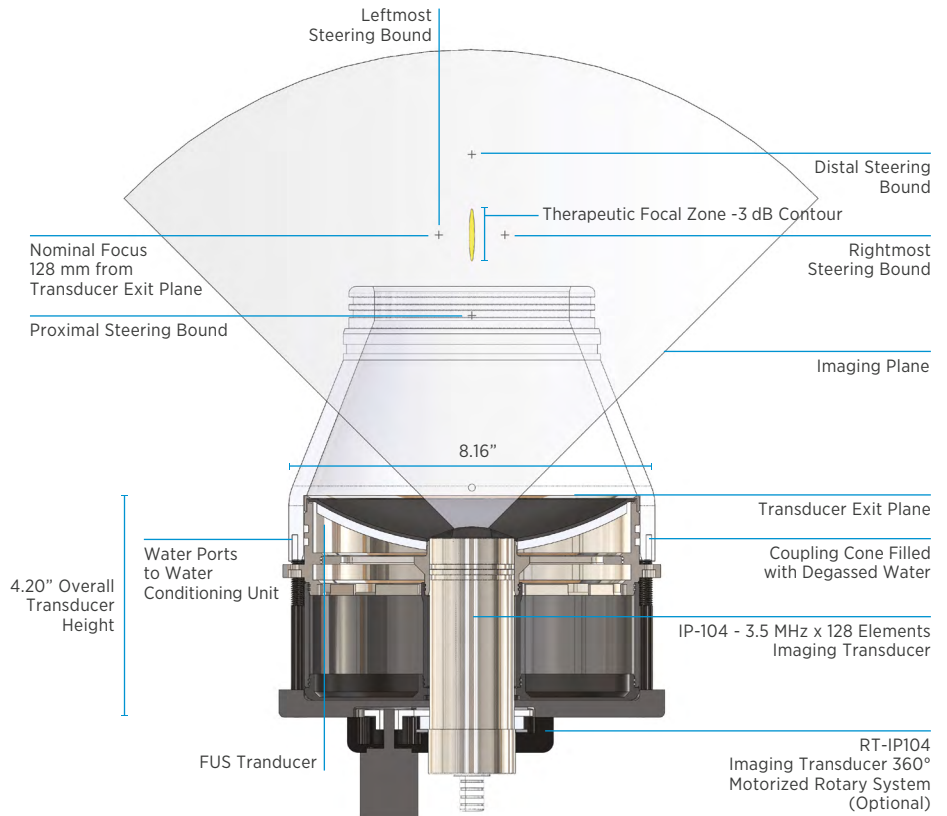


FUS-04 -05 & -06 Bundles (0.5, 1.1 & 2.0 MHz, respectively) include FUS and imaging transducers to provide 3D therapeutic focusing where both lateral and axial steering is required. These solutions provide interleaving capability between the FUS therapy and imaging using Verasonics' FUS 2D GUI or FUS Elite 3000 3D GUI on the Vantage platform.

FUS Transducer Specifications

- Ø150 mm f/1.0 FUS transducer
- Transmit efficiencies up to 80% over a 40% bandwidth
- Includes coupling cone for non-immersion applications and target for self-testing (CT-300)
- Optional bladder coupling system available, to provide a membrane at the transducer exit plane



	FUS-04	FUS-05	FUS-06
Fc (MHz)	0.5	1.1	2.0
# of Elements	64	128	128
Radius (mm)	150	150	150
I.D. (mm)	44	44	44
O.D. (mm)	150	150	150
Geometric Focal Distance* (mm)	128	128	128
Lateral Width** (mm)	3.0	1.4	0.8
Axial Length** (mm)	30.0	10.7	7.3
Axial Steering (mm)	115	57	40
Lateral Steering (mm)	44	21	16
Pressure Focal Gain	21.0	50.2	92.0
TAP, Avg. (Watts)*	500	1250	1250
TAP, Peak (Watts)*	2500	5000	5000
Focal Pressure, Peak (MPa)**	67	343	627

*From the exit plane of the transducer using the provided bladder coupling system

**Down -3 dB from acoustic maximum
**Assumes a linear free field environment

*TAP = Total Acoustic Power



IP-104 Imaging Transducer Specifications

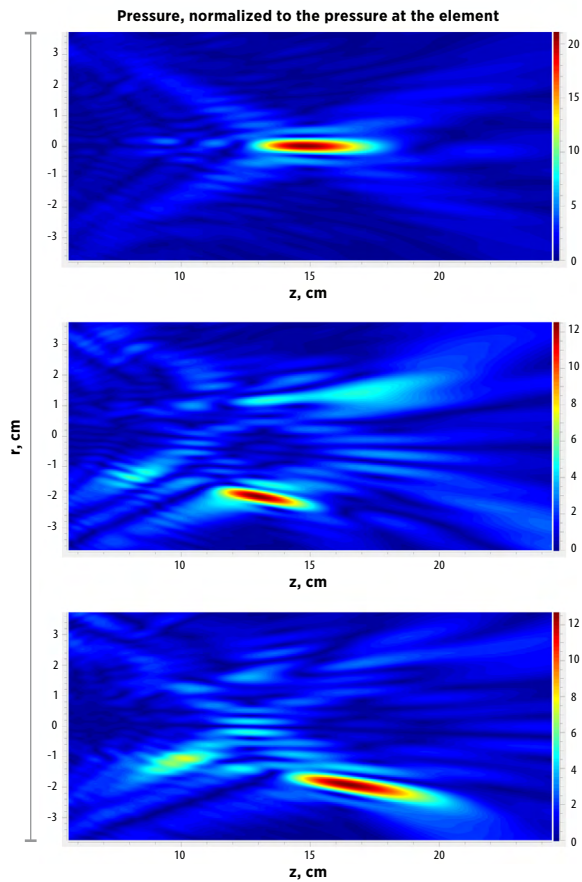
- Single crystal technology
- 128-element phased array (note: only 64 elements available if using FUS-04 with Vantage 128 or Vantage 64LE configuration)
- 3.5 MHz center frequency
- Watertight housing with rotational and vertical adjustability

