- INSTRUCTION MANUAL -

SONY CONDENSER MICROPHONE

MODEL C-37A

SONY CORPORATION
TOKYO JAPAN

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38.2. 5.000

SONY CONDENSER MICROPHONE MODEL C-37A

1. General

The SONY CONDENSER MICROPHONE MODEL C-37A is a high fidelity, variable directional (uni/omni-directional) microphone developed by SONY accoustic engineering staff.

The excellent performance of the C-37A got great reputation in the entire field of accoustic concern when it was introduced, and it has been used in world-wide broadcasting stations, film studios, recording facilities, etc., where superior characteristics and reliability is required, owing to its stable function, excellent performance, simple operation and rigid construction.

2. Description

2.1. The upper part of the microphone is a C-3 capsule mounted in the metal netting, and the lower part, inside of the metal case, is a cathode-follower circuit including an electron tube 6AU6. The entire internal assembly is rigidly shielded against an external static field.

The diaphragm of the microphone capsule is a very thin plastic film sputtered with pure gold. Since this diaphragm is mounted on the capsule so that it may get full damping effect accoustically, the condenser microphone model C-37A shows very excellent high frequency performance.

2.2. The microphone unit is connected to the POWER SUPPLY MODEL CP-3B through the MICROPHONE CABLE TYPE EC-10B.

The output signal from the C-37A is delivered from the connector located on the front panel of the CP-3B.

2.3. The new power supply unit model CP-3B is an improved version of the model CP-3 formerly used, providing more reliable components and printed circuit construction for higher and uniform performance.

2.4. Connectors for input and output, selectors for frequency response are provided on the front panel of the CP-3B, and there also provided another selectors for output impedance, level and supply voltage are provided on the buttom and inside of the unit for versatile operation.

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3. Specifications

3.1. Type:	Condenser microphone.
3.2. Output impedance:	50/250 ohms, balanced, deviation ±20%, (switchable)
3.3. Microphone cable:	Shielded 4 conductors cable with connectors type 21-5P, length; 20 cm.
3.4. Output receptacle:	Type 21-3P.
3.5. Stand screw:	1/2" pipe thread, adaptor for 5/8"-27 thread is provided.
3.6. Finish:	Microphone - Gray baked enamel and white bronze pear grained, Power supply - Ligh gray baked enamel and chrome pear grained.
3.7. Tube and diode:	Pentode tube 6AU6 (cathode follower) -- 1, Diode 1S-125 (rectifier) -- 2, " 1S-121 (") -- 2.
3.8. Dimensions:	Refer to fig. 1 and 2.
3.9. Circuit diagram:	Refer to fig. 3 and 4.
3.10. Weights:	Microphone - 560 g, Power supply - 2700 g.
3.11. Power requirements:	AC 100, 117 or 220 volts 50/60 cps, 10 VA.
3.12. Power cable:	5 meter length UL cord.

4 Performance characteristic

4.1. Directivity:	Uni-directional - refer to fig. 5, Omni-directional - refer to fig. 6.
4.2. Frequency response:	Uni-directional - refer to fig. 7, Omni-directional - refer to fig. 8.
	Frequency range; 30 - 16,000 cps within 5 db.
	High-cut and low-cut switches are provided.

4.3. Output level:

Output impedance	Effective Output Level dbm (1)	Open Circuit Voltage db (2)	Open Circuit Voltage mV	EIA Rating G_M (3) db
50 ohms	-53.0	-60.0	1.0	-145.8
250 ohms	-52.8	-53.0	2.24	-144.8

*6 db lower level signal is available for each impedance.
*Deviation ±2 db.

(1) The effective output level is defined as the ratio in db of the power available from the microphone to 0.001W, on the sound pressure level of 10 μbar.

The calculation is based on the nominal microphone impedance.

(2) 0 db = 1 volt/10 ubar.

(3) EIA standard.

4.4. Signal to noise ratio: More than 60 db on the 1000 cps, 10 ubar sound.

5. Construction

The model C-37A consists of following items.

1. C-37A microphone with case.
2. CP-3B power supply.
3. EC-10B microphone cable, 10 meter long with connectors.
4. Carrying case.
5. Accessories.
   a. Fuse, 0.5A 1 pc
   b. Pilot lamp, 8V 2
   c. Output connector, 21-sP 1
   d. Name plate for indicating supply voltage, 100, 117, 220 volt 1 each
   e. Instruction manual

6. Operation

6.1. The microphone model C-37A is used together with the power supply model CP-3B which is connected to the C-37A through the microphone cable.

The length of the microphone cable type EC-10B supplied is 10 meter, however, the distance between these two units may be prolonged up to 60 meter without giving any effect to the performance.

