

Sono410™ Full Contact™ Phantom

Gain greater flexibility to meet more QA program requirements.

- Featuring Full Contact™ curved surface to improve coupling between convex transducers and the phantom scanning window
- Includes patented HE (High Equivalency) Gel™
- Ensure efficient testing across entire frequency range



Sun Nuclear's Sono410 phantom meets the ACR guidelines for ultrasound QA. It includes two patented scanning surfaces — curved and flat — for precise performance and uniformity testing of convex and linear transducers.

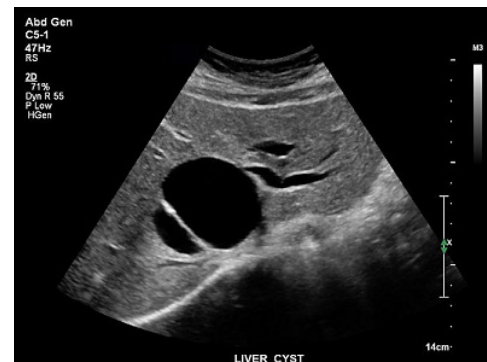
- Meet or exceed ACR, AIUM, EFSUMB, IAC, IEC, IPEM, and WHO QA guidance/standards

Performance measures include:

- Image uniformity
- Artifact surveys
- Lateral resolution
- Horizontal and vertical distance
- Depth of penetration
- Signal-to-noise ratio
- Anechoic and echogenic mass resolution
- Gray scale contrast resolution



Consistent testing with a Sono410 QC test device...



... means confidence in your patient's assessment.

Sono410 Full-Contact Phantom

- HE Gel's response of attenuation-to-frequencies above 8 MHz supports accurate penetration depth representative of human tissue.^{1,2}
- Check resolution against published limiting values using the targets at 80 and 150 mm.
- HE Gel is very uniform and has a nonlinearity parameter (B/A) that is equivalent to human liver.
- HE Gel can be rejuvenated and your phantom re-validated any time to strengthen your investment.

Specifications

Attenuation Coefficient ¹	0.5 or 0.7 dB/cm/MHz
Variation of Attenuation with Frequency ^{2,3}	f ^{1.08} at 0.5 dB/cm/MHz f ^{1.1} at 0.7 dB/cm/MHz
HE Gel Freezing Point	< 0°C
HE Gel Melting Point	>100°C
Frequency Range	2 - 18 MHz
Speed of Sound	1540 m/s
Scanning Surface	Composite Film
Pin Target Material	Nylon monofilament
Case Material	Extruded ABS Plastic
Weight	2.8 kg (6 lbs. 5 oz)
Dimensions	21.8 x 9 x 19.2 cm (8.6 x 3.5 x 7.5 in)

Target Specifications

Cystic Targets

Diameters	1, 2 and 4 mm
Placement	2, 4, 6, 8, 10, 12, 14, and 16 cm deep

Grey Scale Targets

Dimensions	8 mm Diameter
Placement	4 and 11 cm deep
SOS	1540 ±10 m/s
SOS ^{TD}	1.5 m/s/°C
Contrast	-6dB, +6dB, high scatter relative to background

Pin Targets

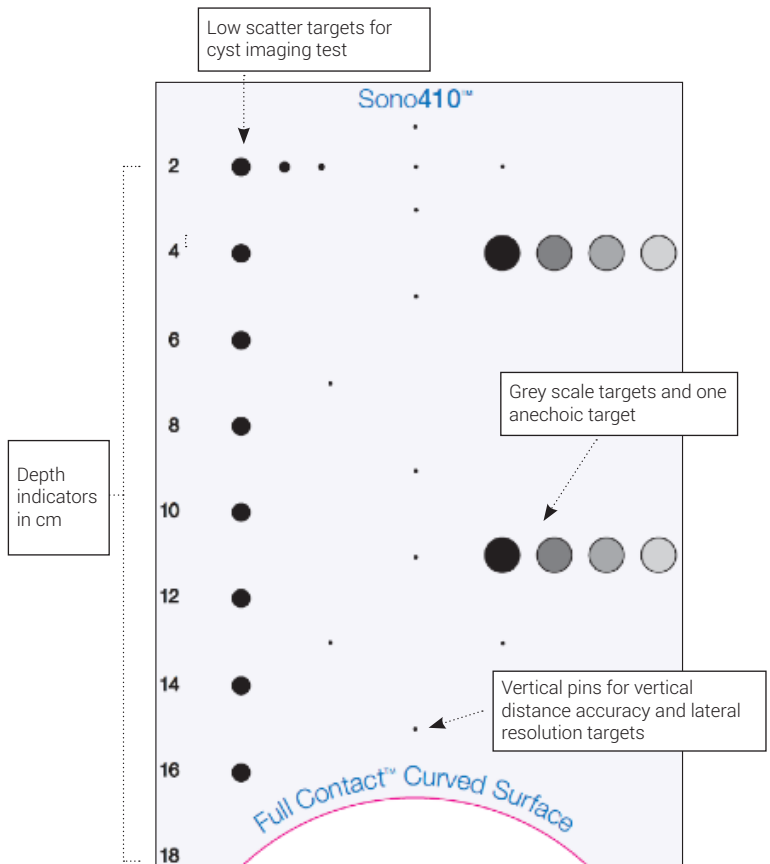
Diameter	0.1 mm
Vertical Spacing	1, 2 and 4 cm from 1 to 15 cm deep
Horizontal Spacing	2 cm at 2 cm deep, 4 cm at 7 and 13 cm deep

Accessories

- Precision Transducer Holder
 - Securely holds a transducer in a precise location for reproducible tests over time.
 - Fits most Sun Nuclear B-Mode & Doppler Flow phantoms
- Padded travel case with shoulder strap



Target Schematic



¹ Browne, J., Ramnarine, K., Watson, A., Hoskins, P., Assessment of the Acoustic Properties of Common Tissue-mimicking Test Phantoms. Ultrasound in Medicine and Biology, Vol. 29 (7), pp. 1053-1060, 2003.

² Goldstein, A., The Effect of Acoustic Velocity on Phantom Measurements. Ultrasound in Medicine and Biology, Vol. 26, pp. 1133-1143, 2003.

³ An attenuation coefficient of 0.5 dB/cm/MHz represents healthy human liver tissue and 0.7 dB/cm/MHz represents fatty liver tissue.

⁴ Near-linear responses of attenuation with frequencies between 2 to 18 MHz support accurate axial resolution and penetration depth representative of human tissue.