

Description

The AT871R is a wide-range condenser microphone with a hemi-cardioid (half-space cardioid) polar pattern. It is useful in surface-mounted applications such as high-quality sound reinforcement, professional recording, television, and other demanding sound pickup applications.

Supplied as a cardioid, the AT871R easily accepts interchangeable elements to permit selection of angle of acceptance from 100° to 360°. The following optional elements are available from an authorized Audio-Technica dealer or the A-T service department: AT853H-ELE hypercardioid, AT853O-ELE omnidirectional, AT853SC-ELE subcardioid.

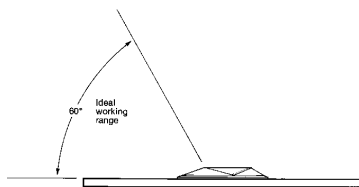
Positioning a properly designed miniature cardioid microphone centrally on a large, flat, unobstructed surface yields several distinct advantages. Directionality is increased by 3 dB, promoting enhanced gain before feedback and further suppression of ambient noise. Sensitivity is increased for improved signal to noise ratio. Phase distortion due to reflected sound energy from the boundary itself is eliminated.

The AT871R is powered from an external 9V to 52V DC phantom power supply. A 25' (7.6 m) cable is provided with TA3F and XLRM-type connectors for use between the microphone and electronics input.

The microphone element is enclosed in a rugged die-cast case and protected by two layers of perforated steel. The combination of heavy die-cast case and rubber non-slip bottom pad minimizes mechanical coupling of surface vibrations to the microphone. The low-profile housing has a low-reflectance black finish. The microphone is also available in white as the AT871RW, with a white-finished microphone housing and cable.

Installation and Operation

The symmetry and area of the mounting surface directly affect the sensitivity of the boundary microphone at low frequencies. Ideally, the mounting surface should be circular; however, square or rectangular surfaces are most often used. If the mounting surface is rectangular, the smaller dimension tends to determine the low-frequency cutoff. The microphone should be centered on the surface and positioned with the front of the microphone facing the sound source along the longer dimension of the mounting surface. The sound source should not be below, or higher than 60° above, the plane of the mounting surface.



Output is low impedance balanced. 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.

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.

Architects and Engineers Specifications

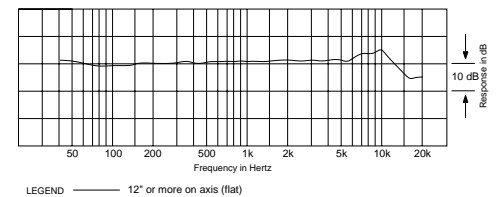
The microphone shall be a fixed-charge condenser with a hemi-cardioid polar pattern designed for use in surface-mount boundary applications. The frequency response shall be 30 Hz to 20,000 Hz. The microphone shall operate from an external 9V to 52V DC phantom power source. Nominal open-circuit output voltage shall be 22.4 mV at 1 kHz, 1 Pascal. Output shall be low impedance balanced (200 ohms).

A 25' (7.6 m) cable with TA3F to XLRM-type connectors shall be supplied for connection between the microphone and electronics input. The microphone shall have a maximum width of 4.72" (120.0 mm) and a maximum length of 5.71" (145.0 mm). Weight shall be 14.6 oz (415 grams). The microphone shall be housed in a die-cast case with a two-layer perforated steel grille. Finish shall be low-reflectance black [white].

The Audio-Technica AT871R [AT871RW] is specified.

