

ABDOMEN PHANTOM

Age
Category

Adult

Body
Region

Abdomen

Target
Modality

CT

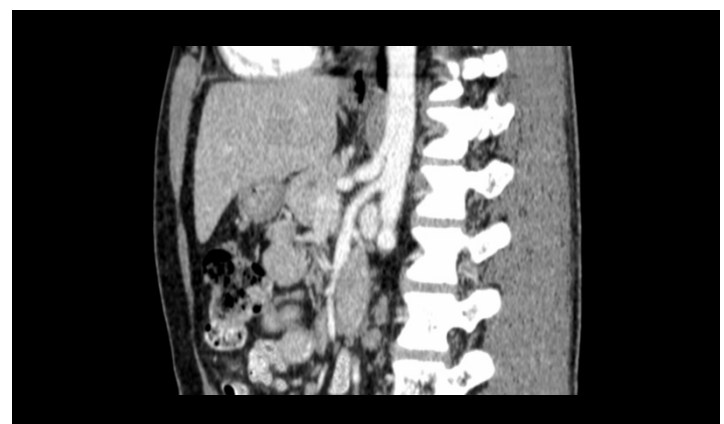
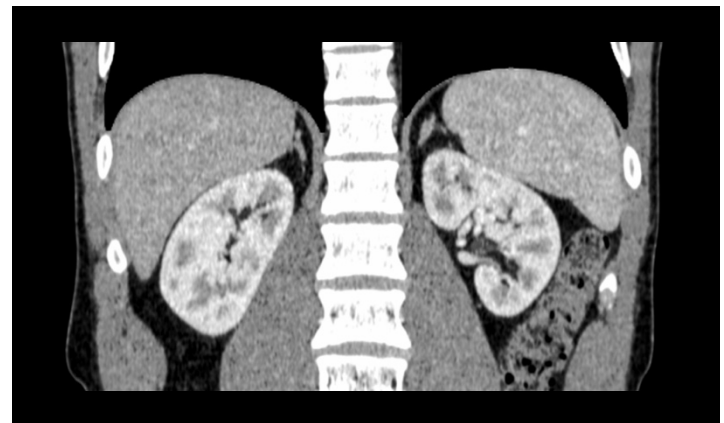
Diagnostic
FeaturesLow contrast
lesions

This abdomen phantom can be used in CT for evaluation of low-contrast lesions in the liver. It was designed to enable evaluation of diagnostic software, including AI tools.

The phantom simulates a contrast medium enhanced abdomen in early portal venous phase and has 35 low-contrast liver lesions.

The phantom provides a detailed and realistic simulation of soft and bone tissue, including small details such as lymph nodes. Air voids are filled with a cellulose-polymer composite of approx. -80 HU.

The phantom can be used for detection, segmentation and classification tasks and other common methods of image quality evaluation.



ABDOMEN PHANTOM



Specifications

Size	Approx. 268 x 189 x 149 mm
Weight	Approx. 5400 g
Base material	Cellulose-polymer composite
Optimal tube voltage	120 kVp (cf page 5) - adaptable upon request -

