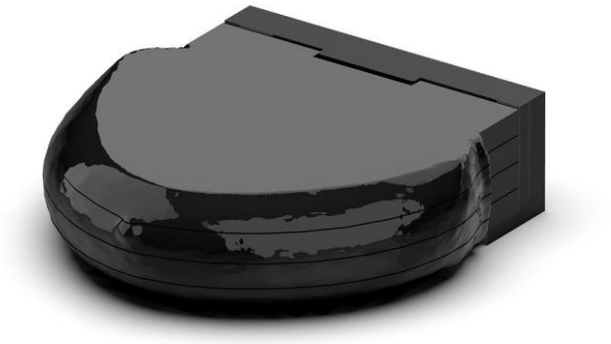
Article Number
PX02034421

Made in Germany

BREAST PHANTOM – MAM AI-SIM

Age Category	Adult
Body Region	Breast
Target Modality	Mammography, Tomosynthesis
Diagnostic Features	Masses, Calcifications

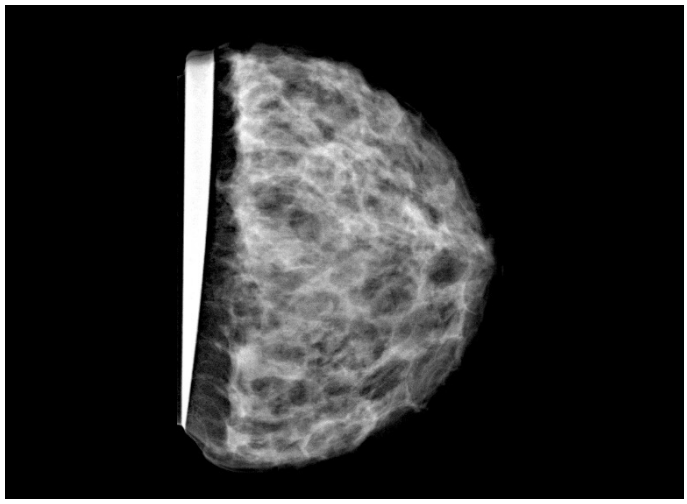


This phantom simulates a compressed breast. It is composed of four slabs that are held together by a magnetic mount.

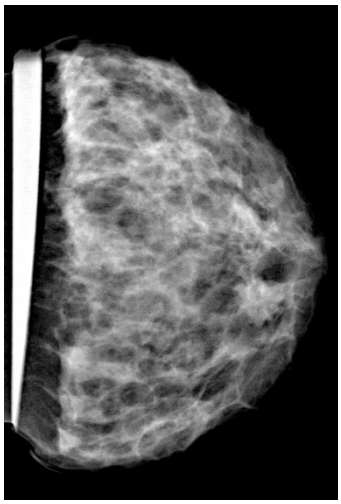
The phantom can be equipped with an insertable pattern to simulate microcalcifications. The central slabs can be replaced to simulate a breast mass.

The phantom can be used in mammography and breast tomosynthesis to evaluate and optimize imaging performance and post-processing applications, including AI-enabled applications. It is also suited for training purposes.

The phantom provides a detailed and realistic simulation of glandular and adipose tissue.



Breast phantom



Tumor slabs inserted

Calcification pattern inserted

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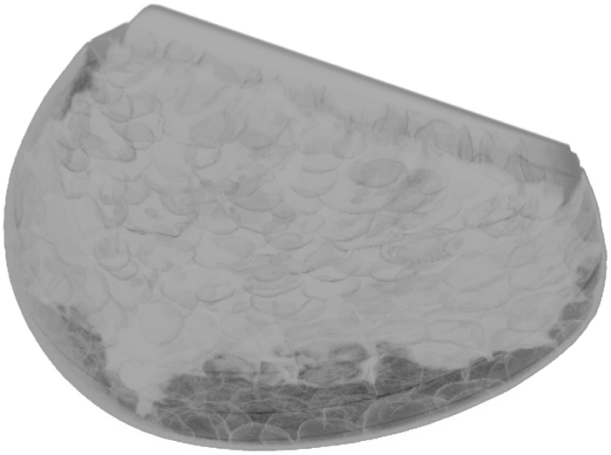
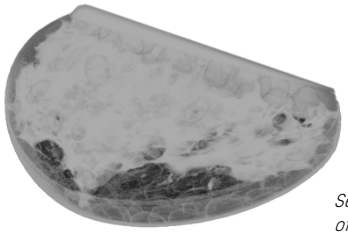
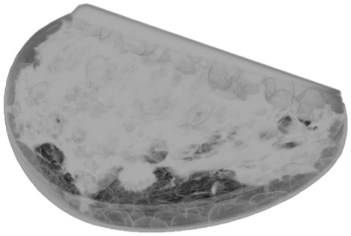


