

# ABDOMEN PHANTOM

Age  
Category

Adult

Body  
Region

Abdomen

Target  
Modality

CT

Diagnostic  
Features

Low contrast  
lesions

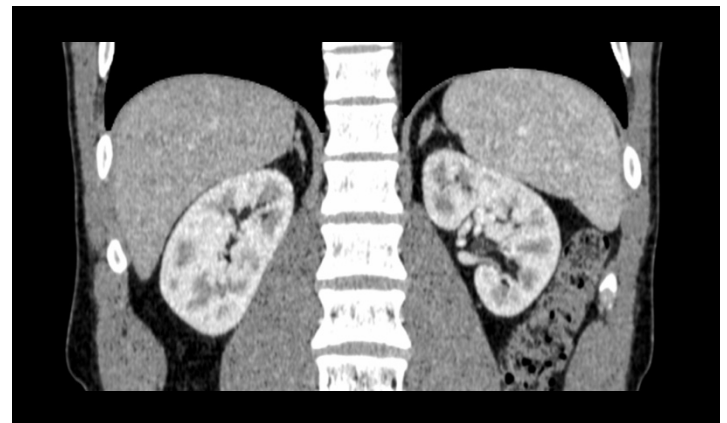


This abdomen phantom can be used in CT for evaluation of low-contrast lesions in the liver. It was designed to enable evaluation of diagnostic software, including AI tools.

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

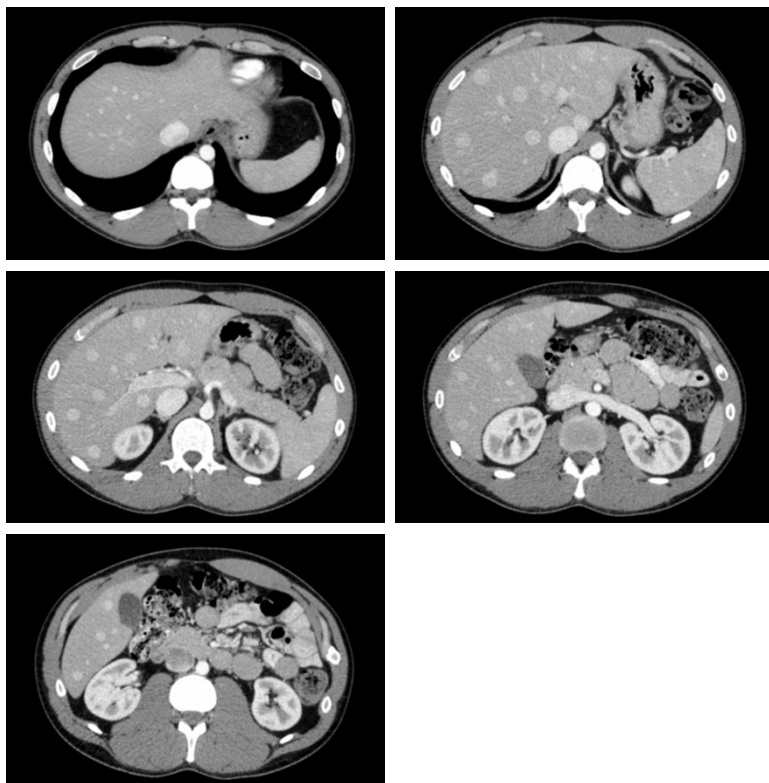
35 rod-shaped liver lesions in 5 sections  
Lesion height: 10.9 mm

