

HIFUPlex™

HIFUPlex-01, -02 & -03 Transducer Bundles

HIFUPlex-01, -02 & -03 Bundles (0.5, 1.1 & 2.0 MHz, respectively) include FUS and imaging transducers to provide 1D therapeutic focusing under ultrasound guidance. These solutions provide interleaving capability between the FUS therapy and imaging using Verasonics' HIFUPlex GUI or HIFUPlex PLUS GUI on the Vantage platform.

FUS Transducer Specifications

- Ø64 mm f/1.0 focused annular array transducer
- Transmit efficiencies up to 90% over a 40% bandwidth
- 50 mm (between 25 and 75 mm) of axial focal steering from the exit plane of the transducer, as defined -3 dB from acoustic maximum
- Includes coupling cone for non-immersion applications and target for self testing (CT-100)

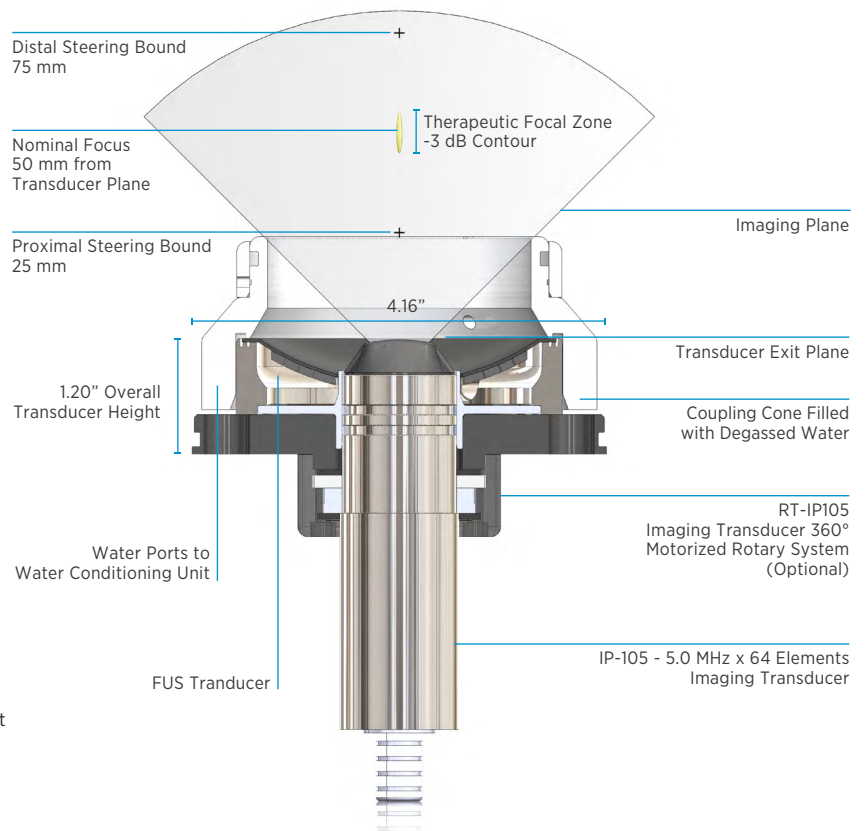
	H-104 (HIFUPlex-01)	H-101 (HIFUPlex-02)	H-106 (HIFUPlex-03)
Fc (MHz)	0.5	1.1	2.0
# of Rings	3	4	8
Radius (mm)	64.0	64.0	64.0
I.D. (mm)	31.7	31.7	31.7
O.D. (mm)	64.0	64.0	64.0
Geometric Focal Distance* (mm)	52.0	52.0	52.0
Lateral Width (mm)	3.1	1.5	0.8
Axial Length (mm)	21.9	11.5	5.9
Pressure Focal Gain	13.8	27.6	55.1
TAP, Avg. (Watts)**	400	500	500
TAP, Peak (Watts)**	2000	2000	2000
Focal Pressure, Peak (MPa)*	6.0	15.0	28.0

* From the exit plane of the transducer
 ** TAP = Total Acoustic Power
 † Linear calculation at maximum peak power

