Near Field Ultrasound Phantom

Model 050



ZERDINE® *Inside*
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QA STANDARD FOR HIGH FREQUENCY PROBES

The CIRS series of ultrasound phantoms, unlike human subjects or random scannable materials, offers a reliable medium that 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 nylon with a diameter of 0.1 mm. There are also two known volumes, a 10 mm combination cyst-like/hyperechoic mass and anechoic focal lesions embedded within the phantom. These “masses” are made from Zerdine that has a different contrast and 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.

Features

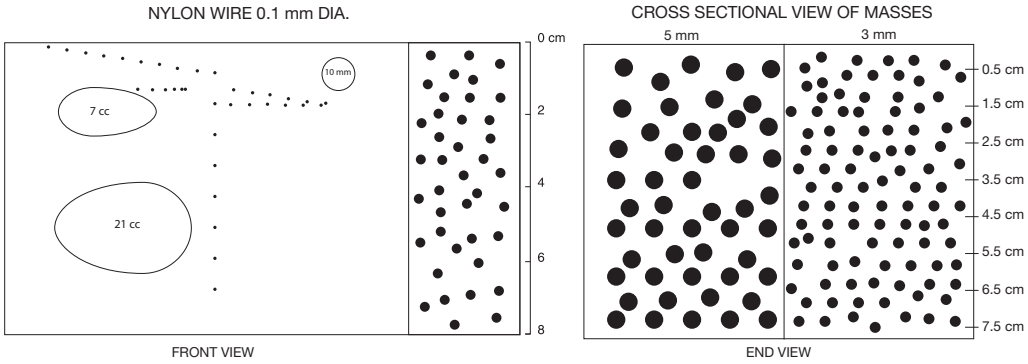
- Complies with AIUM standards for QA
- Perfrom 13 assessments with a single phantom
- Known test objects for repeatable QA trending

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CIRS
Tissue Simulation & Phantom Technology

NEAR FIELD ULTRASOUND PHANTOM

Model 050



SPECIFICATIONS

CONTAINER
- Dimensions: 200 x 150 x 100 mm
- Weight: 18 lbs (6.7 kg)
- Material: ABS Housing

BACKGROUND GEL
- Zerdine, solid elastic water-based polymer
- Freezing Point: 0º C
- Melting Point: Above 100º C
- Attenuation Coefficient: 0.5 dB/cm-MHz
- Speed of Sound: 1540 m/s

SCANNING WELL
- 165 x 100 x 10 mm deep

SCANNING MEMBRANE
- Saran-based laminate

WIRE TARGETS
- Material: Nylon Wire
- Diameter: 0.10 mm

NEAR FIELD GROUP
- Number of Targets: 10
- Depth Range: 1 to 10 mm
- Vertical Spacing: 1.0 mm

VERTICAL GROUP
- Depth Range: 10 to 80 mm
- Spacing: 10 mm
- Material: 0.1 mm Nylon Wire

AXIAL RESOLUTION GROUP
- Number of targets: 12
- Depth: 20 mm
- Spacing: 0.5, 1, 2, 3, 4 & 5 mm

LATERAL RESOLUTION GROUP
- Number of targets: 6
- Depth: 15 mm
- Spacing: 1, 2, 3, 4 & 5 mm

HIGH CONTRAST/ CYSTIC ROD
- Material: Zerdine
- Diameter: 10 mm
- Depth: 10 mm
- Attenuation Coefficient- Cystic Half: less than 0.07 dB/cm-MHz
- Contrast- Cystic Half: anechoic
- Attenuation Coefficient- High Contrast: 1.23 dB/cm-MHz
- Contrast- High Contrast: hyperechoic

FOCAL LESIONS
- Diameter of Targets: 3 & 5 mm
- Random Distribution

VOLUMETRIC TEST OBJECTS
- Material: Zerdine
- Number of Targets: 2
- Speed of Sound: 1540 m/s
- Attenuation Coefficient: 0.5 dB/cm-MHz
- Contrast: +9 dB
- Depths: 20 mm, 47 mm
- Volumes: 7 cc, 21 cc

MODEL 050 INCLUDES
- Near Field Ultrasound Phantom
- Certificate of Compliance
- Carry Case
- Removable Scanning Wells
- User Guide
- QA Worksheet
- 48-month Warranty



Phantom includes detachable scanning wells and air tight case.

(1) US PATENT# 5196343

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