Multi-Purpose, Multi-Tissue Ultrasound Phantom

Model 040GSE



The CIRS Model 040GSE Multi-Purpose, Multi-Tissue Ultrasound Phantom is the most complete solution available for performance and quality assurance testing. Its dual frequency design and detachable water wells allows testing of most transducer shapes – including curvilinear and endocavity – and frequencies. It is also the only QA phantom on the market that provides both elasticity targets and all the standard B-mode imaging test objects.

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

CIRS ultrasound QA phantoms come standard with a robust housing, carry case, 48-month warranty, and user guide.

The Standard for Ultrasound Quality Assurance

- 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
- 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

Includes best in industry four-year warranty

ZERDINE® Inside A registered trademark of CIRS

Key Tests with Model 040GSE

- 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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MULTI-PURPOSE MULTI- TISSUE ULTRASOUND PHANTOM

Near Field Hard Elasticity Gray Scale $\begin{pmatrix} -9 \\ dB \end{pmatrix} \begin{pmatrix} -6 \\ dB \end{pmatrix} \begin{pmatrix} -3 \\ dB \end{pmatrix} \begin{pmatrix} +3 \\ dB \end{pmatrix} \begin{pmatrix} +6 \\ dB \end{pmatrix}$ Axial/Lateral Resolution Horizontal Distance Soft Elasticity Axial/Lateral Resolution Horizontal Distance Axial/Lateral Resolution Gray Scale (-6 +3 dB (+6 dB





Phantom comes with detachable scanning wells to accommodate large sector probes and small endocavity probes. It is packaged in a foam lined carry case.

SPECIFICATIONS

DIMENSIONS	17.8 cm x 12.7 cm x 20.3 cm (7" x 5" x 8")
PHANTOM WEIGHT	11 lbs. (4.1 kg)
HOUSING MATERIALS	ABS Plastic
MEMBRANE	Saran-based laminate
TISSUE-MIMICKING Material	Zerdine® solid elastic hydrogel

Compatible with harmonic imaging

100-micron, nylon monofilament

ZERDINE® PROPERTIES

Freezing point: Melting point: Speed of Sound: Other:

VERTICAL DISTANCE GROUP

0° C

Above 100° C 1540 m/s

1 to 16 cm

4 & 9 cm 6 & 7 respectively

100 microns

1 to 5 mm

1 mm

10 & 20 mm respectively

10 mm

Number of targets: Wire diameter: Depth range: Spacing:

HORIZONTAL DISTANCE GROUP 2 100-micron, nylon monofilament

Number of groups: Wire: Depths: Number of Targets: Spacing:

NEAR FIELD GROUP

Number of targets: Wire Diameter: Depth range: Distance b/w Targets:

ELASTICITY TARGETS

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

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

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MODEL 040GSE INCLUDES

QTY	COMPONENT DESCRIPTION
1	Multi-Purpose, Multi-Tissue Ultrasound Phantom
1	Detachable Protective Cover
1	Detachable Water Well (1cm deep)
1	Detachable Endocavity Well
1	Carry Case
-	48-Month Warranty
-	User Guide

AXIAL-LATERAL RESOLUTION GROUPS

Wire diameter: 80 microns

Group 1&2 Depths: Axial separation: Lateral separation: Group 3 Depths:

4, 3, 2, 1, 0.5 & 0.25 mm 4, 3, 2, 1, 0.5 & 0.25 mm 10.5 cm

3 & 6.5 cm

Axial separation: 5, 4, 3, 2 & 1 mm Lateral separation: 5, 4, 3, 2 & 1 mm

ANECHOIC STEPPED CYLINDERS

Number of targets: Diameter of targets: Depth of Targets: Contrast:

12 1.3, 2.0, 3.0, 4.5, 6.7 & 10.0 mm 1.5, 4.5, 7.0, 10.0, 13.0, 16.0 cm Anechoic, Cyst-like

GRAY SCALE TARGETS Group 1: Contrast: Group 2: Contrast:

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

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