

SHURE[®]
LEGENDARY
PERFORMANCE™

SM87A

SUPERCARDIOID CONDENSER MICROPHONE

MICROPHONE ÉLECTROSTATIQUE SUPERCARDIOÏDE

KONDENSATORMIKROFON MIT SUPERNIEREN-RICHTCHARAKTERISTIK

MICROFONO DE CONDENSADOR DE SUPERCARDIOIDE

MICROFONO SUPERCARDIOIDE A CONDENSATORE

コンデンサー型マイクロホン/スーパーカーディオイド



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27D2964 (Rev. 1)



SM87A

The Shure Model SM87A is a professional-quality, handheld condenser microphone for use in sound reinforcement, broadcasting, and studio recording installations. Its supercardioid polar pattern provides greater rejection of unwanted sound sources, making it ideal for miking individual instruments in a multi-microphone setting or for miking single sources in a reverberant or noisy environment.

The SM87A features a controlled low-frequency roll-off tailored for optimum performance when close-miking sound sources. An integral three-stage wind and pop filter protects against wind and breath noise. Its built-in shock mount reduces stand and handling noise. The SM87A operates on phantom power.

FEATURES

- Uniform super-cardioid pick-up pattern for maximum gain before feedback and superior rejection of off axis sound
- Smooth, wide frequency response with gradual presence rise and controlled proximity effect tailored for vocals
- Steel mesh grille and satin finished aluminum construction resist wear and abuse
- Very low susceptibility to RF and electromagnetic hum
- Minimally affected by varying load impedances
- Phantom powered
- Performs over a wide range of temperature and humidity conditions
- Cartridge shock mount system absorbs mechanical shock and minimizes handling noise
- Built in pop-filter reduces undesirable wind and breathe noise
- Shure quality, ruggedness and reliability

Power

Condenser microphones such as the SM87A require phantom power supplied by a mixer, preamplifier, or console.

General Rules for Use

- Aim the microphone toward the desired sound source (such as the talker, singer, or instrument) and away from unwanted sources.
- Place the microphone as close as practical to the desired sound source.
- Work close to the microphone for extra bass response.
- Use only one microphone to pick up a single sound source.
- Use the fewest number of microphones as practical.
- Keep the distance between microphones at least three times the distance from each microphone to its source.
- Place microphones as far as possible from reflective surfaces.
- Add a windscreen when using the microphone outdoors.
- Avoid excessive handling to minimize pickup of mechanical noise and vibration.
- Do not cover any part of the microphone grille with your hand, as this will adversely affect microphone performance.

APPLICATIONS AND PLACEMENT

The following table lists the most common applications and placement techniques. Keep in mind that microphone technique is largely a matter of personal taste; there is no one "correct" microphone position.

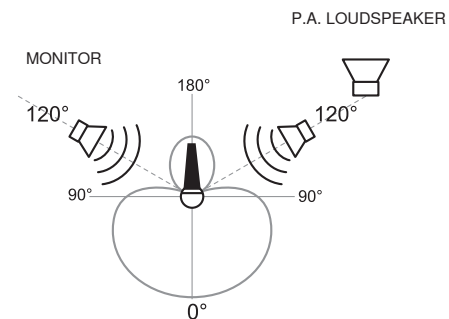
APPLICATION	SUGGESTED MICROPHONE PLACEMENT	TONE QUALITY
Vocals	Lips less than 15 cm (6 in.) away or touching the windscreen, on axis to microphone.	Robust sound, emphasized bass, maximum isolation from other sources.
	15 to 60 cm (6 in. to 2 ft.) away from mouth, just above nose height.	Natural sound, reduced bass.
	20 to 60 cm (8 in. to 2 ft.) away from mouth, slightly off to one side.	Natural sound, reduced bass and minimal "s" sounds.
	90 cm to 1.8 m (3 to 6 ft.) away.	Thinner, distant sound; noticeable levels of ambient noise.

Proximity Effect

Unidirectional microphones such as the SM87A progressively boost bass frequencies by 6 to 10 dB below 100 Hz when the microphone is at a distance of about 6 mm (1/4 in.) from the sound source. This phenomenon, known as proximity effect, can be used to create a warmer, more powerful sound. To prevent explosive low frequency sound during close-up use, the SM87A bass response gradually rolls off. This provides greater control and helps the user take advantage of proximity effect.

Avoiding Pickup of Unwanted Sound Sources

A supercardioid microphone has the greatest sound rejection at points 120° toward the rear of the microphone. Place the microphone so that unwanted sound sources, such as monitors and loudspeakers, are at these angles, not directly behind it. To minimize feedback and ensure optimum rejection of unwanted sound, always test microphone placement before a performance.



