

# Engineered Sound®

## Description

The AT845R is a wide-range condenser microphone with an omnidirectional polar pattern. It is designed for unobtrusive table, ceiling or panel-mounted applications for high-quality sound reinforcement, teleconferencing, professional recording, television and other demanding sound pickup applications.

The AT847R is a similar microphone, with a unidirectional polar pattern. Positioning a properly designed miniature unidirectional microphone centrally on a large, flat, unobstructed surface yields several distinct advantages. The directivity factor is greatly increased over a comparable omnidirectional microphone, thus promoting enhanced gain before feedback and further suppressing ambient noise. Sensitivity is increased for improved signal-to-noise ratio. Phase distortion due to reflected sound energy from the boundary itself is eliminated.

Both microphones require 9V to 52V DC phantom power for operation. The microphones are enclosed in a heavy-duty die-cast case and protected by two layers of heavy perforated steel. The low-profile housing has a low-reflectance black finish. The microphones are also available in white, as AT845RW and AT847RW. Isolators are included with each microphone for applications where mechanical isolation from the mounting surface is required.

## Installation and Operation

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.

To mount these microphones in a ceiling or table top *without* the isolators, a  $\frac{13}{16}$ " diameter hole is required. To mount these microphones *with* the isolators, a  $\frac{15}{16}$ " hole is required. The isolators can be placed on either side of the hole for mechanical isolation from the mounting surface.

The Audio-Technica round mark (Ⓐ) on the AT847 bezel indicates the "front" of the microphone.

While a modern fixed-charge condenser microphone is not unduly sensitive to the environment, temperature extremes can be harmful. Exposure to high temperature 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

### AT845R [AT845RW]

The microphone shall be a fixed-charge condenser with an omnidirectional polar pattern designed for use in table, ceiling or panel-mount applications. The frequency response shall be 30 Hz to 20,000 Hz. The microphone shall operate from an external 9V to 52V phantom power source. Nominal open-circuit voltage shall be 7.9 mV at 1 kHz, 1 Pascal. Output shall be low impedance balanced (200 ohms).

The microphone shall have a self-contained power module with an XLRM-type output connector.

The microphone shall have a diameter of 1.10" (28.0 mm) and a length of 2.72" (69.0 mm). Weight shall be 2.1 oz (60 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 AT845R [AT845RW] is specified.

### AT847R [AT847RW]

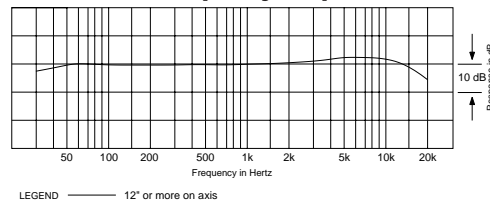
The microphone shall be a fixed-charge condenser with a unidirectional polar pattern designed for use in table-mount applications. The frequency response shall be 30 Hz to 20,000 Hz. The microphone shall operate from an external 9V to 52V phantom power source. Nominal open-circuit output voltage shall be 7.9 mV at 1 kHz, 1 Pascal. Output shall be low impedance balanced (200 ohms).

The microphone shall have a self-contained power module with an XLRM-type output connector.

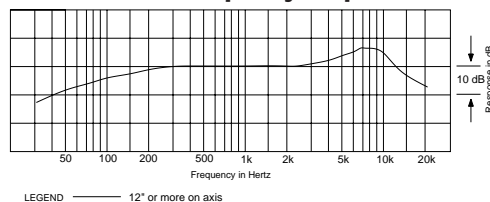
The microphone shall have a maximum diameter of 1.18" (30.0 mm) and a length of 2.72" (69.0 mm). Weight shall be 2.2 oz (62 grams). The microphone shall be housed in a die-cast case with a two-layer perforated steel grille. Finish shall be low-reflectance black [white].

The Audio-Technica AT847R [AT847RW] is specified.

