

# Gray Scale Ultrasound Phantom

*For evaluating resolving power as a function of depth, size, and contrast.*

Introducing a new design using proven, patented materials to permit rapid visualization of gray scale resolution power at continuous depths from 1 to 12 cm.

Model 047 is a single simple tool to assess resolution of masses varying in size, depth and contrast.

The Model 047 is usable on all diagnostic ultrasound machines thus allowing user evaluation of gray scale sensitivity with a wide range of transducer frequencies. This phantom is an ideal training tool for learning optimum system setup and evaluating system performance.

Masses may be viewed with either a circular or elliptical cross-section. The mass di-



**Model 047**

ameters were selected so the volume imaged would double as the diameter increased. The gray-scale levels were selected to achieve a doubling

in signal intensity as you move from mass to mass. The anechoic masses comply with the ACR accreditation program.

## Features

- 21 Testing objects:  
Diameters: 2.4, 4, & 6.4 mm  
Contrast: Anechoic, -9, -6, -3, +3, +6, +9 dB
- Depth of test object varies continuously as phantom is scanned laterally
- Scatter controlled independently from attenuation
- Carry case included

<sup>(1)</sup> US Patent # 5196343

# Model 047 Specifications:

## DIMENSIONS

35 x 13 x 17 cm  
Weight: 23 lbs.  
Scanning well: 1 cm deep

## MATERIAL

Zerdine®, solid elastic water-based polymer  
Freezing Point: 0° C, Melting Point: Above 100° C  
Scanning Membrane: Saran-based laminate

## BACKGROUND:

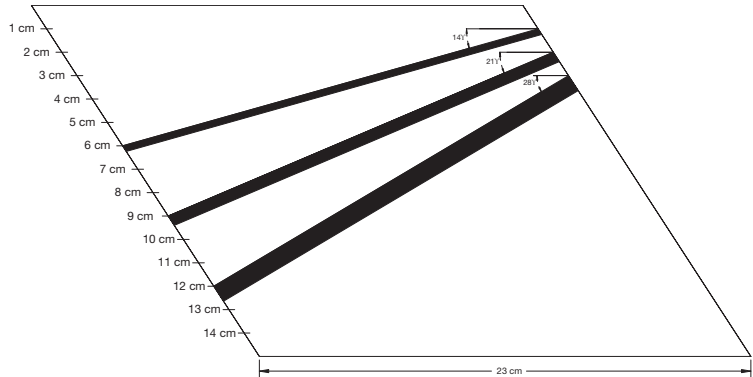
Attenuation Coefficient:  
0.50 dB/cm-MHz  $\pm$  0.05 dB/cm-MHz  
Speed of Sound: 1540 m/s  $\pm$  10 m/s

## TARGETS

Attenuation Coefficient:  
0.50 dB/cm-MHz  $\pm$  0.05 dB/cm-MHz  
Speed of Sound: 1540 m/s  $\pm$  10 m/s  
Contrast: anechoic, -9, -6, -3, +3, +6, +9 dB  
(with respect to background)  
Diameters: 2.4, 4, and 6.4 mm

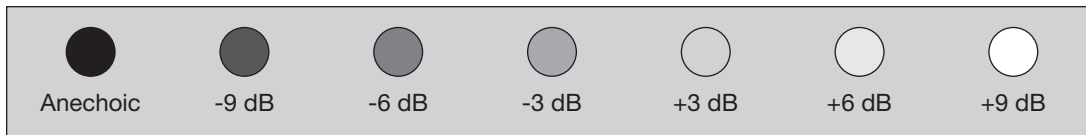
## DEPTH RANGE:

3 mm: 1 - 6 cm  
4 mm: 2 - 9 cm  
6 mm: 3 - 12 cm



## Gray Scale Phantom Procedure

For each probe combination scan laterally to detect maximum frequency of visualization. Freeze image, measure depth from scan surface to top of target of last visualization.



Test objects have same speed and attenuation as background



Masses are angled for continuous assessment over a range of depth.