C314

PROFESSIONAL MULTI-PATTERN CONDENSER MICROPHONE



2 BEDIENUNGSANLEITUNG
Bitte vor Inbetriebnahme des Gerätes lesen!

34 USER INSTRUCTIONS
Please read the manual before using the equipment!

64 MODE D'EMPLOI
Veuillez lire cette notice avant d'utiliser le système!

96 MODO DE EMPLEO
¡Sirvase leer el manual antes de utilizar el equipo!

AKG by HARMAN

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Updates

Dieses Manual kann ohne Vorankündigung geändert werden und stellt keine Verpflichtung seitens der Firma AKG Acoustics GmbH dar.

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1 Safety and environment



Risk of damage

Please make sure that the piece of equipment your microphone will be connected to fulfills the safety regulations in force in your country and is fitted with a ground lead.

1.1 Environment



At the end of the lifetime of the product, disconnect the housing, electronics and cable from each other and discard all components according to applicable disposal regulations.



The packaging is recyclable. Dispose of the packaging via an appropriate collection system provided for this purpose.

2 Description

Introduction

2.1 Introduction

Thank you for your decision to buy an AKG product. **Please read the user instructions carefully** before using the unit and keep them in a safe place so that you can refer to them in the future at any time. We wish you a lot of fun and success!

Packing list

2.2 Packing list

C314
SA60 stand adapter
H85 shock mount
W214 foam windscreen
High quality carrying case for microphone and standard accessories

Stereo-Sets:

2 x C314
2 x SA60 stand adapter
2 x H85 shock mounts
2 x W214 foam windscreens
1 x H50 stereo bar
High quality carrying case for microphone and standard accessories

Check that the packaging contains all of the items listed for your system. If anything is missing, please contact your AKG dealer.

Optional accessories

2.3 Optional accessories

Optional accessories can be found in the current AKG catalogue at www.akg.com. Your dealer will be happy to advise you.

C314

2.4 C314

This large-diaphragm condenser microphone has been designed on the basis of experiences gained with models C12, C12 A, C414 EB, C414 B-ULS as well as C414 XLS microphones in recording studios and on stages around the world for years. Using hand-selected, modern and reliable components as well as advanced production processes, the microphone meets the highest professional standards and will withstand the tough handling typically encountered in the recording studio and on stage for many years.

The electronic circuitry of the microphone has been redesigned to achieve maximum dynamic and completely linear transfer characteristics of all electrical parameters. Extremely low self-noise and high headroom add up to a dynamic range of approximately 147 dB (A-weighted).

A dual-diaphragm transducer allows you to select one of several polar patterns. The transducer element uses advanced backplate technology and a diaphragm that is gold-sputtered on one side only. This design prevents shorting to the back electrode even at extremely high sound pressure levels.

The all-metal body adds to the rejection of RF interference so you can use the microphone near transmitter stations, along with wireless microphones or other communications equipment.

Control elements

2.5 Control elements

The C314 provides selectors for the polar patterns, preattenuation pad and bass cut.

Selector for polar patterns



Figure 1: Selector for polar patterns

Selector 1 on the back of the microphone (see fig. 1) allows you to select four polar patterns, providing the optimum polar pattern for best possible results in the most diverse miking situations. All polar patterns are largely frequency-independent for realistic and uncoloured off-axis sound.

Selector for preattenuation pads



Figure 2: Selector for preattenuation pads

Selector 2 on the side of the microphone (see fig. 2) lets you increase the headroom by 20 dB for distortion-free close-in recording. The preattenuation pads prevent the microphone's output level, particularly at low frequencies, from overloading the mixer input stages and amplifiers in the microphone.

Overload display with overload function



The overload LED is located beneath the preattenuation selector.

Once the microphone is connected to the phantom feed, the LED turns red for approximately one to five seconds. Afterwards, the LED turns green.

The overload display also indicates minimal overloads (fractions of a second). When reaching or exceeding approximately 2 dB below the admissible headroom, the active polar pattern LED turns red for approximately one to five seconds, depending on the sound level. To prevent overloads, increase the preattenuation with selector 2 or increase distance to the sound source.

This function is not only used to prevent mixers but also the internal amplifier from overloading, which would increase noise and distortion.

