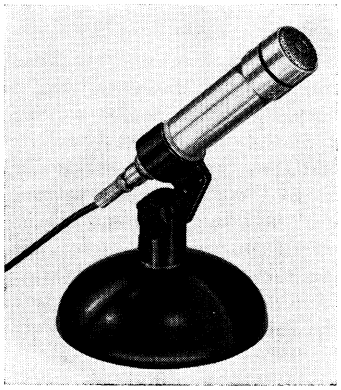
222 HARTREY AVE., EVANSTON, IL. 60204 U.S.A.
SHURE MICROPHONES AND ELECTRONIC COMPONENTS
AREA CODE 312/328-9000 • CABLE: SHUREMICRO

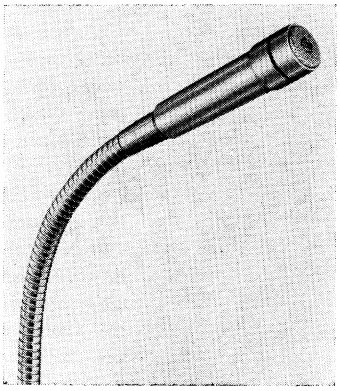
DATA SHEET

MODELS 245, 245S, 245G, and 245GS 'Uniplex"

Unidirectional Ceramic Microphones



Model 245
Using A25 Swivel
Mounted on S38B Desk Stand



Model 245G
Mounted on
Flexible Gooseneck

Model 245
As A
Handheld Unit

GENERAL: Model "245" series microphones are cardioid ceramic microphones employing the Shure "Uniphase" principle. The cardioid characteristics allow satisfactory operation under adverse conditions of background noise and reverberation, where operation of a conventional microphone would be rather limited.

Model "245" contains a diaphragm actuated element, combined with acoustical networks, which cause cancellation of sound pressures for sounds incident from the rear. The transducer element is a lead zirconate titanate ceramic, usable without damage from —40°C (—40°F.) to +76°C (+170°F.) and is not damaged by humidity. The rich satin chrome case is designed for improved acoustical performance and appearance.

The symmetrical design of the Model "245" series microphones, coupled with reduced size and weight, makes them more versatile in use — desk, stand, mounted gooseneck, or handheld. Models 245 and 245S are provided with a 15 foot (4.6m) single-conductor shielded cable with a plug (equivalent to amphenol MC1F) for attaching the cable to the microphone. In Models 245G and 245GS the 7 foot 2.1m) single-conductor shielded cables are attached to the microphone. Models 245 and 245S are provided with the Model A25 swivel adapter. The swivel adapter has a 5/8" —27 thread and may be mounted on the S38B Desk Stand or any conventional desk or floor stand. The swivel adapter is not required when the microphone is handheld. The Models 245G and 245GS are especially designed to be used with flexible goosenecks having a 5/8"—27 thread or customized installation where a concealed cable is desired.

Models 245S and 245GS have a built-in switch to control the microphone circuit. Models 245 and 245G have no switch.

APPLICATIONS: The Model 245 "Uniplex" is excellent for quality public address communications, all types of recording, and similar applications.

The wide range angle unidirectional characteristic of the "Uniplex" provides an inherent reduction of the feedback problem in reverberant locations, facilitates orchestral placement and provides an effective reduction of unwanted noises.

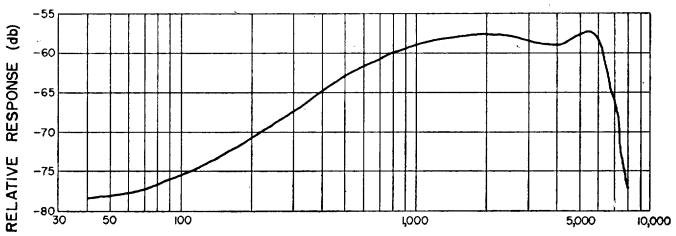


FIGURE A
FREQUENCY RESPONSE

The frequency response of the Model 245 series is from 50 to 7000 Hz. (See Figure A.) The microphone response is symmetrical about the axis with the response down 6 db at the sides, 15 db or more at the rear. (See Figure B.) This reduced rear response feature permits more volume without feedback which simplifies microphone and speaker placement and greatly improves systems using conventional microphones.

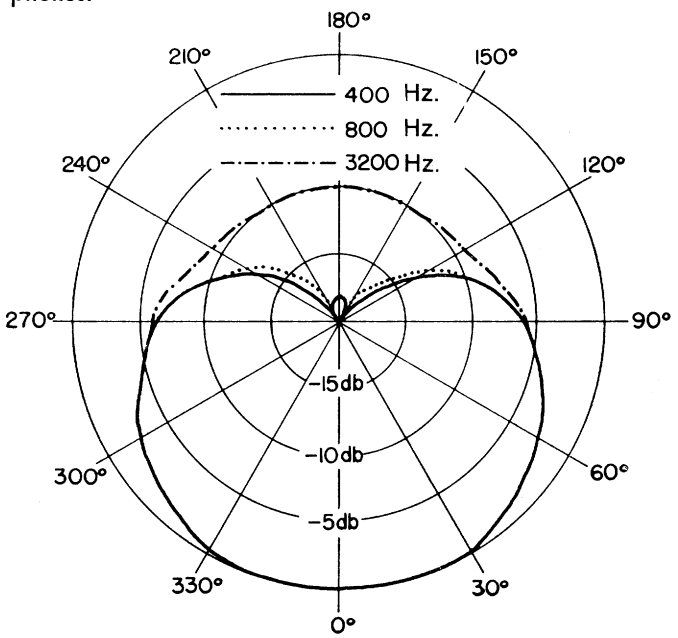


FIGURE B
Typical Directional Pattern

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(OVER)

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CONNECTIONS: Connect the inner conductor or hot lead of the microphone cable to the coupling capacitor feeding the grid of the first tube in the amplifier across a load resistance of 5 megohms. (See Figure C.) Input resistances as low as 1 megohm may be used if necessary, but higher values are recommended because of the better low frequency response which will result. The shield or ground should be connected to the chassis. The shield, chassis, or amplifier ground should be securely connected to a water pipe or similar ground to prevent shock hazard during operation of the amplifying system.

