SUN NUCLEAR
A MIRION MEDICAL COMPANY

Multi-Purpose, Multi-Tissue Ultrasound Phantom

The Standard for Ultrasound Quality Assurance

Features and Benefits

- Test the full range of standard diagnostic ultrasound probes (2 MHz to 18 MHz)
- Dual attenuation design provides challenging testing environment for high sensitivity probes
- Acoustic properties comply with IEC Technical Standard 62736
- Detachable water wells allow for testing curvilinear and endocavity probes
- Only general purpose QA phantom on market with elasticity targets
- Ensure over ten years of reliable use through reinspection and repair services

The Multi-Purpose, Multi-Tissue Ultrasound Phantom is the complete solution for performance and quality assurance testing. Its dual-frequency design and removable water wells accommodate a wide range of transducer shapes, including curvilinear and endocavity, and frequencies. Additionally, it stands alone as the only QA phantom that offers both elasticity targets and all standard B-mode imaging test objects.

The phantom is constructed of Zerdine® hydrogel polymer, formulated to provide tissue mimicking properties including compatibility with harmonic imaging. To maximize phantom lifetime, this gel is contained in a rugged plastic housing with a Saran-based laminate membrane.

Our ultrasound QA phantoms come standard with a robust housing, carry case and user guide.

Key Tests

- Uniformity
- Depth of Penetration
- Beam Profile/ Focal Zone/ Lateral Response Width
- Vertical Distance Measurement
- Horizontal Distance Measurement
- Axial and Lateral Resolution
- Elevational Resolution
- Contrast Resolution
- Grayscale Contrast Sensitivity
- Elasticity Sensitivity
- Dead Zone Assessment

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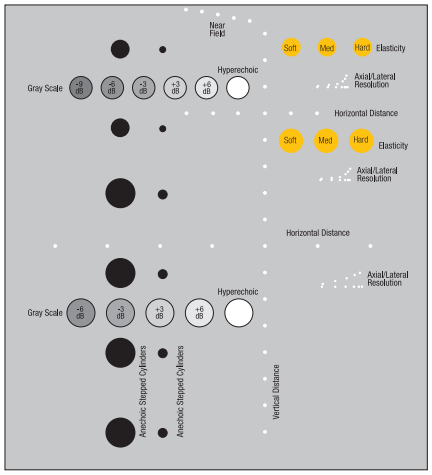

Overall Ultrasound image

Phantom comes with detachable scanning wells to accommodate large sector probes and small endocavity probes.

Specifications

Dimension (cm)	17.8 cm x 12.7 cm x 20.3 cm (7" x 5" x 8")
Phantom Weight (kg)	11 lbs. (4.1 kg)
Housing Material	ABS Plastic
Membrane	Zerdine® solid elastic hydrogel

zerdine® properties

Freezing point	0° C
Melting point:	Above 100° C
Speed of Sound:	1540 m/s
Attenuation:	Low: 0.7 dB/cm/mHz; High: 0.95 dB/cm/mHz
Other:	Compatible with harmonic imaging

Vertical Distance Group

Number of targets	16
Wire diameter	100-micron, nylon monofilament
Depth range	1 to 16 cm
Spacing	10 mm

Horizontal Distance Group

Number of groups	2
Wire	100-micron, nylon monofilament
Depth range	4 & 9 cm
Spacing	6 & 7 respectively

Near Field Group

Number of targets	5
Wire diameter	100 microns
Depth range	1 to 5 mm
Distance b/w Targets	1 mm

Elasticity Targets

Group 1	1.5 cm deep, Ø 6 mm
Group 2	5 cm deep, Ø 8 mm
Elasticity*	Soft, medium & hard
Grayscale Contrast	-3 db with respect to background

Axial-Lateral Resolution Groups

Wire diameter	80 microns
Group 1&2 Depths	3 & 6.5 cm
Axial separation	4, 3, 2, 1, 0.5 & 0.25 mm
Lateral separation	4, 3, 2, 1, 0.5 & 0.25 mm
Group 3 Depths	10.5 cm
Axial separation	5, 4, 3, 2 & 1 mm
Lateral separation	5, 4, 3, 2 & 1 mm

Anechoic Stepped Cylinders

Number of targets	12
Diameter of targets	1.3, 2.0, 3.0, 4.5, 6.7 & 10.0 mm
Depth of Targets	1.5, 4.5, 7.0, 10.0, 13.0, 16.0 cm
Contrast	Anechoic, Cyst-like

Gray Scale Targets

Group 1	3 cm deep, Ø 8 mm
Contrast	-9 dB, -6 dB, -3 dB, +3 dB, +6 dB & > +15 dB with respect to background
Group 2	11.5 cm deep, Ø 10mm
Contrast	-6 dB, -3 dB, +3 dB, +6 dB & > +15 dB with respect to background

Includes

(1) Multi-Purpose, Multi-Tissue Ultrasound Phantom, (1) Detachable Protective Cover, (1) Detachable Water Well (1cm deep), (1) Detachable Endocavity Well, (1) Carry Case, User Guide

**Modulus values are nominal; details are available upon request.*