



# 1/2" Free-Field Prepolarized Microphone and Preamplifier

Model 378A07 is recommended for high accuracy applications where extreme low frequency measurements are required.



## Applications

- Environmental testing
- Wind turbine measurements
- Earthquake and tornado analysis
- Sonic boom measurements
- General purpose low frequency noise measurements

## Standards Compliance

The 377A07 microphone used in the 378A07 system complies with the following industry standards:

- IEC 61094-4 WS2F
- IEC 61672 class 1 compliant for premium sound level meter use
- IEC 60651 type 1 compliant
- Calibration reference microphone traceable through PTB, compliant with ISO 9001 & 17025, A2LA, ILAC approved

## Model 378A07 Free-Field microphones

Model 378A07 is comprised of a 1/2" (12mm) 377A07 prepolarized microphone, a 426E01 preamplifier, and a low frequency filter adapter, Model 079A43. For applications measuring infrasound (below the human hearing threshold) the 378A07 provides the capability to measure down to 0.1 Hz (-3dB).

Acoustic pressure waves may be altered by objects in the sound field including the measurement microphone. To correct for this, free-field microphones are calibrated to compensate for their own presence. This provides more accurate measurements.

## Polarization Voltage (0V)

PCB® is the inventor of ICP® sensor power technology. Model 378A07 operates on this same ICP® sensor power, or any 2-20 mA constant current power supply. This modern design is preferred for portable measurements or operation in high humidity applications. Because the 378A07 uses the same power supply and coaxial cables as other ICP® sensors, cost savings and set-up times reductions can be achieved.

