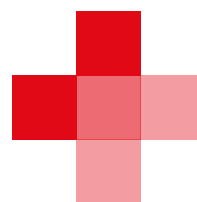
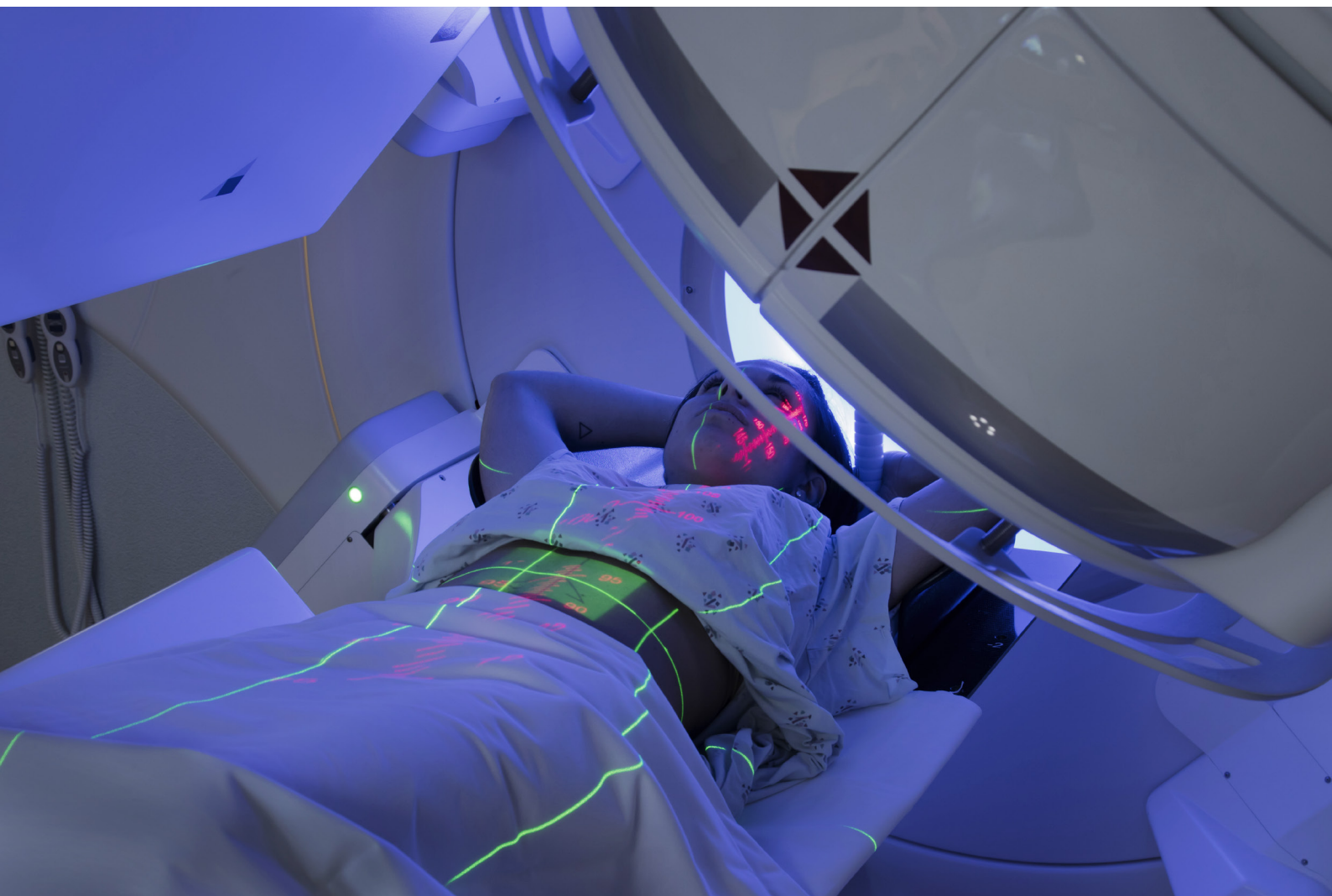




