



# KSM44A

## Multi-Pattern Dual Diaphragm Microphone

The Shure premium large-diaphragm, side-address condenser microphone, KSM44A, user guide.  
Version: 2 (2019-D)

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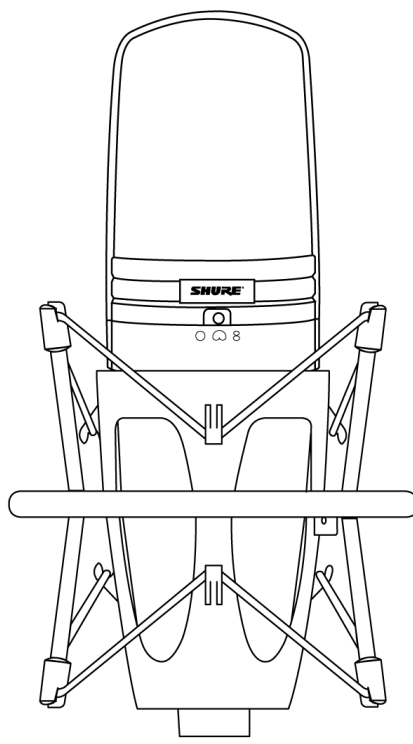
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# KSM44A

## Multi-Pattern Dual Diaphragm Microphone

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### General Description



The Shure® KSM44A is a premium, large-diaphragm, side-address condenser microphone with multiple polar pattern options (cardioid, omnidirectional, bidirectional). The refined and sophisticated design of the KSM44A features externally biased, dual 1-inch diaphragms, extensive internal pop filtering and Prethos® advanced preamplifier technology for a ground-breaking threshold minimum of self-noise. The KSM44A is the premier choice for the highest level of professional studio and stage performance.

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### Features

- Multiple polar patterns (cardioid, omnidirectional and bidirectional) for maximum flexibility in a wide variety of recording applications
- Dual 1 inch, externally biased, ultra-thin, 2.5  $\mu\text{m}$ , 24 Karat gold-layered, low mass, Mylar® diaphragms provide superior frequency response
- Prethos® Advanced Preamplifier Technology: Class A, discrete, transformerless preamplifier provides transparency, extremely fast transient response and no crossover distortion. Minimizes harmonic and intermodulation distortions.
- Premium electronic components and gold-plated internal and external connectors

- Subsonic filter eliminates rumble from mechanical vibration below 17 Hz
- Switchable 15 dB pad for handling extremely high sound pressure levels (SPLs)
- 3-position switchable low-frequency filter helps reduce unwanted background noise or counteract proximity effect
- Integrated three-stage "pop" protection grille reduces plosives and other breath noise
- Internal shock mount reduces handling and stand noise

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## Performance Characteristics

- Extremely uniform polar response
- Extended frequency response
- Minimal self-noise
- Exceptional low-frequency reproduction
- Able to withstand high SPLs
- High output level
- No crossover distortion
- Superior common-mode rejection and suppression of radio frequency interference (RFI)

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## Applications

The KSM44A provides superior results in any application requiring a high quality microphone. Some typical applications are listed below.

- Vocals (studio or live)
- Acoustic instruments such as piano, guitar, drums, percussion, strings
- Brass and woodwind instruments
- Low-frequency instruments such as double bass, electric bass, kick drum
- Overhead miking for drums or percussion
- Choral or orchestral ensembles
- Room ambience or stereo miking

Acoustic environments and microphone placements strongly affect the sound obtained from miking a source, especially with a high-resolution microphone like the KSM44A. You may need to experiment with placement, room treatments, and polar pattern to achieve the best overall sound for each application.

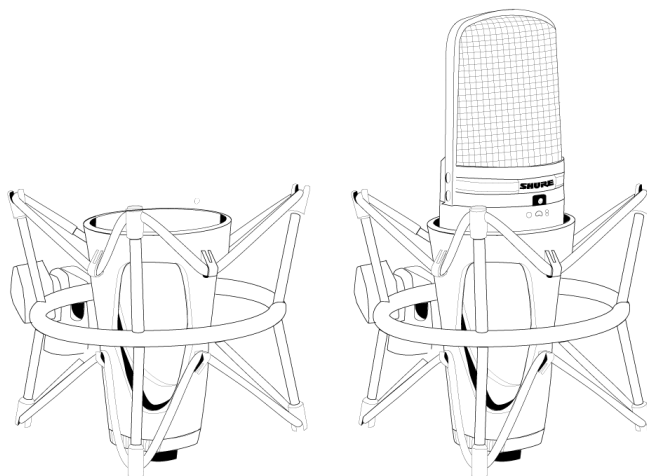
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## Operation

### Suspension Mount

Use the supplied ShureLock® rubber suspension mount to secure the microphone to a floor or boom stand.