6.2. The output signal from the microphone is delivered from the 3P connector on the front panel of the CP-3B.

The frequency response, output level and impedance are available at several values by the following procedures.

(1) Frequency response.

By turning the 4-position switch located on the front panel, low frequency response is varied.

The switch position M corresponds to the flat response, and when the switch turned to M1, V1 and V2, the degree of low frequency attenuation is increased respectively.

By depressing the push-button on the front panel, attenuation in high frequency is achieved. The pilot lamp just above the push-button is illuminated when the button is depressed.

As to the characteristic of the attenuation, please refer to the fig. 8.

(2) The switch for the ouput impedance/level selection is provided on the buttom of the CP-3B.

By turning the screw on the buttom with a screwdriver, the output impedance/level is varried, and the value selected is indicated through the rectangular opening.

The figure 50 corresponds the output impedance of 50 ohms, and 250 to 250 ohms. The letter "ATT" just behind each figure shows that the output level is 6 db below the normal value.

6.3. The power supply is initially set at the factory for the line voltage as specified in the name plate on the back panel. By changing the tapping of the power transformer inside the housing it may be set for either 100, 117 or 220 voltage line.

(1) Remove the housing by loosing two screws on each side of the

housing to get in access of the power transformer.

(2) Change the tapping of the primary side of the transformer.

(3) Whenever this tapping change is made, make certain to change the voltage indication in the name plate to the correct figure.

6.4. It may be noticed that there exist some noise when the switch is on after long time of unused period or in rainy season, but this noise will be disappeared after several minutes of operation, and the set will show perfect performance.

6.5. Do not turn on the power without connecting the microphone to the power supply, or do not disconnect the microphone while the power is on.

6.6. Several length of microphone cable is provided to prolong the distance between microphone and the power supply, as follows.

EC-10B ------- 10 meter
EC-20B ------- 20 meter
EC-30B ------- 30 meter

6.7. Two kind of directivity, omni- and uni-directional , are available with the C-37A.

To change the directivity from uni- to omni-, or vice versa, turn the small screw provided on the back of the metal netting part of the microphone with a screwdriver to the left or right.

