ONDA

Putting Confidence in Ultrasound

# Acoustic Cavitation Meter (Preliminary)

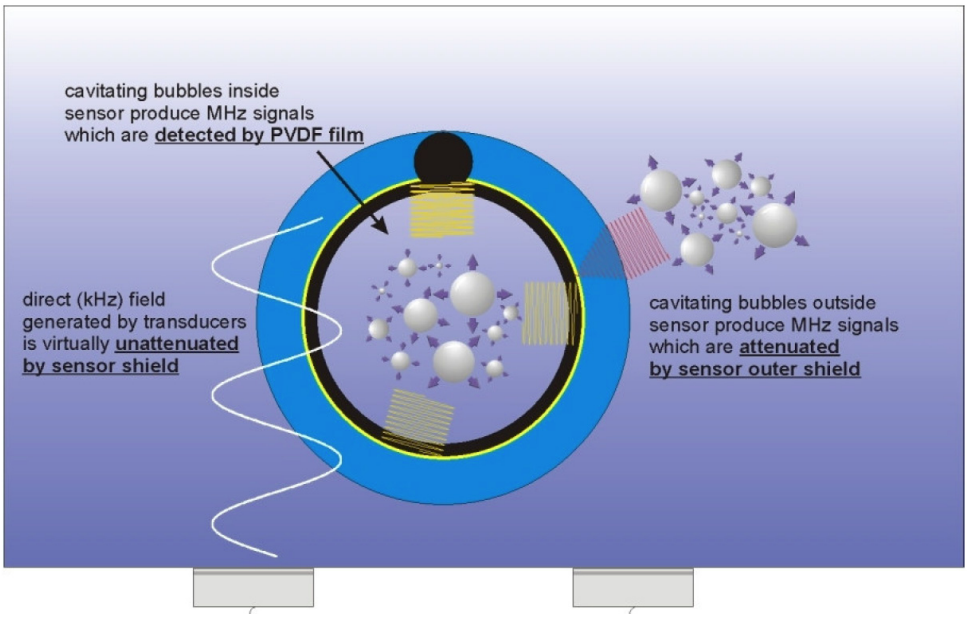
*CaviMeter™ and CaviSensor*

The CaviMeter™ was developed by the National Physical Laboratory (NPL) to characterize the acoustic emissions generated by cavitation, or the growth, contraction, and collapse of micro-bubbles (or cavities) within a liquid media in response to a driving ultrasonic field. The energy from the implosion of a cavity is sufficient to overcome particle adhesion forces and hence is used for ultrasonic cleaning and other sonoprocessing applications. Excessive cavitation energy can also damage the surface of a substrate, which is why a measurement instrument such as the CaviMeter™ is essential to develop and control a process window.


**CaviMeter™ and CaviSensor**

## Applications

- R&D acoustic measurements up to 150 kHz to determine the cavitation activity in cleaning vessels, sonoprocessing systems, and medical ultrasound devices such as HIFU systems
- Differentiate between the level of inertial cavitation intensity and direct field pressure
- Routinely spot check the acoustic field of cleaning tank for process control monitoring




**Schematic Representation of CaviSensor Operation**

## Technical Specifications

### CaviSensor

- *Useful Frequency Range (for direct field)**:
  20 to 60 kHz
- *Maximum Operating Temperature*: 70 °C
- *pH Range*: aqueous, 4 to 12 (no solvents)
- *Sensor Construction*:
  34 mm high, 40 mm diameter
  Polyurethane rubber
- *Cable*: coaxial (BNC)

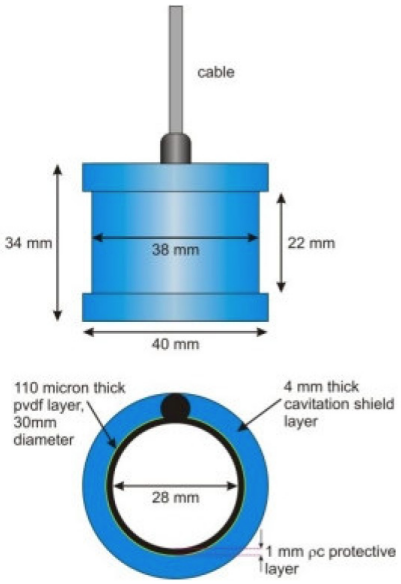
* Custom sensors may be available to extend the driving field frequency range

### CaviMeter™

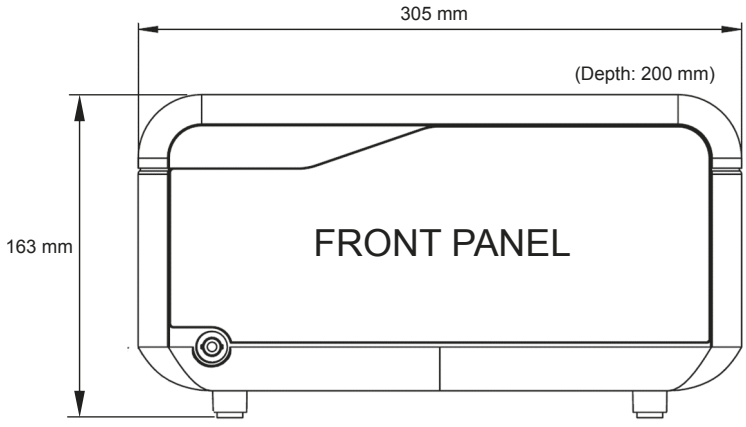
- *Pressure Range*: up to 1 MPa
- *Parameters:*
  Driving Field Pressure
  Broadband Cavitation
- *Selectable Gains:*
  x0.1 to x1.0 (Overall System)
  x1.0 and x2.5 (Cavitation)
- *Analog Outputs (BNC)*:
  LF - Low Frequency (Direct Field)
  HF - High Frequency (Cavitation)
- *Power*: AC power plug
- *Dimensions:*
  305 mm (W) x 163 mm (H) x 200 mm (D)

**Specifications are subject to change without notice.**

## Schematics of CaviSensor and CaviMeter™




CaviSensor




CaviMeter™

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