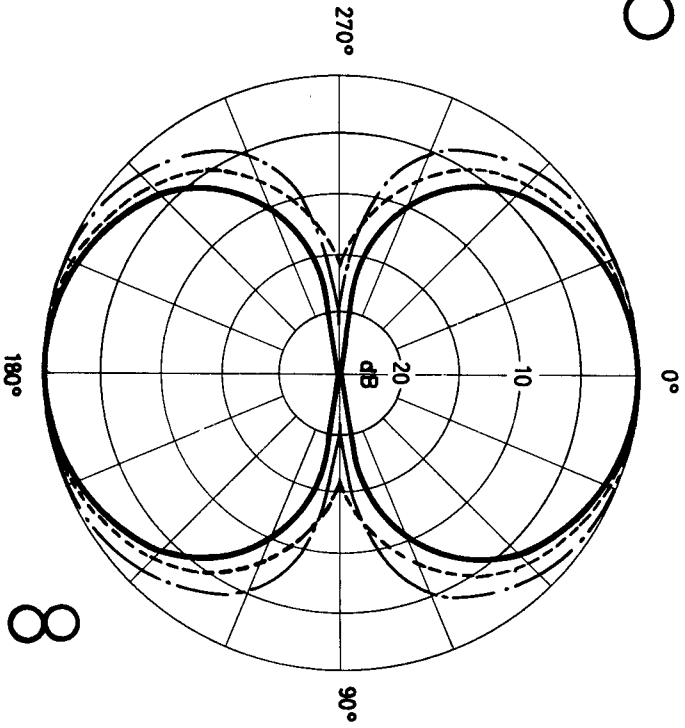
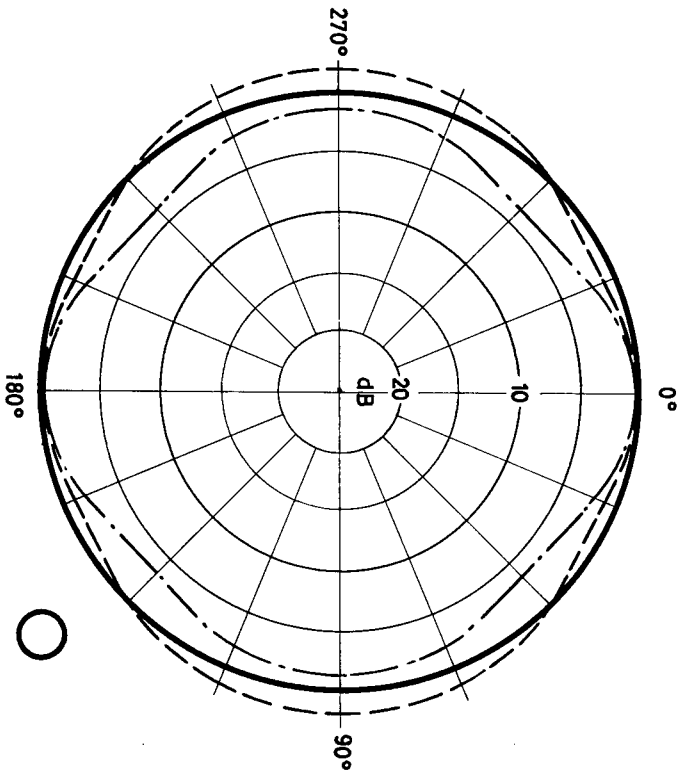
# TECHNICAL DETAILS

## MICROPHONE KM 56c

Acoustical system ....	Combination of two pressure gradient transducers electrically switchable for omni directional, cardioid and figure-eight
Frequency range .....	40 ... 15 000 cps
Output levels .....	Omni :app. .9 mV/ $\mu$ b across 1000 $\Omega$ Cardioid:app. .9 mV/ $\mu$ b across 1000 $\Omega$ Figure- of-eight:app. .9 mV/ $\mu$ b across 1000 $\Omega$
Electrical load resistance .....	$\geq 1000$ (250) $\Omega$
Electrical source resistance .....	200 (50) $\Omega \pm 20\%$
Capacitance capsule .....	2 x 35 pF
Stray voltage .....	$\geq 15 \mu$ V
Noise voltage .....	$\geq 5 \mu$ V measured according to DIN 45 405 $\hat{=} 29$ phon
Maximum sound pressure for .5 % distortion at 40 cps, 1 kcps and 5 kcps .....	190 $\mu$ b $\hat{=} 119$ dB (dB above $2 \cdot 10^{-4}$ $\mu$ b)
Gain of microphone amplifier at 1000 cps.....	- 2 dB
Valves .....	1 x AC 701k (Telefunken)
Dimensions .....	Length ..: 150 mm ..... Diameter : 21 mm
Weight .....	125 g



# KM 56c



- 1000 Hz
- - - 100 Hz
- - - 10000 Hz
- - - 15000 Hz



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