Diagnostic features

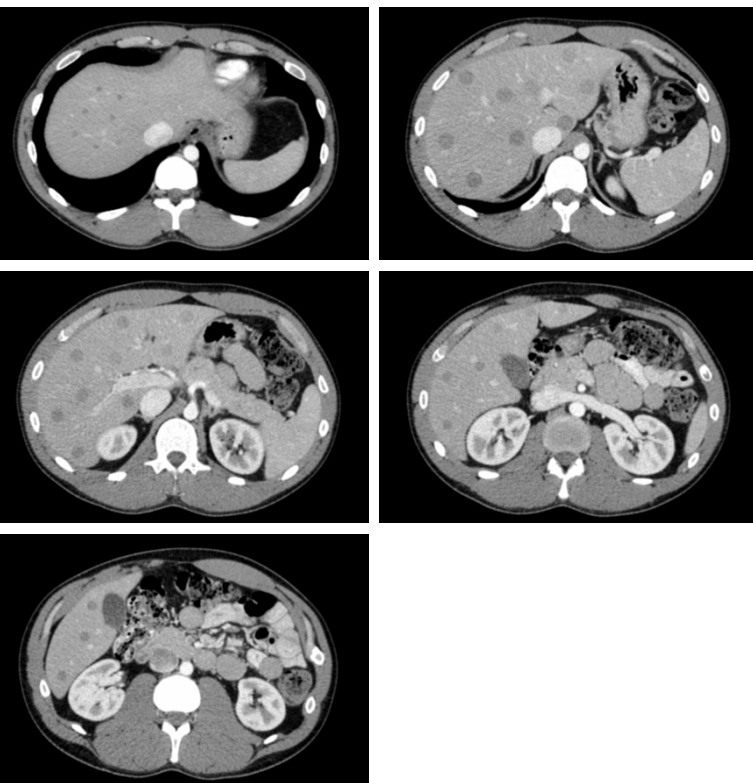
35 rod-shaped liver lesions in 5 sections
Lesion height: 10.9 mm

- Section 1: 8 lesions, 5 mm diameter, approx. -50 to -20 HU contrast at 120 kVp
- Section 2: 9 lesions, 13 mm diameter, approx. -40 to -20 HU contrast at 120 kVp
- Section 3: 9 lesions, 11 mm diameter, approx. -40 to -20 HU contrast at 120 kVp
- Section 4: 6 lesions, 8 mm diameter, approx. -30 to -20 HU contrast at 120 kVp
- Section 5: 3 lesions, 8 mm diameter, approx. -40 HU contrast at 120 kVp

Similar products

- Head phantom with brain lesions
- Abdomen phantoms with liver lesions
- Abdomen phantoms with pancreatic lesions
- Breast phantom with microcalcifications and breast mass

For more information visit
www.phantomx.de

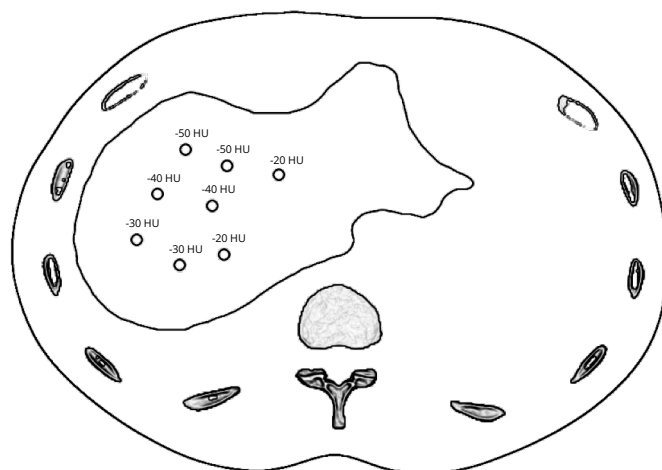


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Section 1 _____
 Section 2 _____
 Section 3 _____
 Section 4 _____
 Section 5 _____



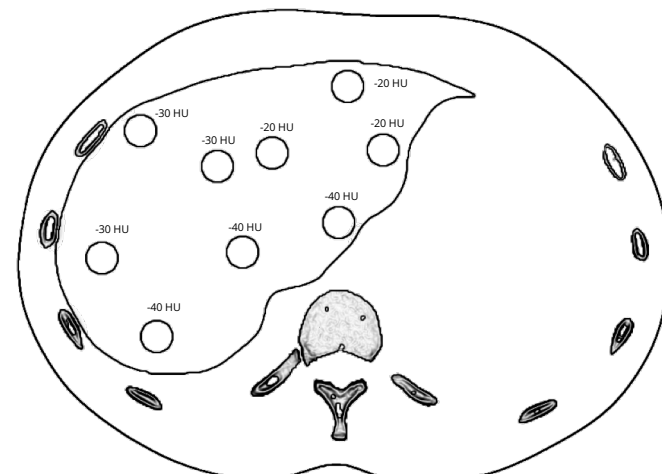
Exemplary image of section 1



Drawing indicates lesion contrast to surrounding liver tissue.