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

## Similar products

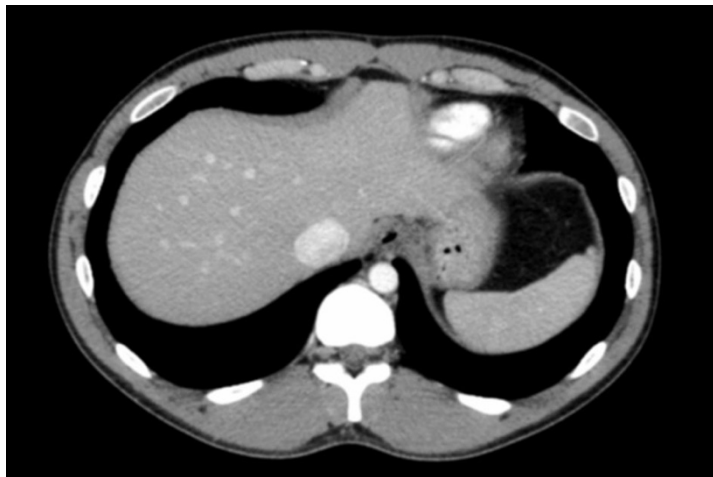
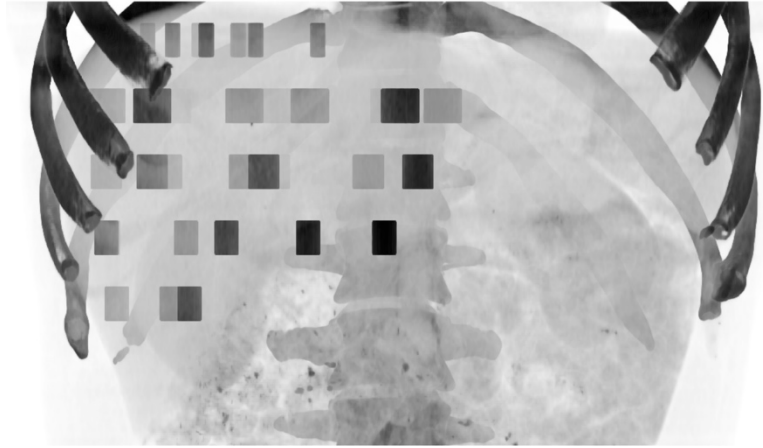
- Head phantom with brain lesions
- Abdomen phantoms with liver lesions
- Abdomen phantoms with pancreatic lesions
- Breast phantom with microcalcifications and breast mass

For more information visit  
[www.phantomx.de](http://www.phantomx.de)

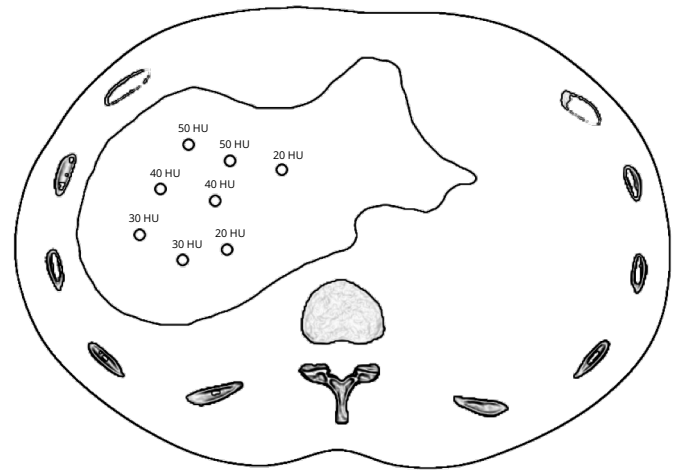


# ABDOMEN PHANTOM

- Section 1 \_\_\_\_\_
- Section 2 \_\_\_\_\_
- Section 3 \_\_\_\_\_
- Section 4 \_\_\_\_\_
- Section 5 \_\_\_\_\_



