



H-Transducer Series Ø64 mm

The H- Transducer Series Ø64 mm is Sonic Concepts most popular model variety. Each configuration offers high-efficiency over a broad bandwidth intended for deep high-intensity focused ultrasound (HIFU) experiments. Common non-human experiments include, but are not limit to ablation, cavitation, histotripsy, boiling histotripsy and other non-medical applications. Transducers within this Ø64 mm series range from 250 kHz to 2.0 MHz over a variety of f-numbers.

Each transducer is intended for use with a 50 Ohm RF amplifier with a maximum average power level of 400 electrical Watts, assuming the transducer is operating in free-field (i.e., no reflector) conditions. The acoustic output is highly uniform over the radiating surface.

An RF impedance matching network is supplied with each transducer to resonate at the fundamental resonance. The measured efficiency and bandwidth of this transducer series includes losses in the transducer, cable and matching network, and is typically 85% (minimum) across the fundamental passband.

An optional third harmonic RF impedance matching network allows operation in the vicinity of three (3) times the fundamental resonance. The efficiency at the third harmonic is about 25% lower than at the fundamental. The matching networks include BNC connectors and forced-air cooling in an aluminum, RF shielded enclosure, approx. 13.3 x 6.8 x 4.5 cm.

Features

- High power (up to 400 Watts)
- High conversion efficiency at fundamental (F_0) and 3rd harmonic ($3x F_0$) resonances
- Variety in focal geometry and focal gain
- Water proof housing
- Optional MRI Compatible version
- Optional multi-element structures

Transducer Characteristics

Center frequency (F_c): +/- 5% (fundamental mode); approximately 3.3 times fundamental mode ($3x F_0$)

Bandwidth: +/-20% of F_c to -3 dB points (F_0); approximately +/-10% ($3x F_0$)

Efficiency: 85% (min) at F_0

Active diameter: 64.0 mm

Housing Assembly

Stainless steel

RoHs compliant

Ø82.0 mm x 19.0 mm height

Six mounting holes located 60° apart on bottom of housing

Side exiting 0.5 meter x 50 Ohm coaxial cable, BNC Male Plug

Waterproof up to 0.5 meter, connector not submersible

Characteristics

MODEL	Fo	3xFo	Radius of Curvature	I.D.	O.D.	Area	Power Electric	Power Acoustic	Pressure Focal Gain	Surface Intensity	Surface Pressure	Focal Intensity	Focal Pressure	Focal Width (Ø)	Focal Length
	MHz	MHz	mm	mm	mm	cm ²	Watts	Watts		W/cm ²	kPa_pk	W/cm ²	MPa_pk	mm	mm
H-115	0.25	0.78	63.20	0.00	64.00	34.55	400	340	9.11	9.84	543.36	817	4.95	6.045	39.49
H-104	0.50	1.55	63.20	0.00	64.00	34.55	400	340	18.22	9.84	543.36	3268	9.90	3.02	21.42
H-229	0.50	1.55	45.00	0.00	64.00	37.78	400	340	27.98	9.00	519.61	7048	14.54	2.15	11.13
H-116	0.75	2.33	63.20	0.00	64.00	34.55	400	160	27.33	4.63	372.74	3460	10.19	2.01	14.70
H-101	1.10	3.41	63.20	0.00	64.00	34.55	400	340	40.09	9.84	543.36	15815	21.78	1.37	10.21
H-197	1.10	3.41	45.00	0.00	64.00	37.78	400	340	61.56	9.00	519.61	34112	31.99	0.98	5.24
H-151	1.10	3.41	100.00	0.00	64.00	33.04	400	340	24.23	10.29	555.64	6041	13.46	2.17	24.97
H-199	1.50	4.65	45.00	0.00	64.00	37.78	400	340	83.95	9.00	519.61	63431	43.62	0.72	3.87
H-106	2.00	6.20	63.20	0.00	64.00	34.55	400	340	72.89	9.84	543.36	52281	39.60	0.76	5.72