

PRO 45

REMOTE-POWERED CARDIOID CONDENSER HANGING MICROPHONES



Description

The PRO 45 is a wide-range condenser microphone with a cardioid (unidirectional) polar pattern. It was designed for high-quality sound reinforcement and other demanding sound pickup applications. The PRO 45 is furnished with a vinyl-coated steel hanger that allows it to be positioned inconspicuously over a choir, orchestra, stage, etc., for low-profile situations.

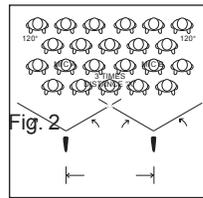
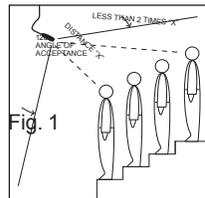
The PRO 45 features a 25' (7.6 m) permanently-attached miniature cable with an XLRM-type connector, which allows it to be plugged directly into an XLRF-type jack or cable connector. The unit's integral electronics can be powered from any external 9V to 52V DC phantom power source.

Audio-Technica design engineers have utilized the newest low-mass technology in the quest for superior performance. The charge is now on the fixed back plate, rather than the moving element. With the A-T fixed-charge "back plate" construction, a gold-vaporized diaphragm just 2 microns thick (about 0.000079") can be used. This reduces moving mass substantially, improving frequency response and transient response while reducing distortion.

The microphone element is enclosed in a rugged housing with a low-reflectance black finish microphone housing, windscreen, cable and steel hanger, for applications where the microphone must be hung against a light background.

Operation and Maintenance

The PRO 45 is ideal for suspension over choirs, instrumental groups or theater stages. A uniform 120° angle of acceptance provides well-balanced audio pickup. The microphone should be located forward of the front-most source, above the rear-most source, and "aimed" between them (Fig. 1). Increasing the height of the mic above the sources will tend to equalize sound levels between them, but may also increase background/reverberant sound pickup. Whenever possible, the distance from the mic to the rear-most pickup should be no more than twice the distance to the front source, to maintain front-to-rear balance (Fig. 1).



Width of pickup is approximately three times the distance to the closest performer. If additional mics are needed for wide sources, they should not be closer together laterally than three times the distance to the front source, to avoid phase cancellation (Fig. 2).

To orient in the proper direction, twist the microphone housing *slightly* in its wire holder (clockwise rotation moves the microphone to the right; counterclockwise rotation moves it to the left). The provided AT8146 windscreen simply slips over the head of the microphone, effectively reducing noise from wind or ventilation air currents.

Output is low impedance balanced. The output connector mates with XLRF-type connectors. The balanced signal appears across Pins 2 and 3, while the ground (shield) connection is Pin 1. Output is phased so that positive acoustic pressure produces positive voltage at Pin 2 in accordance with industry convention.

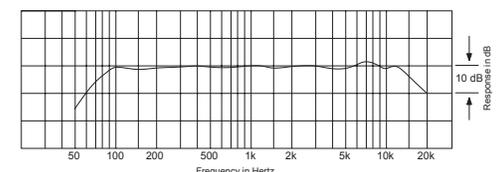
DC phantom power (9-52 volts) must be applied equally to Pins 2 and 3, with the ground for the power supply connected to Pin 1. This can be provided by a console or mixer with built-in phantom voltage or with the addition of an in-line phantom power supply, such as the recommended Audio-Technica CP8506 and AT8801 power supplies.

If an extension cable is necessary, AT8314 cable (or equal) should be used. Regardless of cables used, it is important that both ends of each cable are wired consistently, with the shield always connected to Pin 1 at both ends, Pin 2 connected to Pin 2, and Pin 3 to Pin 3. This will ensure that all microphones are electrically in phase and reduce problems of uneven response and sound cancellation when two microphones are used close to each other.

The high sensitivity of the PRO45 ensures useful output and an excellent match to most mixer, tape recorder and amplifier inputs. It will provide undistorted output even in sound fields as loud as 134 dB SPL. However, due to the high sensitivity, in some instances it may be possible to overload sensitive input stages. If distortion occurs, *first* check for input overload. In such cases, an attenuator such as the Audio-Technica AT8202 may be required between the mic and the electronics input. (Also, many mixers provide "input pad" switches to reduce mic-input signal levels.)

While a modern condenser microphone is not unduly sensitive to the environment, temperature extremes can be harmful. Exposure to high temperatures can result in gradual and permanent reduction of the output level. Avoid leaving the microphone in the open sun or in areas where temperatures exceed 110° F (43° C) for long periods of time. Extremely high humidity should also be avoided.

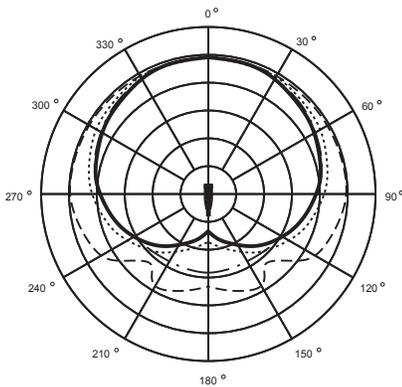
Frequency Response



LEGEND: ——— 12° or more on axis

PRO45

Polar Pattern



SCALE IS 5 DECIBELS PER DIVISION

LEGEND

200 Hz	— · — · — ·
1 kHz	— — — — —
5 kHz	- - - - -
8 kHz	· · · · ·

PRO 45 SPECIFICATIONS

Element	Fixed-charge back plate permanently polarized condenser
Polar Pattern	Cardioid (Unidirectional)
Frequency Response	70-16,000 Hz
Open Circuit Sensitivity	-37 dB (14.1 mV) re 1V at 1 Pa*
Impedance	100 ohms
Maximum Input Sound Level	134 dB SPL, 1 kHz at 1% T.H.D.
Signal-to-noise Ratio ¹	66 dB, 1 kHz at 1 Pa*
Dynamic Range (Typical)	106 dB, 1 kHz at Max SPL
Phantom Power Requirements	9-52V DC, 2 mA typical
Weight (less cable)	0.5 oz (15 grams)
Dimensions	2.24" (56.9 mm) long, 0.47" (12.0 mm) head diameter
Output Connector	3-pin XLRM-type
Cable	25' (7.6 m) long (permanently attached to microphone), 0.10" (2.6 mm) diameter, 2-conductor, shielded cable
Accessories Furnished	Foam windscreen, steel hanger

* 1 Pascal = 10 dynes/cm² = 10 microbars = 94 dB SPL

¹ Typical, A-weighted, using Audio Precision System One

Dimensions

