

# AT4041

## CARDIOID CAPACITOR MICROPHONE



### Description

The AT4041 is a pressure-gradient capacitor microphone with a uniform cardioid polar pattern. The frequency response is smooth over the AT4041's extended 20-20,000 Hz range, with a slight rise occurring in the high-frequency region. It is recommended for professional recording and critical applications in broadcast.

The AT4041 features a transformerless output for low self-noise, high output and a very high SPL (sound pressure level) handling capability. The balanced output is direct-coupled, resulting in a clean signal even under high-output conditions. The microphone is totally free of the distortion associated with conventional transformer-coupled outputs. The microphone will accept as high as a 145 dB SPL before producing 1% T.H.D. Sounds which approach this intensity may require the use of an attenuator between the microphone and electronics to avoid overloading the input stage due to excess signal strength.

The back plate of the AT4041 element holds a fixed charge and has been aged to provide energy stabilization. The surface of the back plate has been precision-milled to ensure maximum charge linearity. The result is a reduction in both frequency response peaks and diaphragm break-up distortion.

The Audio-Technica fixed-charge capacitor element design allows significant diaphragm weight reduction relative to earlier charged-diaphragm electret designs. The low-mass diaphragm improves transient response, increases response bandwidth and reduces handling and mechanical noise transfer.

An integral hi-pass filter provides easy switching from a flat frequency response to a low-end roll-off. The hi-pass switch is recessed to prevent accidental activation. The hi-pass position reduces the microphone's sensitivity to wind noise, "popping" in close vocal use, and handling noise. It reduces the pickup of low-frequency ambient noise (such as air-handling systems, traffic, etc.) and room reverberation. The hi-pass filter may also be used to compensate for proximity effect in close-miking situations. Use of the supplied foam windscreen will also help reduce wind and "popping" noise. For the ultimate in wind and "popping" protection, use an AT8106 pop filter in combination with an AT8114 windscreen.

A rugged microphone, the AT4041 is housed in a case constructed of turned brass, not thin-wall aluminum. The surface is painted black for low reflectivity.

### Operation and Maintenance

The AT4041 will operate in conjunction with any remote "phantom" or "simplex" power source supplying 48 volts DC, such as the AC-powered Audio-Technica CP8506 that can accommodate up to four microphones.

While a modern fixed-charge capacitor 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 areas where the temperature exceeds 110° F (43° C) for appreciable periods of time. Extremely high humidity should also be avoided if possible.

### Architects and Engineers Specifications

The microphone shall be a fixed-charge capacitor with a cardioid polar pattern and a frequency response of 20 to 20,000 Hz. It shall operate from an external 48V DC phantom power source.

Nominal open-circuit output voltage shall be 15.8 mV at 1 kHz, 1 Pascal. The microphone shall have an output impedance of 100 ohms and output shall be balanced. The microphone shall accept a 145 dB SPL at 1 kHz while producing no greater than 1% T.H.D.

The case shall be turned brass and have a diameter of 0.83" (21.0 mm), a length of 6.28" (159.5 mm), and a weight of 4.2 oz (120 g). Finish shall be black paint.

The Audio-Technica AT4041 is specified.



# AT4041

## Specifications†

ELEMENT	Fixed-charge, permanently polarized capacitor
POLAR PATTERN	Cardioid (Unidirectional)
FREQUENCY RESPONSE	20-20,000 Hz
OPEN CIRCUIT SENSITIVITY (1 kHz)	-36 dB (15.8 mV) $\pm$ 2 dB, re 1V at 1 Pa* <sup>1</sup>
IMPEDANCE	100 ohms
MAXIMUM INPUT SOUND LEVEL	145 dB SPL, 1 kHz at 1% T.H.D.
DYNAMIC RANGE, TYPICAL	121 dB, 1 kHz at Max SPL
SIGNAL-TO-NOISE RATIO, TYPICAL	70 dB, 1 kHz at 1 Pa*
HI-PASS FILTER (LOW-END ROLL-OFF)	80 Hz, 12 dB/octave
POWER REQUIREMENTS	48V DC phantom ( $\pm$ 4V)
CURRENT CONSUMPTION, TYPICAL	3.2 mA
WEIGHT (LESS CABLE AND CLAMP)	4.2 oz (120 g)
DIMENSIONS	6.28" (159.5 mm) long, 0.83" (21.0 mm) maximum body diameter
ACCESSORIES FURNISHED	AT8405 snap-in clamp for standard 5/8"-27 threaded stands; foam windscreen; 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/cm<sup>2</sup> = 10 microbars = 94 dB SPL

<sup>1</sup> Measured at diaphragm

## Optional Accessories:

- AT8106 metal-frame pop filter.
- AT8114 foam windscreen for AT8106 pop filter.
- AT8314 2-conductor, shielded, vinyl-jacketed, broadcast-type cable with XLR-type connector at microphone end, XLRM-type connector at equipment end. Available in 10', 20', 25', 30', 50' & 100' lengths.
- AT8407 universal "clothes-pin" stand clamp fits both tapered and cylindrical microphones.
- AT8410a shock mount for boom or stand operation. Universal "clothes-pin" clamp fits tapered and cylindrical microphones.
- AT8415 shock mount for boom or stand operation.
- CP8506 four-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, or removal or defacing of the product labeling.

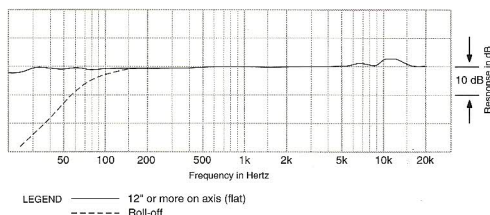
For return approval and shipping information, contact the Service Department, Audio-Technica U.S., Inc., 1221 Commerce Drive, Stow, Ohio 44224.

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.**

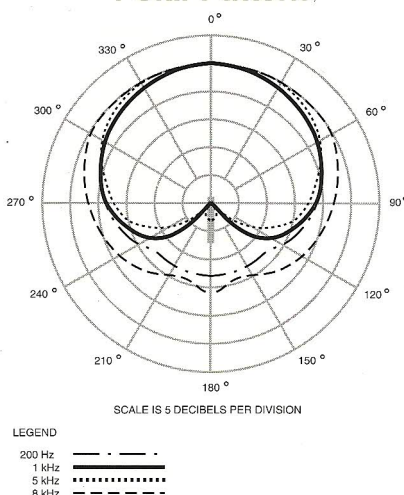
This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

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

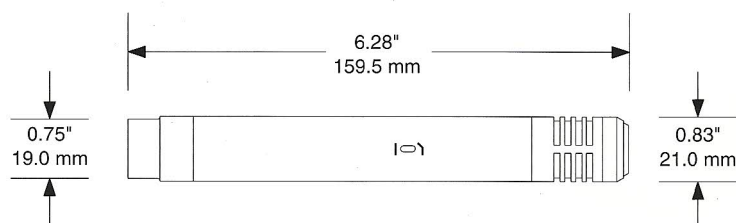
## Frequency Response



## Polar Pattern



## Dimensions



**audio-technica®**

Audio-Technica U.S., Inc., 1221 Commerce Drive, Stow, Ohio 44224

Audio-Technica Limited, Old Lane, Leeds LS11 8AG England

Form No. 0345-0813-00 © 1995 Audio-Technica U.S., Inc. Printed in U.S.A.