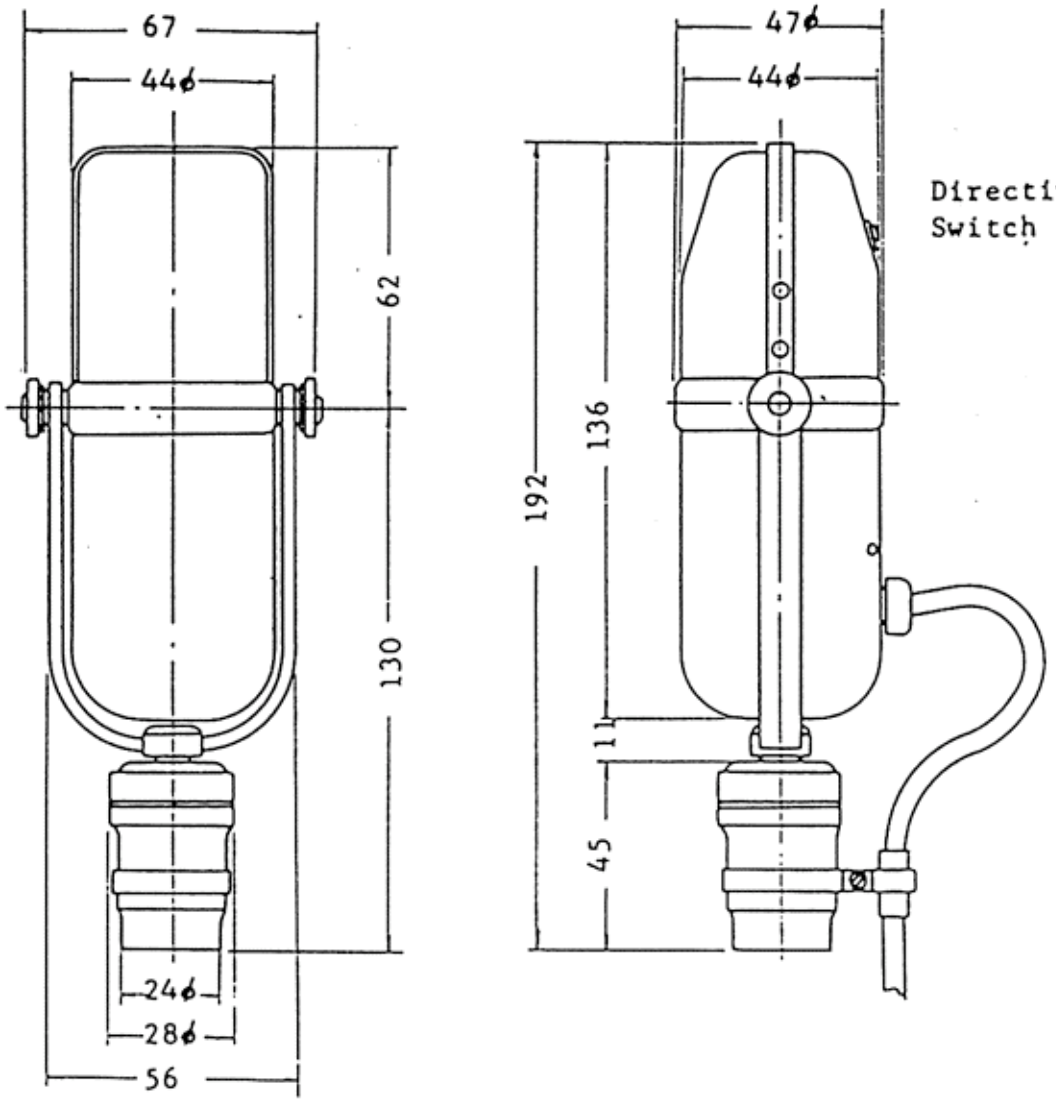


Fig. 1 Dimension of Model C-37A Microphone