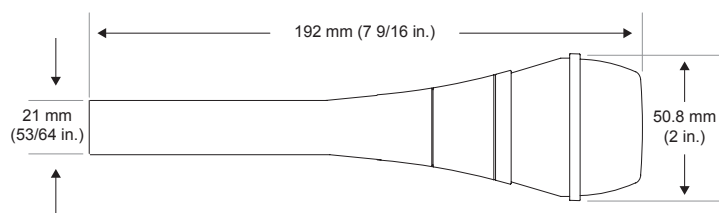
RECOMMENDED LOUDSPEAKER LOCATIONS FOR SUPERCARDIOID MICROPHONES

SPECIFICATIONS

Type	Condenser (electret bias)
Frequency Response	50 to 20,000 Hz
Polar Pattern	Supercardioid
Output Impedance	EIA rated at 150Ω (100Ω actual)
Sensitivity (at 1 kHz, open circuit voltage)	-52 dBV/Pa (2.4 mV) 1 Pascal=94 dB SPL
Maximum SPL (1 kHz at 1% THD, 1kΩ load)	140 dB
Signal-to-Noise Ratio (referenced at 94 dB SPL at 1 kHz)	70 dB S/N ratio is difference between 94 dB SPL and equivalent SPL of self noise, A-weighted
Dynamic Range (at 1 kHz, 1 kΩ load)	116.5 dB
Clipping Level (1 kHz at 0.25% THD, 1kΩ load)	-6 dBV (0.5 V)
Self Noise (typical, equivalent SPL, A-weighted)	24 dB
Polarity	Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3
Weight	Net: 0.20 kg (0.44 lbs)
Connector	Three-pin professional audio (XLR), male
Case	Aluminum construction with steel grille and satin black finish
Power Requirements	11 to 52 Vdc phantom (1.2 mA)

CERTIFICATION

Eligible to bear CE Marking. Conforms to European EMC Directive 89/336/EEC. Meets applicable tests and performance criteria in European Standard EN55103 (1996) parts 1 and 2, for residential (E1) and light industrial (E2) environments.



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ACCESSORIES AND PARTS

Furnished Accessories

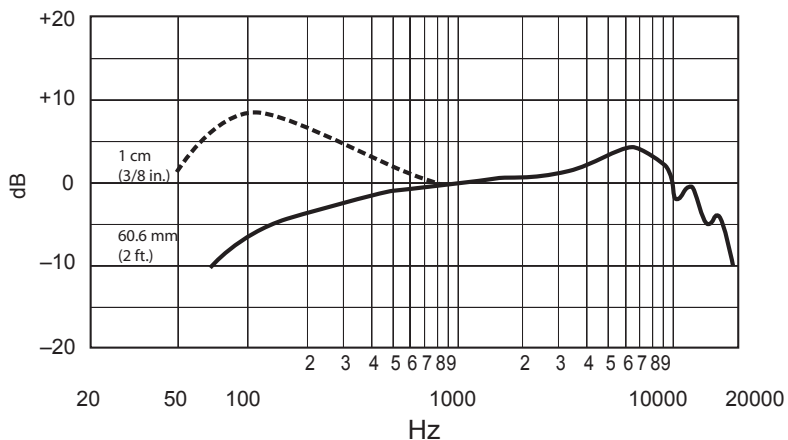
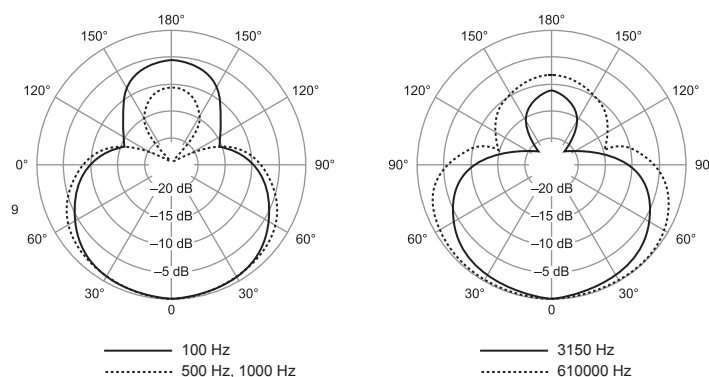
Swivel Stand Adapter	A25D
Carrying/Storage Bag	95A2313

Optional Accessories

Phantom Power Supply	PS1A
Shock Stopper™ Isolation Mount	A55M
Shock Stopper™ Isolation Mount	A55HM
Windscreen	A85WS
TRIPLE-FLEX™ Cable and Plug 7.6 m (25 ft.)	C25F

Replacement Parts

Screen and Grille Assembly	RK214G
Cartridge	R128
In-Line Preamp (1 piece)	RPM626



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