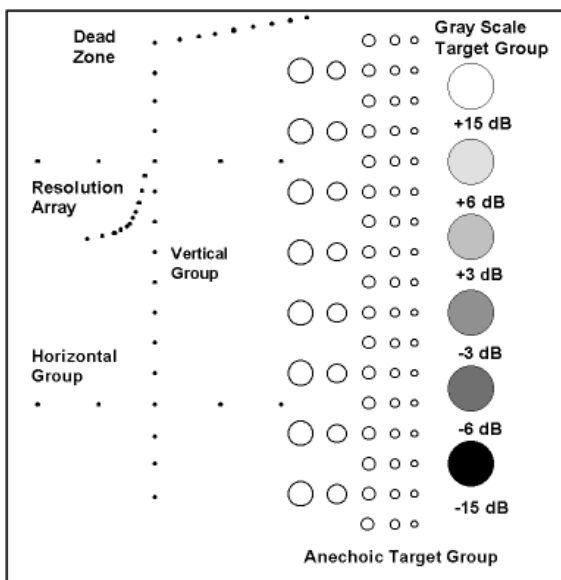




Model 539 Multipurpose Phantom

- Dead Zone or Ring-Down
- Vertical Measurement Calibration
- Horizontal Measurement Calibration
- Sensitivity/Penetration
- Functional Resolution
- Focal Zone
- Axial & Lateral Resolution
- Image Uniformity
- Gray Scale & Displayed Dynamic Range



Product Description

The Model 539 Multipurpose phantom is an easy, comprehensive means of evaluating imaging systems with an operating frequency range of 2.25 to 7.5 MHz. Phantom is designed with a combination of monofilament line targets for distance measurements and tissue mimicking target structures of varying sizes and contrasts. Cystic-like target structures are positioned in-line vertically, thereby permitting an entire target group to be displayed in one view. Due to the acoustic similarity of the background material and the target structures, artifacts caused by distortion, shadowing or enhancement have been eliminated. Six gray scale targets ranging in contrast from +15 to -15 dB are provided to evaluate the system's displayed dynamic range and gray scale processing performance.

Specifications

General

Overall Dimensions	23.4 x 20.5 x 9.5cm*
Weight	3.1 Kg*
Housing Material	PVC
Wall Thickness	1.0 cm*
Scan Surfaces	4
Scan Surface Dimensions	17.5x7.5 cm* 14.0x7.5 cm*

Tissue Mimicking Material

Type	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°

Line Targets

Material	Monofilament Nylon
Diameter	0.12mm ± 5%
Position Tolerance	± 0.1 mm
Vertical Group	
Number of Targets	17
Interval Spacing	1.0 cm
Depth	1.0 - 18.0 cm
Horizontal Group	
Number of Targets	10
Number of Groups	2
Interval Spacing	2.0 cm
Depth	
Scanning Surface #1	5.0 cm
Scanning Surface #3	5.0 cm

Dead Zone Group	
Number of Targets	9
Lateral Displacement	5.0 mm
Interval Spacing	1.0 mm
Depth	2.0 - 10.0 mm
Axial-Lateral Resolution Group	
Number of Targets	11
Lateral Displacement	1.0 mm
Interval Spacing	5.0, 4.0, 3.0, 2.0, 1.0 mm
Depth	7.0, 11.0, 4.0, 16.0 cm

Anechoic Target Structures

Type	Non-echogenic, cylindrical
Positional Tolerance	± 0.1 mm
Diameter Tolerance	± 5%
Number of Groups	5
Targets:	17
Group 2, 3, 4	8
Group 6, 8	
Diameters	
Group 2, 3, 4	2.0, 3.0, 4.0 mm
Group 6, 8	6.0, 8.0 mm
Interval Spacing (center to center)	
Group 2, 3, 4	1.0 cm
Group 6, 8	2.0 cm
Depth	1.0 - 17.0 cm

Gray Scale Target Structures

Type	Echogenic, Cylindrical
Number of Targets	6
Diameters	15.0 mm
Interval Spacing (center to center)	2.0 cm
Depth	4.0 cm
Contrast relative to background material (dB)	+15,+6, +3,-3,-6, -15

*Nominal dimensions

**Other attenuations are available upon request