Model 378C20 is a 1/2 in (12 mm) prepolarized random incidence response microphone and preamplifier combination. The 378C20 has a low noise floor and flat response in diffuse field applications where low sound pressure levels need to be measured accurately in the presence of acoustic reflections.

Acoustic pressure waves may be altered by objects in the sound field including the microphone itself. The 378C20 corrects for its own presence, providing more accurate measurements within a diffuse field.

**TYPICAL APPLICATIONS**
- Cabin measurements
- Environmental testing
- Room acoustics
- Tests within reverb chambers

**STANDARDS COMPLIANCE**
- IEC 61094-4 WS2D 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

**USE OF MODEL 378C20**

Model 378C20 is a 1/2 in (12 mm) prepolarized random incidence response microphone and preamplifier combination. The 378C20 has a low noise floor and flat response in diffuse field applications where low sound pressure levels need to be measured accurately in the presence of acoustic reflections.

Acoustic pressure waves may be altered by objects in the sound field including the microphone itself. The 378C20 corrects for its own presence, providing more accurate measurements within a diffuse 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.
**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.

---

**378C20 PREPOLARIZED RANDOM INCIDENCE MICROPHONE SYSTEM**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Microphone Diameter</td>
<td>1/2 (12)</td>
</tr>
<tr>
<td>Sensitivity at 250 Hz (± 1.5 dB) mV/Pa (dB re 1 V/Pa)</td>
<td>50 (-26)</td>
</tr>
<tr>
<td>Frequency Range (± 2 dB) Hz</td>
<td>3.75 - 16,000</td>
</tr>
<tr>
<td>Cartridge Thermal Noise (Microphone) dBA re 20 μPa</td>
<td>14</td>
</tr>
<tr>
<td>Inherent Noise with 426E01 Preamp dBA re 20 μPa</td>
<td>16</td>
</tr>
<tr>
<td>Harmonic Distortion Limit: 3% dB re 20 μPa</td>
<td>146</td>
</tr>
<tr>
<td>Distortion Limit with 426E01 Preamp dB re 20 μPa</td>
<td>137</td>
</tr>
</tbody>
</table>

**Environmental Specifications**

- Operating Temperature Range Microphone: -40 to +248°F (-40 to +120°C)
- Operating Temp. with 426E01 Preamp: -40 to +248°F (-40 to +120°C)
- Operating Temp. with HT426E01 Preamp: -40 to +248°F (-40 to +120°C)

**Electrical Specifications**

- Polarization Voltage V: 0
- Constant Current Excitation mA: 2 - 20

**Physical Specifications**

- Size (Diameter x Length with Grid): 0.52 x 3.62 in (13.2 x 91.9 mm)
- Connector: Coaxial BNC Jack

* all specifications typical unless otherwise noted

---

**OPTIONAL ACCESSORIES**

- 426A13 – 1/2” short preamplifier
- 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 – windscreen for 1/2” microphones
- 079A11 – microphone holder
- 079A15 – tripod microphone stand with boom arm
- 079B16 – miniature microphone stand
- 079A18 – clamp on flexible extension stand
- 079C23 – microphone holder with swivel mount
- CAL200 – handheld calibrator
- ACS-63 – microphone system calibration

---

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 SensorLine℠, 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.

© 2019 PCB Piezotronics, Inc. In the interest of constant product improvement, specifications are subject to change without notice. PCB®, ICP®, Swiveler®, Modally Tuned®, and IMI® with associated logos are registered trademarks of PCB Piezotronics, Inc. in the United States. ICP® is a registered trademark of PCB Piezotronics Europe GmbH in Germany and other countries. SWIFT® is a trademark of MTS Systems Corporation in the United States.