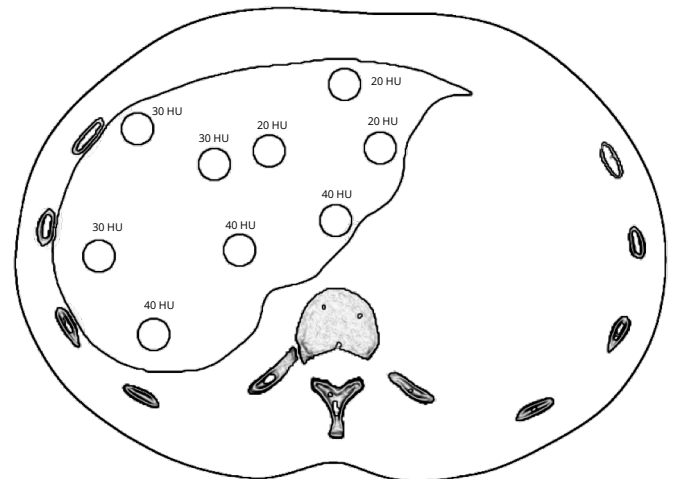
*Exemplary image of section 1*



*Drawing indicates lesion contrast to surrounding liver tissue.*



*Exemplary image of section 2*

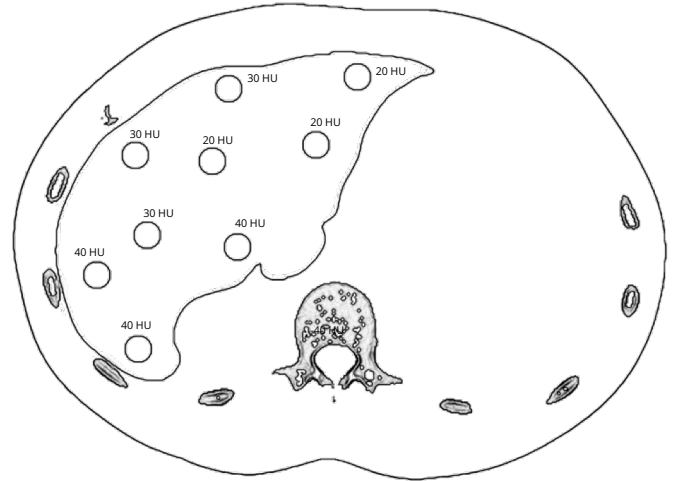


*Drawing indicates lesion contrast to surrounding liver tissue.*

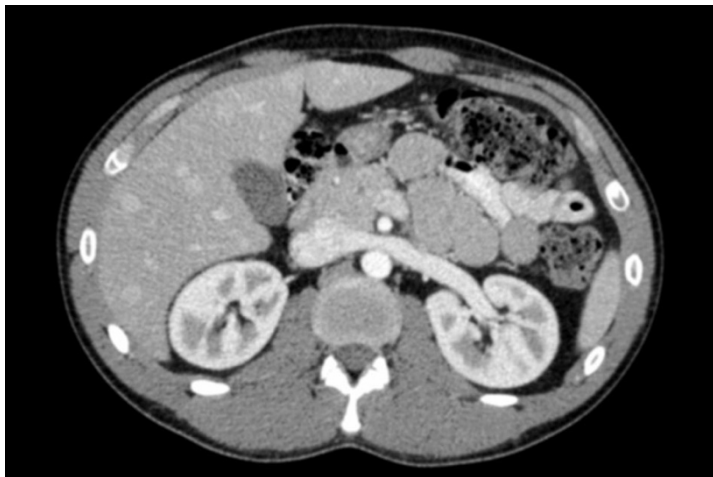
# ABDOMEN PHANTOM



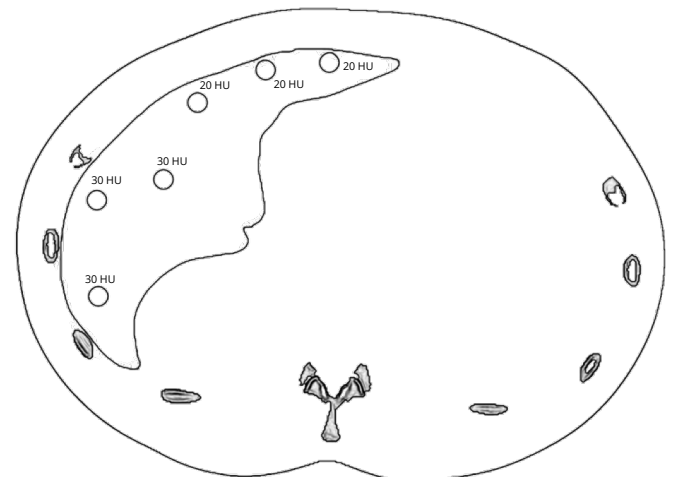
*Exemplary image of section 3*



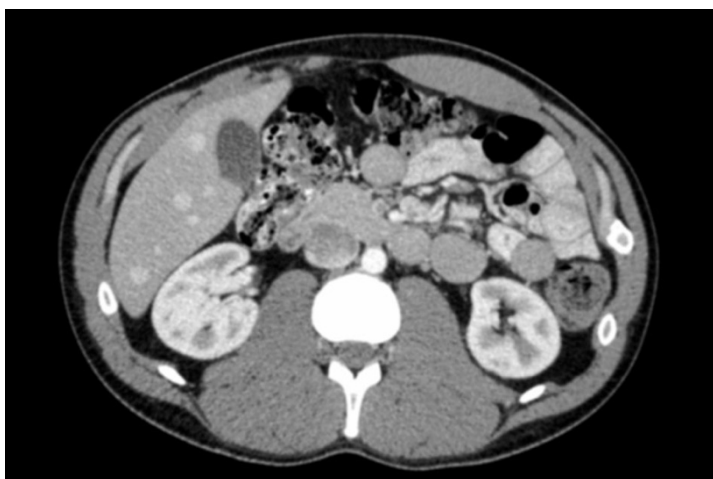
*Drawing indicates lesion contrast to surrounding liver tissue.*