Exemplary image of section 2

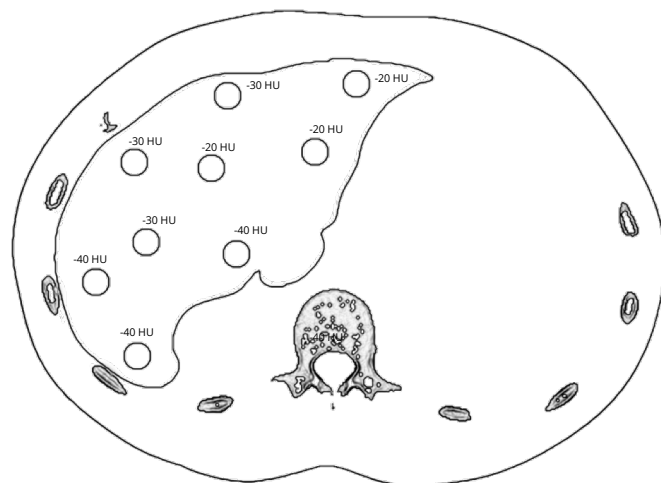


Drawing indicates lesion contrast to surrounding liver tissue.

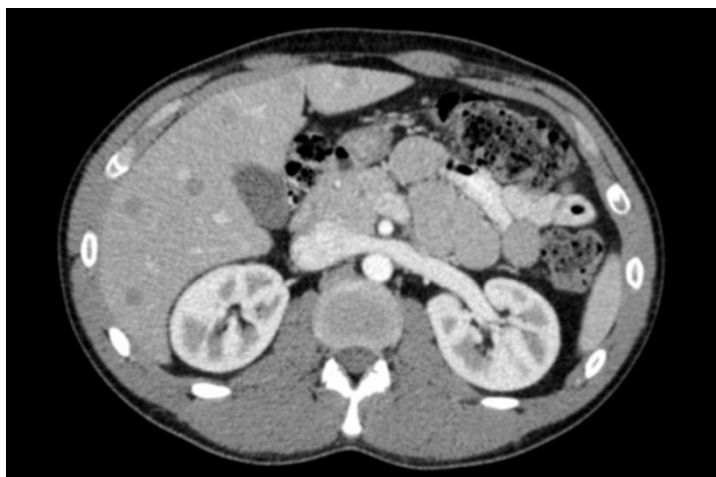
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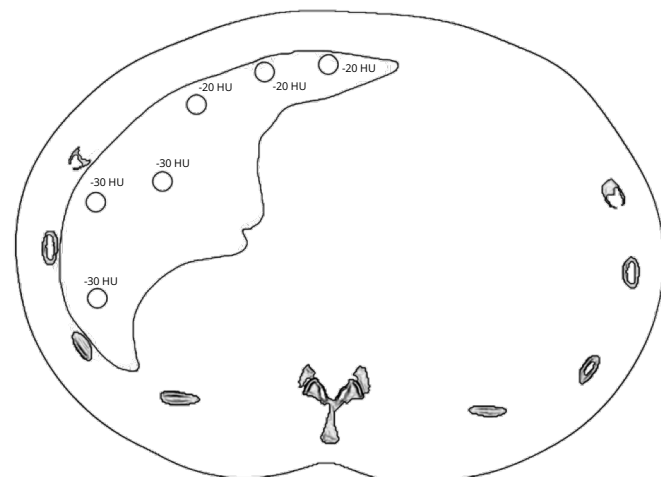
Exemplary image of section 3



Drawing indicates lesion contrast to surrounding liver tissue.