(Dimension in millimeter)

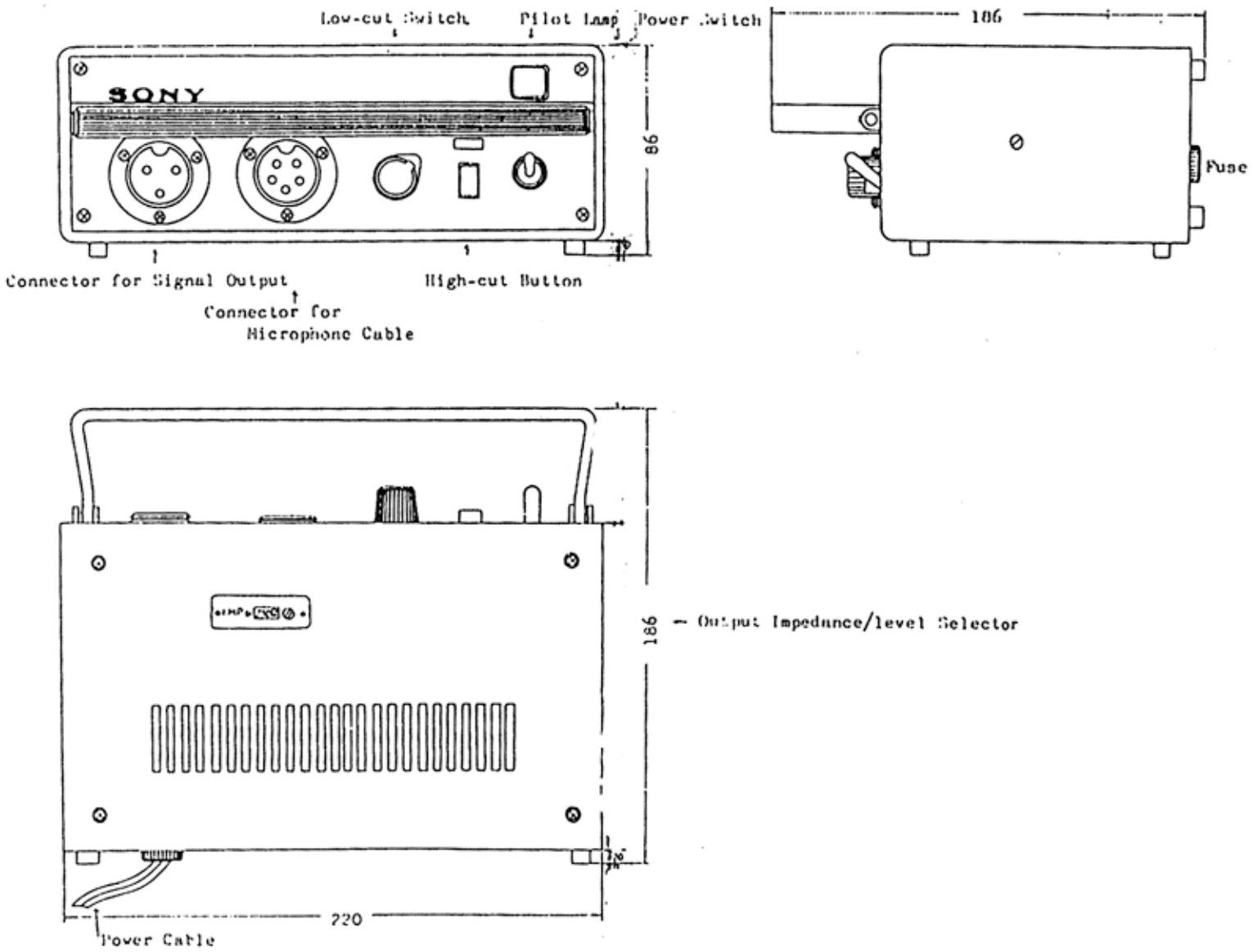
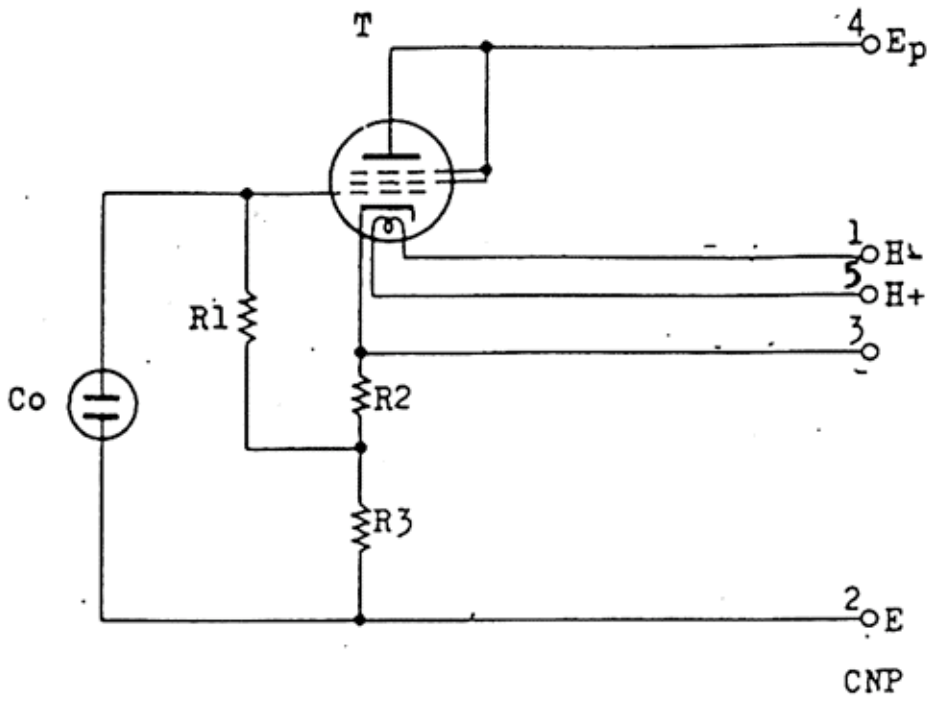


