

PERCEPTION 420

User Instructions p. 2

Please read the manual before using the equipment!

Mode d'emploi p. 14

Veuillez lire cette notice avant d'utiliser le système!





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1 Precaution/Unpacking

1.1 Precaution

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.

1.2 Unpacking

Check that the packaging contains all of the items listed below:

- Microphone
- Spider suspension
- Carrying case
- Mini poster

Should any item be missing, please contact your AKG dealer.



2 Description

2.1 Introduction

Thank you for purchasing an AKG product. This Manual contains important instructions for setting up and operating your equipment. Please take a few minutes to **read the instructions below carefully before operating the equipment** and keep the Manual for future reference. Have fun and impress your audience!

The PERCEPTION 420 is a heavy-duty, rugged true condenser microphone built to the same strict quality standards as all other AKG products.

Designed on the basis of AKG's decades of know-how and feedback from sound engineers around the world using AKG studio microphones every day, this general-purpose 1-inch dual large-diaphragm microphone brings AKG studio quality to the worlds of recording, live sound, and broadcasting.

2.2 Features

- **Selectable polar patterns:** The microphone's

transducer uses a dual diaphragm. This sophisticated technology allows you to select the optimum polar pattern (cardioid, omnidirectional, or figure eight) for every application.

- **Gold-sputtered diaphragm:** The diaphragm is made of a plastic foil that is gold-sputtered on one side only to prevent shorting to the back electrode even at extremely high sound pressure levels.
- **All-metal body:** The all-metal body adds to the rejection of RF interference so you can use the microphone near transmitter stations and along with wireless microphones or other communications equipment. The extremely rugged, heavy body and sturdy front grill protect the microphone from damage from tough handling on stage.
- **High headroom, minimum distortion:** Capable of handling sound pressure levels up to 155 dB without introducing perceptible dis-



Fig. 1: Polar pattern selector (1) on PERCEPTION 420 front.

tortion and built to resist high temperatures and humidity, the microphone will give excellent results in a wide range of applications.

- **Polar pattern selector:** Selector 1 on the microphone front (refer to fig. 1) sets the microphone polar pattern to cardioid, omnidirectional, or figure eight.
- **Switchable preattenuation pad:** Selector 2 on the microphone rear (refer to fig. 2) lets you increase the headroom by 20 dB for distortion-free close-in recording. The preattenuation pad prevents the microphone's output level, particularly at low frequencies, from overloading the miniature transformers used in many mixer input stages, etc.
- **Bass cut filter:** Selector 3 on the microphone rear (refer to fig. 2) further reduces low-end distortion caused by footfall or wind noise, etc. The filter also minimizes the proximity effect that close-in miking from less than 4 inches



Fig. 2: Preattenuation (2) and bass cut (3) switches on PERCEPTION 420 rear.

causes in any unidirectional microphone. The filter rolls off at 12 dB/octave from 300 Hz downward.

2.3 Optional Accessories

- **PF 80** studio pop screen
- **ST 305** floor stand
- **W 4000** external windscreen



3 Interfacing

3.1 General

The microphone uses a true condenser transducer designed for 48-volt phantom powering to DIN 45 596/IEC 268-15. Neither the diaphragm nor the backplate are permanently polarized, so the

microphone needs an external power supply.

3.2 Pinout

The microphone provides a balanced output on a 3-pin male XLR connector:

Pin 1: ground

Pin 2: hot

Pin 3: cold

3.3 Connecting the Microphone

Refer to fig. 3 below.

1. Use an XLR cable to connect the microphone to a balanced XLR input with phantom power.
2. Switch the phantom power on. (Refer to the user manual of the unit to which you connected your microphone.)

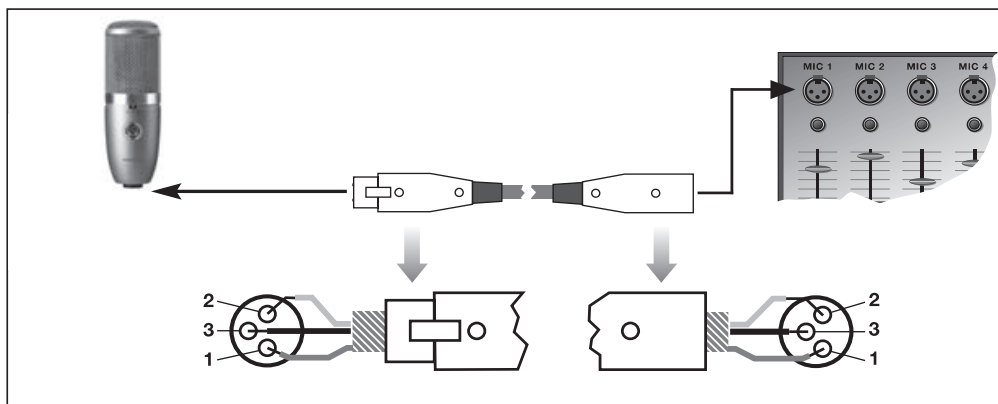


Fig. 3: Connecting to a balanced input with phantom power.



