

Pro-CT 110



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The Pro-CT 110 phantom may be used for carrying out acceptance and constancy tests of computed tomography systems according to IEC 61223-3-5 and the AAPM (American Association of Physicists in Medicine) guidelines.

This phantom consists of several test modules placed inside the cylindrical container that can be mounted either directly on a holder of the CT table or on an adjustable stand. It allows for accurate alignment for measurements on and off the table. Markings on the phantom and levelling aids provide further facilitation

of the positioning process.

The phantom can be used to do the following tests:

- Geometric distortion
- CT number (HU) measurement
- Noise / Uniformity
- Artefacts
- MTF
- SSP, LSF, PSF
- CNR
- Spatial resolution
- Contrast resolution
- Low contrast resolution
- Slice profile
- Alignment
- Linearity
- Beamwidth

Technical data

(can be modified to customer specifications):

Main module

- outside diameter: 110 mm
- length: 200 mm
- contains a PMMA section - lid with an array of holes 2mm in diameter, 10 mm deep, placed at 10 mm intervals on one end
- on the opposite end of the body, a homogeneous module is permanently attached

Homogenous module

- diameter: 100 mm
- thickness: 20 mm
- made of PMMA

Low contrast module

- diameter: 100 mm
- thickness: 20 mm
- made of PMMA
- contains low-contrast objects: rods of the same density, 10 mm in height and with diameters 2, 3, 4, 6, 8, 10, 12 mm (contrast difference between groups and surrounding material is 0.3, 0.6 and 1%)

Sensitometry/contrast module

- diameter: 100 mm
- thickness: 20 mm
- contains 6 sensitometric samples shaped like rods (ø15 mm): PTFE, LDPE, POM-C, air, plastic water equivalent and PMMA module's body

Geometry module

- diameter: 100 mm
- thickness: 20 mm
- contains a pair of aluminium wire ramps whose slope angle tangent is equal to 0.5

Spatial / high-contrast resolution module

- diameter: 100 mm
- thickness: 20 mm
- contains 19 concentrically placed high-contrast elements for spatial resolution evaluation from 4 to 22 LP/cm

LSF/PSF module

- two tungsten carbide beads ø0.2 mm for MTF and SSP calculation
- Linear Spread Function (LSF) PTFE / PMMA interface
- Point Spread Function (PSF) - 0.025 mm stainless steel wire in air

Water-filled module

- diameter: 100 mm
- thickness: 23 mm
- screw for easy filling and emptying procedures

Accessories

- carrying case

Product features

- complies with:
 - IEC 61223-3-5
 - IEC 61223-2-6
 - AAPM guidelines or ACR guidelines
- the manual provides detailed guidelines for carrying out each test, results assessment and registration