

# SHURE **BETA GREEN**

## BG 1.0

- Dynamic vocal mic
- Cardioid pattern
- Built-in shock mount
- Low or High impedance

## BG 2.0

- Neodymium magnet for high output
- Dynamic vocal mic
- Cardioid pattern
- Low impedance

## BG 3.0

- Neodymium magnet for extra-high output
- Dynamic vocal mic
- Cardioid pattern
- Superior shock mount
- Low impedance

## BG 4.0

- Condenser instrument recording mic
- Battery or phantom power
- Extended flat frequency response
- Cardioid pattern
- Low impedance

## BG 5.0

- Condenser vocal mic
- Battery or phantom power
- Extended, tailored frequency response
- Cardioid pattern
- Low impedance



## BETA GREEN MODEL BG 5.0 UNIDIRECTIONAL CONDENSER MICROPHONE

The BG 5.0 microphone represents the latest in microphone technology, utilizing an advanced condenser transducer design. The BG 5.0 delivers the high performance and rugged construction that you need for demanding applications such as live music, sound reinforcement and home studio recording.

The BG 5.0 is the ideal choice for laying down vocal tracks in the home studio environment. Its electret condenser design provides high sensitivity and low noise for producing quality demo tapes, while its specially shaped frequency response helps vocals to sound vibrant and clear.

### Features:

- Highly sensitive and reliable electret condenser design for high quality vocal recording
- Cardioid pickup pattern reduces feedback and pickup of unwanted noise
- Wide frequency response, specially shaped for crisp, clear voice reproduction
- Internal shock mount for reduced pickup of handling noise and stand vibration
- On/Off switch for convenient control of audio signal by performer
- Operates on internal AA battery for one year of continuous use, or on phantom power from mixer

- Sturdy open-mesh type grille with built-in wind and pop filter
- Padded Nylon carrying case and unbreakable swivel adapter included

### Basic Microphone Technique

Good microphone technique will add to your effectiveness as a performer. Keep the following points in mind when using your Shure BetaGreen Microphone.

1. The distance from the performer or instrument to the microphone has a significant effect on the sound. For increased bass response, get close to the microphone (within 6 inches or less). The closer the microphone is to the sound source, the more the bass response will be increased.

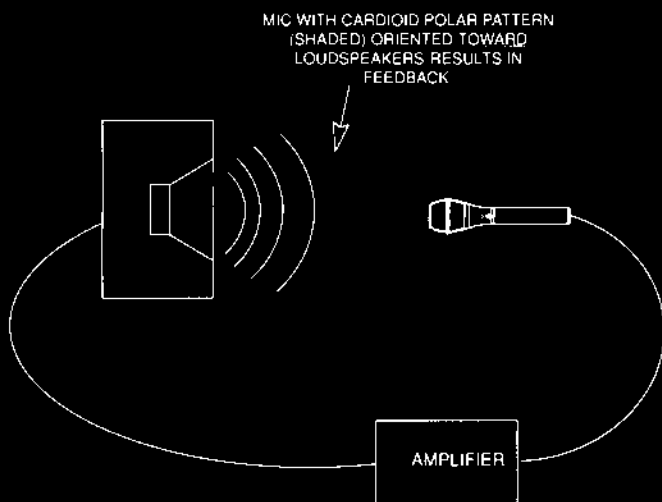


DISTANCE FROM MICROPHONE AFFECTS PERFORMANCE  
**FIGURE 1**

- Beneficial changes in the level and character of sound coming from the loudspeakers can be achieved by changing your distance from the microphone. For instance, working up close can provide maximum bass enhancement without feedback. Practice and experience will develop your skill in varying your distance to achieve the desired effects.
- For maximum isolation from other sound sources and background noise, position the microphone as close to the source as practical, and aimed at the source.

### Feedback and Directional Microphones

A performer's worst enemy in using a microphone is feedback. This is a harsh howl or squeal that occurs when the microphone picks up sound from the loudspeakers, reamplifies and reproduces it over and over again (see Figure 2). This vicious circle results in feedback.