4 Using Your Microphone

4.1 General Hints

The PERCEPTION 420 is a general-purpose multi-pattern microphone for recording, broadcast, and onstage use.

Every instrument radiates its sound in a specific way. Therefore, to get the best sound it is crucial to experiment with microphone placement.

- Refer to fig. 4. Whichever polar pattern you selected, it may be good to know which way the transducer axis is facing: the **front** of the microphone is the side of the body with the **AKG logo** and polar pattern selector (1) on it.
- When recording wind instruments or vocals, make sure **not to blow or sing directly into the microphone**.

To avoid unwanted wind and pop noise or moisture problems, place an optional **PF 80 pop screen** from AKG between the microphone and vocalist/instrument.



Fig. 4: Microphone front.

- **Keep the microphone dry.** Moisture from blowing or singing directly at the capsule from a short distance, or extremely high humidity may cause the microphone to start crackling or go very quiet due to partial short circuits in the polarization voltage.
- If you use the microphone **in the open**, use an optional **AKG W 4000 windscreen** to protect the microphone from moisture and reduce wind noise.
- **High volume instruments:** You can use this microphone for close-in recording of very loud instruments (brass instruments, kick drum, etc.). Just switch the preattenuation pad in to increase the microphone's capability of handling sound pressure levels to 155 dB.
- **Low-frequency noise:** To suppress low-frequency noise such as air conditioning rumble, footfall noise, or traffic sounds, switch the bass cut filter in.

4.2 Selecting Polar Patterns

Each of the PERCEPTION 420's selectable polar patterns is virtually frequency independent so that reflected sound, too will be reproduced accurately and uncolored.

- **Cardioid** (center setting): This is a standard setting for recording and gives excellent results on all kinds of voices and a wide range of instruments. Remember to aim the microphone front (see fig. 4 on page 7) at the sound source.
- **Figure eight** (left-hand setting): The microphone will pick up sounds arriving from the front and rear with equal sensitivity. Use this mode to mic up the side signal in M/S stereo recording or to record two sound sources (talkers, instruments) facing each other. It is also a good choice for cymbal overhead miking.
- **Omnidirectional** (right-hand setting): This is the preferred setting for "all around the mic" recording, high quality ambience (audience

sound) miking, or far-field recording in exceptionally good-sounding large or small recording rooms, etc.



5 Cleaning

- To clean the surface of the microphone body, use a soft cloth moistened with water.



Problem	Possible Cause	Remedy
No sound.	<ol style="list-style-type: none">1. Power to mixer and/or amplifier is off.2. Channel or master fader on mixer, or volume control on amplifier is at zero.3. Microphone is not connected to mixer or amplifier.4. Cable connectors are seated loosely.5. Cable is defective.6. No supply voltage.	<ol style="list-style-type: none">1. Switch power to mixer or amplifier on.2. Set channel or master fader on mixer or volume control on amplifier to desired level.3. Connect microphone to mixer or amplifier.4. Check cable connectors for secure seat.5. Check cable and replace if damaged.6. Switch phantom power on. Phantom power supply: insert batteries. Check cable and replace if necessary.
Distortion.	<ol style="list-style-type: none">1. Channel gain control on mixer set too high.2. Microphone too close to sound source.3. Microphone sensitivity set too high.	<ol style="list-style-type: none">1. Turn gain control down CCW.2. Move microphone further away from sound source.3. Switch preattenuation pad in.



6 Troubleshooting

Problem	Possible Cause	Remedy
Crackling noises or low output.	<ul style="list-style-type: none">• Partial short circuits due to excessive humidity.	<ul style="list-style-type: none">• Place microphone in warm, dry room and allow to dry.

