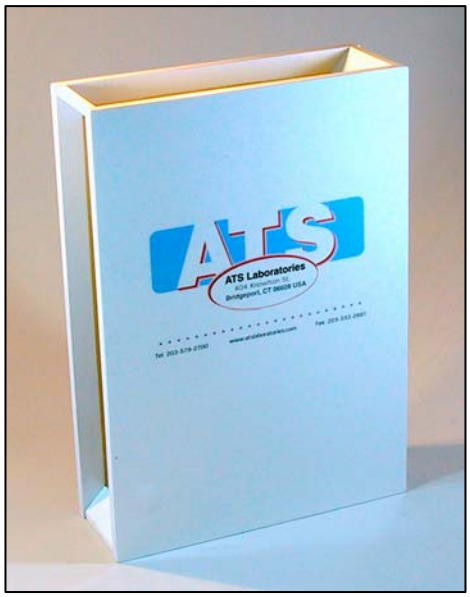
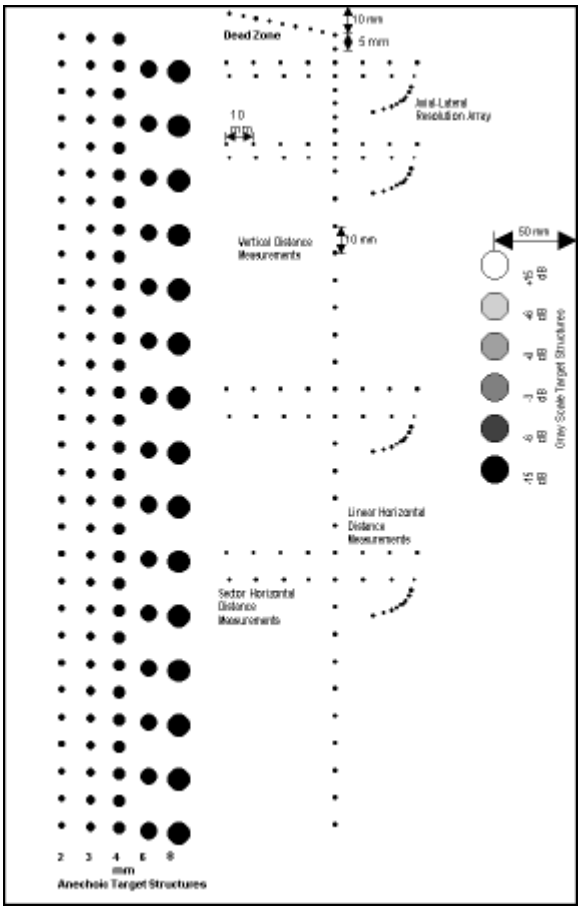
ATS Laboratories
404 Knowlton St.
Bridgeport, CT 06608 USA

Model 549

General & Small Parts 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 549 General & Small Parts phantom is an easy, comprehensive means of evaluating imaging systems with an operating frequency range of 2.25 to 15.0 MHz. The first 6 cm of this model has been designed to accommodate the higher frequencies, whereas the area between 6-30 cm is reserved for frequencies less than 7.5 Mhz. The scanning wells when filled with water provide an ideal means to evaluate endoscopic probes. Simply lie the active area of the transducer onto the surface of the phantom, the procedure is the same as for any standard linear transducer.

The Model 549 is designed with a combination of monofilament line targets for distance measurements and tissue mimicking target structures of varying sizes and contrasts. One hundred and twenty (120) 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	36.5 x 25.7 x 9.5 cm
Housing Material	PVC
Wall Thickness	1.0 cm*
Scan Surfaces	4
Scan Surface Dimensions	21.0 x 7.0 cm 31.5 x 7.0 cm
Weight	7.1 Kg (15.5lb)

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°C

Line Targets	
Material	Monofilament Nylon
Diameter	0.05 mm & .12 mm
Position Tolerance	± 0.1 mm
Vertical Group	
Interval Spacing	
Depth 1.0– 6.0 cm	.5 cm
Depth 6.0 – 30.0 cm	1.0 cm
Depth	1.0 - 30.0 cm
Horizontal Group	
Number of Groups	8
Interval Spacing	1.0 cm
Depths	
Linear Array Group	2.0, 5.0, 14.0, 20.0 cm
Sector/Convex Array Group	2.5, 5.5, 15.0, 21.0 cm

Dead Zone Group	
Lateral Displacement	5.0 mm
Interval Spacing	1.0 mm
Depth	2.0 - 10.0 mm
Axial-Lateral Resolution Group	
Depths (first axial target)	
Scan surface 1	2.5, 5.5, 15, 21.0 cm
Scan surface 2	7.0 cm
Scan surface 4	13, 19, 28.5, 31.5 cm
Interval Spacing	0.5, 1, 2, 3, 4 mm

Anechoic Target Structures	
Anechoic Target Structures Type	Non-echogenic, cylindrical
Group 2, 3, 4 mm	
Targets in each group	30
Diameters	2.0, 3.0, 4.0 mm
Depth Scan surface 1	1.0 - 30.0 cm
Group 6, 8 mm	
Targets in each group	15
Diameters	6.0, 8.0 mm
Interval Spacing (center to center)	2.0 cm
Depth Scan surface 1	2.0 - 30.0 cm

Gray Scale Target Structures	
Type	Echogenic, Cylindrical
Number of Targets	6
Diameters	10.0 mm
Depth	5.0 cm
Contrast relative to background material (dB)	+15,+6, +3,-3,-6, -15

*Nominal dimensions
**Other attenuations are available upon request

ATS Laboratories, Incorporated, 404 Knowlton St., Bridgeport, CT USA Tel: 203-579-2700 Fax: 203-333-2681
Email: atslaboratories@yahoo.com Webpage: atslaboratories.com