



GENERAL DESCRIPTION

The AKG C-500 electret-condenser microphone system is a modular group of matched components that combines high-quality performance and long-term reliability with flexibility and ease of expansion. These features make the system especially suitable for the small studio or production facility, and for the semiprofessional recordist. The system consists of five interchangeable CE-series capsules and a common, mating SE-5E powering module. To cover a wide range of applications, the capsules offer a choice of five different directional patterns and operational features — cardioid, omnidirectional, shock-mounted cardioid with integral windscreen, short-shotgun hypercardioid, and lavalier. For further versatility, the powering module may be operated either of two ways — self powered by its own battery or phantom powered by suitably equipped mixers or tape machines. All components in the system are available individually, while those most frequently requested are also packaged as part of three complete microphone combinations.

CE-SERIES CAPSULES

All five capsules in the series have several advanced features in common. The electret-condenser transducer element in each employs a specially embossed Teflon* diaphragm with a vacuum-deposited gold film. This process protects the element's elasticity and dimensional stability against the deteriorating effects of aging, excessive temperature and/or humidity, and other environmental conditions. Each capsule also incorporates a low-noise FET preamplifier. In all but one capsule, the FET is a discrete device; the exception — the CE-10 — uses an integrated-circuit FET instead. The sensitivity, frequency-response, and polar-response characteristics of all production capsules are scrupulously controlled and checked to ensure a high degree of capsule-to-capsule uniformity. This is especially important for accurate and predictable results in stereo recording setups employing only two microphones.

CE-1: Cardioid electret-condenser capsule. For all general-purpose applications where a directional wide-range microphone is required. Screws directly onto SE-5E powering module.

CE-2: Omnidirectional electret-condenser capsule. For all general-purpose applications where a non-directional wide-range microphone with extremely flat and extended low-frequency response is required. Screws onto SE-5E powering module.

CE-5: Cardioid electret-condenser capsule with integral shock mount and windscreen. Ideal as a hand-held vocalist's microphone for contemporary-music recording sessions and concerts. Features an internally suspended transducer for relative insensitivity to handling noise, mechanical shocks, and spurious vibrations. A wire-mesh windscreen with polyurethane-foam lining minimizes the effects of breath "pop" and wind noise. Frequency response is tailored to compensate for proximity effect. Screws directly onto SE-5E powering module.

CE-8: Short-shotgun hypercardioid electret-condenser capsule. Especially useful for minimizing the effects of ambient noise or room reverberation when recording in-the-field interviews or motion-picture and videotape dialog tracks. Combines both pressure-gradient and interference-tube principles for greater

directionality and working distance than conventional cardioid types. Screws directly onto SE-5E powering module.

CE-10: Lavalier electret-condenser capsule. For all on-camera applications where an inconspicuous microphone is a must. Transducer element internally suspended to minimize handling, cable, and clothing noise. Design offers natural, extended low-frequency response, and smooth high-frequency response free of annoying sibilance peaks. Complete with adjustable tie clip, and 7 m (≈23 ft) non-detachable shielded cable terminating in an adapter that screws onto SE-5E powering module.

SE-5E POWERING MODULE

This unit mates with any one of the CE-series capsules to constitute a complete microphone. It contains a compartment and on-off switch for a PX-23 5.6-volt mercury photographic battery, a DC regulating and filtering network, an audio output transformer, and a 3-pin XLR-type male connector. When battery powered, the unit can operate about 550 hours continuously or 1000 hours intermittently. When phantom powered from a 9- to 52-volt DC source (see bulletin on phantom powering), the module's on-off switch is bypassed, while its regulating-filtering network protects the microphone from reverse-voltage damage.

COMPLETE MICROPHONE COMBINATIONS

C-501E: Cardioid microphone. Consists of one each CE-1 cardioid capsule, SE-5E powering module, W-20 windscreen, SA-11/1 stand adapter, and 4.6 m (≈15 ft) cable. Packaged in a foam-lined vinyl case.

C-505E: Cardioid microphone with integral shock mount and windscreen. Consists of a CE-5 cardioid capsule, an SE-5E powering module, an SA-11/1 stand adapter, and a 4.6 m (≈15 ft) cable. Packaged in a foam-lined vinyl case.

C-510E: Lavalier microphone. Consists of a CE-10 lavalier capsule with non-detachable cable and adapter, and an SE-5E powering module. Packaged in a foam-lined vinyl case.



The microphone system shall be a modular electret-condenser type. It shall consist of five interchangeable transducer-preamplifier capsules and a common powering module that shall mate readily with each of the capsules. The capsules shall provide five different directional patterns and operational features: 1) cardioid, 2) omnidirectional, 3) cardioid with integral shock mount and windscreen, 4) short-shotgun hypercardioid, and 5) lavalier. The powering module shall be capable of operating from either a self-contained battery or a phantom-power source originating at a suitably equipped mixer or tape machine. The system herein specified shall be the AKG C-500.

Each transducer-preamplifier capsule shall incorporate an electret-condenser element having an embossed Teflon diaphragm with a vacuum-deposited gold film, and an audio-frequency preamplifier circuit employing a Field-Effect Transistor. The FET shall be a discrete device in each capsule except the lavalier, which shall employ an integrated-circuit FET. Each capsule shall have a nominal impedance of 200 ohms ($\pm 20\%$) when used with the powering module. The output level of each capsule except the shotgun and lavalier shall be -48 dBm (re: 1 mW/ 10 dynes/cm²). Each capsule shall be capable of handling a maximum sound-pressure level of 3500 μ bar (145 dB SPL) at 1000 Hz, with distortion not exceeding 1.0% . The EIA sensitivity rating (G_m) of each capsule except the shotgun and lavalier shall be -141 dBm. The self-noise figure of each capsule except the shotgun and lavalier shall be 26 dB weighted (DIN 45 405). The DC current drain of each capsule shall not exceed 150 μ A when the capsule is battery operated from the powering module. Each capsule except the lavalier shall incorporate an integral 2-pin threaded-screw female connector to mate directly with the powering module.

In addition to the aforementioned specifications, the cardioid capsule shall have a frequency range of 40 - $20,000$ Hz. The front-to-rear discrimination shall exceed 18 dB at 1000 Hz at a sound-incidence angle of 180 degrees, and an effective cardioid pattern shall be maintained over the entire frequency range. The finish of the capsule shall be matte nickel and shall not create specular light reflections. The capsule shall be 37 mm ($\approx 1\text{-}7/16$ in.) long, by 21 mm ($\approx 13/16$ in.) in diameter, and the net weight shall not exceed 12 g ($\approx 1/2$ oz.). The capsule herein specified shall be the AKG CE-1.

In addition to the aforementioned specifications, the omnidirectional capsule shall have a frequency range of 20 - $20,000$ Hz, with an effective omnidirectional pattern maintained over the entire frequency range. The finish of the capsule shall be matte nickel and shall not create specular light reflections. The capsule shall be 37 mm ($\approx 1\text{-}7/16$ in.) long, by 21 mm ($\approx 13/16$ in.) in diameter, and the net weight shall not exceed 12 g ($\approx 1/2$ oz.). The capsule herein specified shall be the AKG CE-2.

In addition to the aforementioned specifications, the cardioid capsule with integral shock mount and windscreen shall have a frequency range of 40 - $20,000$ Hz. The front-to-rear discrimination shall exceed 18 dB at 1000 Hz at a sound-incidence angle of 180 degrees, and an effective cardioid pattern shall be maintained over the entire frequency range. A wire-mesh screen, lined with polyurethane foam and commensurate with the acoustical properties of the unit, shall protect the capsule's elements and circuits from metal particles and dust. The transducer element shall be suspended within the windscreen to isolate the element

from the effects of handling noise, mechanical shocks, and spurious vibrations. The finish of the windscreen shall be nickel and shall not create specular light reflections. The capsule shall be 49 mm ($\approx 1\text{-}15/16$ in.) long, by 52.5 mm ($\approx 2\text{-}1/16$ in.) in diameter, and the net weight shall not exceed 35 g ($\approx 1\text{-}1/4$ oz.). The capsule herein specified shall be the AKG CE-5.