7 Specifications



Type:	1-inch dual-diaphragm, true condenser pressure-gradient microphone
Polar patterns:	cardioid, omnidirectional, figure eight
Open-circuit sensitivity at 1kHz (cardioid):	28 mV/Pa (-31 dBV ±2 dB)
Frequency range:	20 Hz to 20 kHz (see frequency response graphs)
Impedance:	≤ 200 ohms
Recommended load impedance:	≥ 1000 ohms
Equivalent noise level to CCIR 468-2:	26 dB
Equivalent noise level to IEC 60268-4 (A-weighted):	16 dB-A
Signal/noise ratio re 1 Pa (A-weighted):	78 dB
Max. SPL for 0.5% THD:	135 / 155 dB SPL (0 / -20 dB)
Preattenuation pad:	-20 dB (switchable)
Bass cut filter slope:	12 dB/octave, 300 Hz

Environment:	temperature: -10°C to +60°C R.H.: 80% (+25°C)
Powering:	48 V ±4 V phantom power to DIN 45 596 / IEC 268-15
Current consumption:	≤ 2 mA
Connector:	3-pin XLR (pin 2 hot)
Dimensions:	53 dia. x 165 mm high / 2 x 6.5 in.
Net weight:	525 g / 1.2 lbs.

FCC Statement

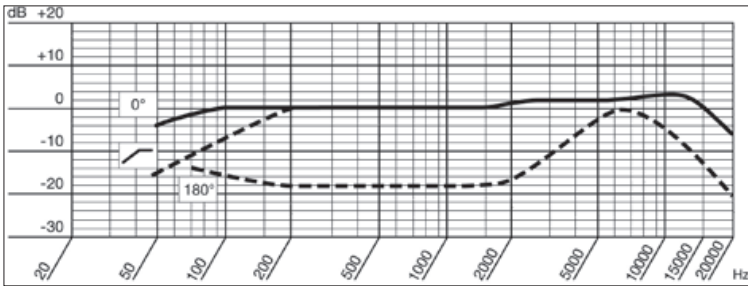
The device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

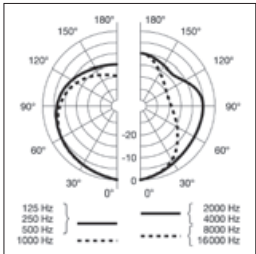
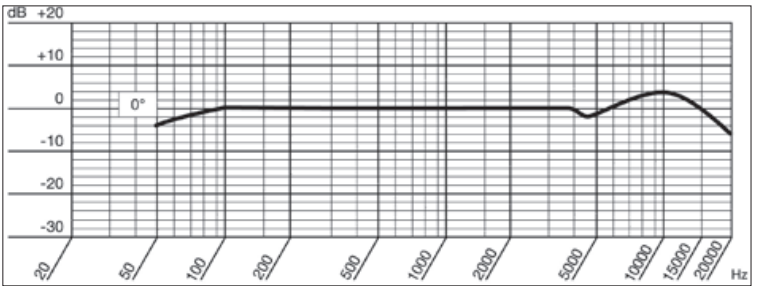


7 Specifications

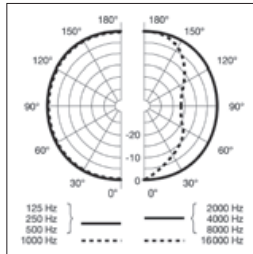
Frequency Response (cardioid)



Frequency Response (omnidirectional)



Cardioid Polar Diagram



Omnidirectional Polar Diagram



Frequency Response (figure eight)

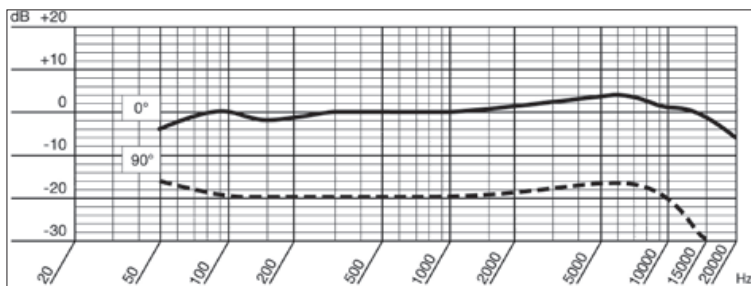
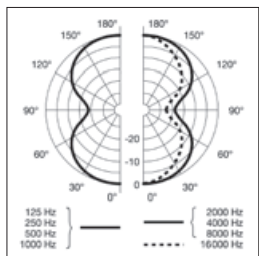


Figure Eight Polar Diagram



AKG PERCEPTION 420



English

This product conforms to the standards listed in the Declaration of Conformity.

To order a free copy of the Declaration of Conformity, visit <http://www.akg.com> or contact sales@akg.com

Deutsch

Dieses Produkt entspricht den in der Konformitätserklärung angegebenen Normen. Sie können die Konformitätserklärung auf <http://www.akg.com> oder per E-Mail an sales@akg.com anfordern.

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Printed in China (P.R.C.)

09/07/9100 U 1247

