

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.

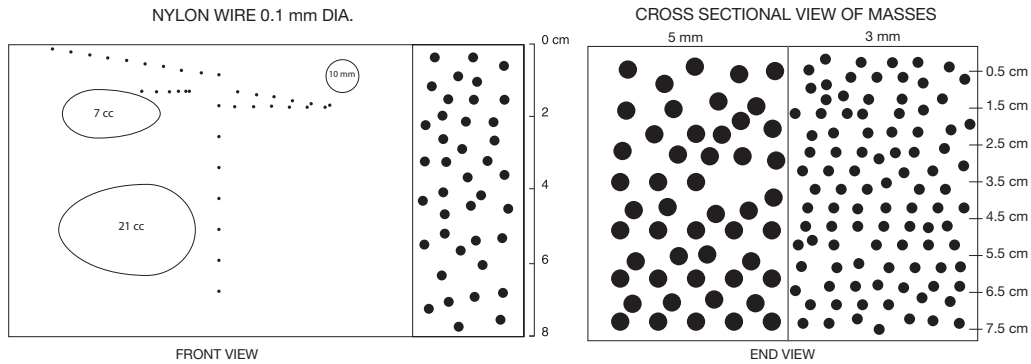
At normal or room temperatures the Zerdine® ⁽¹⁾ material found in the Near Field phantom will accurately simulate the ultrasound characteristics found in human tissue.

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
- Perform 13 assessments with a single phantom
- Known test objects for repeatable QA trending



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: 0° C
Melting Point: Above 100° 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