In addition to the aforementioned specifications, the short-shotgun hypercardioid capsule shall have a frequency range of 70 - $20,000$ Hz. The front-to-side discrimination shall exceed 15 dB at 1000 Hz at a sound-incidence angle of 105 degrees ± 15 degrees, the front-to-rear discrimination shall exceed 15 dB at 1000 Hz at a sound-incidence angle of 180 degrees, and an effective hypercardioid pattern shall be maintained over the entire frequency range. The output level shall be -42 dBm (re: 1 mW/ 10 dynes/cm²). The EIA sensitivity rating (G_m) shall be -135 dBm. The self-noise figure shall be 20 dB weighted (DIN 45 405). The finish of the capsule shall be matte black and shall not create specular light reflections. The capsule shall be 217 mm ($\approx 8\text{-}9/16$ in.) long, by 21 mm ($\approx 13/16$ in.) in diameter, and the net weight shall not exceed 55 g (≈ 2 oz.). The capsule herein specified shall be the AKG CE-8.

In addition to the aforementioned specifications, the lavalier capsule shall have a frequency range of 20 - $18,000$ Hz, with an effective omnidirectional pattern maintained over the entire frequency range. The output level shall be -51 dBm (re: 1 mW/ 10 dynes/cm²). The EIA sensitivity rating (G_m) shall be -144 dBm. The self-noise figure shall be 30 dB weighted (DIN 45 405). The transducer element shall be suspended within the capsule to isolate the element from the effects of handling, cable, and clothing noise. The capsule shall incorporate an adjustable tie clip, and a 7 m (≈ 23 ft.) non-detachable shielded cable terminating in a 2-pin threaded-screw female adapter to mate with the powering module. The finish of the capsule shall be matte broadcast grey and shall not create specular light reflections. The capsule shall be 37 mm ($\approx 1\text{-}7/16$ in.) long including strain relief, by 14.5 mm ($\approx 9/16$ in.) in largest diameter, and the net weight shall not exceed 75 g ($\approx 2\text{-}3/4$ oz.) including cable and adapter. The capsule herein specified shall be the AKG CE-10.

The powering module shall incorporate a 2-pin threaded-screw male connector to mate with any one of the aforementioned capsules, a battery compartment and on-off switch for a PX-23 or equivalent 5.6 -volt mercury photographic battery, a DC regulating and filtering network, an audio output transformer, and a 3-pin male audio connector to mate with Cannon XLR, Switchcraft A3, or equivalent connectors. When battery powered, the module-capsule combination shall be capable of approximately 550 hours of continuous operation or approximately 1000 hours of intermittent operation. When phantom powered from a 9 - 52 volt DC source, the module's on-off switch shall be automatically bypassed, and its regulating-filtering network shall protect the associated capsule from reverse-voltage damage. The module's audio circuit shall have a frequency range of 10 - $25,000$ Hz and a nominal output impedance of 200 ohms ($\pm 20\%$). The finish of the module shall be matte nickel and shall not create specular light reflections. The module shall be 117 mm ($\approx 4\text{-}5/8$ in.) long, by 21 mm ($\approx 13/16$ in.) in diameter, and the net weight shall not exceed 80 g ($\approx 2\text{-}3/4$ oz.) less battery. The module herein specified shall be the AKG SE-5E.

LIMITED WARRANTY

Philips Audio Video Systems Corp. warrants AKG Microphones against defects in material or workmanship for a period of one (1) year from the date of original purchase for use, and agrees to repair or, at our option, replace any defective unit without charge for either parts or labor.

IMPORTANT: This warranty does not cover damage resulting from accident, misuse or abuse, lack of reasonable care, the affixing of any attachment not provided with the product, loss of parts, or connecting the product to any but the specified receptacles. THIS WARRANTY IS VOID UNLESS SERVICE OR REPAIRS ARE PERFORMED BY AN AUTHORIZED SERVICE CENTER.

NOTE: No other warranty written or oral, is authorized by Philips Audio Video Systems Corp.

NO RESPONSIBILITY IS ASSUMED FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. HOWEVER, THE LIMITATION OF ANY RIGHT OR REMEDY SHALL NOT BE EFFECTIVE WHERE SUCH IS PROHIBITED OR RESTRICTED BY LAW.

You may obtain a list of warranty service stations in your area directly from our service department listed below.

Simply take or ship your Microphone prepaid to our service department or service station. Be sure to include your sales slip as proof of purchase date. (We will not repair transit damage under the no-charge terms.)



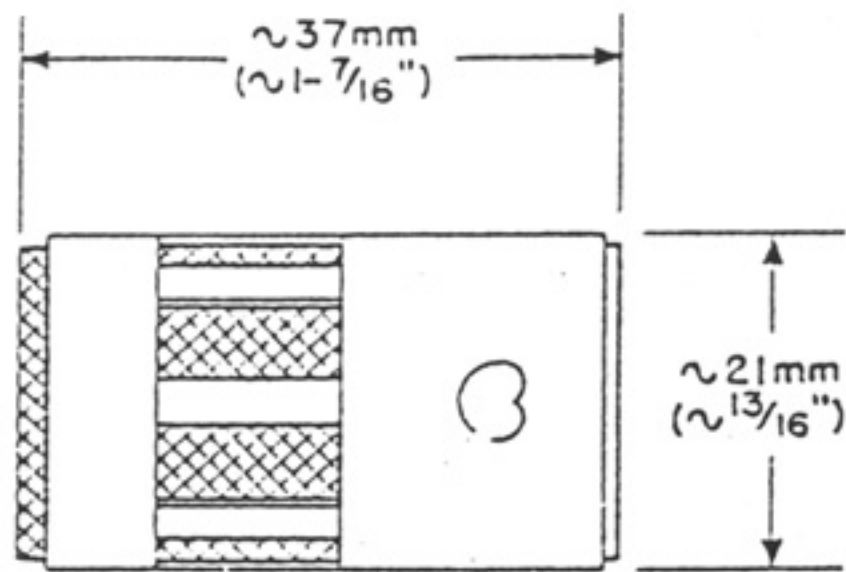
AKG MICROPHONES • HEADPHONES

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31 McKee Drive
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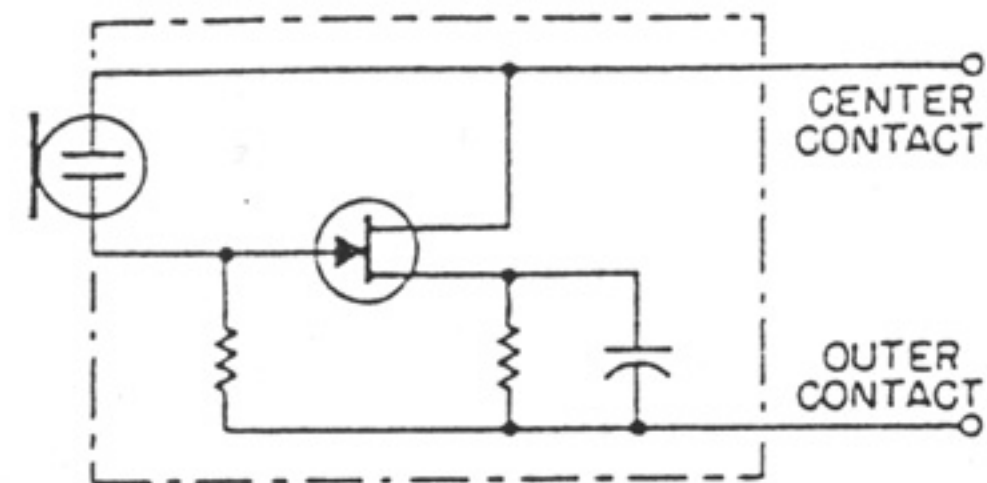
Product improvements and other design modifications are subject to change without notice.

