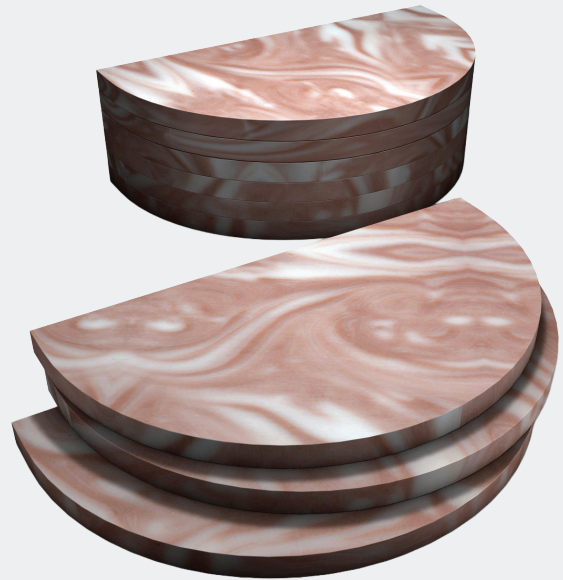




BR3D Breast Imaging Phantom

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- Supports tomosynthesis and breast CT testing
- Complex background provides a greater challenge for target detection
- Slab configurations provide a range of thicknesses with or without targets



The BR3D Breast Imaging Phantom evaluates the detectability of lesions of varying sizes within a tissue-equivalent, heterogeneous breast background.

In traditional 2D mammography, cancerous masses may be obscured by superposition of dense breast tissue, whereas tomosynthesis can help to eliminate this by capturing multiple image slices combined to create a 3D reconstruction. As tomosynthesis continues to become prominent in breast imaging, the BR3D phantom provides a realistic platform for comprehensive system performance evaluation.

The phantom consists of six heterogeneous, breast-equivalent slabs that demonstrate how variations in glandular density can obscure underlying targets. Each slab consists of two tissue-equivalent materials mimicking 100% adipose and 100% gland tissues, swirled together in an approximate 50/50 ratio by weight. Each slab features a unique swirl pattern, allowing multiple background configurations when the slabs are rearranged.

A dedicated target slab contains a range of simulated microcalcifications, fibrils, and masses. This target slab can be positioned at different depths within the phantom by varying the arrangement of the background slabs, enabling depth-dependent detectability studies.

Slabs with alternative gland-to-adipose ratios by weight are available upon request.

Key Benefits

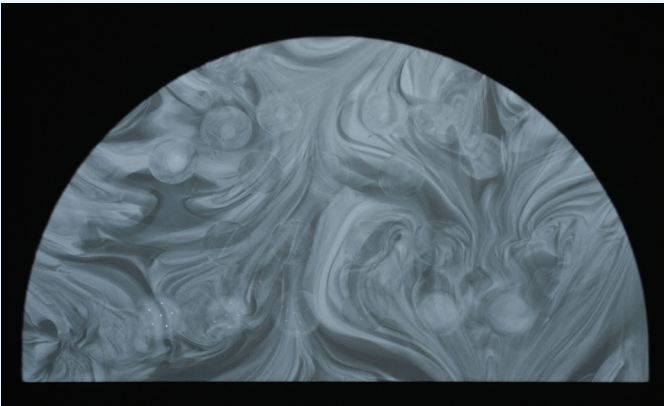
- Tissue-equivalent adipose and gland tissues swirled in an approximate 50/50 ratio by weight provide a more realistic target detection assessment
- One target slab contains microcalcifications, fibrils, and masses
- Five 1 cm background slabs provide a range of breast thicknesses with or without targets

BR3D Breast Imaging Phantom

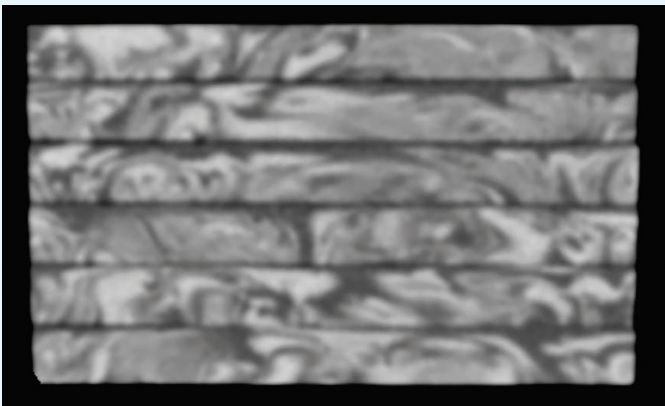
Supports tomosynthesis and breast CT testing

Specifications

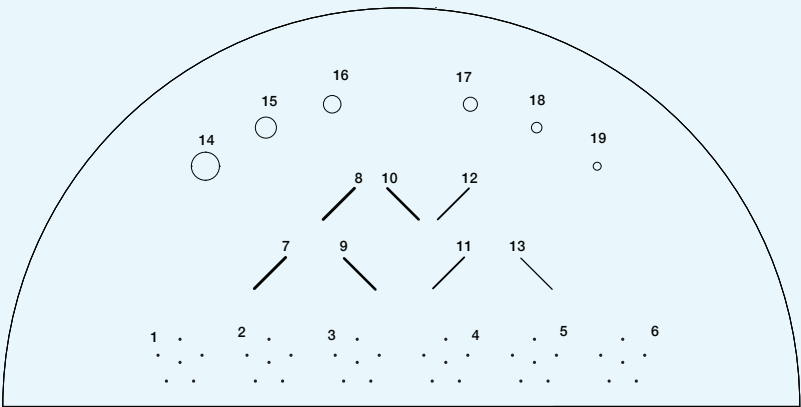
Overall Dimensions	10 x 18 x 6 cm (4" x 7" x 2.4")
Slab Dimensions	10 x 18 x 1 cm, semi-circular shape
Weight	0.9 kg (2 lbs)
Materials	Slabs: Epoxy resin Specks: Calcium carbonate Spheroidal Masses: Epoxy resin, breast carcinoma formulation



Screen-film mammography image of the target slab



Coronal CT image of the phantom set



Target Slab

Specks (CaCO3)	Fibers (10 mm length)	Spheroidal Masses (Breast Carcinoma)
1. 0.400 mm	7. Ø 0.60 mm	14. Ø 6.3 mm
2. 0.290 mm	8. Ø 0.41 mm	15. Ø 4.7 mm
3. 0.230 mm	9. Ø 0.38 mm	16. Ø 3.9 mm
4. 0.196 mm	10. Ø 0.28 mm	17. Ø 3.1 mm
5. 0.165 mm	11. Ø 0.23 mm	18. Ø 2.3 mm
6. 0.130 mm	12. Ø 0.18 mm	19. Ø 1.8 mm
	13. Ø 0.15 mm	