

## 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
<b>Targets</b>		
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

® Zerdine is a registered trademark of CIRS inc.

### The Ultrasound Phantom tests:

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