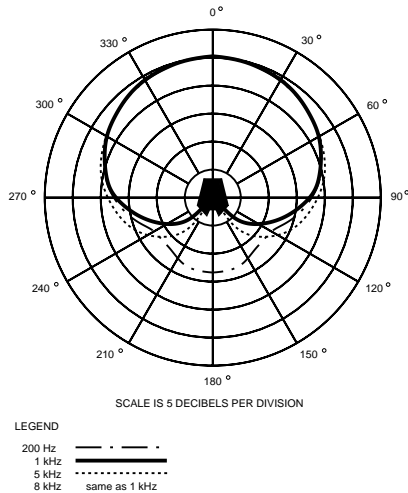
AT871R AT871RW UNIDIRECTIONAL CONDENSER BOUNDARY MICROPHONES

Frequency Response

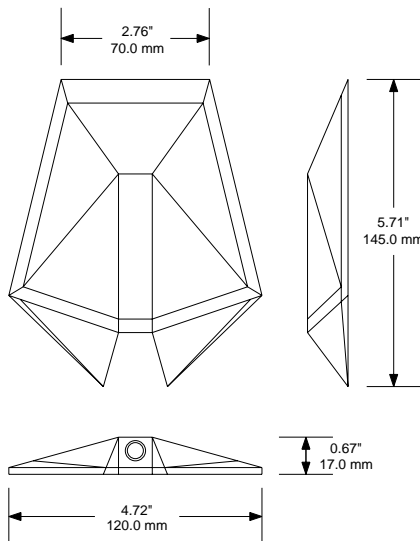


AT871R AT871RW

Polar Pattern



Dimensions



AT871R/AT871RW SPECIFICATIONS†

ELEMENT	Fixed-charge back plate permanently polarized condenser
POLAR PATTERN	Half-cardioid (cardioid in hemisphere above mounting surface)
FREQUENCY RESPONSE	30-20,000 Hz
OPEN CIRCUIT SENSITIVITY	-33 dB (22.4 mV) re 1V at 1 Pa*
IMPEDANCE	200 ohms
MAXIMUM INPUT SOUND LEVEL	130 dB SPL, 1 kHz at 1% T.H.D.
DYNAMIC RANGE (TYPICAL)	103 dB, 1 kHz at Max SPL
SIGNAL-TO-NOISE RATIO¹	67 dB, 1 kHz at 1 Pa*
PHANTOM POWER REQUIREMENTS	9-52V DC, 2 mA typical
WEIGHT (LESS CABLE)	14.6 oz (415 grams)
DIMENSIONS	4.72" (120.0 mm) max width, 5.71" (145.0 mm) max length, 0.67" (17.0 mm) height
OUTPUT CONNECTOR	TB3M-type
CABLE	25' (7.6 m) long, 0.13" (3.2 mm) diameter, 2-conductor, shielded cable with TA3F and XLRM-type connectors
ACCESSORY FURNISHED	Soft protective pouch
OPTIONAL INTERCHANGEABLE ELEMENTS	AT853H-ELE hypercardioid (100°) AT853O-ELE omnidirectional (360°) AT853SC-ELE subcardioid (170°)

† 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.

Optional Accessories:

- CP8201 line matching transformer (Lo-Z to 50,000 ohms).
- AT8202 adjustable in-line attenuator for use with balanced Lo-Z microphones.
- AT8314 2-conductor, shielded, vinyl-jacketed, broadcast-type cable with XLRF-type connector at microphone end, XLRM-type connector at equipment end. Available in 10', 20', 25', 30', 50' & 100' lengths.
- CP8506 four-channel 48V phantom power supply (AC powered).
- AT8801 single-channel 48V phantom power supply (AC powered).

One-Year Limited Warranty

Audio-Technica microphones and accessories purchased in the U.S.A. are warranted for one year from date of purchase by Audio-Technica U.S., Inc. (A.T.U.S.) to be free of defects in materials and workmanship. In event of such defect, product will be repaired promptly without charge or, at our option, replaced with a new product of equal or superior value if delivered to A.T.U.S. or an Authorized Service Center, prepaid, together with the sales slip or other proof of purchase date. **Prior approval from A.T.U.S. is required for return.** This warranty excludes defects due to normal wear, abuse, shipping damage, or failure to use product in accordance with instructions. This warranty is void in the event of unauthorized repair or modification.

For return approval and shipping information, contact the Service Department, Audio-Technica U.S., Inc., 1221 Commerce Drive, Stow, Ohio 44224.

Except to the extent precluded by applicable state law, **A.T.U.S. will have no liability for any consequential, incidental, or special damages; any warranty of merchantability or fitness for particular purpose expires when this warranty expires.**

This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Outside the U.S.A., please contact your local dealer for warranty details.



Audio-Technica U.S., Inc., 1221 Commerce Drive, Stow, Ohio 44224
 Audio-Technica Limited, Old Lane, Leeds LS11 8AG England