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 endocacity – 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

- Unique dual attenuation design allows testing on low frequency abdominal probes up to 5 MHz and high frequency probes to 15 MHz and higher
- 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

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 60 Flasticity $\begin{pmatrix} -6\\ dB \end{pmatrix} \begin{pmatrix} -3\\ dB \end{pmatrix} \begin{pmatrix} +3\\ dB \end{pmatrix} \begin{pmatrix} +6\\ dB \end{pmatrix} \begin{pmatrix} -6\\ dB \end{pmatrix}$ Axial/Lateral Resolution Gray Scale (-9 dB Horizontal Distance 10 kPa KPa Elasticity 40 kPa Axial/Lateral Resolution Horizontal Distance Axial/Lateral Resolution Gray Scale (⁻⁶_{dB} +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 16

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 10, 40 & 60 kPa 0 db with respect to background

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	
-	Certificate of Compliance	

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

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

around

3 & 6.5 cm

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, 1mm

GRAY SCALE TARGETS Group 1: Contrast: Group 2:

Contrast:

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

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