

U853A & U853AW



Cardioid Condenser Hanging Microphones

unipoint® microphones



Features

- Offers the convenience of battery or phantom power operation
- Uniform cardioid polar pattern with 120° 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)
- UniSteep® filter provides a steep low-frequency attenuation to minimize pickup of undesired ambient noise
- Available interchangeable elements permit angle of acceptance from 90° to 360°
- Steel hanger positions microphone over choirs, instrumental groups and theater stages
- Available in two colors: black (U853A) and white (U853AW)

Description

The U853A is a wide-range miniature condenser microphone with a cardioid polar pattern. It is designed for quality sound reinforcement, professional recording, television and other demanding sound pickup applications. The combination of small size and excellent response makes the microphone ideal for suspension over choirs, instrumental groups or theater stages.

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

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

The microphone includes a 7.6 m (25') permanently attached miniature cable. Its free end connects to the provided AT8531 power module via a special TA3F-type connector designed to optimize RFI immunity. 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 vinyl-coated steel hanger for positioning over a choir/orchestra/stage, a two-stage

foam windscreen, a $\frac{5}{8}$ "-27 stand adapter and a battery. The microphone is enclosed in a rugged housing with a low-reflectance black finish. It is also available with white housing, cable, hanger and windscreen as the U853AW.

Installation and Operation

The U853A 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.

A uniform 120° 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 (Fig. 1). 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 (Fig. 1).

Width of pickup is approximately three times the distance to the closest performer. If additional mics are needed for wide sources, they should be positioned apart laterally at least three times the distance to the front source, to avoid phase cancellation (Fig. 2).

To orient the microphone in the proper direction, twist the housing slightly in its wire holder. (Clockwise rotation moves the microphone to the right; counterclockwise rotation moves it to the left.)

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.

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

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 (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.

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.

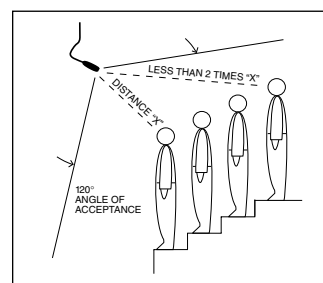


Figure 1

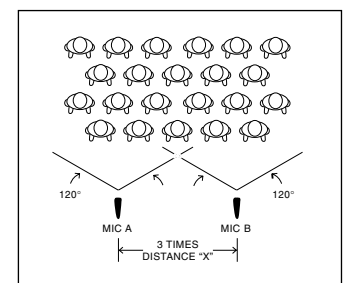


Figure 2

U853A & U853AW

Note: Audio-Technica has developed a special RFI-shielding mechanism, which is an integral part of the connectors in the UniPoint® line. If you remove or replace the connector, you may adversely affect the unit's RFI immunity. Audio-Technica offers a crimp tool (ATCT) and RFI shields that enable you to shorten the cable and correctly reinstall the connector while maintaining the highest level of RFI immunity.

Architect's and Engineer's Specifications

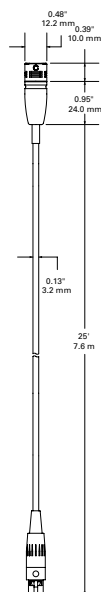
The microphone shall be a fixed-charge condenser designed for permanent installation or portable applications. It shall have a cardioid polar pattern with a uniform 120° angle of acceptance and a frequency response of 30 Hz to 20,000 Hz. It shall be capable of accepting optional interchangeable elements for additional polar patterns. 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 133 dB (phantom) or 123 dB (battery) with a dynamic range of 109 dB (phantom) or 99 dB (battery). Nominal open-circuit output voltage shall be 7.9 mV (phantom) or 7.0 mV (battery) at 1 V, 1 Pascal. Output shall be low impedance balanced (200 ohms – phantom, 270 ohms – battery). It shall offer outstanding rejection of radio frequency interference (RFI).

The microphone shall have a 7.6 m (25') permanently attached miniature cable terminating in a special TA3F-type output connector designed to optimize RFI immunity. 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.

An adjustable steel wire hanger shall be provided for suspended installations. The steel wire hanger shall attach to the microphone body and allow for the positioning of the microphone without the need for tools. A two-stage foam windscreen, a 5/8"-27 stand adapter and a battery shall also be included.

The microphone shall be a hanging design, with an overall length of 34.0 mm (1.34") and a head diameter of 12.2 mm (0.48"). Weight shall be 14 grams (0.5 oz) without cable. The microphone, cable and steel hanger shall be black [white].

The Audio-Technica U853A [U853AW] is specified.



Specifications

Element	Fixed-charge back plate, permanently polarized condenser
Polar pattern	Cardioid
Frequency response	30-20,000 Hz
Low frequency roll-off	80 Hz, 18 dB/octave
Open circuit sensitivity	Phantom: -42 dB (7.9 mV) re 1V at 1 Pa Battery: -43 dB (7.0 mV) re 1V at 1 Pa
Impedance	Phantom: 200 ohms Battery: 270 ohms
Maximum input sound level	Phantom: 133 dB SPL, 1 kHz at 1% T.H.D. Battery: 123 dB SPL, 1 kHz at 1% T.H.D.
Dynamic range (typical)	Phantom: 109 dB, 1 kHz at Max SPL Battery: 99 dB, 1 kHz at Max SPL
Signal-to-noise ratio¹	70 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: 14 g (0.5 oz) Power module: 139 g (4.9 oz)
Dimensions	Microphone: 34.0 mm (1.34") long, 12.2 mm (0.48") 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	7.6 m (25.0') long (permanently attached to microphone), 3.2 mm (0.13") diameter, 2-conductor, shielded cable with TA3F-type connector
Optional interchangeable elements	UE-O omnidirectional (360°) UE-H hypercardioid (100°) UE-UL UniLine® (90°)
Audio-Technica case style	M12
Accessories furnished U853A	AT8531 power module; AT8451 steel hanger; AT8153 two-stage foam windscreen; AT8438 5/8"-27 stand adapter; battery
U853AW	AT8531 power module; AT8451(WH) steel hanger; AT8153 (WH) two-stage foam windscreen; AT8438 5/8"-27 stand adapter; battery

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

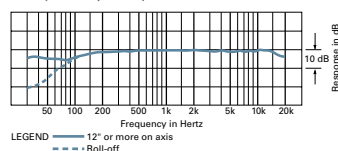
1 Pascal = 10 dynes/cm² = 10 microbars = 94 dB SPL

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

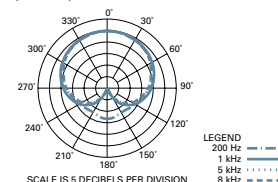
Specifications are subject to change without notice.



frequency response: 30–20,000 Hz



polar pattern



audio-technica

Audio-Technica U.S., Inc., 1221 Commerce Drive, Stow, Ohio 44224
Audio-Technica Limited, Old Lane, Leeds LS11 8AG England
©2010 Audio-Technica U.S., Inc. audio-technica.com

0001-0155-01