Selector for bass cut



Figure 3: Selector for bass cut

The switchable bass cut (see fig. 3) helps to reduce distortions at extremely low frequencies, which may occur due to handling or wind. The filter slope 12 dB/ octave, at cut-off frequency of 100 Hz. The bass cut also minimizes the proximity effect that may arise when close-in miking from less than 6 inches (15 cm).

Stereo pairs

Stereo pairs

Realistic stereo recordings require microphones with outstanding performance and excellent quality. They also require consistent performance and accurate localization throughout the entire frequency range from the pair of microphones.

Therefore, every factory-matched pair of C314 is created from thousands of individual microphones selected by AKG's sophisticated computer-aided matching method.

The C314 matched stereo pairs thus provide the highest possible correlation over the microphones' entire frequency range and virtually identical sensitivity for stunning, three-dimensional recordings.

3 Powering

The C314 provides low self-noise yet high headroom. The microphone requires a phantom power source providing 48 V ± 4 V as per IEC 61938.



Risk of damage

Do not connect the microphone to any power supply other than a phantom power source (input with phantom power or external IEC 61938 standard phantom power supply) with a floating connector, using a balanced cable with studio grade connectors to IEC 268-12 only. This is the only way to ensure safe and reliable operation.

4 Using the Microphone

Introduction

4.1 Introduction

The C314 features a smooth frequency response similar to the typical sound of AKG large-diaphragm microphones.

You can use the C314 for most musical instruments in the studio and on stage (see also section 3.5).

With its cardioid polar pattern, the microphone will give excellent results in a multiplicity of recording situations, particularly, in close miking.

Bass cut filters

4.2 Bass cut filters

The selectable bass cut filter will effectively cancel out any unwanted noise such as fan noise from air conditioning systems or low-frequency noise due to floor vibrations, handling noise, etc. without affecting the sound of the recorded voice or instrument on tape.

For details on the bass cut refer to the description of the operating elements.

Preattenuation pads

Preattenuation pads

The switchable preattenuation pads allow you to increase the microphone's headroom. Remember to check that the equipment connected to the microphone (microphone preamp, mixer input, recorder input) can handle the maximum output level of the microphone without causing distortion.

For correct setting of the preattenuation, refer to the description of the operating elements.

Stand mounting

4.3 Stand mounting

The supplied H85 shock mount has a standard 3/8" thread insert so you can mount the microphone on almost every commercial stand or suspension with a 3/8" thread.

To mount the H85 on a stand with a 5/8" thread, remove the tread insert and screw the H85 directly on the stand.

To remove the H85 from the microphone, rotate the bayonet-type lock at the lower end of the H85 CCW to the point that the H85 unlocks.

Application areas

4.4 Application areas

4.4.1 Lead Vocals



Figure 4: Solo vocalist

Working distance: 6 to 12 in. (15 to 30 cm)
Polar pattern: cardioid
Bass cut: ON
For best results, be sure to use a pop screen, e.g. the PF80 from AKG. If no pop screen is available, use at least the supplied W214 windscreen.

4.4.2 Choir/backing vocals

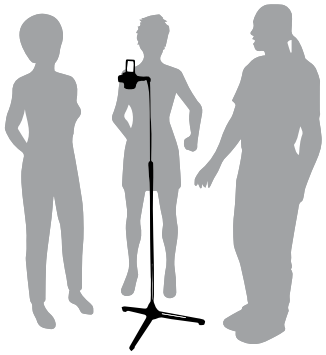


Figure 5: Backing vocals with one microphone (variant 2)

For **large choirs**, we recommend one pair of microphones plus one spot microphone each for the soprano, alto, tenor, and bass sections.

In rooms with good acoustics, a single microphone pair or two matched mono microphones will often do the trick.

Backing vocals/variant 1:

If you have enough tracks available, we recommend overdubbing each voice separately. Refer to section 4.6.1 Lead Vocals above.

Backing vocals/variant 2:

If you have to make do with one or two tracks, use one microphone each for two, at most three persons. Place the choir in a semi-circle in front of the microphone and select Cardioid or Omnidirectional as polar pattern.

4.4.3 Violin, Viola



Figure 6: Violin

Solo violin:

Direct the microphone to the f holes from a height of 6 to 8 feet (1.8 to 2.5 m) above the floor.

Large string sections:

Use a combination of a main microphone in an XY, MS, ORTF, or other stereo configuration and close-in spot microphones.

Viola:

Direct the microphone to the f holes from a height of 7 to 10 feet (2.2 to 3 m) above the floor.