Dimensions



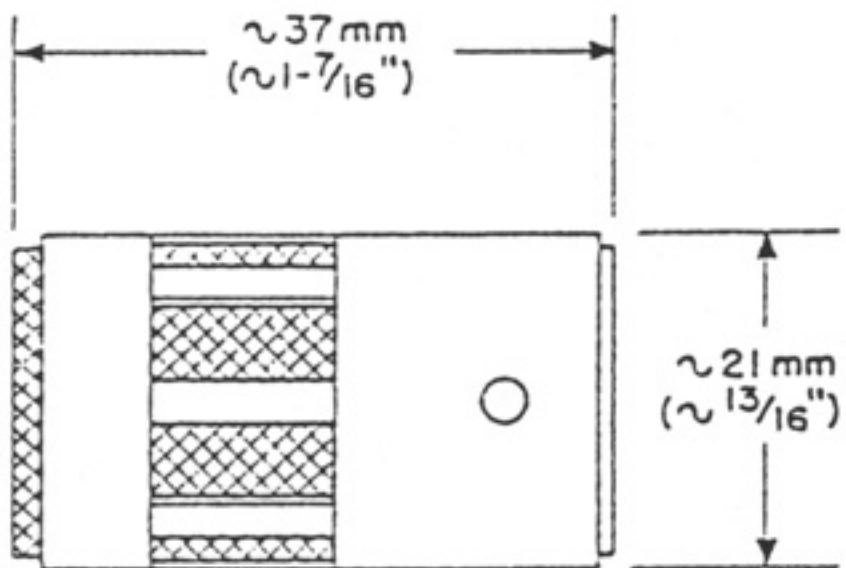
CE-1

Schematic

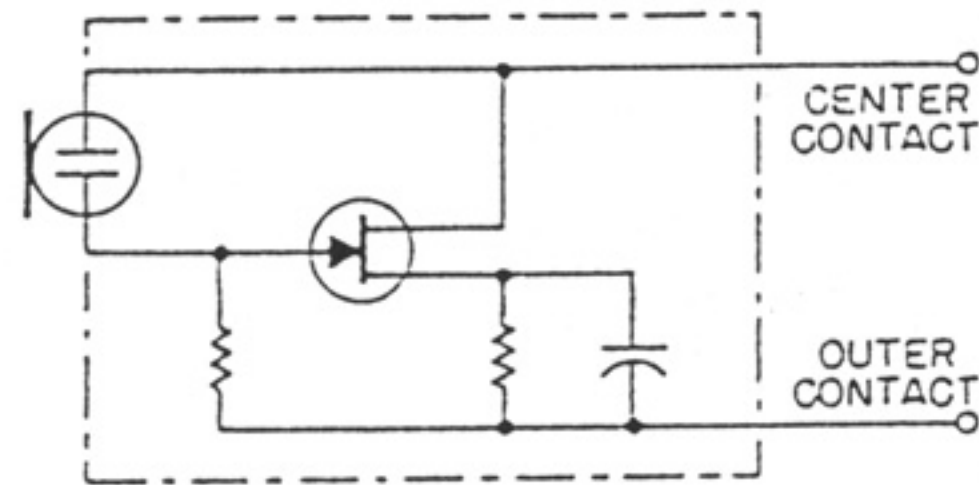


Positive pressure on diaphragm produces positive voltage on pin 2 (referred to pin 3) of SE-5E.

2002 Z 0001

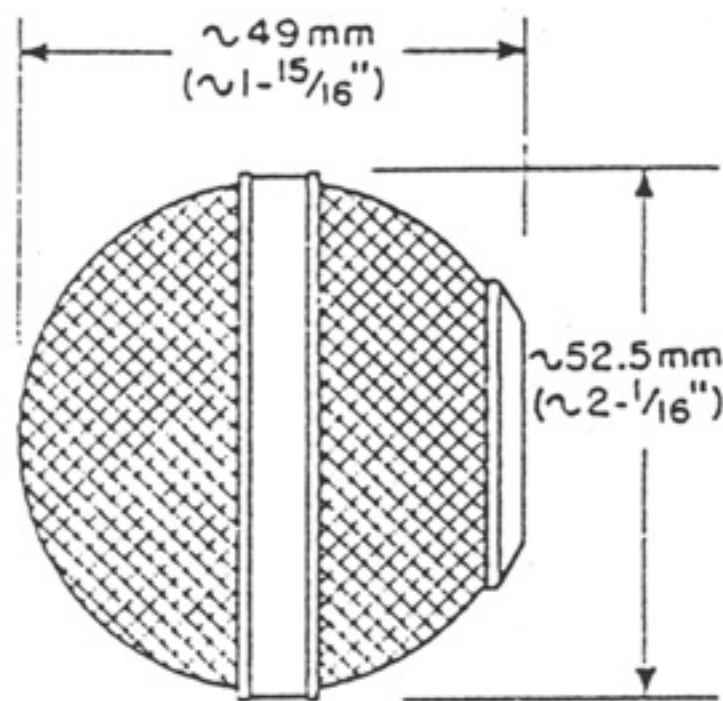


CE-2

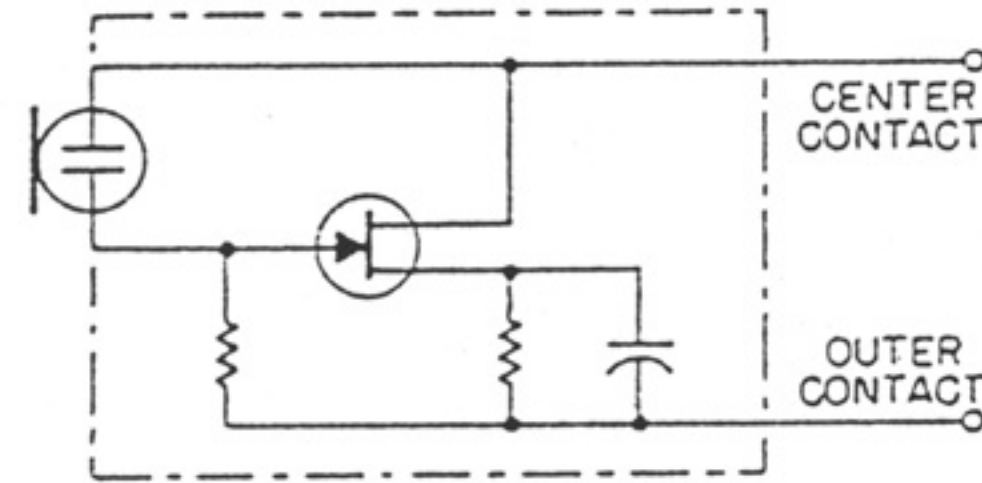


Positive pressure on diaphragm produces positive voltage on pin 2 (referred to pin 3) of SE-5E.

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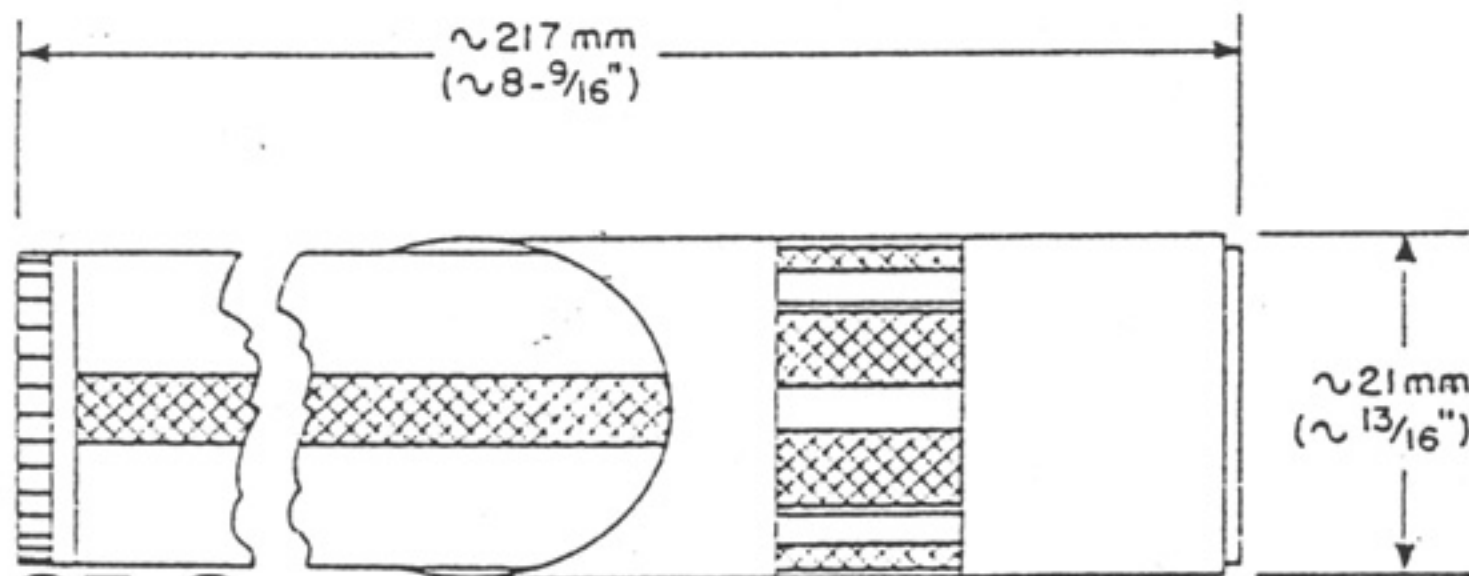