IP-105 Imaging Transducer Specifications

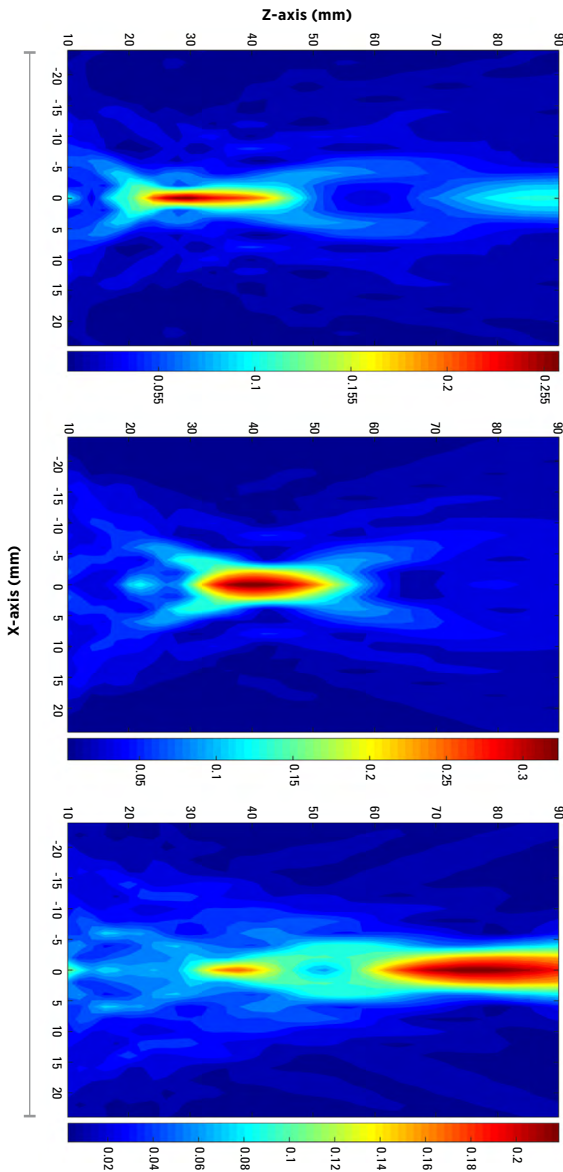
- Single crystal technology
- 64-element phased array
- 5.0 MHz center frequency
- Watertight housing with rotational and vertical adjustability

	IP-105
Fc (MHz)	5.0
Bandwidth (%)	95
Pitch (mm)	Lambda/2
Aperture Elevation (mm)	10.0
Aperture Azimuth (mm)	9.6
Elevation Focus (mm)	65.0



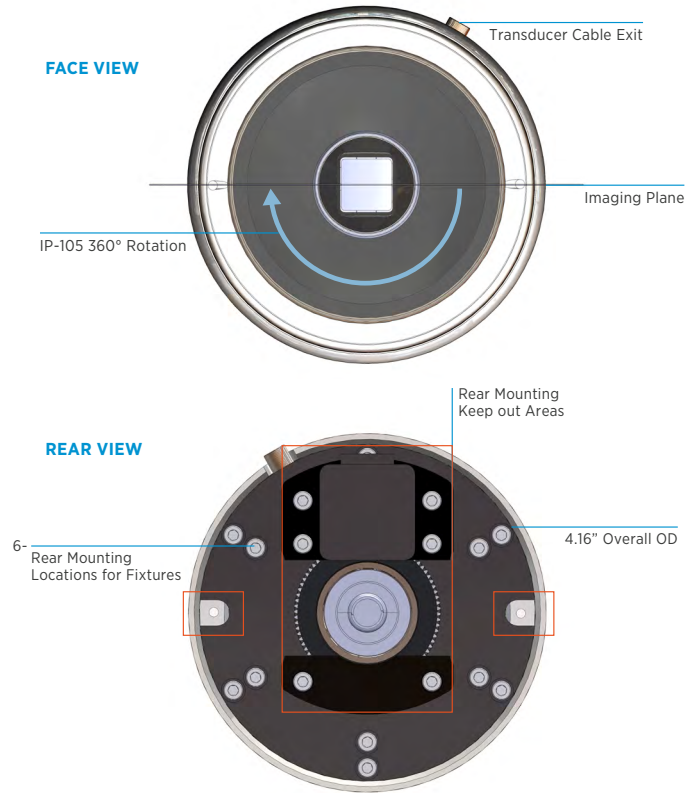
Dynamic Focal Depth Steering

The acoustic pressure field maps (below) illustrate software-controlled spatial modulation of the HIFUPlex -01 along the transverse plane. The HIFUPlex focus is shown at 30 mm (top), 40 mm (mid), and 75 mm (bottom) depths.



3D Rotary and Rear Mounting

The small rotary motion apparatus can be added to the HIFUPlex-01, -02, or -03 and is controlled by using the Vantage HIFUPlex PLUS GUI for 3D therapy planning and delivery.



HIFUPlex Full-screen Graphical User Interface for USgFUS Workflow

Workflow Step	Capability	HIFUPlex	HIFUPlex Plus
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	✗	✓
	Motorized X-Y Movement of Imaging Plane	✗	✓*
	2D Treatment Planning & Delivery	✓	✓
MONITORING	3D Treatment Planning & Delivery	✗	✓
	Thermal strain imaging (thermometry via user calibration)	optional	✓
DATA MANAGEMENT	Experimental event logging, data capture & recall	✓	✓

*Plus 1000 only



Verasonics, Inc. is a privately held company founded in 2001, with headquarters in Kirkland, Washington, USA. As the leader in research ultrasound, Verasonics is focused on providing researchers and developers with the most advanced and flexible tools enabling them to develop new algorithms and products used in biomedical ultrasound, materials science, earth sciences, and the physics of acoustics and ultrasonics. Verasonics also licenses its technology to companies for use in their commercial products. Verasonics has customers located in 34 countries across North and South America, Europe, Asia and Australia.

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Sonic Concepts, Inc. founded in 1986 in Bothell, Washington delivers premium ultrasonic systems to biomedical, industrial, marine, and research markets. They specialize in designing and manufacturing High Intensity Focused Ultrasound (HIFU) transducers, electronics and software. Their systems are installed in leading corporate and academic research labs around the globe.

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