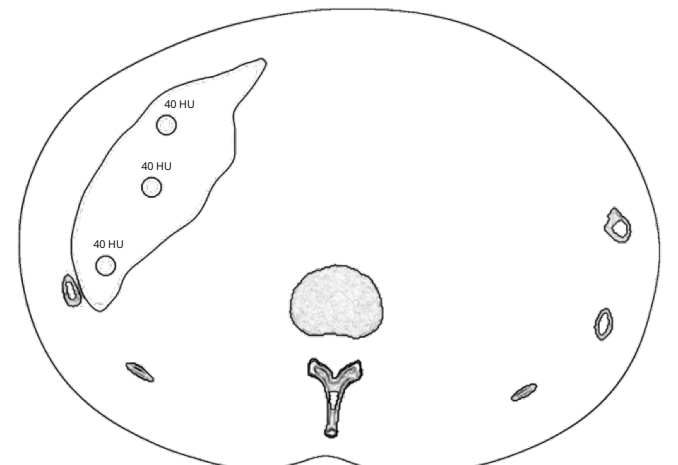
*Exemplary image of section 4*



*Drawing indicates lesion contrast to surrounding liver tissue.*



*Exemplary image of section 5*



*Drawing indicates lesion contrast to surrounding liver tissue.*



# ABDOMEN PHANTOM

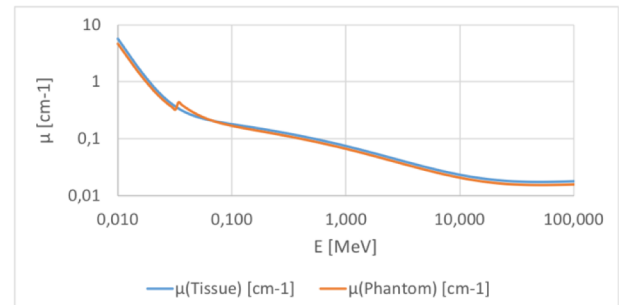
## General indications

- 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.

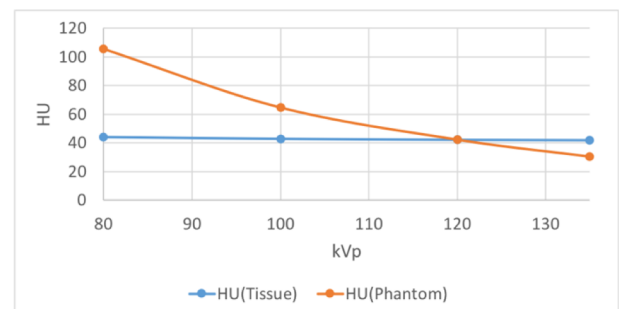
## Attenuation properties

### Soft Tissue

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

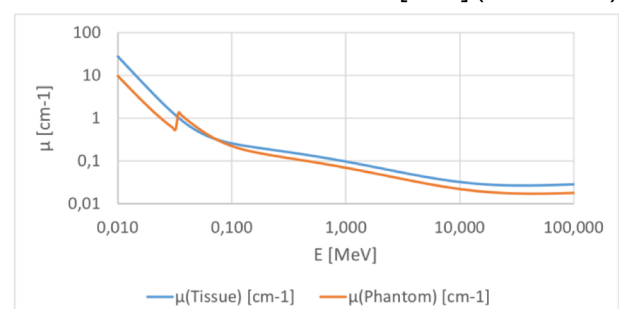


### Hounsfield units (calculated)

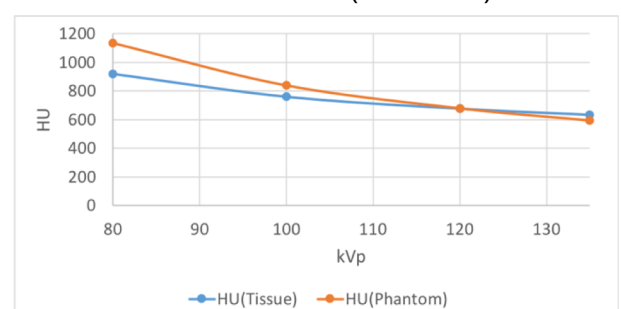


### Bone Tissue

Linear attenuation coefficients [ $\text{cm}^{-1}$ ] (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.