

Ultrasound Phantoms

Model 040

General-Purpose, Multi-Tissue Ultrasound Phantom

The Model 040 offers a reliable medium which contains specific, known test objects for repeatable qualitative assessment of ultrasound scanner performance over time.

This phantom is constructed from the patented, solid, elastic material, Zerdine®. Zerdine® is not affected by changes in temperature. Zerdine® allows more pressure to be applied to the scanning surface without subsequent damage to the material. At normal room temperature, Zerdine® will accurately simulate the ultrasound characteristics found in human liver tissue. The Phantom includes detachable scanning wells to accommodate large sector probes and endocavity probes and a rugged carrying case.

Model 042

General Purpose Urethane Ultrasound Phantom

The Model 042 enables repeatable, qualitative assessment of ultrasound scanner performance over time.

The Model 042 Axial Resolution Target is constructed from a proprietary urethane matrix, housed within a rigid PVC container with three separate scanning windows. It allows for depth of penetration, uniformity, distance calibration, resolution and lesion detectability assessment. The Model 042 is sold with a three-year warranty. This phantom includes an in-house certification traceable to NIST, user's manual, ultrasound physics textbook and a carrying case.



	Model 040	Model 042
Material	Zerdine®	Proprietary Urethane Matrix
Attenuation	0.5 dB/cm/MHz	0.05 dB/cm/MHz – 0.05
Coefficient	0.7 dB/cm/MHz	dB/cm/MHz at 5.0 MHz
Speed of Sound	1540 m/s	1430 m/s – 10 m/s at 20 C
Scanning Well	1 cm deep	2 cm deep
Targets		
Material	Nylon Monofilament 0.1 mm diameter	Nylon Monofilament 0.1 mm diameter
Vertical Plane	1 group, 16 targets, 18 cm depth range, 1 cm spacing	1 group, 10 targets, 1 cm – 19 cm depth, 20.0 mm – 0.38 mm
Horizontal Plane	2 groups, 4 and 7 targets, 3 cm and 9cm depth range, 1 cm and 2 cm spacing	1 group, 10 targets, 3 cm and 10 cm depth, 18.56 mm – 0.38 mm
High Contrast	4 targets, target depths: 2,4,6,and 8 mm, diameters: 2,4,6,and 8 mm, contrast: +15 dB v.s. background	
Cystic Contrast	4 targets, target depths: 2,4,6,and 8 mm, diameters: 2,4,6,and 8 mm, contrast: anechoic	
Axial Resolution		2 groups, 12 targets/group, depth of targets: 2, 5, 8 and 11 cm
Lateral Resolution		2 groups, 6 targets/group, depth of targets: 2, 5, 8 and 11 cm
Anechoic		2 groups, 6 targets/group, depth of targets: 2, 5, 8, 11, 13, and 16 cm

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The Ultrasound Phantom tests:

- ▶ Uniformity
- ▶ Registration with two different backgrounds
- ▶ Axial and lateral resolution
- ▶ Depth calibration
- ▶ Dead zone measurement