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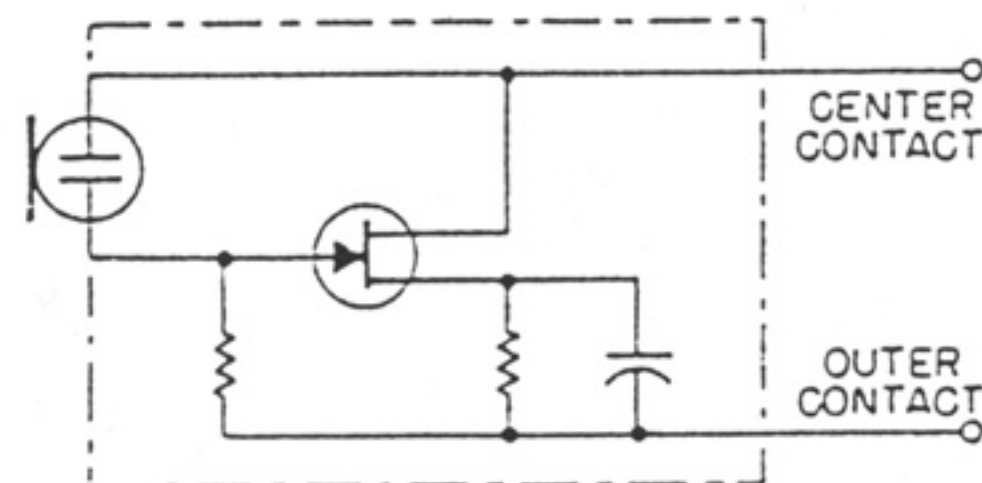


Positive pressure on diaphragm produces positive voltage on pin 2 (referred to pin 3) of SE-5E.

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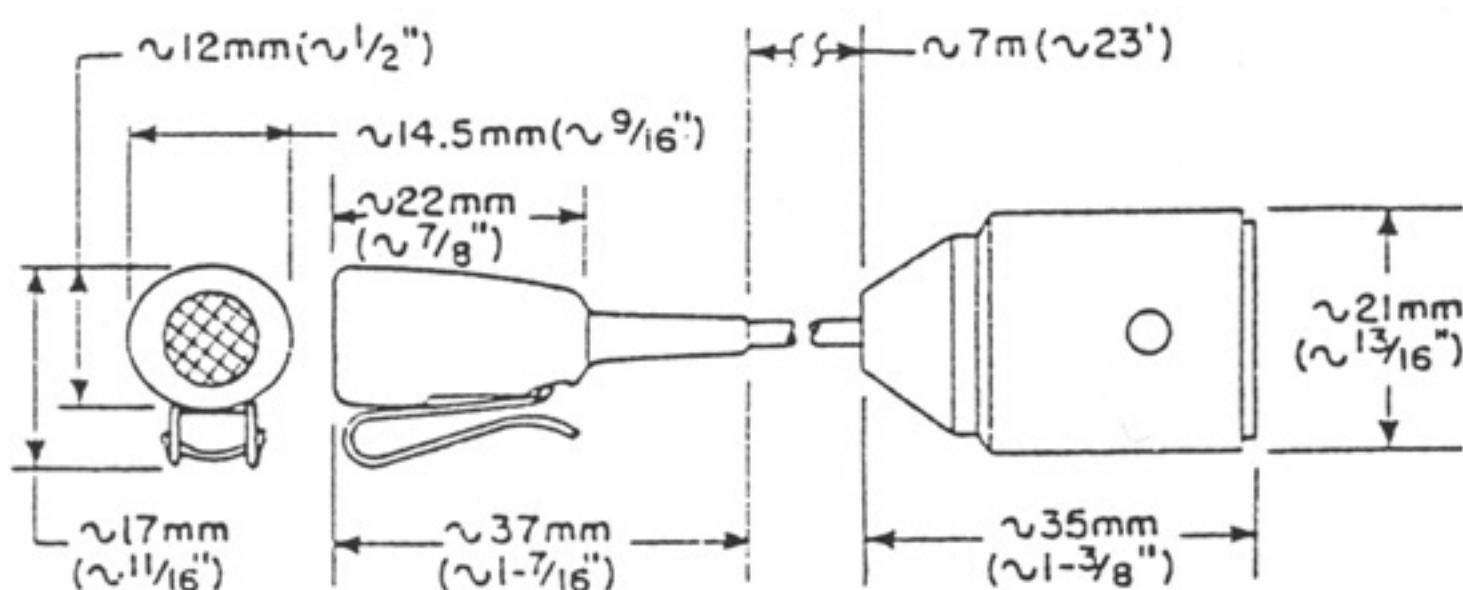


CE-8

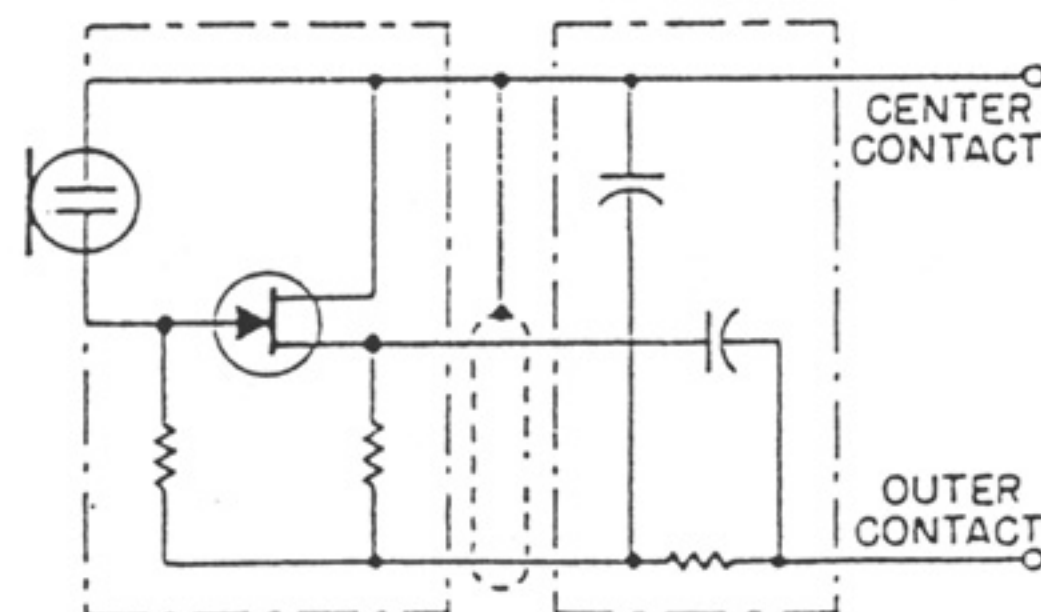


Positive pressure on diaphragm produces positive voltage on pin 2 (referred to pin 3) of SE-5E.

2002 Z 0008



CE-10



Positive pressure on diaphragm produces positive voltage on pin 3 (referred to pin 2) of SE-5E.

