



MODEL 378B02

1/2" PREPOLARIZED FREE-FIELD MICROPHONE



USE OF MODEL 378B02

Model 378B02 is a 1/2 in (12 mm) prepolarized microphone and preamplifier combination for applications where the audible range frequencies need to be accurately measured in areas free of reflective surfaces. The high sensitivity allows for low amplitudes to 15.5 dB(A) to be tested. The 378B02 is suited for a wide variety of auto, aerospace, and R & D applications making it one of the best selling microphones.

Acoustic pressure waves may be altered by objects in the sound field including the microphone itself. The 378B02 corrects for its own presence, providing more accurate measurements within a free-field.

POLARIZATION VOLTAGE – ICP® (0V) PREPOLARIZED

PCB® is the inventor of ICP® sensor power technology. All manufacturers of IEC 61094-4 compliant prepolarized (0V) microphones use the technology that PCB developed. Prepolarized microphones operate on 2-20 mA constant current supply and use coaxial cables resulting in significant per channel cost savings over the PCB 200V models. Other ICP® compatible sensors such as accelerometers, force, strain, and pressure sensors use the same power supplies and cables as prepolarized microphones, further reducing set-up time and initial investment costs.

- Sensitivity: 50 mV/Pa (± 1.5 dB)
- Frequency: 3.75 Hz – 20 kHz (± 2 dB)
- Dynamic range: 15.5 dB(A) – 146 dB

TYPICAL APPLICATIONS

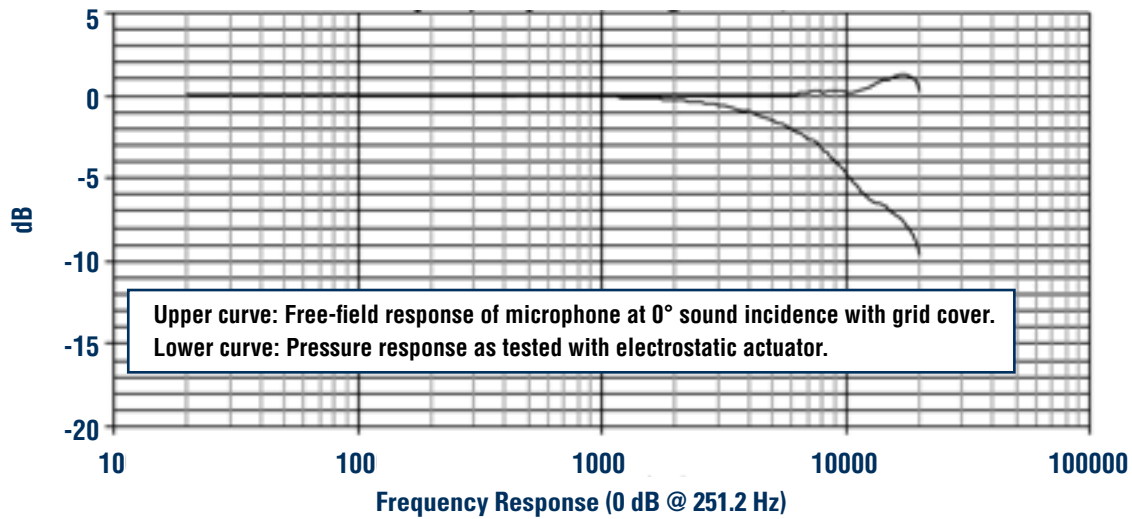
- Precision sound level measurements
- Transfer path analysis
- Environmental noise monitoring
- White goods tests in anechoic chambers

STANDARDS COMPLIANCE

- IEC 61094-4 WS2F compliant, and designed to be used in an IEC 61672 Class 1 compliant system for sound level meter use
- Calibration reference microphone traceable to NIST, PTB or DFM National Labs
- PCB calibration service accredited to ISO 17025, ANSI-Z540.3 by A2LA or ILAC

PCB® QUALITY COMMITMENT

PCB is uniquely equipped with a state of the art, CNC machining facility, allowing control over quality, pricing, and delivery. Investments in clean rooms, anechoic, and environmental test chambers, combined with our rigorous testing and aging process, ensures our products will survive in demanding environmental conditions. PCB has the industry's best 5-year warranty with a "Total Customer Satisfaction" policy.



378B02 PREPOLARIZED FREE-FIELD MICROPHONE SYSTEM		
Nominal Microphone Diameter	in (mm)	1/2 (12)
Sensitivity at 250 Hz (± 1.5 dB)	mV/Pa (dB re 1 V/Pa)	50 (-26)
Frequency Range (± 2 dB)	Hz	3.75 - 20,000
Frequency Range (± 1 dB)	Hz	7 - 10,000
Cartridge Thermal Noise (Microphone)	dB[A] re 20 μ Pa	15
Inherent Noise with 426E01 Preamp	dB[A] re 20 μ Pa	15.5
Harmonic Distortion Limit: 3%	dB re 20 μ Pa	147
Distortion Limit with 426E01 Preamp	dB re 20 μ Pa	137
Environmental Specifications		
Operating Temperature Range Microphone	$^{\circ}$ F ($^{\circ}$ C)	-40 to +302 (-40 to +150)
Operating Temp. with 426E01 Preamp	$^{\circ}$ F ($^{\circ}$ C)	-40 to +176 (-40 to +80)
Operating Temp. with HT426E01 Preamp	$^{\circ}$ F ($^{\circ}$ C)	-40 to +257 (-40 to +125)
Electrical Specifications		
Polarization Voltage	V	0
Constant Current Excitation	mA	2 - 20
Physical Specifications		
Size (Diameter x Length with Grid)	in (mm)	0.52 x 3.62 (13.2 x 91.9)
Connector	Coaxial	BNC Jack

* all specifications typical unless otherwise noted

OPTIONAL ACCESSORIES

- **426A10** – 1/2" preamplifier with 20 Hz high pass filter
- **426A11** – 1/2" preamplifier with gain and filter switches
- **HT426E01** – 1/2" preamplifier, high temperature (125° C)
- **079A06** – 1/2" microphone windscreen
- **079A11** – 1/2" microphone holder
- **079A15** – tripod microphone stand with boom arm
- **079B16** – miniature microphone stand
- **079A18** – clamp on flexible extension arm
- **079B21** – 1/2" nose cone
- **079C23** – microphone holder with swivel mount
- **CAL200** – handheld calibrator
- **ACS-63** – microphone system calibration



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PCB Piezotronics, Inc. is a designer and manufacturer of microphones, vibration, pressure, force, torque, load, and strain sensors, as well as the pioneer of ICP® technology used by design engineers and predictive maintenance professionals worldwide for test, measurement, monitoring, and control requirements in automotive, aerospace, industrial, R&D, military, educational, commercial, OEM applications, and more. With a worldwide customer support team, 24-hour SensorLineSM, and a global distribution network, PCB® is committed to Total Customer Satisfaction. Visit www.pcb.com for more information. PCB Piezotronics, Inc. is a wholly owned subsidiary of MTS Systems Corporation. Additional information on MTS can be found at www.mts.com.

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