



AT831b Cardioid Condenser Lavalier Microphone



Broadcast & Production

Features

- Clip-on lavalier mic provides crisp, full-sounding voice pickup
- Also excels as an instrument mic, especially for pickup of acoustic guitar with included AT8444 instrument adapter
- Excellent gain before feedback and suppression of background noise
- Cardioid polar pattern reduces pickup of sounds from the sides and rear, improving isolation of desired sound source
- Offers the convenience of battery or phantom power operation
- Rugged design and construction for reliable performance
- UniSteep® filter provides a steep low-frequency attenuation to improve sound pickup without affecting voice quality

Description

The AT831b is a miniature clip-on/lavalier condenser microphone with a cardioid polar pattern. It is designed for quality sound reinforcement, professional recording, television and other demanding sound pickup applications.

The microphone is intended to be worn on the clothing or used as an instrument mic for excellent yet unobtrusive sound pickup. The wide-range capability of the microphone ensures clean, accurate reproduction with high intelligibility for speakers and presenters as well as for instrument pickup. Its small size makes it ideal for use in applications where minimum visibility is required.

The microphone requires 11V to 52V phantom power or a 1.5V AA battery for operation. A battery need not be in place for phantom power operation.

The microphone's cardioid polar pattern provides a 120° angle of acceptance.

The microphone includes a 1.8 m (6') permanently attached miniature cable. Its free end connects to the provided AT8531 power module via a TA3F-type connector. The output of the power module is a 3-pin XLRM-type connector.

A 3-position switch in the power module permits choice of off, on/flat response or on/low-roll-off (via integral 80 Hz high-pass UniSteep® filter). The roll-off position reduces the pickup of low-frequency ambient noise.

The microphone comes equipped with a power module, a clothing clip, an instrument adapter, a windscreen, a battery and a protective carrying case.

Operation and Maintenance

The AT831b requires 11V to 52V phantom power or a 1.5V AA battery for operation. A battery need not be in place for phantom power operation.

To install the battery, remove the cap from the top of the power module. Insert a fresh 1.5V AA battery ("+" end toward the cap release button), then reassemble the

power module. For longest battery life, the switch should remain off except when the microphone is in use. Alkaline batteries are recommended for longest life. Remove the battery during long-term storage.

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.

A 3-position switch in the power module permits choice of off, on/flat response, or on/low-roll-off (via integral 80 Hz high-pass UniSteep® filter). The roll-off position reduces the microphone's sensitivity to popping in close vocal use. It also reduces the pickup of low-frequency ambient noise (such as traffic, air-handling systems, etc.), room reverberation and mechanically coupled vibrations. To engage the UniSteep® filter, slide the switch toward the "bent" line. To turn the microphone on without engaging the UniSteep® filter, slide the switch toward the flat line.

For use as a lavalier, attach the microphone about six inches below the chin. Anticipate movements that may cause the microphone to rub against or be covered by clothing, and position the microphone to avoid it.

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 a fixed-charge condenser. It shall have a cardioid polar pattern with a uniform 120° angle of acceptance and a frequency response of 40 Hz to 16,000 Hz. The microphone shall operate from an external 11V to 52V DC phantom power source or, alternatively, from a 1.5V AA/UM3 battery. It shall be capable of handling sound input levels up to 135 dB (phantom) or 121 dB (battery) with a dynamic range of 106 dB (phantom) or 92 dB (battery). Nominal open-circuit output voltage shall be 6.3 mV (phantom) or 5.0 mV (battery) at 1 V, 1 Pascal. Output shall be low impedance balanced (200 ohms – phantom, 270 ohms – battery).

The microphone shall have a 1.8 m (6') permanently attached miniature cable terminating in a TA3F-type output connector. The output connector shall connect to a TB3M-type jack on the included power module. The power module shall house the battery, and shall contain a switch that permits choice of off, on/flat response or on/low-roll-off (80 Hz). The output of the power module shall be a 3-pin XLRM-type connector.

The microphone shall be 25.0 mm (0.98") long and have a diameter of 10.2 mm (0.40"). Weight shall be 2.8 grams (0.1 oz). The microphone shall include a power module, a clothing clip, an instrument adapter, a windscreen, a battery and a protective carrying case. Finish shall be low-reflectance black.

The Audio-Technica AT831b is specified.

AT831b

Specifications

| | |
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| Element | Fixed-charge back plate, permanently polarized condenser |
| Polar pattern | Cardioid |
| Frequency response | 40-16,000 Hz |
| Low frequency roll-off | 80 Hz, 18 dB/octave |
| Open circuit sensitivity | Phantom: -44 dB (6.3 mV) re 1V at 1 Pa Battery: -46 dB (5.0 mV) re 1V at 1 Pa |
| Impedance | Phantom: 200 ohms Battery: 270 ohms |
| Maximum input sound level | Phantom: 135 dB SPL, 1 kHz at 1% T.H.D. Battery: 121 dB SPL, 1 kHz at 1% T.H.D. |
| Dynamic range (typical) | Phantom: 106 dB, 1 kHz at Max SPL Battery: 92 dB, 1 kHz at Max SPL |
| Signal-to-noise ratio¹ | 65 dB, 1 kHz at 1 Pa |
| Phantom power requirements | 11-52V DC, 2 mA typical |
| Battery type | 1.5V AA/UM3 |
| Battery current / life | 0.4 mA / 1200 hours typical (alkaline) |
| Switch | Off, on-flat, on-roll-off |
| Weight | Microphone: 2.8 g (0.1 oz) Power module: 139 g (4.9 oz) |
| Dimensions | Microphone: 25.0 mm (0.98") long, 10.2 mm (0.40") diameter Power module: 84.0 mm (3.31") H x 63.0 mm (2.48") W x 22.0 mm (0.87") D |
| Output connector | Power module: Integral 3-pin XLRM-type |
| Cable | 1.8 m (6') long (permanently attached to microphone), 2.6 mm (0.10") diameter, 2-conductor, shielded cable with TA3F-type connector |
| Audio-Technica case style | M1 |
| Accessories furnished | AT8531 power module; AT8419 clothing clip; AT8444 instrument adapter; AT8116 windscreen; battery; 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.

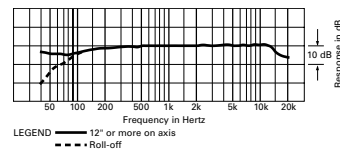
1 Pascal = 10 dynes/cm² = 10 microbars = 94 dB SPL

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

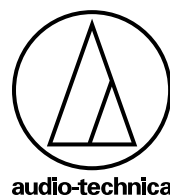
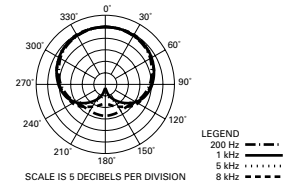
Specifications are subject to change without notice.



frequency response: 40–16,000 Hz



polar pattern



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