Fig.2 Dimensions of CP-3B Power Supply

(Dimensions in millimeter)



Symbol	Description	Model or Type
Co	C-3 capsule	
T	Electron tube	6AU6
R1	Carbon resistor	NRD-1/2L, 100M ohms
R2	" "	NRD-1/2L, 1K ohms
R3	" "	NRD-1/2L, 100K ohms
CNP	Connector	21-5P

Fig. 3 Circuit Diagram of Model C-37A Microphone

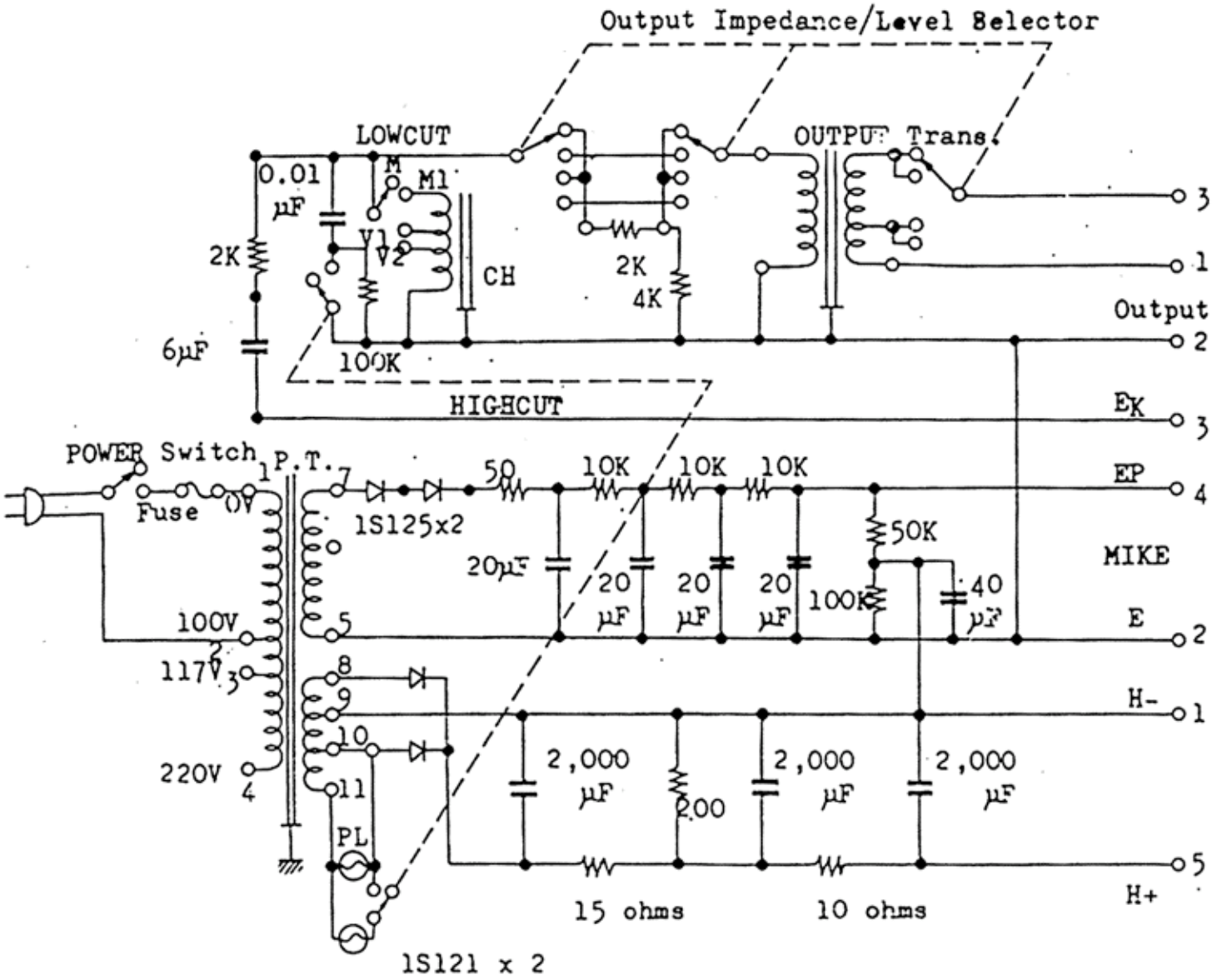


Fig. 4 Circuit Diagram of Model CP-3B Power Supply

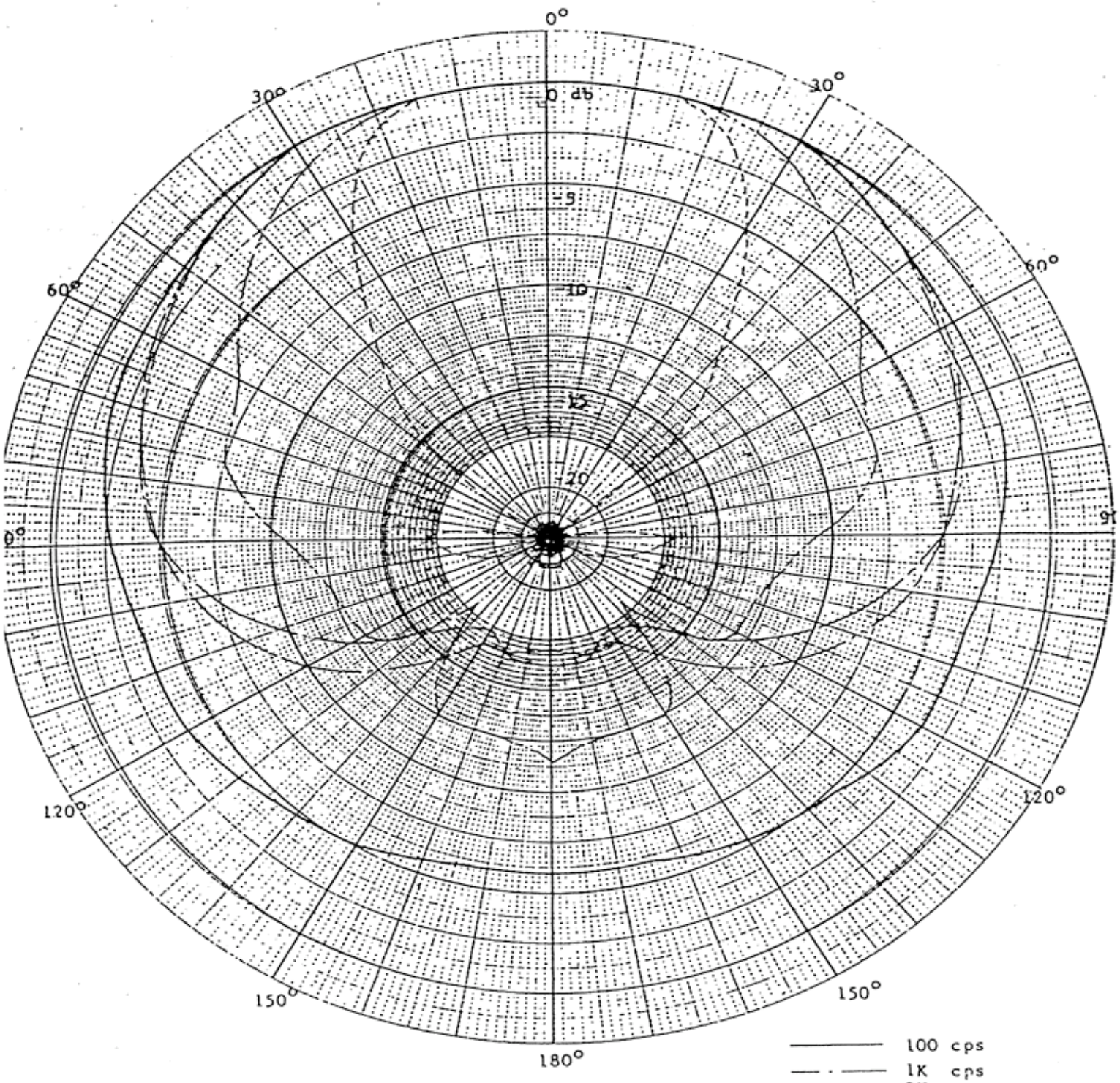


Fig.5 Directional Pattern of C-37A Microphone
Uni-directional position