	IP-104
Fc (MHz)	3.5
Bandwidth (%)	95
Pitch (mm)	Lambda/2
Aperture Elevation (mm)	13.5
Aperture Azimuth (mm)	28.2
Elevation Focus (mm)	75.0



Dynamic Focal Depth Steering

The acoustic pressure field maps (below) illustrate software-controlled spatial modulation of the FUS-04 along the transverse plane. The FUS coherent focus is shown at 150 mm, or 128 mm from the exit plane of the transducer (top), X = -20 mm, Z = 130 mm (mid), and X = -20 mm, Z = 170 mm (bottom).

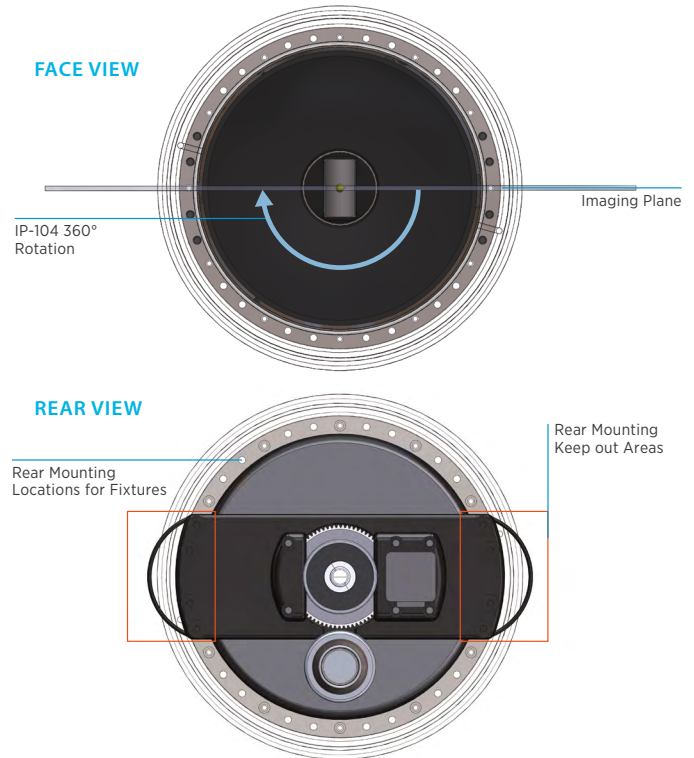


	FUS-04	FUS-05	FUS-06
Axial Focal Steering down -3 dB			
Near Field Distance* (mm)	104	118	134
Far Field Distance* (mm)	182	176	166
Lateral Focal Steering down -3 dB			
Diameter (mm)	32	21	12

*From the exit plane of the transducer

3D Rotary and Rear Mounting

The large rotary motion apparatus can be added to the FUS-04, -05, or -06 and is controlled via the FUS Elite 3000 3D GUI for 3D therapy planning and delivery.



FUS Full-screen Graphical User Interface for USgFUS Workflow

Workflow Step	Capability	FUS 2D	FUS Elite 3000 3D
GUIDANCE	B-Mode Imaging (Plane waves, Wide Beams, Scanline)	✓	✓
	Doppler Imaging (Color Flow, Color Power)	✓	✓
	Harmonic Imaging (Nonlinear imaging via pulse inversion)	✓	✓
PLANNING & DELIVERY	Motorized Rotary Movement of Imaging Plane	✗	✓
	2D Treatment Planning & Delivery	✓	✓
	3D Treatment Planning & Delivery	✗	✓
MONITORING	Thermal strain imaging (thermometry via user calibration)	✗	✓
DATA MANAGEMENT	Experimental event logging, data capture & recall	✓	✓



Verasonics designs, manufactures, and markets Vantage™ Research Ultrasound Systems for academic and commercial investigators. These real-time, software-based, programmable ultrasound systems accelerate research by providing unmatched speed and control to simplify the data collection and analysis process. Individuals across the globe rely on the flexibility of the Vantage platform for ultrasound-driven research and development in biomedical, materials science, earth sciences, and the physics of acoustics.



Sonic Concepts™ is a global leader in designing and delivering innovative therapeutic and focused ultrasound solutions, including the HIFUPlex™ and NeuroFUS® systems. Every day, researchers and organizations around the world use their best-in-class customizable products and turnkey ultrasonic therapy and imaging solutions to make medical breakthroughs and solve complex problems.

Verasonics Inc.

11335 NE 122nd Way, Suite 100, Kirkland, WA 98034

www.verasonics.com | sales@verasonics.com | 425.998.9836



Verasonics reserves the right to change specifications without notice.

© Verasonics, Inc. 2023. All rights reserved. 4000-2023-22