

Near Field Ultrasound Phantom

QA standard for high frequency probes

The CIRS series of ultrasound phantoms, unlike human subjects or random scannable materials, offers a reliable medium which contains specific, known test objects for repeatable qualitative assessment of ultrasound scanner performance over time.

At normal or room temperatures the Zerdine® (1) material found in the Near Field phantom will accurately simulate the ultrasound characteristics found in human tissue.

The Model 050 has a series of wire targets that will appear as bright dots or lines on the ultrasound image. These targets are made from stainless steel with a diameter of 0.1 mm. There are also two known volumes, a 10 mm combination cyst-like/hyper-echoic mass and anechoic mass and anechoic focal lesions embedded within the phantom. These “masses” are made from Zerdine® that has a different contrast and



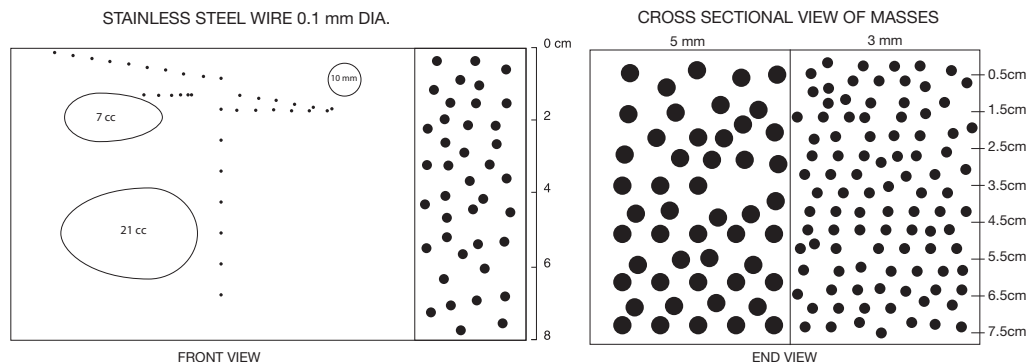
Model 050

Complies with AIUM Standard for Quality Assurance.

attenuation relative to the background material.

The Model 050 was designed to allow for assessment of uniformity, dead zone, depth of penetration, beam profile/focal zone/lateral response

width, vertical distance measurement accuracy, axial resolution, lateral resolution, anechoic masses, high contrast masses, volumetric measurement accuracy, and focal lesion detectability.



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Tissue Simulation &
Phantom Technology

CIRS

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Model 050 Specifications:

MATERIAL: Zerdine^{®(1)}, solid elastic water-based polymer
Freezing Point: 0° C
Melting Point: Above 100° C

ATTENUATION COEFFICIENT:
0.5 dB/cm-MHz

SPEED OF SOUND:
1540 m/s ± 10 m/s

SCANNING WELL:
165 mm X 100 mm X 1.5 cm

SCANNING MEMBRANE:
Saran-based laminate

TARGETS:
Material: Stainless Steel Wire
Diameter: 0.1 mm

VERTICAL PLANE TARGETS:
Depth Range: 8 cm
Spacing: 1 cm

AXIAL RESOLUTION TARGETS:
Number of Arrays: 2
Depths: 1.5 cm and 2 cm
Axial Intervals: 0.5, 1, 2, 3, 4, and 5 mm
Horizontal Intervals: 1, 2, 3, 4, and 5 mm

RING DOWN TARGET:
1 mm to 10 mm

VOLUMETRIC TEST OBJECT:
Calibrated asymmetric shape
7 cc and 21 cc

SPHERICAL CYSTS:
Diameter: 5 mm, 3 mm
Random Distribution

HIGH CONTRAST/CYSTIC:
Cylinder: Diameter 10 mm
Depth: 1.0 cm
Contrast: Hyperechoic/Cyst-like



Phantom includes detachable scanning wells and air tight case.