

# Multi-Purpose Phantom

## Model ATS 539



The Model 539 Multipurpose phantom is an easy, comprehensive means of evaluating imaging systems over the full range of clinical imaging frequencies (2 MHz to 18 MHz).

The 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. All ATS urethane phantoms are guaranteed for the useful life of the phantom, defined as 10 years.

### Key Tests with Model ATS 539

- 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
- Dead Zone Assessment

**CIRS**

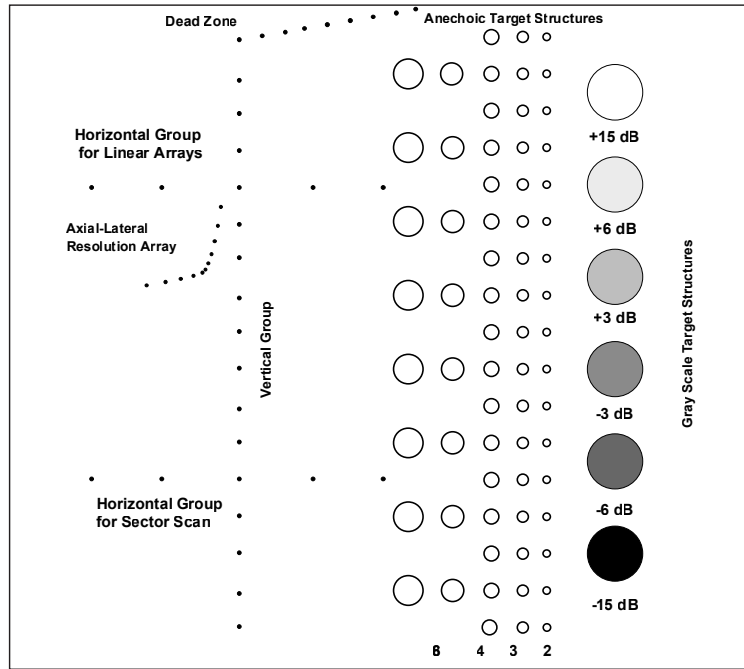
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SPECIFICATIONS

<b>DIMENSIONS</b>	23.4 x 20.5 x 9.5cm (9" x 8" x 4")
<b>PHANTOM WEIGHT</b>	7 lbs. (3.1 kg)
<b>HOUSING MATERIALS</b>	PVC
<b>WALL THICKNESS</b>	1.0 cm
<b>SCAN SURFACES</b>	4
<b>SCAN SURFACE DIMENSIONS</b>	17.5x7.5 cm 14.0x7.5 cm
<b>TISSUE-MIMICKING MATERIAL</b>	Urethane Rubber

URETHANE PROPERTIES

Freezing point: < -40°C  
 Melting point: Above 100° C  
 Speed of Sound: 1450 m/s at 23°  
 Attenuation Coefficient: 0.5 dB/cm/MHz (measured at 3.5 MHz)

LINE TARGETS

Material: Monofilament nylon  
 Diameter: 0.12 mm

VERTICAL DISTANCE GROUP

Number of targets: 17  
 Depth range: 1.0 - 18.0 cm  
 Spacing: 1.0 cm

HORIZONTAL DISTANCE GROUP

Number of groups: 2  
 Depths:  
 Scanning Surface #1: 5.0 cm  
 Scanning Surface #3: 5.0 cm  
 Number of Targets: 10  
 Spacing: 2.0 cm

DEAD ZONE GROUP

Number of targets: 9  
 Depth range: 20-100mm  
 Spacing: 1.0 mm

MODEL ATS 539 INCLUDES

QTY	COMPONENT DESCRIPTION
1	Multi-Purpose Phantom
-	10-Year Warranty
-	User Guide
-	Certificate of Compliance

AXIAL-LATERAL RESOLUTION GROUPS

Number of Targets: 11  
 Lateral Displacement: 1.0 mm  
 Spacing: 4, 3, 2, 1, 0.5 & 0.25 mm  
 Depth: 7.0, 11.0, 4.0, 16.0 cm

ANECHOIC STEPPED CYLINDERS

Type: Non-echogenic, cylindrical  
 Number of Groups: 5

Group 2, 3, 4:  
 Number of targets: 17  
 Diameter of targets: 2.0, 3.0, 4.0 mm  
 Depth of Targets: 1.0 - 17.0 cm  
 Spacing: 1.0 cm

Group 6, 8:  
 Number of targets: 8  
 Diameter of targets: 6.0, 8.0 mm  
 Depth of Targets: 1.0 - 17.0 cm  
 Spacing: 2.0 cm

GRAY SCALE TARGETS

Type: Echogenic, Cylindrical  
 Number of Targets: 6  
 Spacing: 2.0 cm (center to center)  
 Depth: 4.0 cm  
 Contrast: +15, +6, +3, -3, -6, -15 dB with respect to back group

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