

AT4051b

Cardioid Condenser End-Address Microphone



Features

- **Specially engineered to meet the most critical acoustic requirements of professional recording, broadcast and sound reinforcement**
- **Direct-coupled, balanced output results in a clean signal even under high-output conditions**
- **Transformerless circuitry virtually eliminates low-frequency distortion and provides superior correlation of high-speed transients**
- **Cardioid polar pattern reduces pickup of sounds from the sides and rear, improving isolation of desired sound source**
- **Rugged turned-brass microphone housing for enduring dependability**
- **Integral 80 Hz high-pass filter switch and 10 dB pad switch**
- **State-of-the-art design and manufacturing techniques ensure compliance with A-T's stringent consistency and reliability standards**

Description

The AT4051b is an externally polarized (DC bias) condenser microphone with a cardioid polar pattern. It is designed to meet the most critical acoustic requirements of professional recording, broadcast and sound reinforcement.

The AT4051b consists of two modular subassemblies: an AT4900b-48 body and an AT4051b-EL head capsule (both available separately). Additional interchangeable capsules with omnidirectional (AT4049b-EL) and hypercardioid (AT4053b-EL) pickup patterns are available.

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 for controlling feedback and reducing pickup of unwanted sounds.

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

The microphone is equipped with a switchable 10 dB pad and a switch that permits choice of flat response or low-frequency roll-off (via integral 80 Hz high-pass filter).

The microphone is enclosed in a rugged housing. The included AT8405a stand clamp permits mounting on any microphone stand with $\frac{5}{8}$ "-27 threads. A windscreen and a protective carrying case are also included.

Operation and Maintenance

The AT4051b 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 integral 80 Hz high-pass filter provides easy switching from a flat frequency response to a low-end roll-off. The roll-off position reduces the pickup of low-frequency ambient noise (such as traffic, air-handling systems, etc.), room reverberation and mechanically-coupled vibrations. To engage the high-pass filter, slide the switch toward the "bent" line.

The microphone is also equipped with a switchable 10 dB pad that lowers the microphone's sensitivity, thus providing higher SPL capability for flexible use with a wide range of users and system configurations. To engage the 10 dB pad, slide the switch toward the -10 position.

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.

Architect's and Engineer's Specifications

The microphone shall be an externally polarized (DC bias) 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. It shall be capable of accepting optional interchangeable capsules for additional polar patterns. The microphone shall operate from an external 48V DC phantom power source. It shall be capable of handling sound input levels up to 145 dB (155 dB with 10 dB pad) with a dynamic range of 129 dB. Nominal open-circuit output voltage shall be 19.9 mV at 1V, 1 Pascal. Output shall be low impedance balanced (50 ohms).

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

The microphone shall be equipped with a switchable 10 dB pad and a switch that permits choice of flat response or 80 Hz low-frequency roll-off.

The microphone shall be 155.0 mm (6.10") long and have a diameter of 21.0 mm (0.83"). Weight shall be 126 grams (4.4 oz). The microphone shall include a stand clamp, a windscreen and a protective carrying case.

The Audio-Technica AT4051b is specified.

AT4051b

Specifications

Element	Externally polarized (DC bias) condenser
Polar pattern	Cardioid
Frequency response	20-20,000 Hz
Low frequency roll-off	80 Hz, 12 dB/octave
Open circuit sensitivity	-34 dB (19.9 mV) re 1V at 1 Pa
Impedance	50 ohms
Maximum input sound level	145 dB SPL, 1 kHz at 1% T.H.D. 155 dB SPL, with 10 dB pad (nominal)
Noise¹	16 dB SPL
Dynamic range (typical)	129 dB, 1 kHz at Max SPL
Signal-to-noise ratio¹	78 dB, 1 kHz at 1 Pa
Phantom power requirements	48V DC, 4.8 mA typical
Switches	Flat, roll-off; 10 dB pad (nominal)
Weight	126 g (4.4 oz)
Dimensions	155.0 mm (6.10") long, 21.0 mm (0.83") diameter
Output connector	Integral 3-pin XLRM-type
Optional interchangeable capsules	AT4049b-EL (omnidirectional) AT4053b-EL (hypercardioid)
Audio-Technica case style	S1
Accessories furnished	AT8405a stand clamp for $\frac{5}{8}$ "-27 threaded stands; AT8159 windscreen; 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.

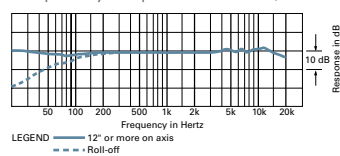
1 Pascal = 10 dynes/cm² = 10 microbars = 94 dB SPL

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

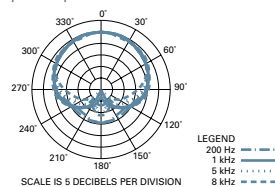
Specifications are subject to change without notice.



frequency response: 20–20,000 Hz



polar pattern



 **audio-technica**

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