**Important:** Thread the knurled locking ring securely to the base of the microphone. Do not overtighten.



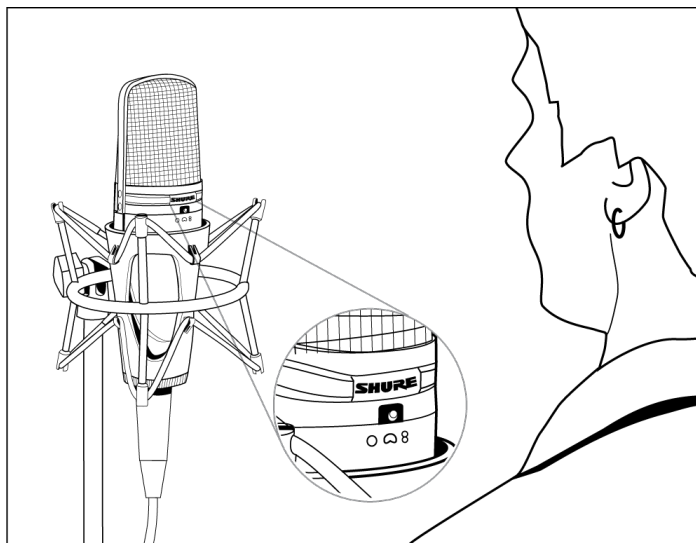
## Power Requirements

This microphone requires phantom power and performs best with a 48 V DC supply (IEC-61938). However, it will operate with slightly decreased headroom and sensitivity with supplies as low as 11 Vdc.

Most modern mixers provide phantom power. You must use a **balanced** microphone cable: XLR-to-XLR or XLR-to-TRS.

## Positioning

Position the front of the microphone, with SHURE®, towards the desired sound source. Position the rear of the microphone, with the vintage circle S logo, towards any unwanted sound sources.



## Selecting a Polar Pattern

The three position switch on the front of the microphone sets the polar response pattern. This changes the microphone's sensitivity to sounds coming from different angles.

**Cardioid.** Picks up sound directly in front of the microphone and is least sensitive to those in back. This is most commonly used in studio recording and live-sound applications.

**Omnidirectional.** Picks up sounds from all directions. Best for picking up room ambience and for miking several sources simultaneously, such as an ensemble or multiple singers. The omnidirectional polar pattern exhibits no proximity effect.

**Bidirectional.** Picks up equally from the front and back of the microphone while rejecting sounds from the sides. Often used for stereo recording (such as mid-side and Blumlein techniques).

*Note:* As with all bidirectional microphones, sounds picked up from the back will be out of polarity with the source. Those from the front are in polarity with the source.

**CAUTION:** The switch produces mechanical noise which, when amplified, may damage the loudspeakers. Turn down any loudspeakers or mute the microphone at the mixing console before using the switch.

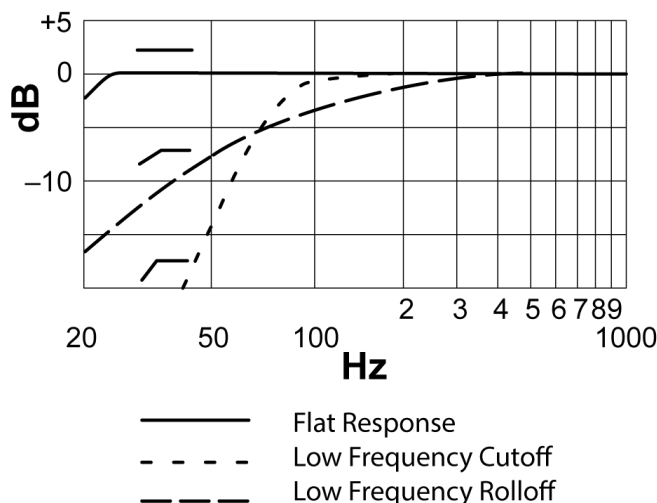
## Selecting Low-Frequency Response

A three-position switch on the back of the microphone lets you adjust the low-frequency response. Use the low-frequency filter to reduce wind noise, room noise, or proximity effect.

**Flat response.** Provides the most natural sound in most applications.

**Low frequency cutoff.** Provides an 18 dB-per-octave cutoff at 80 Hz. Helps eliminate floor rumble and low-frequency room noise from heating and air conditioning systems. This setting may also be used to compensate for proximity effect or to reduce low frequencies that make an instrument sound dull or muddy.

**Low frequency rolloff.** Provides a 6 dB-per-octave rolloff filter at 115 Hz. Use this to compensate for proximity effect or to reduce low frequencies that could make an instrument sound dull or muddy.



## Setting Attenuation

The attenuation switch lets you reduce the signal level without altering the frequency response. This can prevent extremely loud sounds from overloading the microphone circuitry.

