

Cavitera™

High-Performance Focused Ultrasound for Mechanical Ablation

Engineered for precision & control, Cavitera™ redefines what's possible in ultrasonic therapies. Pushing the limits of mechanical ablation with unmatched peak negative pressure performance.

ENGINEERED FOR HISTOTRIPSY EXCELLENCE

The Cavitera system is designed to deliver the extreme acoustic performance required for:

- Mechanical Ablation
- Intrinsic Threshold Histotripsy
- Boiling Histotripsy

By combining Sonic Concepts' short transient transmit burst transducer with 200 Watts per channel pulser technology, Cavitera achieves histotripsy peak negative pressures and delivers precisely controlled ultrasound pulses from 5 microseconds up to 100 milliseconds—covering the full range from intrinsic threshold to boiling histotripsy.

PRECISION MEASUREMENT & VALIDATION WITH FIBER OPTIC HYDROPHONE

To ensure confidence in performance verification throughout the product lifecycle, Sonic Concepts has partnered with Onda—a leader in ultrasound measurements—to pair the Cavitera with an industry-leading fiber-optic hydrophone and reference measurement data.

- Independently measures and validates our claimed transmit pressures
- Allows users to track and confirm system performance over time
- Strengthens the portfolio with a proven, research-grade measurement solution

APPLICATIONS

- Pre-clinical research
- Hiopsotripsy tissue ablation studies
- Cavitation and boiling mechanical ablative ultrasound research

KEY PERFORMANCE SPECIFICATIONS

PARAMETER	CAVITERA PERFORMANCE
Center Frequency	0.5, 0.75, and 1.0 MHz
Peak Negative Pressure (PNP)	25 MPa
Peak Positive Pressure (PPP)	90 MPa
ISPPA	33 kW/cm ²
Pulse Width	5 μs to 100 ms
Focal Width [-3 dB]	3, 2, and 1.5 mm, respectively
Focal Length [-3 dB]	20, 15, and 10 mm, respectively
Focal Steering Volume [-3 dB]	250, 85, 30 cm ² , respectively



ABOUT SONIC CONCEPTS

Located in the Seattle area, Sonic Concepts is a pioneer in therapeutic focused ultrasound transducer development. With diverse expertise in engineering and electroacoustic techniques and material science, the technology team is globally recognized as the leading subject matter expert in designing and manufacturing ultrasound transducers and systems with complex requirements. With decades of experience, Sonic Concepts partners with its OEM customers to ensure innovative ultrasound products and systems are masterfully designed, manufactured, integrated, and delivered reducing development time, cost and risk – adding value by bringing the partners' projects to fruition quickly, safely and profitably.

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