

**FLUKE®**

**Biomedical**

# **Nuclear Associates 18-252**

**Contrast Detail Phantom for Mammography**

**Users Manual**

**Fluke Biomedical  
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# Section 1

## Introduction

### 1.1 Product Description

The Contrast Detail Phantom for Mammography is designed to provide a means of quantitatively testing and monitoring the total performance of an entire mammographic imaging chain. Its small size, as well as the number and distribution of holes simulating embedded objects, make this phantom particularly useful in evaluating digital spot mammography systems. With 49 holes generating subtle contrast variations, the phantom makes it possible to detect small changes in overall system performance.

Included with your wise purchase is a tube of grease. The phantom can be taken apart and a liberal application of grease applied to the inner (holed) surfaces, to decrease the contrast from air and eliminate all air artifacts. After putting the phantom back together, simply wipe the excess grease from the edges.

#### Object Diameter

Row Number	Object Diameter	
	(Inches)	(mm)
1	0.169	4.292
2	0.099	2.524
3	0.058	1.485
4	0.034	0.873
5	0.020	0.513
6	0.011	0.302
7	0.007	0.177

#### Object Diameter and Contrast

Column Number	Object Depth		Typical Contrast at Mammographic Energies (%)
	(Inches)	(mm)	
1	0.033	0.853	6.60
2	0.021	0.533	4.20
3	0.013	0.332	2.60
4	0.008	0.208	1.70
5	0.005	0.129	1.00
6	0.003	0.080	0.65
7	0.002	0.050	0.41

The Contrast Detail Phantom for Mammography is easy to use. Simply place the phantom on the image receptor surface in the same position as a breast. Position the x-ray tube and compression device as in a craniocaudal examination. When using the phantom on prone position breast biopsy systems, use the rotating top plate of the phantom and the compression device to secure the phantom against the image receptor. Choose the appropriate kV and mAs factors (26 kV and 60 mAs works well on most systems), or select automatic exposure control.

A good imaging system should resolve at least the following objects:

<b>Row Number</b>	<b>Minimum Number of Objects Detected</b>
1	6
2	6
3	5
4	4
5	2
6	1
7	0
<i>Minimum detectability score: 24/49</i>	

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