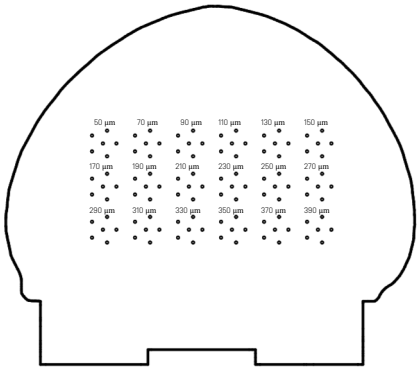
Phantom composed of 4 slabs simulating glandular and adipose tissue



Section shows phantom composition of glandular and adipose tissue



Section shows phantom composition after insertion of tumor slabs



Drawing indicates diameter of microcalcifications of the insertable calcification pattern

Specifications

Size	Approx. 152 x 134 x 36 mm 6.0 × 5.3 × 1.4 in
Weight	Approx. 590 g 1.3 lb
Components	4 slabs of 9 mm thickness
Positioning aid	Magnetic mount
Base material	Cellulose-polymer composite

Diagnostic features

Realistic simulation of glandular and adipose tissue.

Insertable calcification pattern

- Pattern thickness: 0.1 mm
- Calcification diameter: 50 to 390 µm

Replacement slabs containing a spiculated mass

- Mass integrated in 2 additional slabs for replacement of the 2 central slabs
- Mass size: approx. 16 x 16 x 17 mm

For more information visit
www.phantomx.de

BREAST PHANTOM – MAM AI-SIM

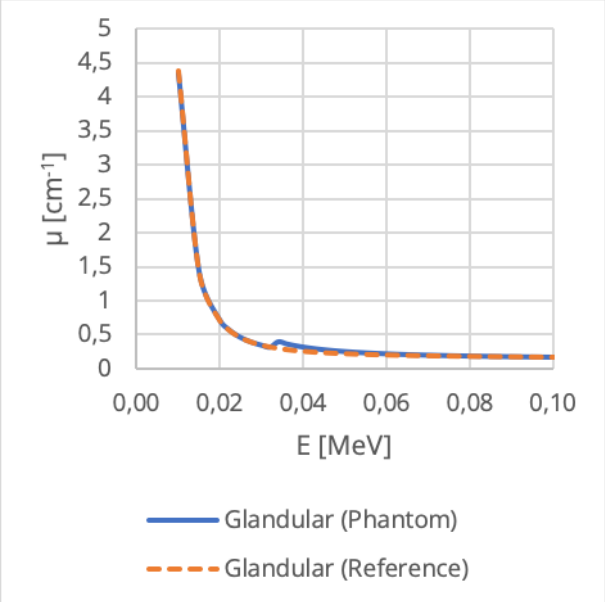
General indications

- The phantom is made of a cellulose-polymer composite material with properties similar to hardwood. If handled carefully, it will last a long time.
- The phantom is coated with a protective layer. If the protective layer is undamaged, the phantom can be cleaned using a damp cloth (water or mild detergent).
- Protect from direct sunlight.
- Maintain a storage temperature of 10 °C to 30 °C. If the phantom is exposed to temperatures below -10 °C or above 45 °C, it can be severely damaged.
- The phantom is not equipped for dose measurements with dosimeters and it is not suited for material characterization with dual energy CT.
- The phantom is not certified as medical device.
- Air voids are filled with cellulose-polymer composite of approx. -160 HU.
- Handle with care to prevent injury or damage.
- If external damage is observed, it is recommended to consult PhantomX.

Attenuation properties

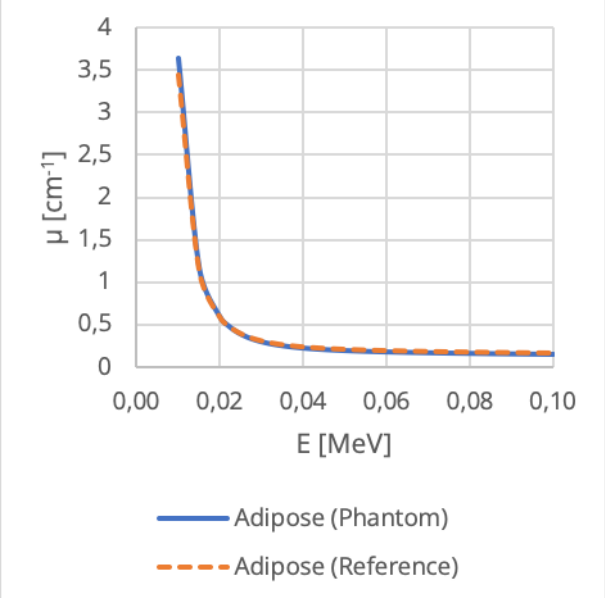
Glandular Tissue

Linear attenuation coefficients [cm^{-1}] (calculated)



Adipose Tissue

Linear attenuation coefficients [cm^{-1}] (calculated)



Phantom based on modified data, originally published by Ikejimba LC et al. A novel physical anthropomorphic breast phantom for 2D and 3D x-ray imaging. Med Phys (2017) and Graff CG. A new, open-source, multi-modality digital breast phantom. SPIE Medical Imaging (2016)

Tissue Reference: Woodard HQ, White DR. The composition of body tissues. Br J Radiol. 1986.

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