**0 dB** For "quiet" to "normal" sound levels.

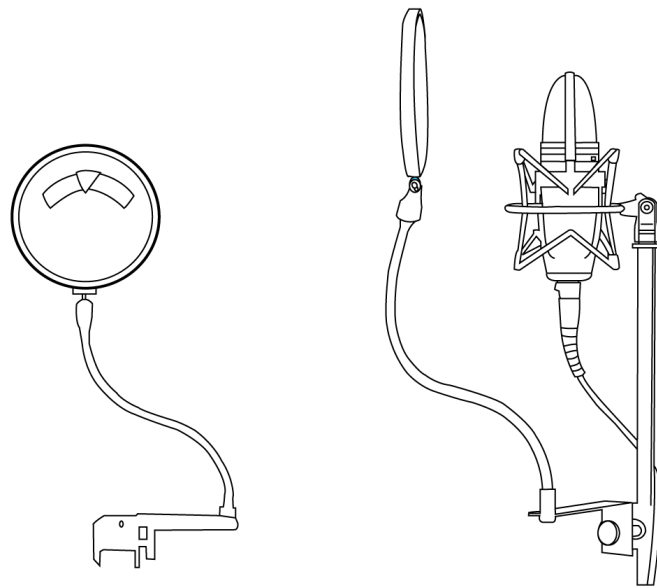
**-15 dB** For use with extremely loud sound sources such as drums, horns, or loud guitar cabinets.

## Load Impedance

Maximum SPL capability, output clipping level, and dynamic range vary with the input load impedance of the preamplifier to which you connect the microphone. Shure recommends a minimum input load impedance of 1000  $\Omega$ . Most modern microphone preamplifiers meet this requirement. Higher impedance results in better performance for these specifications.

## Integral Pop Filter

The microphone grille consists of 3 separate mesh layers that act as an integral pop filter. This helps reduce wind and breath noise. Depending on the performer, an external pop-protection screen or windscreen may be necessary when close-miking vocalists.



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## Specifications

### Cartridge Type

Dual-Diaphragm, Externally-Biased Condenser

### Polar Pattern

*selectable*

Cardioid, Omnidirectional, Bidirectional

### Frequency Response

20 to 20,000 Hz

## Output Impedance

50  $\Omega$ 

## Sensitivity

*open circuit voltage, @ 1 kHz, typical*

Cardioid	Omnidirectional	Bidirectional
-31 dBV/Pa <sup>[1]</sup> (29.8 mV)	-37 dBV/Pa <sup>[1]</sup> (14.8 mV)	-36 dBV/Pa <sup>[1]</sup> (16.8 mV)

## Maximum SPL

*1 kHz at 1% THD <sup>[2]</sup>*

		Cardioid	Omnidirectional	Bidirectional
PAD OFF	2500 $\Omega$ load	134 dB	140 dB	139 dB
	1000 $\Omega$ load	131 dB	137 dB	136 dB
PAD ON	2500 $\Omega$ load	150 dB	152 dB	151 dB
	1000 $\Omega$ load	147 dB	149 dB	148 dB

Signal-to-Noise Ratio <sup>[3]</sup>

Cardioid	Omnidirectional	Bidirectional
90 dB	88 dB	86.5 dB

## Dynamic Range

*@ 1 kHz*

	Cardioid	Omnidirectional	Bidirectional
2500 $\Omega$ load	130 dB	134 dB	131 dB
1000 $\Omega$ load	127 dB	131 dB	128 dB

## Clipping Level

*20 Hz to 20 kHz, 1% THD*

2500 $\Omega$ load	9 dBV
1000 $\Omega$ load	6 dBV

## Self Noise

*equivalent SPL, A-weighted, typical*



Cardioid	Omnidirectional	Bidirectional
4 dB SPL-A	6 dB SPL-A	7.5 dB SPL-A

### Common Mode Rejection

10 to 100,000 kHz

≥50 dB

### Attenuator Switch

-15 dB

### Low-Frequency Filter Switch

Flat, -6 dB/octave below 115 Hz, or -18 dB/octave below 80 Hz

### Connector

Three-pin professional audio (XLR), male, balanced

### Polarity

Positive pressure on diaphragm produces positive voltage on pin 2 with respect to pin 3

### Power Requirements

11–52 V DC <sup>[4]</sup>phantom power (IEC-61938) 5.8 mA, maximum

### Net Weight

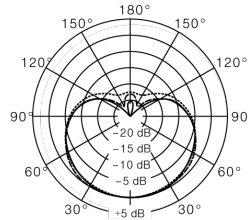
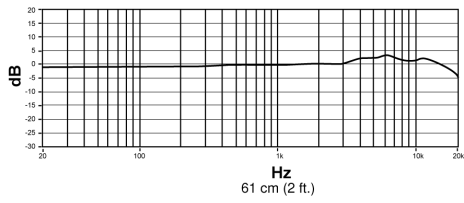
492 g (17.4 oz.)

