



AT5047 Transformer-Coupled Cardioid Condenser Microphone



50 Series Microphones

Features

- Exceptionally wide dynamic range captures the full, expressive character of instruments and voices – from the caress of drum brushes to powerful vocal performances
- Four rectangular diaphragms (2 micron) function together to provide a combined surface area twice that of a standard one-inch circular diaphragm
- Discrete components carefully selected and optimized for maximum performance and compatibility with standalone microphone preamps and console inputs
- Transformer-coupled output provides smooth sonic character
- Hand assembled and inspected for 100% quality control
- Advanced internal shock mounting decouples the capsule from the microphone body
- Elegant, durable housing of aluminum and brass
- Included advanced-design custom AT8480 shock mount provides superior isolation
- Custom hard-shell carrying case with die-cut foam compartments offers protection during storage and transport

AT5047 Description

The AT5047 is a large-diaphragm side-address electret condenser vocal microphone with a cardioid polar pattern. It is engineered to meet the most critical acoustic requirements of professional recording. Designed as a first-choice microphone for vocals and instruments, the AT5047 features an exceptionally wide dynamic range – the widest among all Audio-Technica microphones – to capture the full, expressive character of a sound source, no matter how loud or how soft. And since it is equipped with a transformer-coupled output, the microphone maintains a constant load output impedance, even when capturing sources at extreme SPL, resulting in a stable relationship between the mic and a mic preamp or console input.

The microphone requires 48V phantom power for operation.

The cardioid polar pattern of the microphone is more sensitive to sound originating directly in front of the element, making it useful in controlling feedback, reducing pickup of unwanted sounds and providing isolation between performers.

The AT5047 features a four-part rectangular element; four matched diaphragms function together (with outputs proprietarily summed) as a single high-performance element offering large surface area without the increased weight and decreased transient response that are the expected limitations of diaphragm size. Each AT5047 diaphragm is carefully engineered to improve transient response and increase response bandwidth. Each is 2 microns thick, vapor-deposited gold and aged so that the optimum characteristics remain constant over years of use.

The output of the microphone is a 3-pin XLRM-type connector.

The microphone is enclosed in a rugged housing. The included AT8480 shock mount provides superior isolation and permits mounting on any microphone stand with $\frac{5}{8}$ "-27 threads. A custom hard-shell carrying case is also included.

Operation and Maintenance

The AT5047 requires 48V phantom power for operation. Output is low impedance (Lo-Z) balanced. The signal appears across Pins 2 and 3; Pin 1 is ground (shield). Output phase is "Pin 2 hot" — positive acoustic pressure produces positive voltage at Pin 2.

To avoid phase cancellation and poor sound, all mic cables must be wired consistently: Pin 1-to-Pin 1, etc.

An Audio-Technica logo is on the front of the microphone. Position this side of the microphone toward the sound source.

In use, secure the cable to the mic stand or boom, leaving a slack loop at the mic. This will ensure the most effective shock isolation and reduce the possibility of accidentally pulling the microphone out of its mount.

Avoid leaving the microphone in the open sun or in areas where temperatures exceed 110° F (43° C) for extended periods. Extremely high humidity should also be avoided.

How to use the AT8480 shock mount

Before placing the microphone into the AT8480 shock mount, make certain that the locking mechanism on the top of the shock mount is in the unlocked position.

To position the AT5047 into the AT8480 shock mount, insert the microphone directly into the shock mount's front opening with the AT5047 Audio-Technica logo facing outward and the microphone body vertically centered in the shock mount clamps. Firmly press the AT5047 inward until you hear a click and the microphone feels snug in the shock mount. Finally, secure the microphone by turning the lever on the top of the shock mount to the locked position.

To remove, first turn the lever on the top of the shock mount toward the unlocked position. Next, pull the AT5047 directly outward. A slight twisting motion can aid in removing the microphone from the shock mount.

Architect's and Engineer's Specifications

The microphone shall be a large-diaphragm side-address fixed-charge condenser. It shall have a cardioid polar pattern with a uniform 120° angle of acceptance and a frequency response of 20 Hz to 20,000 Hz. The microphone shall operate from an external 48V DC phantom power source. It shall be capable of handling sound input levels up to 148 dB with a dynamic range of 142 dB. Nominal open-circuit output voltage shall be 35.5 mV at 1V, 1 Pascal. Output shall be low impedance balanced (150 ohms).

The output of the microphone shall be a 3-pin XLRM-type connector.

The microphone shall be 165.3 mm (6.51") long and have a maximum body diameter of 57.0 mm (2.24"). Weight shall be 592 grams (20.9 oz). The microphone shall include a shock mount, a stand adapter ($\frac{3}{8}$ "- $\frac{5}{8}$ "), and a protective carrying case.

The Audio-Technica AT5047 is specified.



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Specifications

Element	Fixed-charge back plate, permanently polarized condenser
Polar pattern	Cardioid
Frequency response	20 – 20,000 Hz
Open circuit sensitivity	-29 dB (35.5 mV) re 1V at 1 Pa
Impedance	150 ohms
Maximum input sound level	148 dB SPL, 1 kHz at 1% T.H.D.
Noise ¹	6 dB SPL
Dynamic range (typical)	142 dB, 1 kHz at Max SPL
Signal-to-noise ratio ¹	88 dB, 1 kHz at 1 Pa
Phantom power requirements	48V DC, 2.7 mA typical
Weight	592 g (20.9 oz)
Dimensions	165.3 mm (6.51") long, 57.0 mm (2.24") maximum body diameter
Output connector	Integral 3-pin XLRM-type
Audio-Technica case style	R10
Accessories furnished	AT8480 shock mount for 5/8"-27 threaded stands; 3/8" to 5/8" stand adapter; protective carrying case

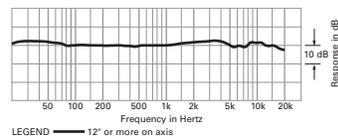
In the interest of standards development, A.T.U.S. offers full details on its test methods to other industry professionals on request.

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

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

Specifications are subject to change without notice.

frequency response: 20–20,000 Hz



polar pattern