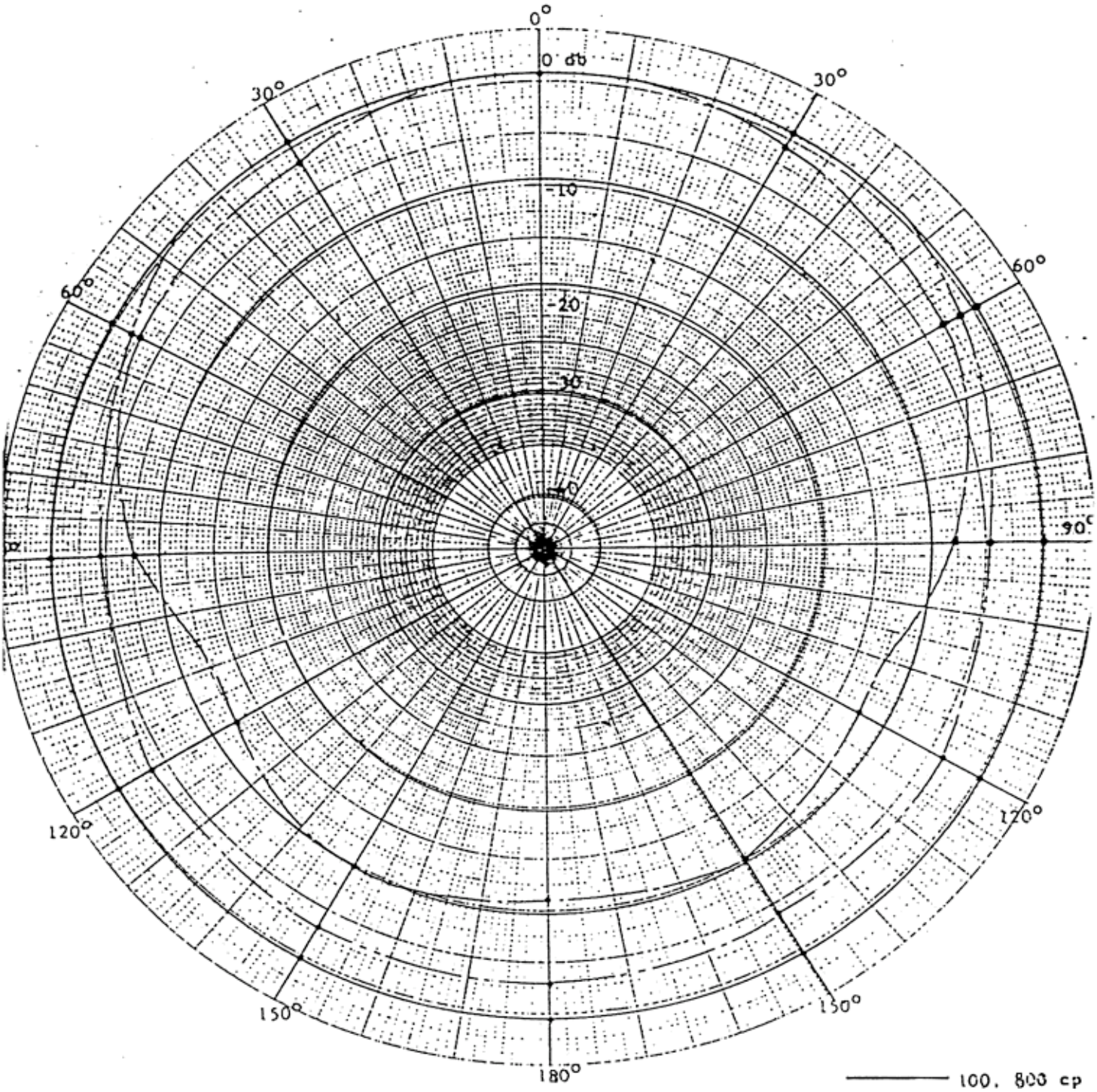


Fig.6 Directional Pattern C-37A Microphone
Omni-directional position

Fig.7 Frequency Response - Uni-directional position

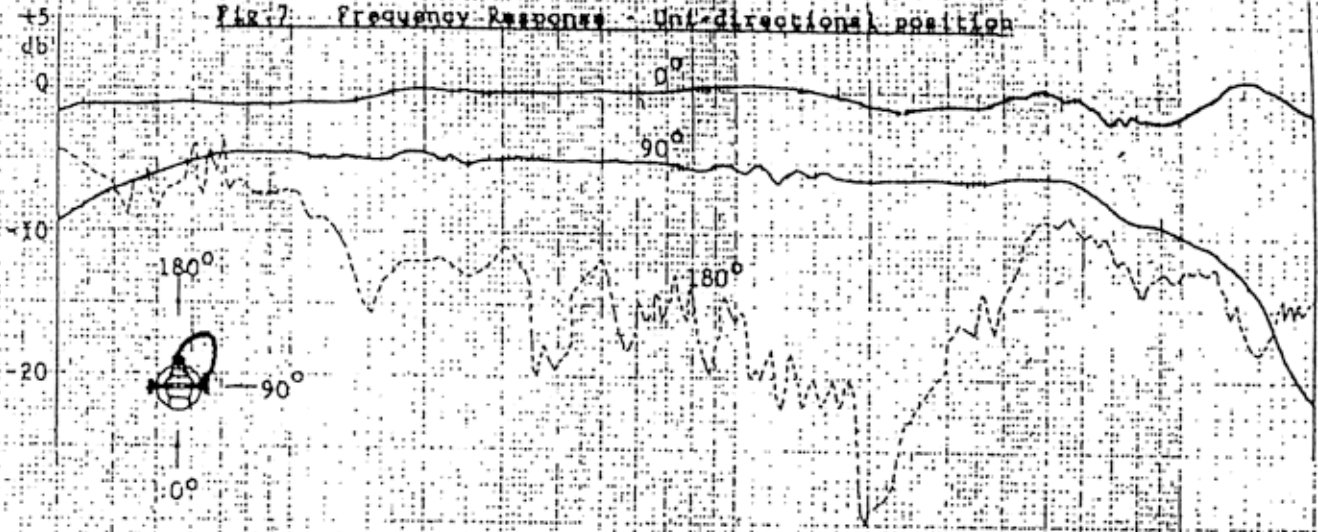
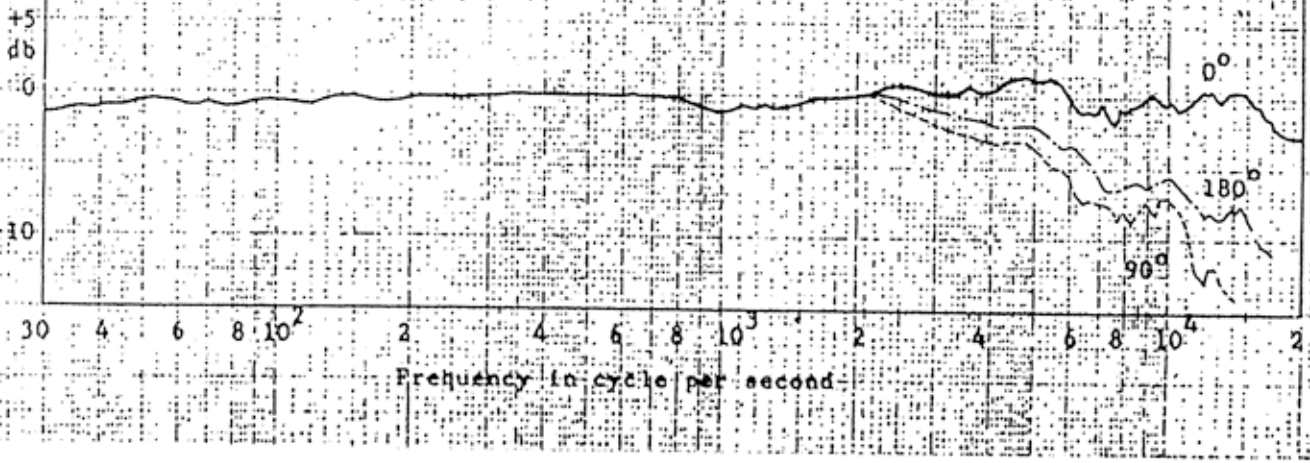