2002 Z C010

CE-1

Transducer Type: Electret condenser
Directional Characteristic: Cardioid
Frequency Range: 40-20,000 Hz
Nominal Impedance (with SE-5E): 200 ohms
Recommended Load Impedance (with SE-5E): ≥ 500 ohms
Sensitivity at 1 kHz:
Open circuit: 0.35 mV/ μ b; -69.1 dBV
Maximum power level: -48 dBm (re: 1 mW/10 dynes/cm²)
EIA G_m: -141 dBm
Tolerance: ± 3 dB

Sound Pressure Level for 1.0% THD:
40 Hz: 136 dB
1000 Hz: 145 dB
Self Noise: 26 dB weighted (DIN 45 405)
Hum Sensitivity (with SE-5E): -132 dBm (1 mG field)
Case Material: Nickel-plated brass
Dimensions: See figure in Dimensions column
Schematic: See figure in Schematic column
Net Weight: 12 g ($\approx 1/2$ oz.)
Optional Accessories: W-20 windscreen

CE-2

Transducer Type: Electret condenser
Directional Characteristic: Omnidirectional
Frequency Range: 20-20,000 Hz
Nominal Impedance (with SE-5E): 200 ohms
Recommended Load Impedance (with SE-5E): ≥ 500 ohms
Sensitivity at 1 kHz:
Open circuit: 0.35 mV/ μ b; -69.1 dBV
Maximum power level: -48 dBm (re: 1 mW/10 dynes/cm²)
EIA G_m: -141 dBm
Tolerance: ± 3 dB

Sound Pressure Level for 1.0% THD:
40 Hz: 136 dB
1000 Hz: 145 dB
Self Noise: 26 dB weighted (DIN 45 405)
Hum Sensitivity (with SE-5E): -132 dBm (1 mG field)
Case Material: Nickel-plated brass
Dimensions: See figure in Dimensions column
Schematic: See figure in Schematic column
Net Weight: 12 g ($\approx 1/2$ oz.)
Optional Accessories: W-20 windscreen

CE-5

Transducer Type: Electret condenser
Directional Characteristic: Cardioid
Frequency Range: 40-20,000 Hz
Nominal Impedance (with SE-5E): 200 ohms
Recommended Load Impedance (with SE-5E): ≥ 500 ohms
Sensitivity at 1 kHz:
Open circuit: 0.35 mV/ μ b; -69.1 dBV
Maximum power level: -48 dBm (re: 1 mW/10 dynes/cm²)
EIA G_m: -141 dBm
Tolerance: ± 3 dB

Sound Pressure Level for 1.0% THD:
40 Hz: 136 dB
1000 Hz: 145 dB
Self Noise: 26 dB weighted (DIN 45 405)
Hum Sensitivity (with SE-5E): -132 dBm (1 mG field)
Case Material: Nickel-plated steel-wire mesh
Dimensions: See figure in Dimensions column
Schematic: See figure in Schematic column
Net Weight: 35 g ($\approx 1-1/4$ oz.)

CE-8

Transducer Type: Electret condenser
Directional Characteristic: Short-shotgun hypercardioid
Frequency Range: 70-20,000 Hz
Nominal Impedance (with SE-5E): 200 ohms
Recommended Load Impedance (with SE-5E): ≥ 500 ohms
Sensitivity at 1 kHz:
Open circuit: 0.70 mV/ μ b; -63.1 dBV
Maximum power level: -42 dBm (re: 1 mW/10 dynes/cm²)
EIA G_m: -135 dBm
Tolerance: ± 3 dB

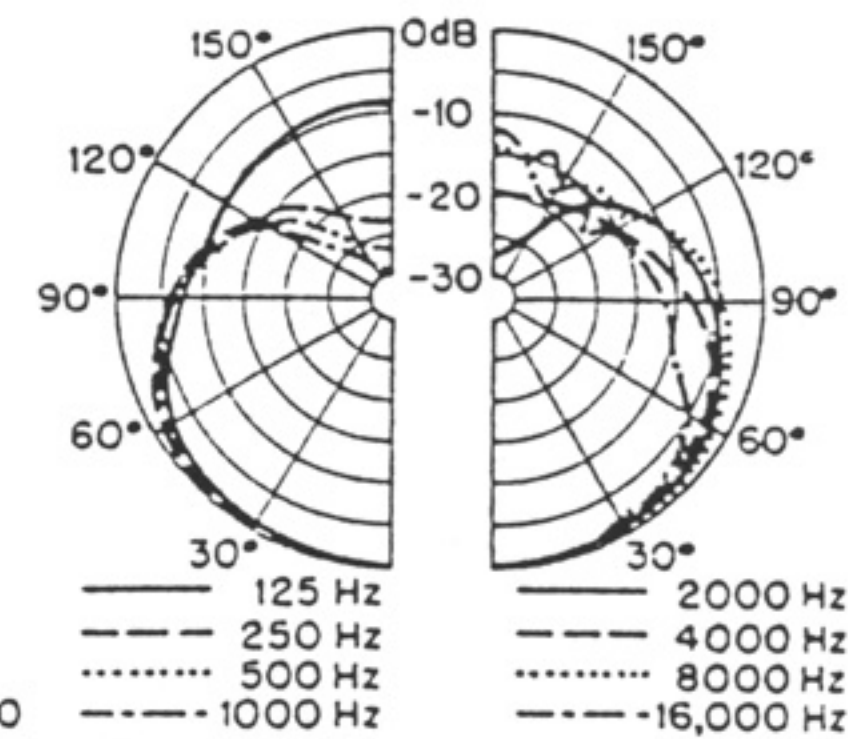
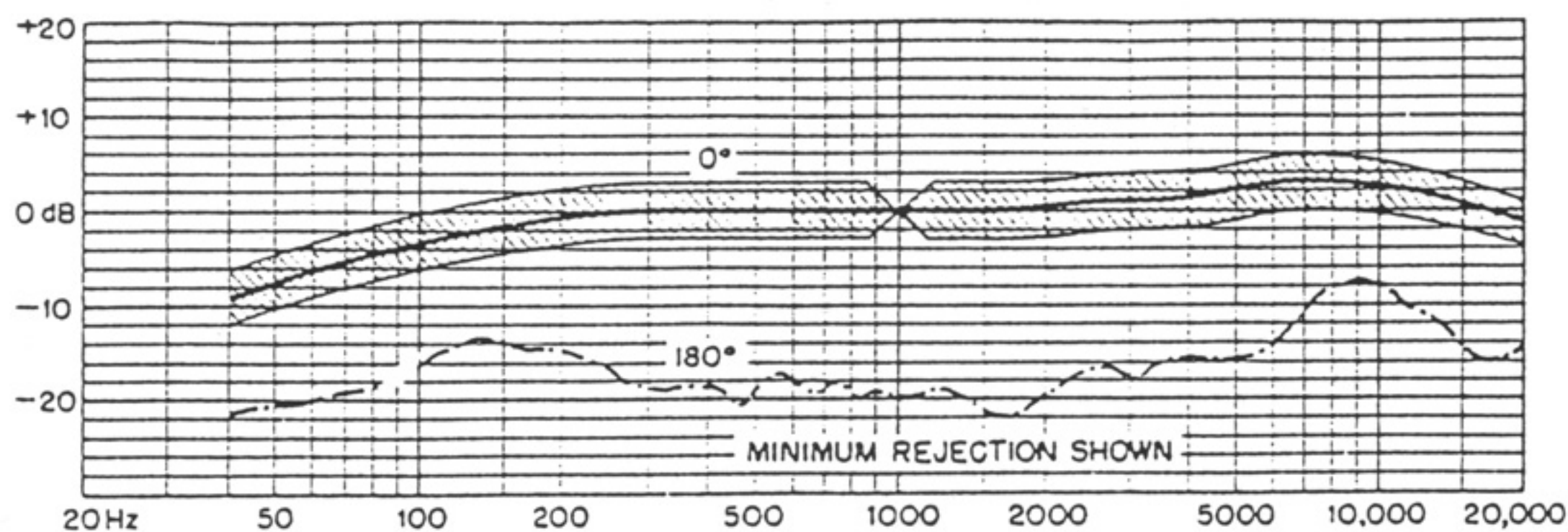
Sound Pressure Level for 1.0% THD:
40 Hz: 136 dB
1000 Hz: 145 dB
Self Noise: 20 dB weighted (DIN 45 405)
Hum Sensitivity (with SE-5E): -132 dBm (1 mG field)
Case Material: Black-varnished brass
Dimensions: See figure in Dimensions column
Schematic: See figure in Schematic column
Net Weight: 55 g (≈ 2 oz.)
Included Accessories: W-18 windscreen