<sup>[1]</sup>1 Pa=94 dB SPL

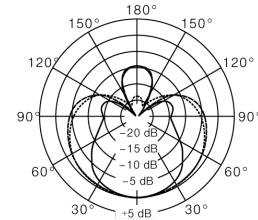
<sup>[2]</sup>THD of microphone preamplifier when applied input signal level is equivalent to cartridge output at specified SPL

<sup>[3]</sup>S/N ratio is the difference between 94 dB SPL and equivalent SPL of self noise, A-weighted

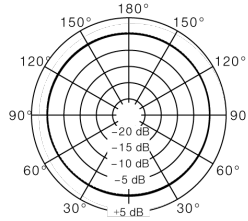
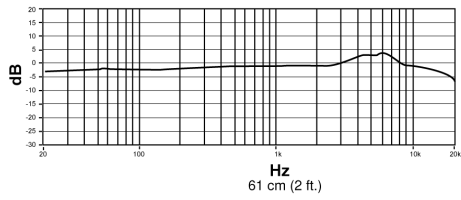
<sup>[4]</sup>All specifications measured with a 48 Vdc phantom power supply. The microphone operates at lower voltages, but with slightly decreased headroom and sensitivity.



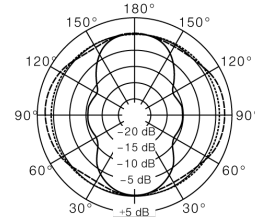
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500 Hz .....  
1000 Hz .....



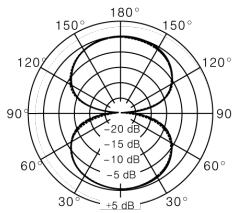
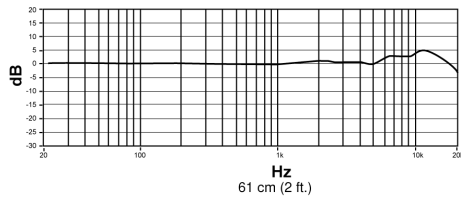
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6400 Hz .....  
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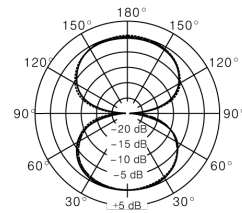
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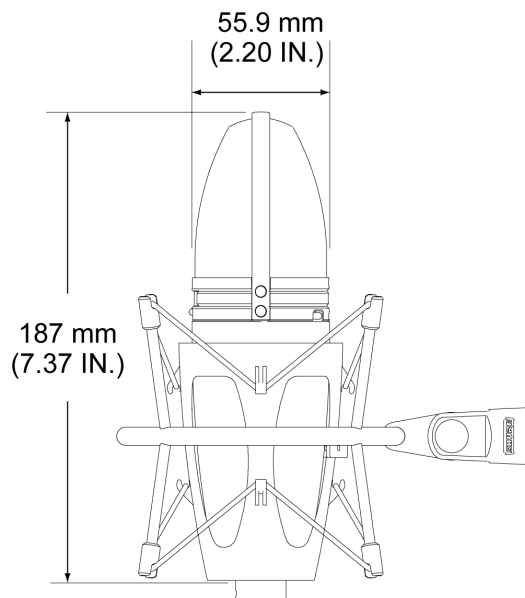
2500 Hz .....  
6400 Hz .....  
10000 Hz .....



250 Hz .....  
500 Hz .....  
1000 Hz .....



2500 Hz .....  
6400 Hz .....  
10000 Hz .....



# ACCESSORIES AND PARTS

## Furnished Accessories

<b>ShureLock® Cristal Elastic Shock Mount</b>	A44ASM
<b>ShureLock® Cristal Swivel Adapter</b>	A44AM
<b>Carrying Case</b>	AK44C
<b>Protective Velveteen Pouch</b>	A44AVB
<b>Suspension Shock Mount Elastic Cord, Cristal (contains two)</b>	RK383

## Optional Accessories

<b>Windscreen</b>	A32WS
<b>Padded, Zippered Carrying Bag</b>	A32ZB
<b>Popper Stopper™</b>	PS-6
<b>Popper Stopper™ Magnetic Pop Filter</b>	A42PF
<b>ShureLock® Rubber Suspension Shock Mount</b>	A42SM

## Certifications

This product meets the Essential Requirements of all relevant European directives and is eligible for CE marking.

The CE Declaration of Conformity can be obtained from: [www.shure.com/europe/compliance](http://www.shure.com/europe/compliance)

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