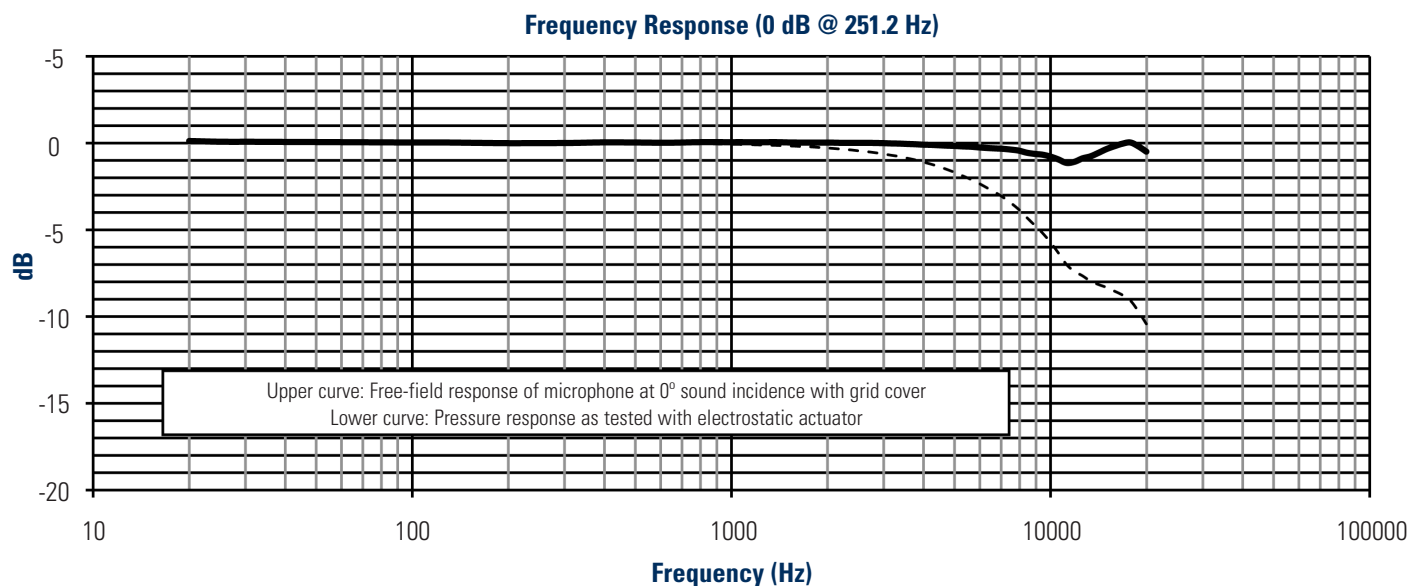
## PCB Quality Commitment

PCB Piezotronics acoustic products are used by some of the largest automotive, aerospace & defense, electronic, and consumer goods manufacturers. PCB® uses only the highest quality material and components for its microphones. While other manufacturers outsource their manufacturing, PCB has invested heavily in on-going employee training as well as in a state of the art, in-house CNC machining facility. This allows us to control all factors that affect quality and delivery. PCB has also invested in a clean room, anechoic room, and environmental test chambers to test and provide quality products. Rigorous environmental testing and aging process ensures that our products will survive in demanding temperature or humidity conditions.

PCB microphones are backed by a best in class, 5 year warranty and our "Total Customer Satisfaction" (TCS) no risk policy. Application support is available from the 24 Hour SensorLine<sup>SM</sup>.



## 1/2" Free-Field Prepolarized Microphone and Preamplifier



### Specifications - 1/2" Low Frequency Microphone Model 378A07

Acoustic	
Nominal Microphone Diameter	1/2" (12mm)
Polarization Voltage	0V (prepolarized)
Open Circuit Sensitivity (at 250 Hz)	5.8 mV/Pa
Open Circuit Sensitivity (re 1 V/Pa)	-44.7 dB (±3 dB)
Frequency range (±2 dB)	0.13 to 20,000 Hz
Minimum Frequency range (±3 dB)	< 0.1 Hz
Distortion Limit (3% distortion)	134 dB
Cartridge Thermal Noise	20 dB(A)
Pressure Equalization Vent	Rear Vented
Environmental	
Operating Temperature Range	-40 to 176 °F (-40 to 80 °C)
Influence of Axial Vibration (0.1g (1 m/s <sup>2</sup> ))	63 dB re 20 µPa
Physical	
Size (Diameter x Height (without grid))	0.50" x 4.25" (12.7 x 108 mm)
Size (Diameter x Height (with grid))	0.52" x 4.29" (13.2 x 109 mm)
Mating Cable Connectors	BNC Jack
Mounting Thread (to Preamplifier)	0.5" (12mm) - 60 UNS

### TEDS Microphone & Preamplifier Combination:

- 378A07 – TEDS programmed to the IEEE 1451.4 standard for SMART transducers, V 1.0 format

### TEDS microphone and preamplifier combinations:

- 378A07 – TEDS 0.9 microphone and preamplifier
- TLD378A07 – TEDS 1.0 microphone and preamplifier

### Optional accessories:

- 079A06 – windscreen for 1/2" microphones
  - 079A11 – 1/2" microphone holder
  - 079A15 – tripod microphone stand with boom arm
  - 079A16 – miniature microphone stand
  - 079A18 – clamp on flexible extension arm
  - 079B21 – 1/2" Nose Cone for wind tunnel testing
  - 079B23 – microphone holder with swivel mount
  - CAL200 – handheld calibrator
  - CAL250 – handheld calibrator
  - ACS-20 – microphone calibration
  - ACS-42 – microphone and preamplifier system calibration
  - HT426E01 – High temperature preamplifier to 250 °F (80 °C)
- A2LA, ILAC Accredited initial calibration chart included.



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**PCB Piezotronics Test & Measurement** Acoustic products consists of microphones, preamplifiers, and accessories for noise testing, pressure mapping, holography, NVH, beamforming, arrays and general sound measurements. Additional Test & Measurement products include pressure, force, load, strain, torque, acceleration, shock, vibration, and electronics. PCB® products are used for product design and development, consumer product testing, quality assurance, civil structure monitoring, research and development, education and engineering applications. All products are backed by our **Total Customer Satisfaction** policy, which guarantees your satisfaction or your money refunded.

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