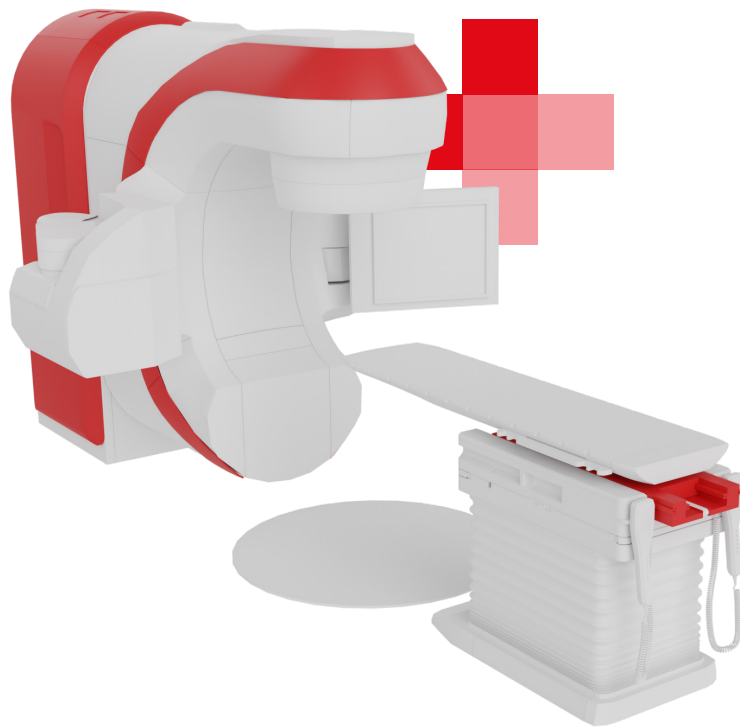
Radiotherapy





Radiotherapy

Phantoms



Pro-RT ED

07-601



The Pro-RT ED phantom is used to account for tissue heterogeneity in radiotherapy treatment planning. It can be used to define precise correlation of CT data to electron density of various tissues. Phantom consists of two nested disks that represent head and abdomen. Nine different tissue equivalent electron density plugs can be positioned at 17 different locations within the scan field. Included is a water vial plug that can be filled with any fluid. Optional distance marker plugs enable quick assessment of the CT scanner's distance measurement accuracy.

The Phantom can be used to do the following tests:

- CT value measurement (HU)
- Evaluate CT scan data
- Correct for inhomogeneities
- Document relationship between CT number and tissue electron density
- Simulate indicated tissue within the diagnostic energy range
- Quick assessment of distance registration

Technical data (can be modified to customer specifications):

- Electron Density Head Insert: Ø 180 mm x 50 mm
- Electron Density Body without Head Insert: 330 mm x 270 mm x 50 mm
- list of electron density plugs Ø 30 mm x 50 mm: Lung (inhale), Lung (exhale), Breast (50% gland / 50% adipose tissue), Fixed trabecular bone 200, Liver, Muscle, Adipose tissue, Fixed dense bone 800, Fixed dense bone 1250, Water-filled plug and optional titanium or steel rod
- Set of 2 Feet
- Carry Case

Product features:

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

Pro-Dose Small Water

07-101



The stationary water phantom for high energy photon dosimetry with **all types of ionization chambers**.

Technical data (can be modified to customer specifications):

- dimensions: 200 x 200 x 110 mm
- cover made of PMMA
- solid construction ensures durability and no leaks
- entrance wall made of milky / opaque 3 mm thick PMMA
- fixed measuring depth at 50 mm
- positioning markers on the top and side surfaces
- phantom can be filled with water through a seal plug - a funnel is provided to facilitate the process
- two elastic extension vessels compensate changes of the water volume caused by ambient temperature changes
- well fitted holders are available for different chamber types
- chamber holders can be interchanged (option)
- heavy duty carrying case

Product highlights:

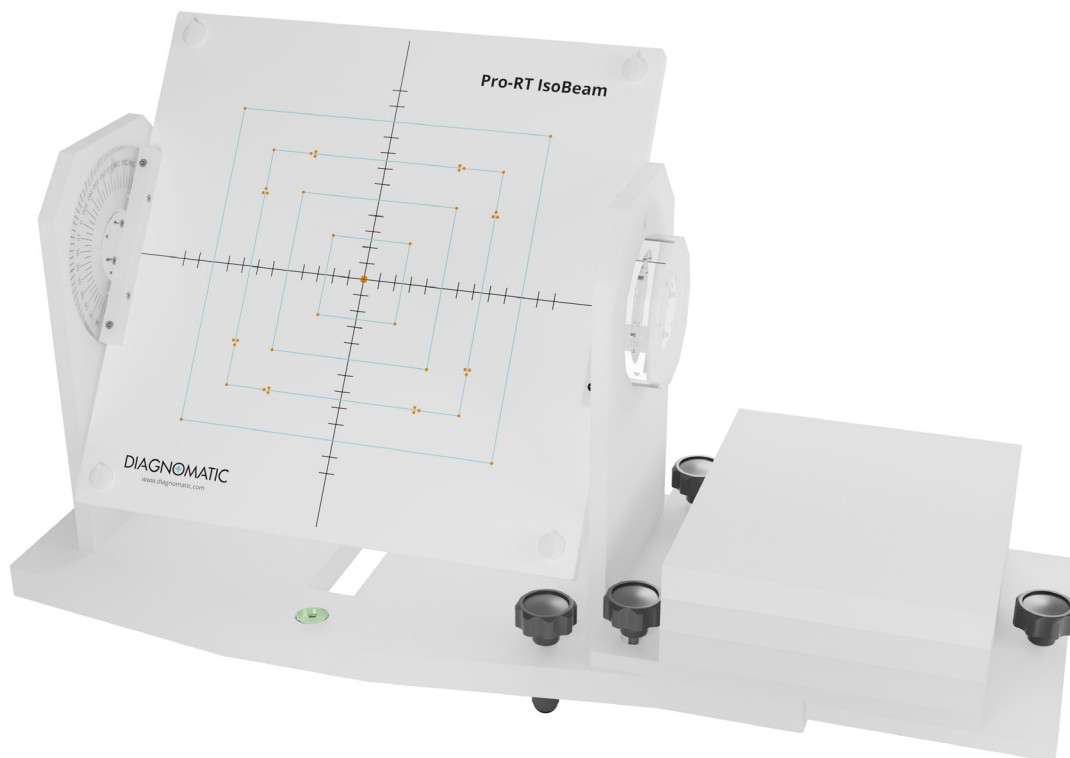
- opaque / white entrance wall with crosshair, makes it very easy to accurately position the phantom in the beam
- side markers at the measurement depth provide further assistance during positioning
- interchangeable holders for different ionization chambers
- extremely well fitted holders are very thin at the reference point – 1 mm thick PMMA
- water-proof ion chamber holders are also available