CE-10

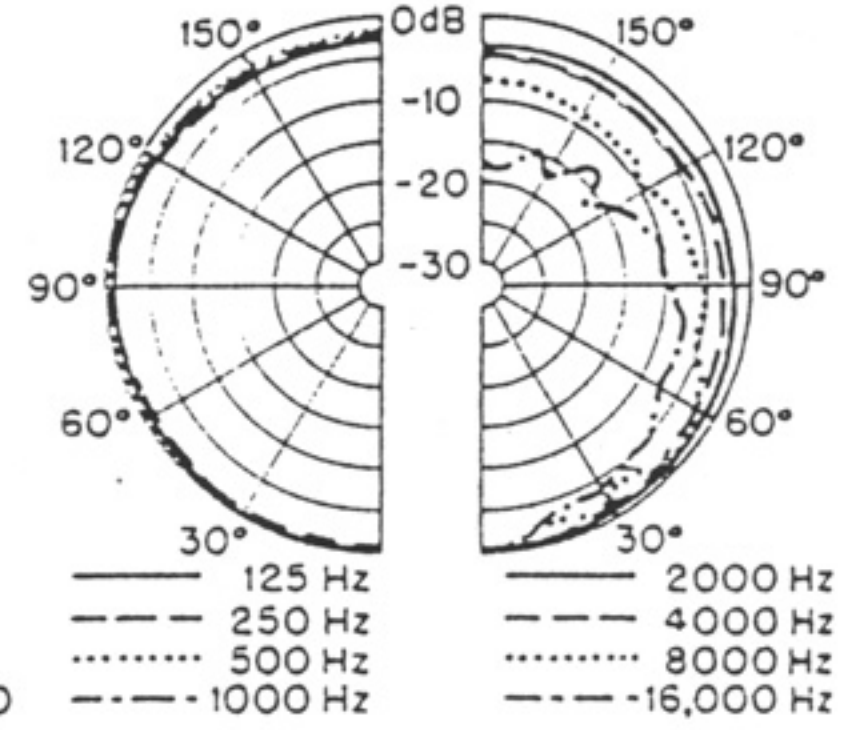
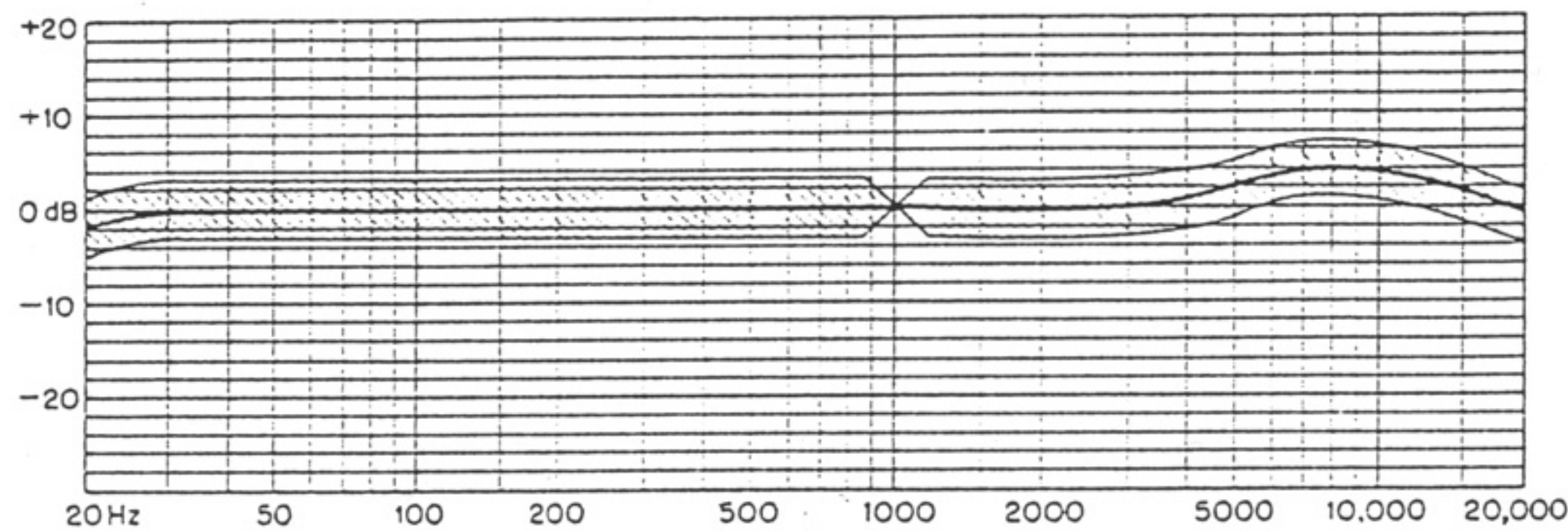
Transducer Type: Electret condenser
Directional Characteristic: Omnidirectional
Frequency Range: 20-18,000 Hz
Nominal Impedance (with SE-5E): 200 ohms
Recommended Load Impedance (with SE-5E): ≥ 500 ohms
Sensitivity at 1 kHz:
Open circuit: 0.25 mV/ μ b; -72 dBV
Maximum power level: -51 dBm (re: 1 mW/10 dynes/cm²)
EIA G_m: -144 dBm
Tolerance: ± 3 dB

Sound Pressure Level for 1.0% THD:
40 Hz: 136 dB
1000 Hz: 145 dB
Self Noise: 30 dB weighted (DIN 45 405)
Hum Sensitivity (with SE-5E): -126 dBm (1 mG field)
Case Material: Broadcast grey plastic
Dimensions: See figure in Dimensions column
Schematic: See figure in Schematic column
Net Weight: 75 g ($\approx 2-3/4$ oz.) with cable and adapter

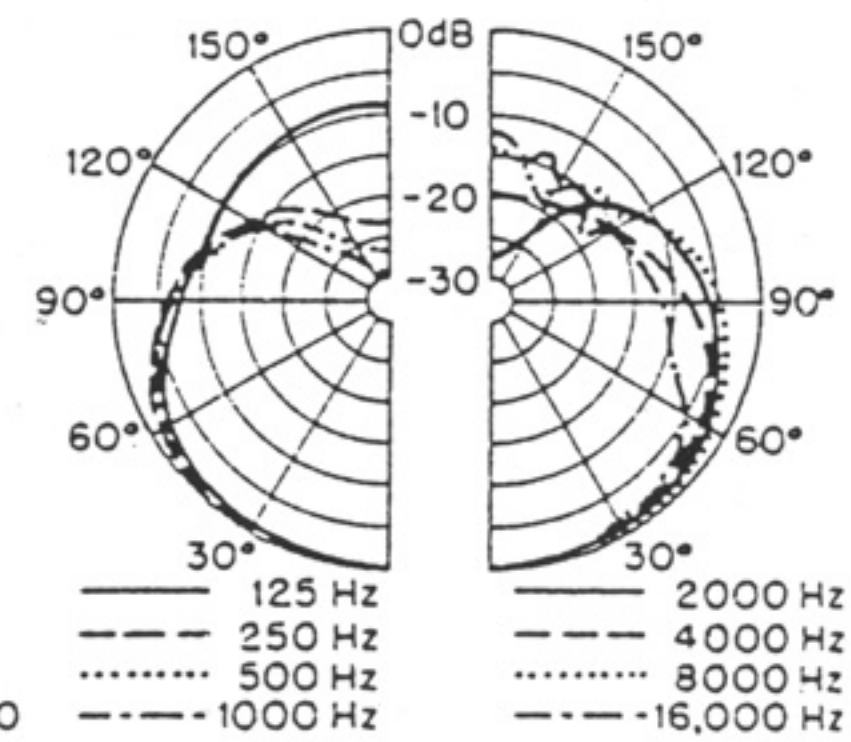
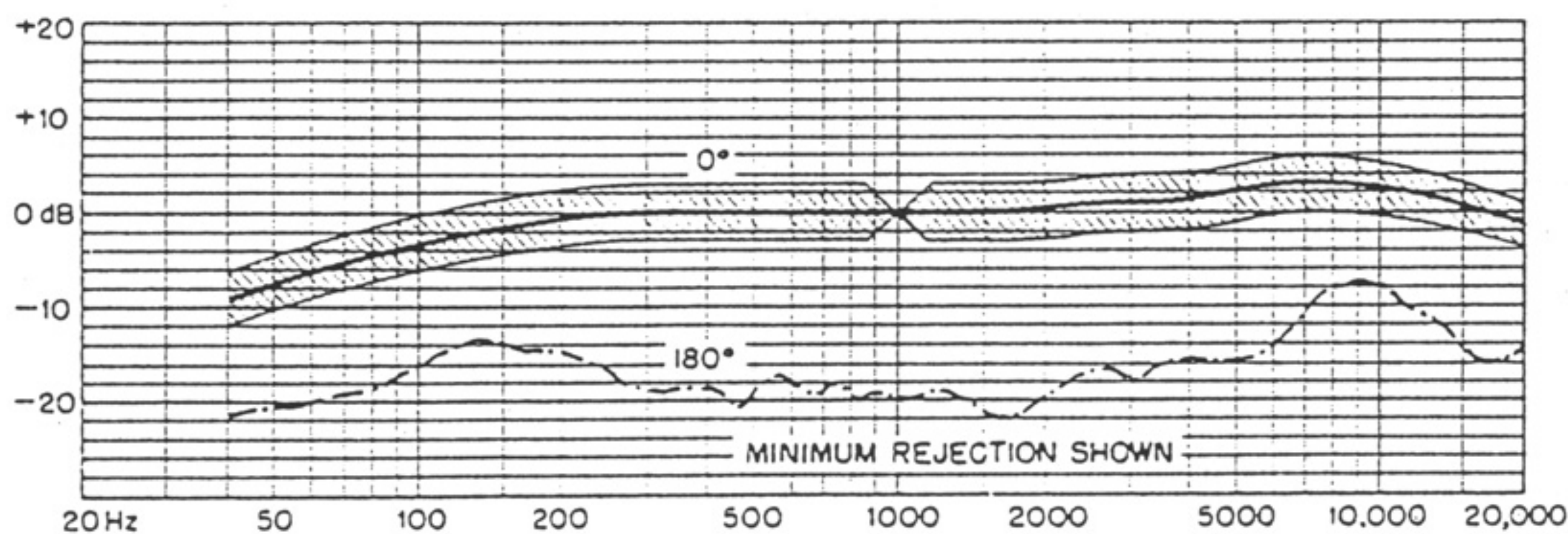
CE-1