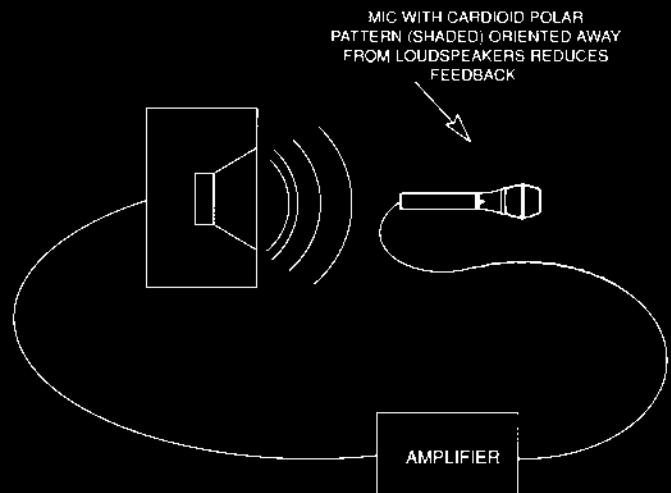


FEEDBACK LOOP  
FIGURE 2

A directional microphone with a cardioid pickup pattern aids in preventing feedback because it rejects sound that originates from the sides and rear (see Figure 3). Sound pickup from the sides is reduced by about one half, and pickup from the rear is reduced by about nine tenths. You can hear this reduction in pickup by speaking into the microphone as you rotate it from front to back.

If you use your directional microphone close to the performer or instrument, you will ensure that the direct sound will be much louder than the feedback-producing amplified sound. Because the amplifier gain can be turned up less to achieve the desired overall loudness, the amplified sound will likely remain below the volume that triggers feedback.

Other hints in preventing feedback are: keep the loudspeakers as far to the sides as possible; be sure that the microphones point toward the performers and away from the loudspeakers; and make certain that any stage monitor speakers are positioned in front of the performers and face the insensitive rear of the microphone.



CARDIOID MICROPHONE MINIMIZES POSSIBILITY OF FEEDBACK  
FIGURE 3

### Directional Microphone and Proximity Effect

Because of their usefulness in reducing the likelihood of feedback, directional microphones are best in sound reinforcement and public address.

When directional microphones are used close to a vocalist or musical instrument, there is an increase in bass (low-frequency) output called proximity effect. Typical increases due to proximity are shown in Figure 5.

Proximity effect can be used to **improve** your sound.

- With vocalists**, it increases bass response, giving a fuller, more powerful quality to the voice. Proximity effect can be especially effective during soft passages where extra emphasis is needed.
- With instruments**, it allows the user to change bass output without tone controls, simply by changing the distance between source and microphone. In addition, close miking improves acoustical isolation by minimizing pickup of other instruments.

The cardioid directional characteristics of your microphone are provided by means of rear sound entry ports that cancel sounds originating from the sides and back of the microphone. It is therefore important that these ports not be covered at any time. When holding the microphone,

do not allow your hand to partially cover the grille (see Figure 4).



**DO NOT COVER THE GRILLE WITH YOUR HAND**  
**FIGURE 4**

Most Shure directional microphones are designed to provide satisfactory response at low frequencies yet still allow proximity effect to be used advantageously when desired. To learn how to use proximity effect, you need to hear the amplified result. Use monitor speakers or headphones, and, just as you practice your instrument, practice your microphone technique to get the precise sound you want.

**OPTIONAL WINDSCREEN**

If you notice excessive popping of p's and b's when the microphone is used closeup, a helpful accessory is the Shure A85WS windscreen in addition to the filter built-in to the ball grille. The windscreen will also minimize pickup of wind noise when the microphone is used outdoors.

**SHOCK MOUNTING**

Your Shure BetaGreen microphone features a carefully engineered shock mount to minimize transmission of mechanical noise. To reduce noise pickup when the microphone is handheld, take care to avoid unnecessarily handling it. To further reduce mechanical noise when the microphone is used on a stand, use a shock-mounted stand adapter such as the Shure A55HM. Also, be sure to locate the stand on a solid, flat surface.

**OPERATION**

The BG 5.0 is designed for powering by virtually any available microphone phantom power supply providing 11 to 52 Vdc (such as a Shure PS1A Power Supply or many mixing consoles or power mixers). As an alternative, the BG 5.0 can also be powered by a single 1.5-volt AA battery (alkaline is recommended). The battery also serves as backup in case of phantom power failure.

A new alkaline battery will provide up to 10,000 hours of continuous microphone operation. Note that the micro-

phone is powered at all times during battery operation (the on/off switch affects only the audio signal) but there is no battery drain during phantom-powered operation.

**Battery Installation**

Disconnect the microphone cable and unscrew the microphone handle, turning it counterclockwise. Slide the handle away from the grille, exposing the battery compartment. Insert the battery, observing the polarity marking in the compartment.

Slide the handle back toward the grille and tighten the handle by turning it clockwise.

