



## Model 538 Model 538N

### Beam Profile & Slice Thickness Phantoms



## Product Description

The phantoms contain a thin plane of echogenic material embedded in an anechoic rubber-based tissue-mimicking matrix. The scattering plane in the Model 538 is located in the center of and perpendicular to the scanning plane of the phantom. Model 538N has two scan planes. The scattering plane is oriented at 45° to one scan plane. And perpendicular to the other

The beam profile is easily displayed at varying depths using either the Model 538 or Model 538N. The beam profile contains a great deal of information regarding the configuration of the sound beam as it propagates through the tissue-mimicking media. The beam profile clearly displays the near field, focal length, focal zone, beam width, side and grating lobes and beam divergence in the far field. In addition, amplitude variations in the near field are displayed as varying degrees of brightness versus the almost homogeneity of the amplitude in the far field.

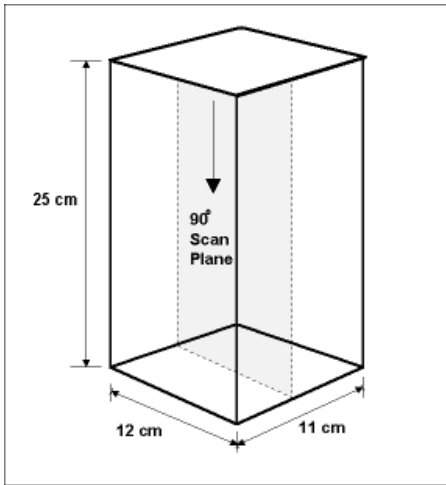
The Model 538N provides a means of evaluating the slice thickness of an imaging system at varying depths. Slice thickness or elevational resolution, the third component of spatial resolution, displays reflections produced by structures in front of or behind the beam's main axis. The effect of changes in the slice thickness is identical to those seen with axial and lateral resolution. Thinner the slice thickness the better the resolution; as the slice thickness increases, the degree of spatial resolution decreases. **Lifetime warranty.**

## Tests Performed

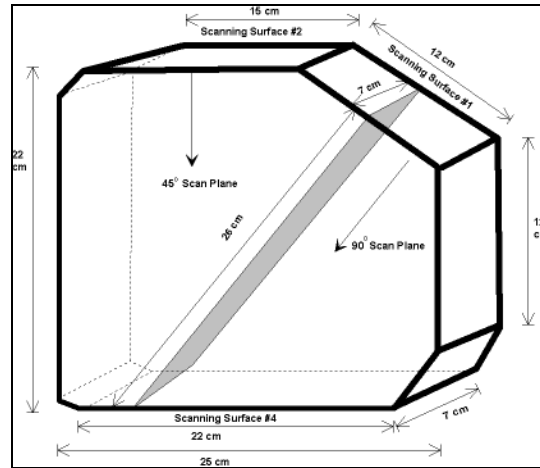
- Beam Profile
- Slice Thickness (Model 538N only)
- Image Uniformity
- Tissue Harmonic Imaging Compatibility

# Target Diagram

## Model 538



## Model 538N



# Specifications

## Model 538

**General** Overall Dimensions: 12 x 11 x 25 cm  
Scan Surfaces: 1  
Scan Surface Dimensions: 12 x 11 cm  
Weight: 3.2 Kg  
Tissue Mimicking Material: Urethane rubber  
Freezing Point: <-40°C  
Melting Point: >100°C  
Attenuation Coefficient: 0.5 dB/cm/MHz ± 5.0%  
Speed of Sound: 1450 m/s ±1.0% at 23°

**Target** Scattering plane located in the center of and perpendicular to the 12 x 11 cm plane of the phantom.

Size: 12 x 25 cm  
Depth: 0 to 25 cm

## Model 538N

**General** Overall Dimensions: 25 x 22 x 7 cm  
Scan Surfaces: 3  
Weight: 3.4 Kg  
Tissue Mimicking Material: Urethane rubber  
Freezing Point: <-40°C  
Melting Point: >100°C  
Attenuation Coefficient: 0.5 dB/cm/MHz ± 5.0%  
Speed of Sound: 1450 m/s ±1.0% at 23°

**Targets** Scattering plane oriented at 45° to the scan planes used to measure slice thickness, and 90° to the beam profile scan plane

Size: 26 x 7 cm  
Depth: 0 to 22 cm