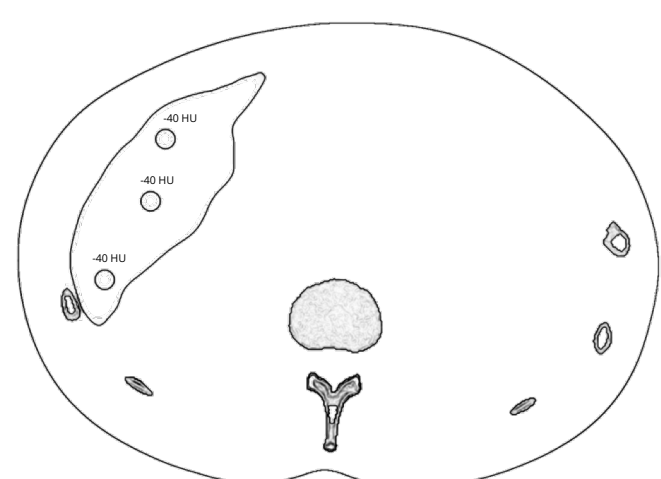
Exemplary image of section 4



Drawing indicates lesion contrast to surrounding liver tissue.



Exemplary image of section 5



Drawing indicates lesion contrast to surrounding liver tissue.

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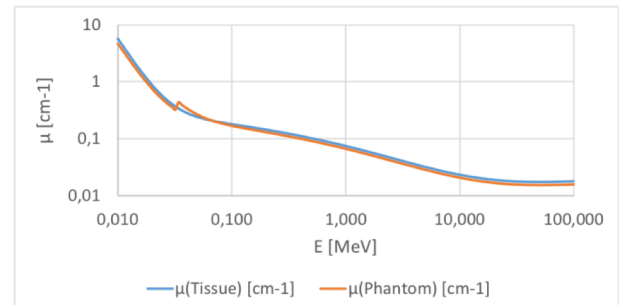
General indications

- 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.
- Abdominal air voids are filled with cellulose-polymer composite of approx. -80 HU.
- Lesion contrasts can slightly vary due to the anatomical phantom structure.

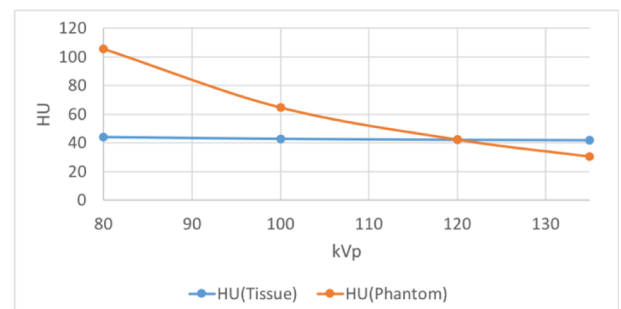
Attenuation properties

Soft Tissue

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

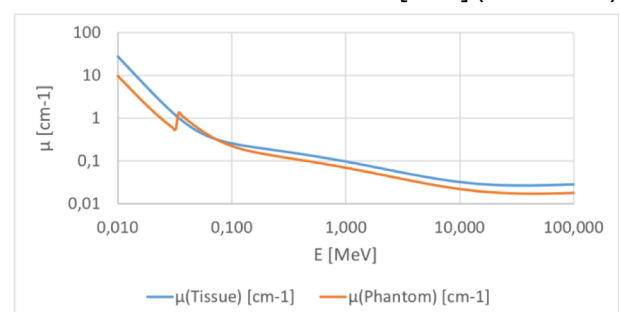


Hounsfield units (calculated)

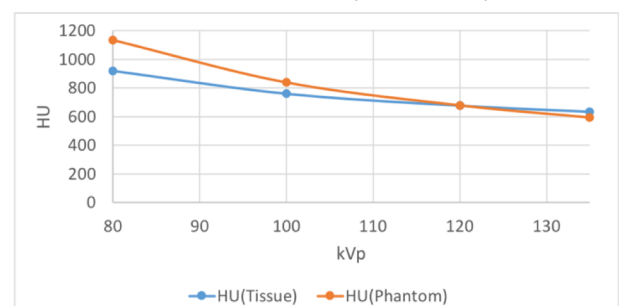


Bone Tissue

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



Hounsfield units (calculated)



Phantom based on modified data, originally from Roth H, et al. (2015). A new 2.5 D representation for lymph node detection in CT [Data set]. The Cancer Imaging Archive. licensed under CC BY 3.0.

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