Product features:

- complies with:
 - IAEA Technical Reports Series No. 398
 - IAEA Technical Reports Series No. 430
 - IAEA Specification and Acceptance Testing of Radiotherapy Treatment Planning Systems (IAEA-TECDOC-1540)
- CE certified
- the Manual provides detailed guidelines for carrying out each test, results assessment and registration

Pro-RT IsoBeam

07-201



This is a **multifunctional, precision quality assurance tool** for daily, weekly or monthly quality assessments of **all mechanical and geometrical treatment parameters of linear accelerators or teletherapy units**.

It is designed to easily and accurately check **collimator isocentricity, gantry isocentricity, table isocentricity, collimator field size accuracy, radiation/light field congruence, isocenter rotational stability, ODI accuracy and laser light alignments**.

Technical data (can be modified to customer specifications):

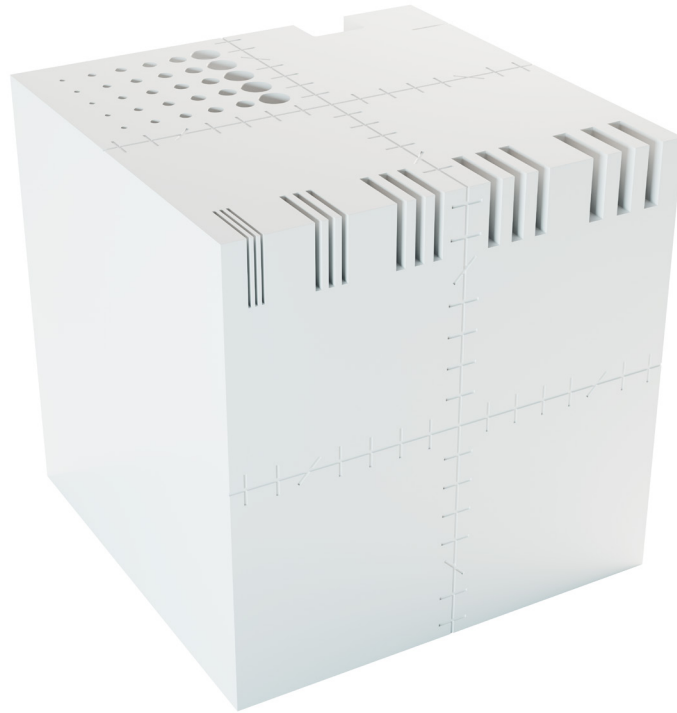
- overall dimensions: 203 x 457 x 330 mm
- screen
 - 305 x 305 mm
 - 2 opaque PMMA plates
 - space for 25 x 30 cm film
 - inscribed with lines precisely defining corners, edges, and centers of screen
 - field sizes: 2 x 2 mm, 50 x 50 mm, 100 x 100 mm, 150 x 150 mm and 200 x 200 mm
 - center lines scribed with short lines 10 mm apart
 - tungsten markers 2 mm in diameter in the center and corners of the field
 - can rotate 360° in 45° increments
- base with three leveling non-slip screws and bubble level
- optional off-the-table measurement possibility

Product features:

