

BETA 91A Instrument Microphone



General Description

The Shure Beta 91A is designed for use with kick drums, piano and other traditional low frequency applications. An updated microphone capsule is tailored for bass-heavy environments to produce a powerful low frequency response, and a new design integrates the preamplifier and XLR connection for easy setup and minimal stage clutter. The Beta 91A combines superior attack and punch for studio-quality sound, even at extremely high sound pressure levels (SPLs).

Features

- Premier live performance microphone with Shure quality, ruggedness, and reliability
- Uniform half-cardioid polar pattern (in the hemisphere above mounting surface) for maximum gain before feedback and rejection of off-axis sound
- Tailored frequency response for kick drums and bass-heavy instruments
- Wide dynamic range for use in high SPL environments
- Two-position contour switch enhances attack and clarity
- Integrated preamp and XLR connector reduce stage clutter and provide a quick, secure setup
- Low profile design requires no external mounting hardware
- Steel grille and die-cast metal construction resist wear and abuse

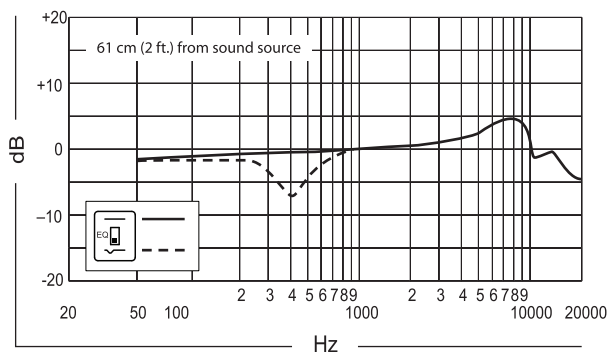
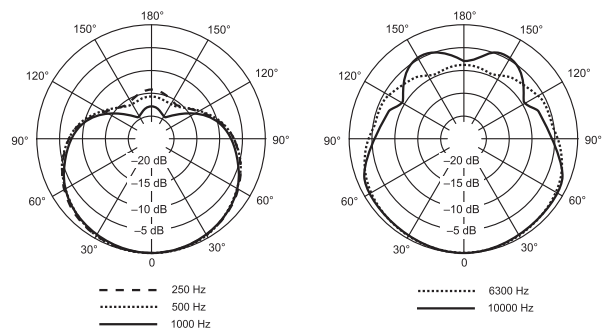
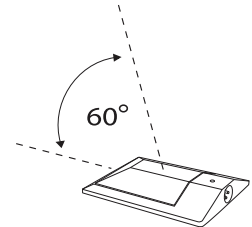
Performance Characteristics

- Exceptional low-frequency reproduction
- Extremely high SPL handling
- High output level
- No crossover distortion

Applications and Placement

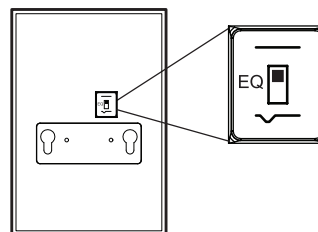
Half-cardioid Polar Pattern

Boundary microphones pick up sound in a cardioid polar pattern in the hemisphere above the mounting surface. Keep sound sources within the 60 degree range above this surface.



Contour Switch

A two-position switch on the bottom of the microphone lets you selectively filter the low-mid frequency response without additional tools. Use this filter to enhance the attack and clarity of bass-heavy instruments.



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

Low-Mid Scoop: This setting tailors the microphone's frequency response to provide a strong 'punch' in the low frequencies, and plenty of attack in the higher frequencies.

Mounting the Microphone

For long-term installation, mount the Beta 91A to a surface using the mounting holes on the bottom of microphone.

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 Ω . Most modern microphone preamplifiers meet this requirement. Higher impedance results in better performance for these specifications.

Power Requirements

This microphone requires phantom power and performs best with a 48 Vdc 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.

SPECIFICATIONS

Cartridge Type	Electret Condenser		
Polar Pattern	Half-cardioid (cardioid in hemisphere above mounting surface)		
Frequency Response	20 to 20,000 Hz		
Output Impedance @ 1 kHz	146 Ω		
Sensitivity open circuit voltage, @ 1 kHz, typical	−48.5 dBV/Pa ^[1] (3.8 mV)		
Maximum SPL 1 kHz at 1% THD ^[2]	2500 Ω load 1000 Ω load	155 dB 151 dB	
Signal-to-Noise Ratio ^[3]	64.5 dB		
Dynamic Range @ 1 kHz	2500 Ω load 1000 Ω load	125.5 dB 121.5 dB	
Clipping Level 20 Hz to 20 kHz, 1% THD	2500 Ω load 1000 Ω load	12.5 dBV 7.5 dBV	
Self Noise equivalent SPL, A-weighted, typical	29.5 dB SPL-A		
Common Mode Rejection 20 Hz to 200 kHz	≥55 dB		
Frequency Contour Switch	7 dB of attenuation centered at 400 kHz		
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 ^[4] phantom power (IEC-61938), 5.4 mA		
Net Weight	470 g (16.6 oz.)		

^[1] 1 Pa=94 dB SPL

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

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

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

Accessories and Parts

Furnished Accessories

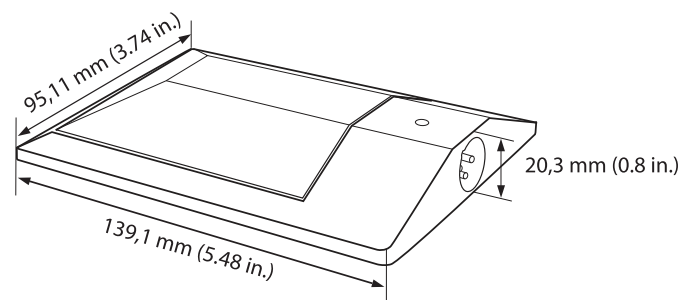
Zippered Carrying Bag	95A2314
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Optional Accessories

7.6 m (25 ft.) Cable	C25E
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Replacement Parts

Cardioid Cartridge	RPM98A/C
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Dimensions

CERTIFICATION

Eligible to bear CE Marking. Conforms to European EMC Directive 2004/108/EC. Meets Harmonized Standards EN55103-1:1996 and EN55103-2:1996, for residential (E1) and light industrial (E2) environments.

The Declaration of Conformity can be obtained from:

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