

Due to improvements in manufacturing yield and economies of scale, AKG is pleased to announce a drastic user price reduction for these popular microphone models. Equally at home in the studio and on the live stage, these three condenser microphones are great problem solvers, and our aim in this Applications Guide is to provide you with detailed information on all of them.

C1000S

The C1000S is a small diameter back-plate electret design with a total dynamic range of 118 dB. It normally has a cardioid pattern, but when the PPC1000 hypercardioid polar pattern converter is installed over the diaphragm assembly the pattern becomes hypercardioid, for extra reach. The extended frequency response has slight peaks at 5 kHz and 9 kHz, which will add presence for most applications. The response has further been tailored to have a gentle bass rolloff commencing at 150 Hz. For close-in use, this will be compensated for by normal proximity effect bass rise. The PB1000 presence booster may be installed, while in the cardioid mode, providing an additional 5 dB brilliance peak between 5 to 9 kHz making the C1000S appealing for use as a stage and studio drum overhead microphone, on string instruments or wherever indicated. A battery on/off switch, slightly recessed, makes the microphone useful for a variety of hand-held and on-stage applications.

Music and On-stage Applications

1. Percussion Pickup: The extended frequency response of the C1000S does great justice to cymbals, brushes on snare drums, and all kinds of metal-against-metal transients. The small diameter diaphragm exhibits very little narrowing of the pickup pattern at high frequencies, so the microphone responds well to a number of instruments, which may be placed anywhere in its frontal pickup zone. With its moderate output level of 6 mV/Pa it can easily be padded at the console input when used with the highest level drums.

2. Horn/Woodwind Pickup: In multitrack recording, natural timbres are usually preferred by mixers and producers, reserving for post-production any specific EQ of the basic tracks. Therefore, a microphone that is basically flat and uncolored is preferred. Because of the extended high frequency response of the C1000S, we recommend placing the microphone slightly off the axis of the bell of brass instruments. For woodwinds, the microphone position should be well off the axis of the bell, looking down on the instrument. (There is very little radiation from the bell of woodwind instruments except at the lowest frequencies.)

3. Guitar Pickup: The unamplified sound of an acoustic guitar is very subtle and often quite soft. Place the C1000S in the region of the tone hole, on the body of the instrument, at a distance of about 18 to 20 inches. Proximity effect will round out the bottom end nicely, balancing the extended high end of the microphone. If the C1000S is employed for micing an acoustic guitar during a live performance, we recommend that the PPC1000 be considered if feedback or stage leakage is an issue.

4. String Pickup: Massed strings are often a problem in the 2500 to 3000 Hz range and can sound rather "screechy" if not properly picked up. Avoid at all costs placing any microphone perpendicular to the top plates of the instruments. When micing a violin section, place the C1000S overhead and slightly to the back of the section; this should put it well off the axes of the violin top plates. Use the C1000S's in multiples, panning them for a rich stereo presentation.

5. Vocal Pickup: Most solo vocalists prefer a so-called vocal mike, one that complements their voice in one way or another. However, a vocal group, small or large, will benefit from the flat response of the C1000S, with its clean uncolored sibilants.

Speech Applications

In those applications where the microphone can afford to be seen, a C1000S, with its hypercardioid converter and positioned at about 45 degrees off-axis at a distance of about two feet from the talker, will produce about as natural speech quality as you could wish for.

Specifications:

- Frequency Range: 50 Hz to 20 kHz
- Pickup Patterns: cardioid; hypercardioid with PPC1000S polar adapter
- Sensitivity: 6 mV/Pa
- Impedance: 200 ohms
- Equivalent Noise Level: 19 dB(A)
- Maximum SPL for 0.5% THD: 137 dB
- Power Requirement: 9 to 52 Vdc/9V Battery
- Size: 1.3" diameter x 8.7"
- Net/Shipping Weight: 9.7 oz/1.8 lbs



C3000

The C3000 is a dual capsule back-plate electret design with a total dynamic range of 118.5 dB. The C3000 contains a large hypercardioid capsule and a small omnidirectional capsule. When the output of the omni capsule is switched on and added to that of the hypercardioid capsule, a standard cardioid pattern is produced. Both patterns are extremely tight with better than normal rejection along the null angles (90° for the cardioid; 120° for the hypercardioid). Internal shock mounting of the transducer assembly assures minimal handling noise, and no external shock mounting is necessary. The C3000 was designed as a studio and stage microphone to be used for both vocal and instrumental recording applications where its large diameter capsule excels. A slight, broad rise in response of about 3 dB in the 8 kHz range is typical of many studio large diaphragm condensers and adds presence to both vocal and instrumental timbres.

Studio Applications

1. Vocal Pickup: The best recommendation here is to place the C3000 slightly above the singer at a distance of 18 to 30 inches. The microphone should be angled downward so that its primary axis is pointed at the singer's mouth -- but be careful that the singer does not create any wind turbulence at the microphone. Use a nylon pop screen if necessary. For normal vocal recording, the proximity effect of a cardioid is actually part of the sonic picture, especially with female vocals. With male vocals, do not hesitate to roll off the LF response with the bass cut switch on the C3000 if it produces a better sound.

2. Instrumental Pickup: The C3000 is recommended for pickup of any prominent solo instrument in the studio or on stage, and the availability of flat, rolled off LF or preattenuation will be useful in matching the microphone to the job at hand.