4.4.4 Double Bass, Cello



Figure 7: Double bass

Double bass:

Align the microphone with one of the f holes from a distance of about 16 inches (40 cm). If you need to record the double bass together with an ensemble, place the microphone closer to the instrument and set the polar pattern to hypercardioid to prevent leakage from other instruments into the bass microphone.

Cello/technique 1:

Refer to "Double bass" above.

Cello/technique 2:

Use a close-in microphone as in technique 1 above plus a distant microphone. Set the level of the close-in microphone approx. 20 dB lower than the distant mic level.

4.4.5 Acoustic guitar



Figure 8: Acoustic guitar with one C314

We recommend using two microphones.

Aim one C314 8 to 12 inches (20 to 30 cm) at the sound hole. Aim a small diaphragm microphone (e.g., a C451B) at a point near the sound hole or bridge from a distance of about 3 to 3 1/2 feet (50 cm up to 1 m).

4.4.6 Flute

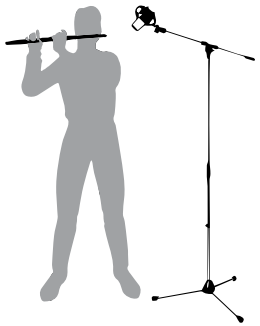


Figure 9: Using a single microphone to mic up a flute.

We recommend using two microphones.

Place mic 1 above and to one side of the player (to reduce blowing noise) and align it with the player's mouth, and aim mic 2 at the instrument from the side.

If you prefer to use a single microphone, place the microphone as mic 1 above at a distance of about 7 to 8 1/2 feet (2 to 2.5 m) above the floor.

4.4.7 Clarinet

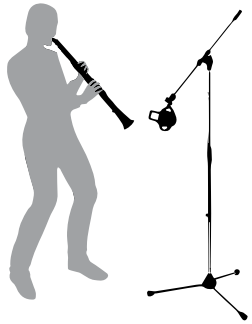


Figure 10: Clarinet

Point the microphone at the lowest key. To minimize key noise, place the microphone a little ways to the side of the instrument.

4.4.8 Tenor Saxophones



Figure 11: Tenor saxophone

Aim the microphone at the middle of the instrument from a distance of about 2 to 3 1/2 feet (50 cm to 1 m).

4.4.9 Trumpet, Trombone



Figure 12: Trumpet (a)



Figure 13: Trombone (b)

Place the microphone about 1 foot (30 cm) in front of the instrument, slightly off the bell axis. Switch in one of the preattenuation pads. Using the supplied windscreen will help reduce blowing noise.

4.4.10 Grand and Upright Pianos



Figure 14: Grand piano

Grand piano:

Aim a single C314 or an XY, MS, or ORTF pair of C414s at the middle strings from a height of 5 to 7 feet (1.5 to 2 m).

For a rock/pop sound, place two C314s roughly 8 to 16 inches (20 to 40 cm) above the strings. Align mic 1 with the treble strings and mic 2 with the bass strings, both at point about 6 inches (15 cm) behind the dampers.

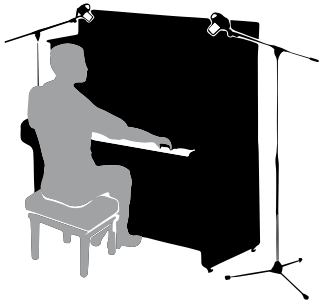


Figure 15: Upright piano

Upright piano:

Use the same technique as for the grand. Open the lid and have the microphones "peek into the instrument" from above.

Electric Guitar and Bass

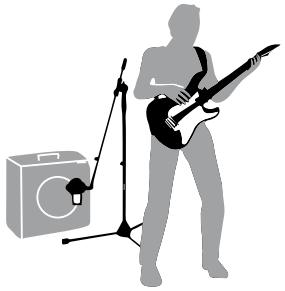


Figure 16: Electric guitar

Electric guitar:

Position the microphone 3 to 6 inches (8 to 15 cm) in front of the speaker, aiming at a point off the speaker diaphragm center. Use the bass cut and a preattenuation pad. You may ant to use an additional distant microphone.

Electric bass:

Use the same technique as for the electric guitar. You can use a DI box to add the direct signal of the line output on the bass amp to the microphone signal.