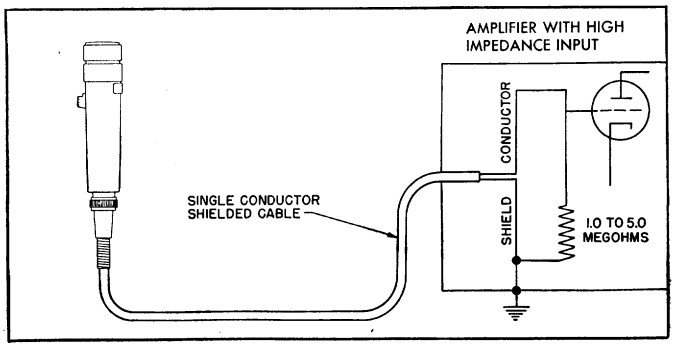

FIGURE C
CONNECTIONS

Added lengths of connecting cable will be accompanied by a decrease in output level. There is no frequency discrimination introduced by the cable, regardless of length. Most modern high-gain amplifiers have a sufficient margin of gain to make up for output level decreases due to additional cable lengths. If the amplifier does not have the necessary gain, a pre-amplifier at the microphone, or near the main amplifier, is suggested. Pre-amplifiers with low impedance output are recommended if the main amplifier system has a low impedance transformer or mixer input. Cable should be of high quality and low capacity.

OPERATION: No polarizing voltage is required for ceramic microphones. Ceramic microphones may be seriously damaged if accidentally connected to loudspeaker or power supply outlets carrying high voltage. Check your connections carefully.

When used near a transmitter, use minimum length of cable consistent with placement requirements. Careful grounding of cable shield is advisable.

The normal temperature-humidity precautions associated with crystal elements do not apply with the "Uniplex" ceramic element as it is usable from —40°C (—40°F.) to +76°C (+170°F.) and is not damaged by humidity, thereby providing greater environmental range of operation, with no special precautions, beyond ordinary care, for the efficient and dependable operation of the "Uniplex" Microphone.

Models 245S and 245GS "Uniplex" Unidirectional ceramic microphones have a built-in switch to control the microphone circuit. The switch has a press-to-talk locking or non-locking feature, having long-life phosphor-bronze blades with fine silver contacts. For momentary contact, depress switch button and release. For locking, depress switch button and slide button upwards. When not depressed the switch achieves normal nonoperative conditions by shorting the hot lead of the ceramic element and connecting cable conductor to shield or ground.

ACOUSTIC CONSIDERATIONS: The expression "cardioid type response" simply means that the polar characteristic of the microphone approximates a cardioid of revolution. (See Figure B.) There is a wide, useful pickup angle at the front of the microphone. The rear response is down over a broad range of frequencies and reduces pickup of random energy by 67%.

The Shure "Uniplex" employs the same type of acoustic phase shifting network used in the highest cost Shure microphones. The unidirectional cardioid characteristics of the "Uniplex" allows satisfactory operation under adverse conditions of background noise and reverberation where operation of a conventional microphone would be rather limited. By directing the rear side of the microphone towards the audience or other source of interfering sound, pickup can be concentrated on the desired source. The microphone can be placed close to reflecting surfaces without objectionable effects if the rear side of the microphone is toward the reflecting surface. This is particularly valuable in small studios or rooms.

It is desirable to experiment with microphone placement and orientation in order to secure the greatest benefits from the unidirectional characteristic.

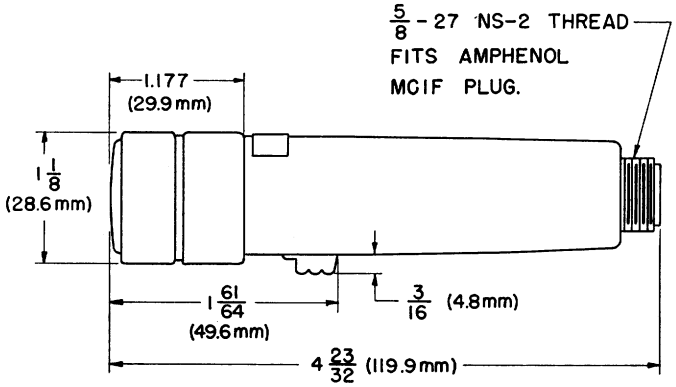

FIGURE D
OVERALL DIMENSIONS

SPECIFICATIONS

Voltage Sensitivity: 1.10 millivolts per microbar at end of 7 feet (2.1m) cable across 1 to 5 megohms. This is equivalent to 59 db below 1 volt per microbar.
EIA Microphone rating GM (sensitivity) — 159 db
EIA Standard SE-105, August, 1949

Internal Output Impedance: Equivalent to a 935 picofarad condenser.

Recommended Load Impedance: 1 to 5 megohms.

Weight: Net 3/8 lb. (170 g), Packaged 3/4 lb. 340 g).

Dimensions: See Fig. D.

Guarantee: This Shure product is guaranteed in normal use to be free from electrical and mechanical defects for a period of one year from the date of purchase. Please retain proof of purchase date. This guarantee includes all parts and labor.

Shipping Instructions: Carefully repack the unit and return it prepaid to the factory. If outside the United States, return the unit to your dealer or Authorized Shure Service Center for repair. The unit will be returned to you prepaid.