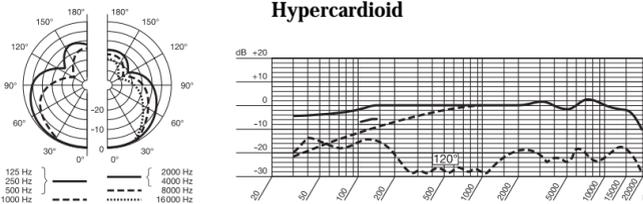
There is however one way in which the C3000 is different from most studio one-inch condensers, and that is the tightness of its polar patterns. This translates into greater overall off-axis and rear hemisphere rejection. This means that you can operate the C3000 a few inches farther away from the sound source than you may be used to. This will generally produce a warmer, more natural sound, with little loss of presence. These comments apply to all wind and percussion instruments, keyboards and guitars.

Onstage Applications

Normally, you will not be able to use the C3000 for vocals on stage inasmuch as the vocalist-performer will need a hand-held, end firing microphone as an integral prop in the act. The previous comments regarding instruments will be applicable for on-stage use.

Specifications:

- Frequency Range: 20 Hz to 20 kHz
- Pickup Patterns: Cardioid and hypercardioid
- Preattenuation: -10 dB
- Bass Cut Filter: 12 dB per octave at 75 or 150 Hz
- Sensitivity: 20 mV/Pa (cardioid); 15 mV/Pa (hypercardioid)
- Impedance: 200 ohms
- Equivalent Noise Level: 18.5 dB(A)
- Maximum SPL for 0.5% THD: 137 dB
- Power Requirement: 9 to 52 Vdc
- Current Consumption: 2 mA
- Size: 6.29" x 2.17" dia.
- Net/Shipping Weight: 11.3 oz/1.8 lb.



C4000B

The C4000B is a dual one-inch diaphragm, multi-pattern backplate prepolarized design representing a breakthrough for both AKG Acoustics and the international microphone industry. It is the first design of its type and presents state of the art performance in all regards. Its salient features are:

1. One-inch diameter back-to-back prepolarized capsules.
2. Uses dual diaphragm pressure gradient capsule arrangement for multiple patterns.
3. Self-noise level of 8 dB-A.
4. Maximum operating level capability of 145/155 dB-SPL (0.5% THD).
5. Total operating dynamic range of 137 dB (A-weighted).
6. Switchable 10-dB pad.
7. Switchable LF cut (100 Hz, 12-dB/octave).
8. Internal shock mounting of diaphragm assembly.
9. Included H100 spider suspension mount.

The combination of extremely low self noise and high level capability make the C4000B a truly remarkable microphone, both in the pop studio, where extremely high levels are routinely encountered, and in the finest of classical recording venues, where the microphone's self noise must be lower than that of the acoustical field itself. Its total dynamic range is virtually the equivalent of an ideal digital recorder operating at 23 bits word depth!

Studio Applications:

1. Vocal Pickup: The most useful pattern here will be the cardioid. The microphone should be mounted in its accompanying shock mount assembly and positioned slightly above the vocalist's mouth at a distance of 18 to 24 inches. In this position the microphone will probably not need a windscreen or pop filter, but with an active vocalist you may want to mount the large open cell windscreen that comes with the microphone. Normally, you will be recording with the vocalist in a booth; but if you are working in the studio the hypercardioid pattern will give more immunity to studio leakage. With male vocalists you may need to roll off a little LF. The microphone's bass cut will work well here if the vocalist is fairly close to the microphone; otherwise you should roll off whatever is needed using the console's input EQ.

The on-axis response of the C4000B in its cardioid position is virtually flat (± 1.5 dB) over the vocal range, and you can expect its pickup to be absolutely neutral, as opposed to the colored response of many one-inch variable pattern studio microphones. Add whatever EQ you need to complement the vocalist.

2. Instrumental Pickup: The C4000B can handle just about anything in today's pop/rock studio. No longer do you have to worry about microphone overload with close-in brass or percussion since the C4000B will handle it with stride. Its integral 10-dB pad increases its high level handling capability to 155 dB SPL. (You will of course have to be careful with downstream gain structure in order to take full advantage of this capability.)

The flat response of the C4000B lets you take advantage of the true, natural timbre of all instruments in the studio. Instead of EQing out an undesired peak or dip in the response, you're now in a position of EQing in what you want.

Recording in Live and Classical Venues: With its well-behaved omni and cardioid patterns and very uniform on-axis response, the C4000B can be used in stereo multiples for both ORTF (near-coincident cardioids) and spaced omni recording, each with the same inherent noise floor of 8 dB-A. Choral and string recordings in particular will benefit from the uniform axial response. In fact, the slight broad rise in response (+1.5 dB between 8 and 15 kHz) will be seen as an advantage by many recording engineers as adding a bit more "air" to the recording.

Specifications:

- Frequency Range: 20Hz to 20kHz
- Polar Patterns: cardioid, hypercardioid, omnidirectional
- Preattenuation: 0/-10dB, switchable
- Bass Cut Filter: 12dB/octave below 100Hz
- Sensitivity: 20 mV/Pa (-32dBV)
- Impedance: <200Ω
- Equivalent Noise Level: 8dB-A
- Maximum SPL for 0.5% THD: 155 dB SPL
- POWER REQUIREMENT: 9-52Vdc