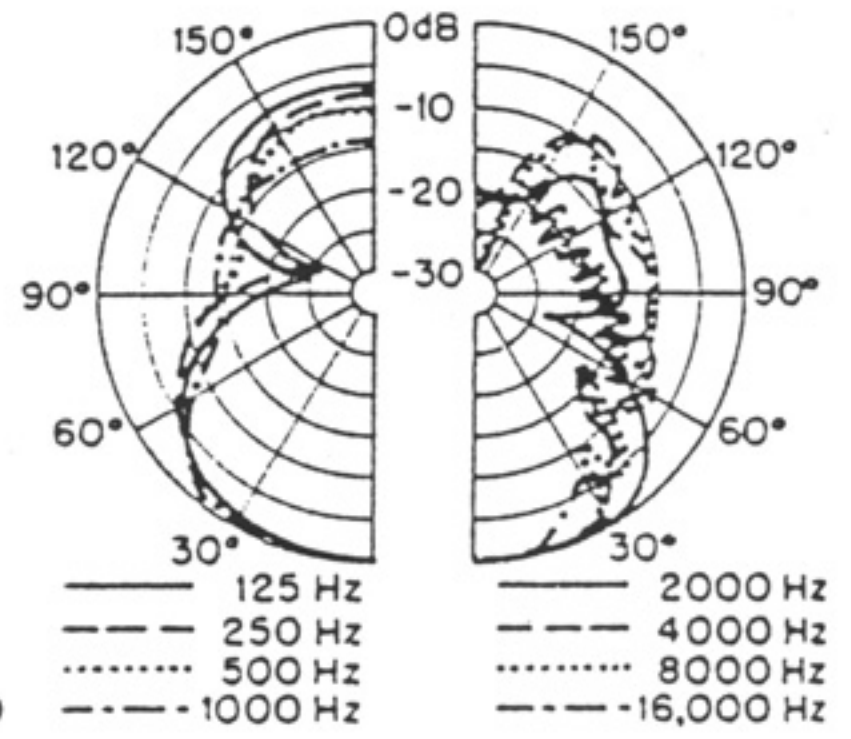
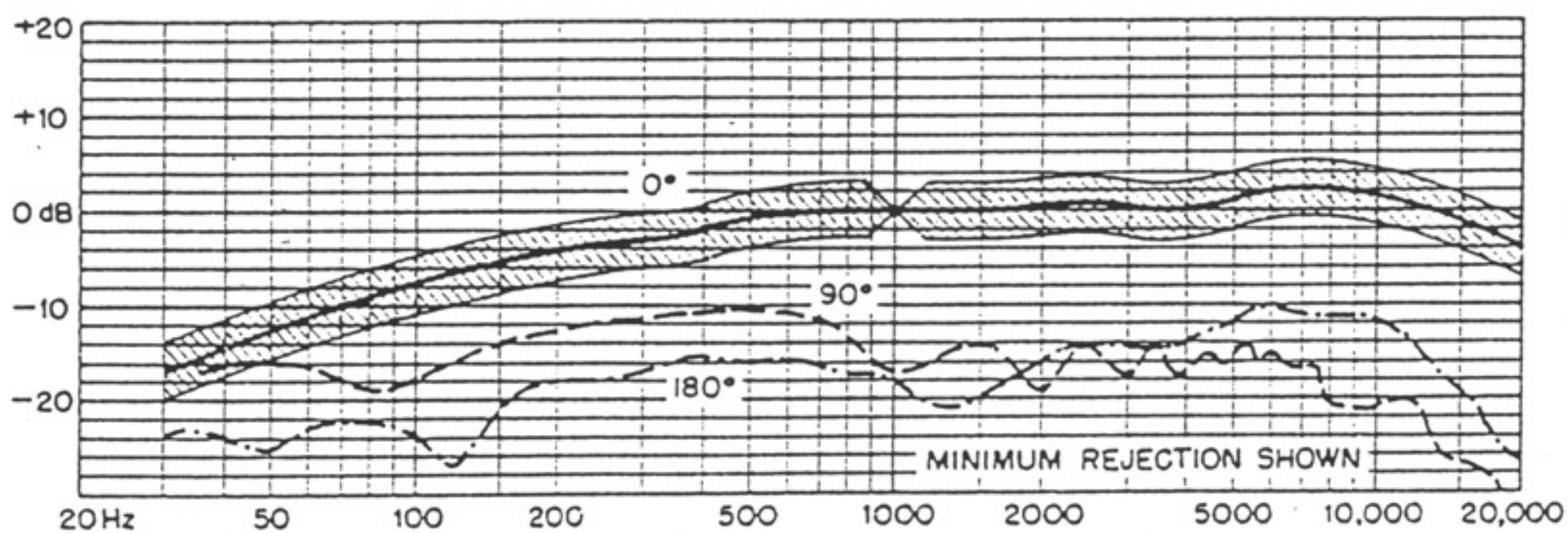
CE-2