### AT845R Frequency Response



### AT847R Frequency Response



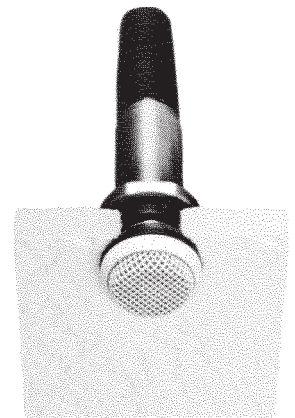
## AT845R/RW

Omnidirectional

## AT847R/RW

Cardioid

Condenser  
Boundary  
Microphones



audio-technica®

# AT845R/RW AT847R/RW

## AT845R, AT847R Specifications†

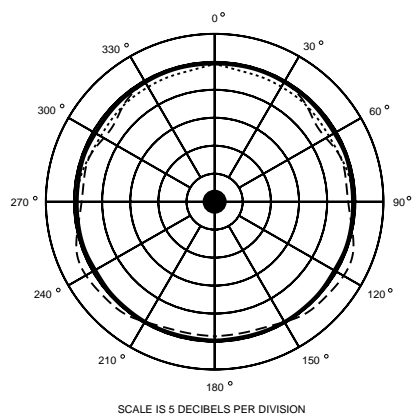
<b>Element</b>		Fixed-charge back plate permanently polarized condenser
<b>Polar Pattern</b>	AT845R AT847R	Omnidirectional Unidirectional (Cardioid in hemisphere above mounting surface)
<b>Frequency Response</b>		30-20,000 Hz
<b>Open Circuit Sensitivity</b>		-42 dB (7.9 mV) re 1V at 1 Pa*
<b>Impedance</b>		200 ohms
<b>Maximum Input Sound Level</b>		142 dB SPL, 1 kHz at 1% T.H.D.
<b>Dynamic Range (Typical)</b>	AT845R AT847R	112 dB, 1 kHz at Max SPL 113 dB, 1 kHz at Max SPL
<b>Signal-to-noise Ratio<sup>1</sup></b>	AT845R AT847R	64 dB, 1 kHz at 1 Pa* 65 dB, 1 kHz at 1 Pa*
<b>Phantom Power Requirements</b>		9-52V DC, 2 mA typical
<b>Weight</b>	AT845R AT847R	2.1 oz (60 grams) 2.2 oz (62 grams)
<b>Dimensions</b>	AT845R AT847R	1.10" (28.0 mm) dia, 2.72" (69.0 mm) length 1.18" (30.0 mm) dia, 2.72" (69.0 mm) length
<b>Output Connector</b>		Integral 3-pin XLRM-type
<b>Accessory Furnished</b>		One pair isolators

† 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/cm<sup>2</sup> = 10 microbars = 94 dB SPL

<sup>1</sup> Typical, A-weighted, using Audio Precision System One.

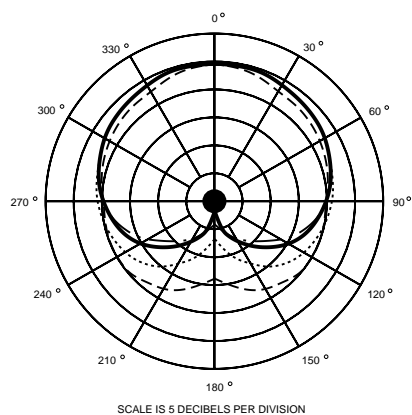
### AT845R Polar Pattern



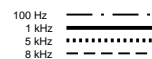
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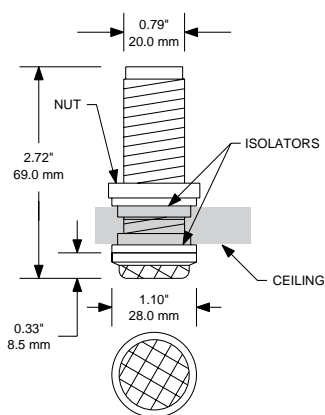
### AT847R Polar Pattern



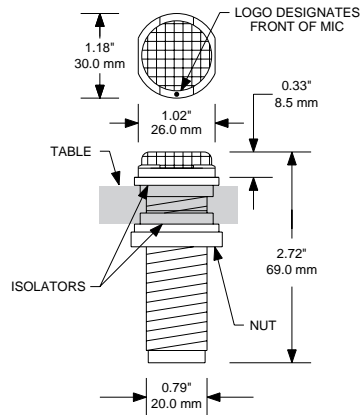
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### AT845R Dimensions



### AT847R Dimensions



### 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.

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