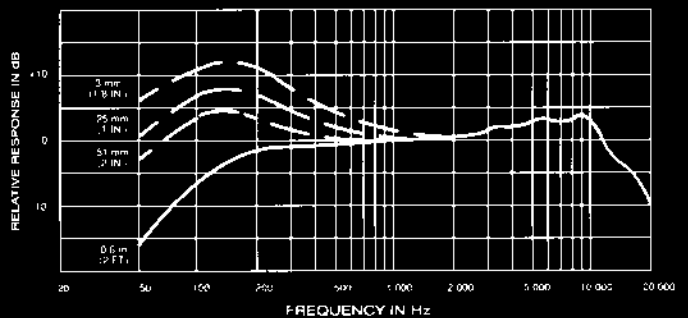
**SPECIFICATIONS**

**Type**

Cardioid condenser (electret bias)

**Frequency Response**

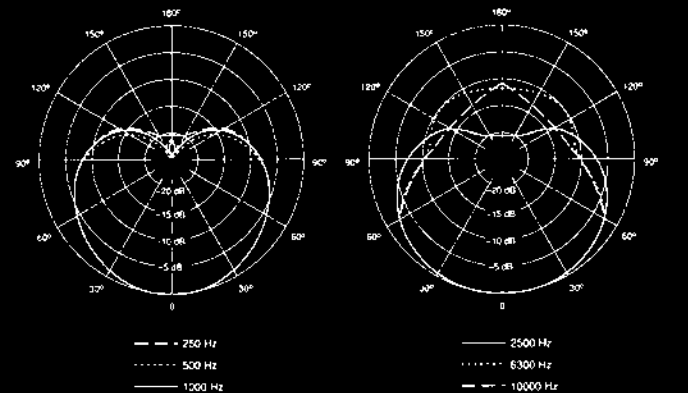
70 to 16,000 Hz (see Figure 5)



**TYPICAL FREQUENCY RESPONSE**  
**FIGURE 5**

**Polar Pattern**

Cardioid (directional), symmetrical about axis (see Figure 6)



**TYPICAL POLAR PATTERNS**  
**FIGURE 6**

**Output Impedance**

600 Ω rated

**Recommended Load Impedance**

For connection to microphone inputs rated 800 Ω minimum

**Output Level (at 1,000 Hz)**

Open Circuit Voltage . . . . . -69.0 dB (0.355 mV)  
0 dB = 1 V/μbar

**Maximum SPL**

2,000 Ω load . . . 132 dB (phantom), 128 dB (battery)  
800 Ω load . . . . 130 dB (phantom), 127 dB (battery)

**Output Noise**

21 dB typical, A weighted  
25 dB typical, weighted per DIN 45 405

**Dynamic Range** (maximum SPL, 2 kΩ load, to A-weighted noise level)

111 dB (phantom); 107 dB (battery)  
Reverse polarity protected to: > 100 Vdc

**Phasing**

Positive pressure on diaphragm produces positive voltage on pin 2 relative to pin 3 of microphone output connector

**Power**

Phantom  
Supply Voltage . . . . . 11 to 52 Vdc  
Current Drain . . . . . 2.0 mA max at 52 Vdc  
Reverse polarity protected to . . . . . 100 Vdc

**Battery**

Type . . . . . 1.5 V alkaline AA size (NEDA 15A)  
Life . . . . . up to 10,000 hours

**Environmental Conditions**

This microphone will operate over a temperature range of -29 to 57°C (-20 to 135°F), and at relative humidity of 0 to 95%.

**Connector**

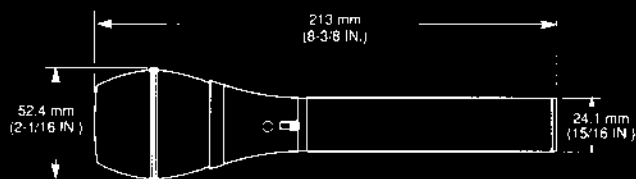
3-pin professional audio (XLR) designed to mate with Cannon XL series, Switchcraft A3 (Q.G.) series, or equivalent connector

**Case**

Steel and aluminum construction with black finish

**Dimensions**

See Figure 7



OVERALL DIMENSIONS  
FIGURE 7

**Net Weight**

257 g (9 oz) less battery

**FURNISHED ACCESSORIES**

- Swivel Adapter . . . . . A25C
- Carrying/Storage Bag (less foam insert) . . . . . 26A16

**OPTIONAL ACCESSORIES**

- Phantom Power Supply . . . . . PS1A
- Shock Stopper™ Isolation Mount . . . . . A53M
- Windscreen . . . . . A85WS
- Cable (7.6 m [25ft]) . . . . . C25J

**REPLACEMENT PARTS**

- Screen and Grille Assembly . . . . . 90HP2600
- Cartridge Assembly . . . . . 90HS2600
- Plug Element . . . . . 90A1984



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