

# ES931H/MIC & ES931WH/MIC



## Hypercardioid Condenser Gooseneck Microphones

engineered sound® microphones



### Features

- **Uniform hypercardioid polar pattern with 100° acceptance angle**
- **Low-profile design with low-reflectance finish for minimum visibility**
- **Superior off-axis rejection for maximum gain before feedback**
- **UniGuard® RFI-shielding technology offers outstanding rejection of radio frequency interference (RFI)**
- **Easy-to-adjust, rugged, small-diameter gooseneck with virtually no “memory” permits quick positioning into desired shape**
- **Available interchangeable elements permit angle of acceptance from 90° to 360°**
- **Ideal for boardrooms, school and government settings, teleconferencing, houses of worship and other installed applications**
- **Available in two colors: black (ES931H/MIC) and white (ES931WH/MIC)**

### Description

The ES931H/MIC is a wide-range miniature condenser microphone with a hypercardioid polar pattern. It is designed for quality sound reinforcement. The small-diameter gooseneck design permits highly flexible positioning while maintaining a smooth, well-contoured appearance. The combination of small size and excellent response makes the microphone ideal for boardrooms, school and government settings, teleconferencing, houses of worship and other installed applications.

The microphone requires a compatible Audio-Technica power module (not included) for operation.

The microphone is equipped with UniGuard® RFI-shielding technology, which offers outstanding rejection of radio frequency interference (RFI).

The microphone's hypercardioid polar pattern provides a 100° angle of acceptance. Additional interchangeable elements with omnidirectional (360°), cardioid (120°) and MicroLine® (90°) pickup patterns are available.

The microphone's free end connects to a compatible Audio-Technica power module (not included) via a special TA3F-type connector designed to optimize RFI immunity.

The microphone is enclosed in a rugged housing with a low-reflectance black finish and comes equipped with a two-stage foam windscreen. It is also available with white housing and windscreen as the ES931WH/MIC.

### Installation and Operation

The ES931H/MIC requires a compatible Audio-Technica power module (not included) for operation.

A uniform 100° angle of acceptance provides well-balanced audio pickup. The microphone should be located forward of the front-most source, above the rear-most source, and “aimed” between them. Increasing the height of the mic above the sources will tend to equalize sound levels between them, but may also increase background/reverberant sound pickup. When possible, the distance from the mic to the rear-most source should be no more than twice the distance to the front source, to maintain front-to-rear balance.

Width of pickup is approximately 2.5 times the distance to the closest source. If additional mics are needed for wide sources, they should be positioned apart laterally at least 2.5 times the distance to the front source, to avoid phase cancellation (Fig. 1).

The provided two-stage foam windscreen simply snaps over the head of the microphone, effectively reducing noise from wind or ventilation air currents.

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.

**Note:** Audio-Technica has developed a special RFI-shielding mechanism, which is an integral part of the connectors in the Engineered Sound® line. If you remove or replace the connector, you may adversely affect the unit's RFI immunity.

### Architect's and Engineer's Specifications

The microphone shall be a fixed-charge condenser designed for permanent installation or portable applications. It shall have a hypercardioid polar pattern with a uniform 100° angle of acceptance and a frequency response of 80 Hz to 20,000 Hz. It shall be capable of accepting optional interchangeable elements for additional polar patterns. The microphone shall operate from an Audio-Technica power module (not included). It shall be capable of handling sound input levels up to 138 dB with a dynamic range of 109 dB. Nominal open-circuit output voltage shall be 10.0 mV at 1V, 1 Pascal. It shall offer outstanding rejection of radio frequency interference (RFI).

The microphone shall incorporate a special TA3F-type output connector designed to optimize RFI immunity.

A two-stage foam windscreen shall be included.

The microphone shall be a small-diameter gooseneck design, with an overall length (with capsule) of 152.4 mm (6.0") and a head diameter of 8.4 mm (0.33"). Weight shall be 39 grams (1.4 oz). The microphone shall be black [white].

The Audio-Technica ES931H/MIC [ES931WH/MIC] is specified.

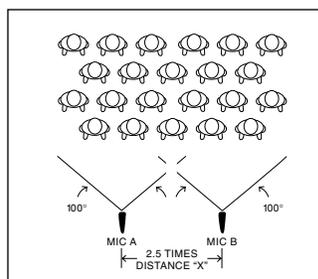
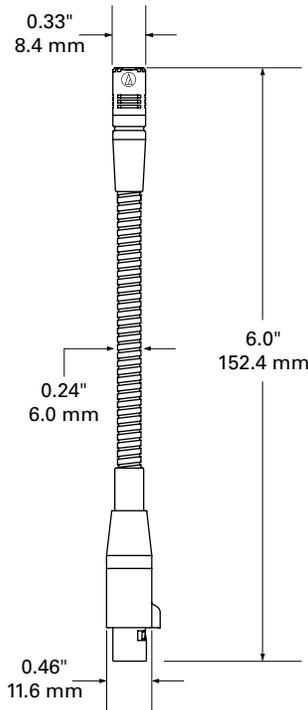


Figure 1

# ES931H/MIC & ES931WH/MIC



## Specifications

<b>Element</b>	Fixed-charge back plate, permanently polarized condenser
<b>Polar pattern</b>	Hypercardioid
<b>Frequency response</b>	80-20,000 Hz
<b>Open circuit sensitivity</b>	-40 dB (10.0 mV) re 1V at 1 Pa
<b>Maximum input sound level</b>	138 dB SPL, 1 kHz at 1% T.H.D.
<b>Dynamic range (typical)</b>	109 dB, 1 kHz at Max SPL
<b>Signal-to-noise ratio<sup>1</sup></b>	65 dB, 1 kHz at 1 Pa
<b>Weight</b>	39 g (1.4 oz)
<b>Dimensions</b>	152.4 mm (6.0") long (with capsule), 8.4 mm (0.33") head diameter, 11.6 mm (0.46") base diameter
<b>Output connector</b>	TA3F-type
<b>Optional interchangeable elements</b>	ESE-O omnidirectional (360°) ESE-C cardioid (120°) ESE-ML MicroLine® (90°)
<b>Audio-Technica case style</b>	M41
<b>Accessories furnished</b>	<b>ES931H/MIC</b> AT8109 two-stage foam windscreen <b>ES931WH/MIC</b> AT8109(WH) two-stage foam windscreen
<b>Compatible power modules</b>	AT8534 wall/ceiling plate power module; AT8538 power module; ATND8734 network audio microphone power module

Specifications derived by using AT8538 power module.

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

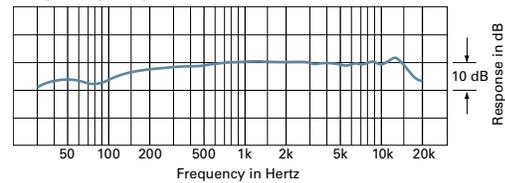
1 Pascal = 10 dynes/cm<sup>2</sup> = 10 microbars = 94 dB SPL

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

Specifications are subject to change without notice.

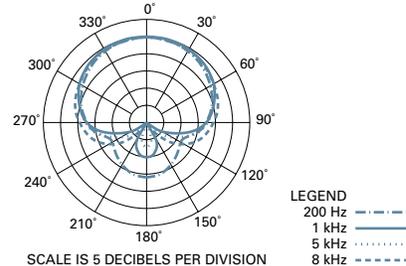


frequency response: 80–20,000 Hz



LEGEND — 12" or more on axis

polar pattern



 **audio-technica**

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