Fig.8 Frequency response - Omni-directional position



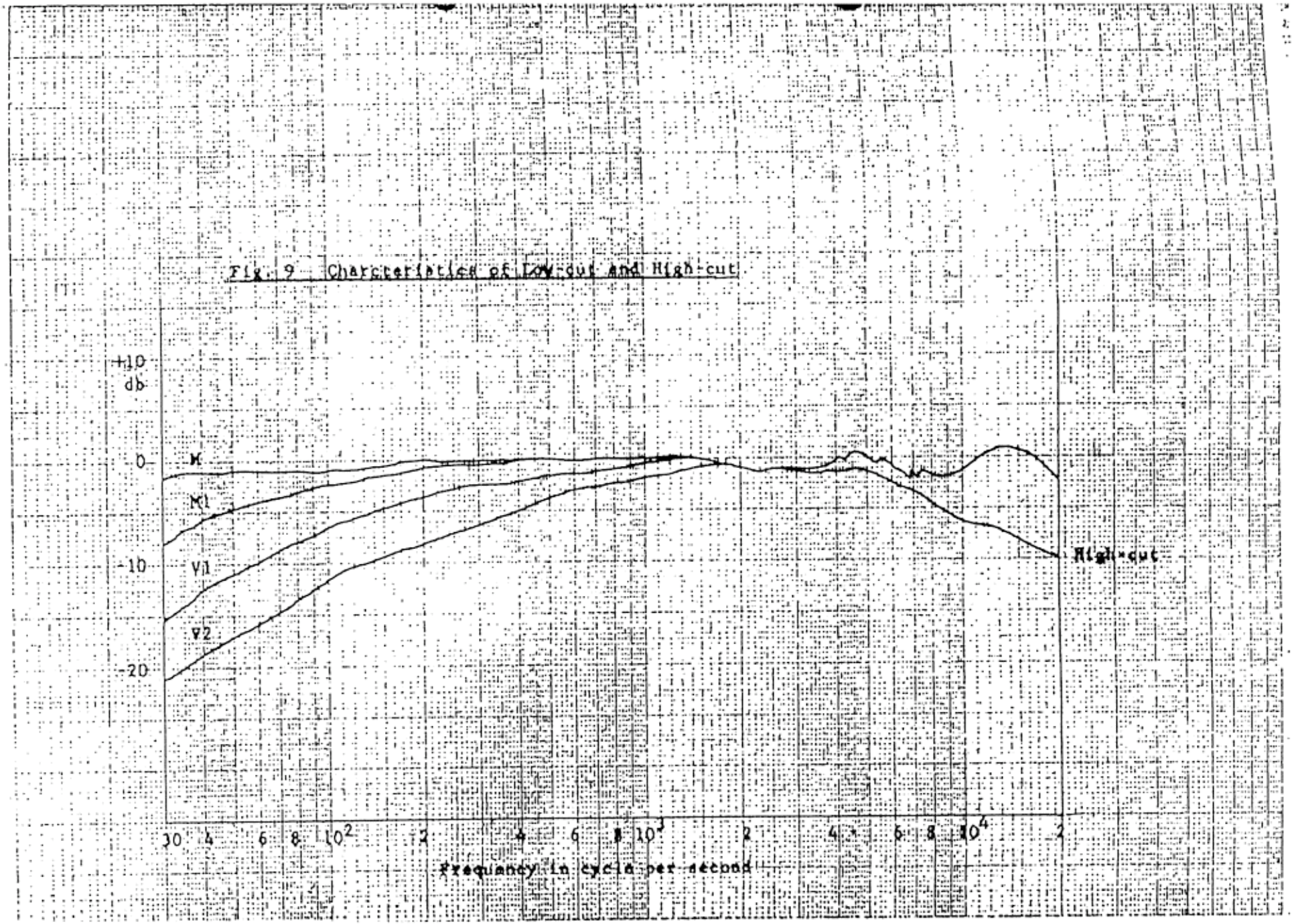


Fig. 9 Characteristics of Low-cut and High-cut

Specifications

Type	:	Condenser
Vaccum tube	:	6AU6A
Directivity	:	Uni-directional/Omni-directional (selectable)
Frequency range	:	30 - 16,000 Hz
Output level	:	Uni - 53 dB /Pa
		Omni - 54 dB /Pa
Output impedance	:	200 or 50 Ohms
Low-cut	:	M_2. M_1. V
Weight	:	680 g (with cable)