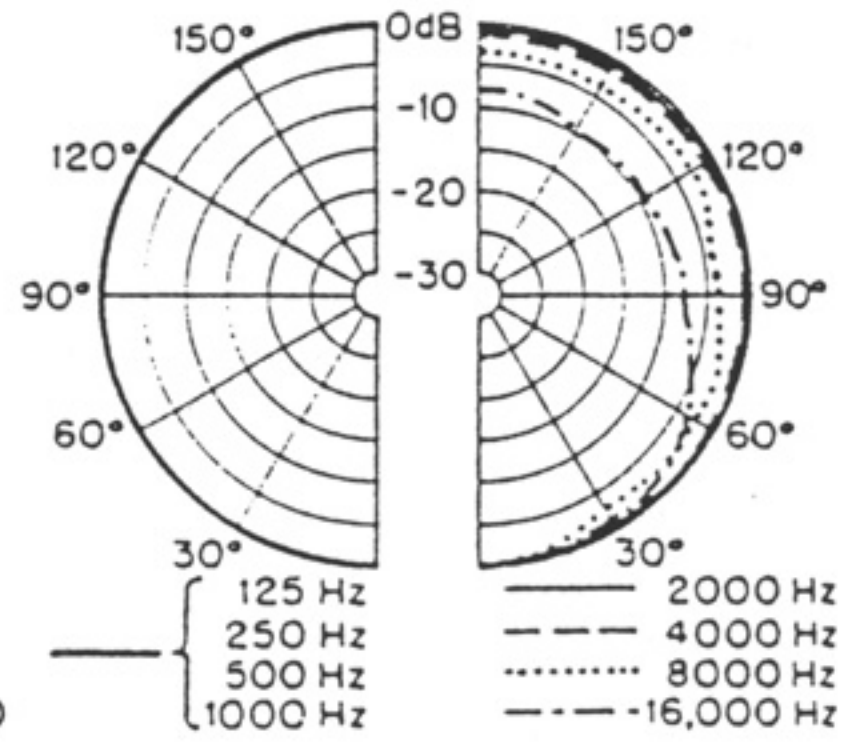
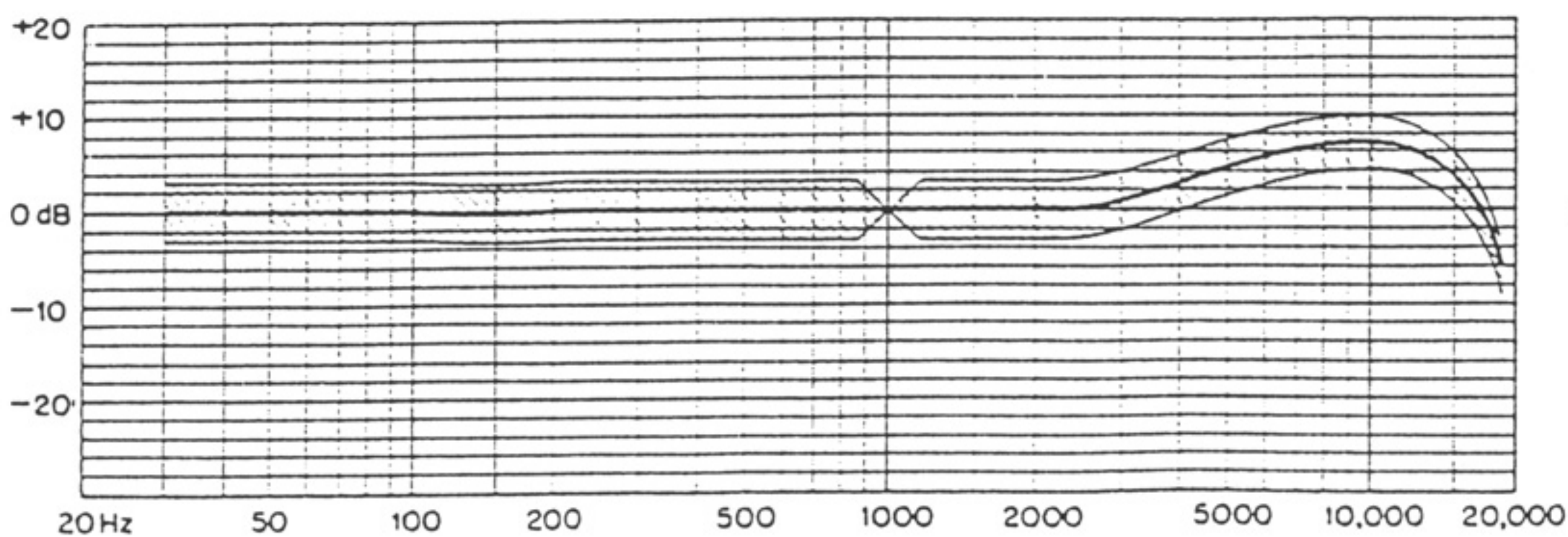
CE-5



CE-8



CE-10

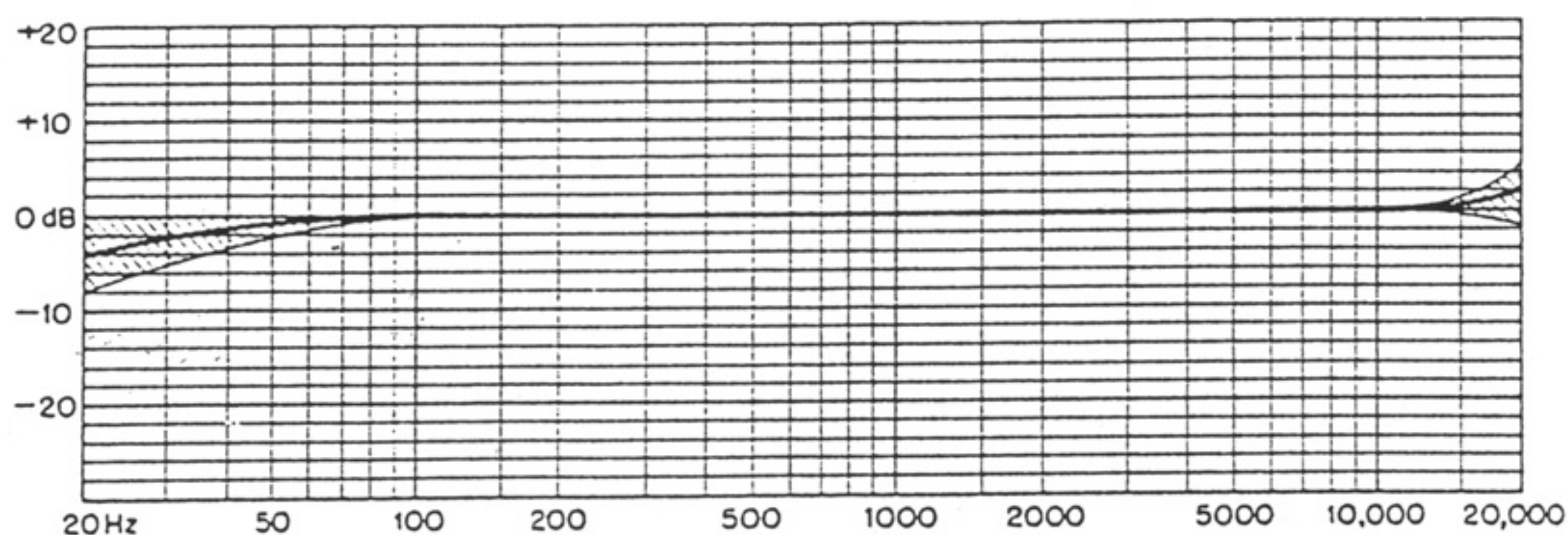


SE-5E

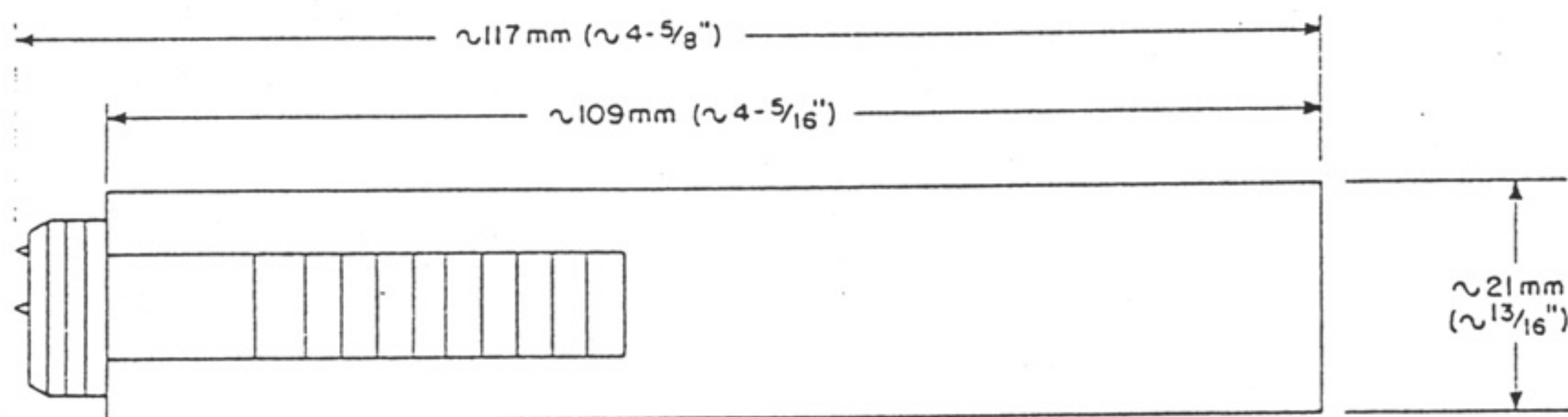
TECHNICAL DATA

Function: Powering module for CE-series capsules
Frequency Range: 10-25,000 Hz
Nominal Impedance: 200 ohms
Recommended Load Impedance: ≥ 500 ohms
Required Battery: PX-23, 5.6-volt mercury photographic
Approx. Battery Life: 550 hrs cont, 1000 hrs intermittent
Acceptable Phantom-Power Input: 9-52 volts DC
Case Material: Nickel-plated brass
Dimensions: See Dimensions figure below
Schematic: See Schematic figure below
Net Weight: 80 g ($\approx 2\text{-}3/4$ oz.) less battery
Optional Accessories: SA-11/1 metal-thread stand adapter
H-24 shock mount

FREQUENCY RESPONSE



DIMENSIONS



SCHEMATIC