4.4.11 Drums



Figure 17: Typical drum kit

Overhead miking:

Place two C314s in an AB or XY configuration about 2 3/4 to 4 ft. (80 to 120 cm) above the drummer's head. This technique will pick up the entire kit, delivering a highly natural sound. Use little or no EQ!

Hanging and floor toms:

Use one microphone for each tom or for every two toms, aligning the microphone with the rim of the top head. To reduce leakage from other instruments, attenuate the HF range above 10 kHz using the channel EQ(s).

Kick drum:

Be sure to switch the preattenuation pad in (-20 dB) because the kick drum may produce extremely high sound pressure levels.

Place the microphone right inside the shell.

For a dry, "click" type sound with lots of attack, position the microphone near the head, at an angle of 45 degrees.

For a fatter sound, place the microphone closer to the front head or outside the shell, up to 6 in. (15 cm) from the opening in the front head.

5 Cleaning

5.1 Microphone

Microphone

Use a soft cloth moistened with water to clean the surface of the microphone body.

5.2 Windscreen

Windscreen

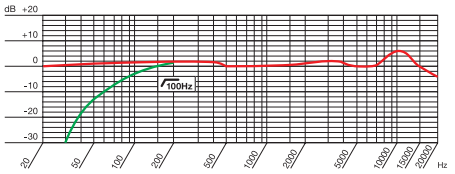
Wash the foam windscreen in mild sudsy water. Do not use the windscreen before it has dried completely.

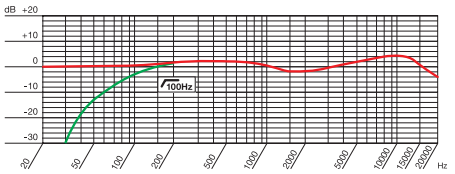
6 Technical data

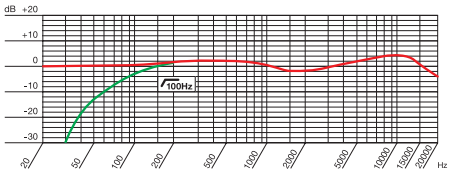
Type:	1" large dual diaphragm back-plate condenser
Polar pattern:	cardioid, supercardioid, omnidirectional, figure 8
Sensitivity:	(cardioid): 20 mV/Pa (-34 dBV)
Frequency response:	20 Hz to 20 kHz (see frequency response trace)
Electrical impedance:	≤ 200 ohms
Recommended load impedance:	≥ 1000 ohms
Equivalent noise level to IEC 60268-4:	8 dB (A)
Signal to noise:	86 dB(A) at 1 Pa
Max. SPL for 0.5% THD:	135 / 155 dB SPL (0 / -20 dB)
Temperature range:	-10 °C +60 °C (14 °F - 140 °F)
Phantom powering:	48 V ±4 V to IEC 61938
Current consumption:	≤ 3 mA
Connector:	3-pin XLR (pin 2 hot)
Height	160 mm (6.3 in.)
Width	55 mm (2.16 in.)
Depth	43 mm (1.7 in.)
Net weight:	300 g (10.58 oz.)
Bass cut pad:	100 Hz, 12 dB/octave
Preattenuation pad:	-20 dB

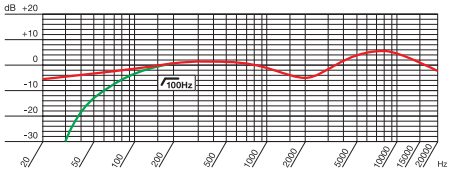
This product conforms to the standards listed in the Declaration of Conformity. You can request the Declaration of Conformity by e-mail from sales@akg.com.

Frequency response C314



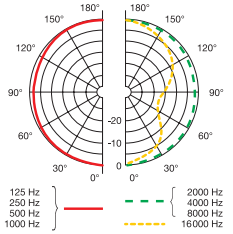




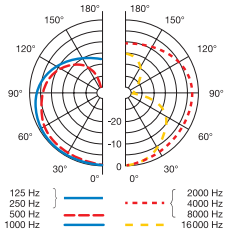


Polar diagram C314

Omnidirectional »



Cardioid »



Supercardioid »

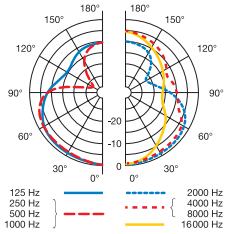


Figure 8 »