- Complies with:
 - IAEA Technical Reports (Series No. 398)
 - IAEA Technical Reports (Series No. 430)
 - IAEA-TECDOC-1540, Specification and Acceptance Testing of Radiotherapy Treatment Planning Systems
- CE certified
- the Manual provides detailed guidelines for carrying out each test, results assessment and registration

Pro-RT CTsim

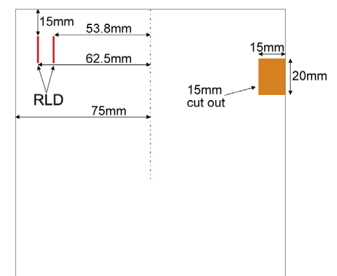
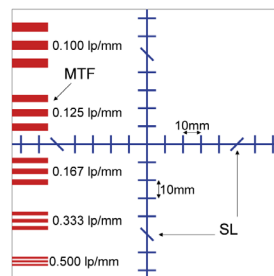
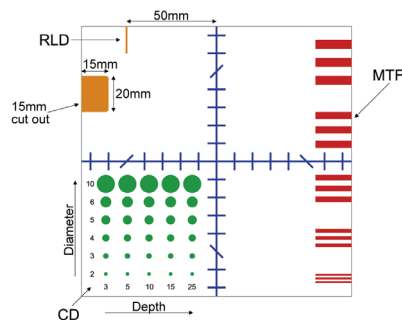
07-301



This phantom is designed for quality control of a CT simulator, which usually consists of a CT scanner, virtual simulator software and a laser marking device (marking the centre of target volume). Since geometrical planning is the core of CT simulation, periodic quality control is essential for maintaining optimum image quality and patient care. **The phantom allows performing detailed geometry and table movement tests as well as image quality assessment - low contrast resolution and high contrast detectability.**

Technical data (can be modified to customer specifications):

- overall dimensions: 150 x 150 x 150 mm
- made of PMMA
- test object placed on four faces of the cube



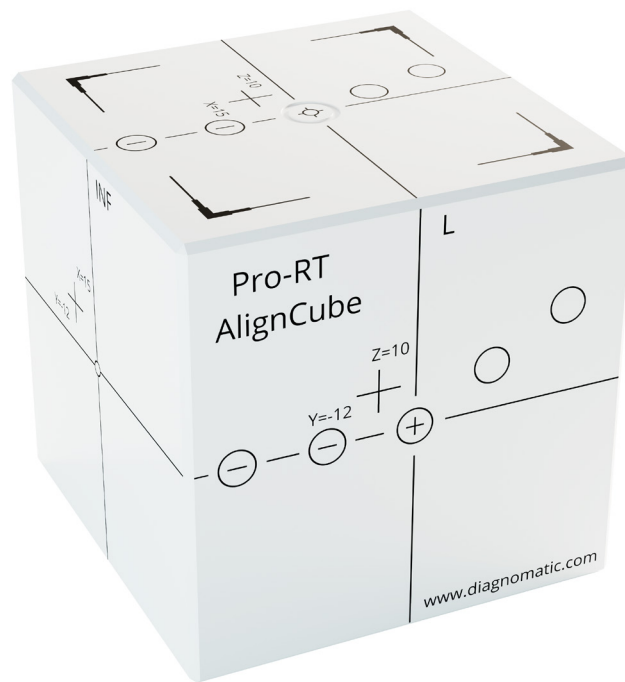
- top Face contains contrast details objects (CD), MTF, ray line divergence (RLD) and spatial linearity (SL) patterns
- optional carrying case
- first Side Face contains MTF and spatial linearity (SL) patterns
- second and Third Side Face contains ray line divergence (RLD) pattern

Product features:

- Complies with:
 - IEC 61223-3-5
 - IEC 61223-2-6
- CE certified
- The manual provides detailed guidelines for carrying out each test, results assessment and registration

Pro-RT AlignCube

07-401



A versatile and easy-to-use tool for regular qualitycontrol of the geometric accuracy of the patient positioning systems. It enables the assessment of the alignmentbetween the isocentre of the imaging system (CBCT, 2D kV, 2D MV) and the LINAC-Isocentre.

Pro-RT Align-Cube phantom contains radiographicmarkers in an arrangement that allows evaluation of the translation and rotation of the phantom relative to the reference position. The marker materialhas been selected to ensure good visibility while avoiding artefacts whichcould compromise image registration. The position of the markers is clearlylabelled on the phantom surface.

Due to the additional markings of the offset positionon the phantom surface, it is possible to quickly evaluate the accuracy of theautomatic couch shift adjustment.

It can be used to test:

- imaging systems (CBCT, 2D kV, 2D MV) and LINAC isocentre alignment
- automatic couch shift adjustment
- laser to isocentre coincidence
- SGRT systems
- optical distance indicator accuracy

Technical data (can be modified to customer specifications):

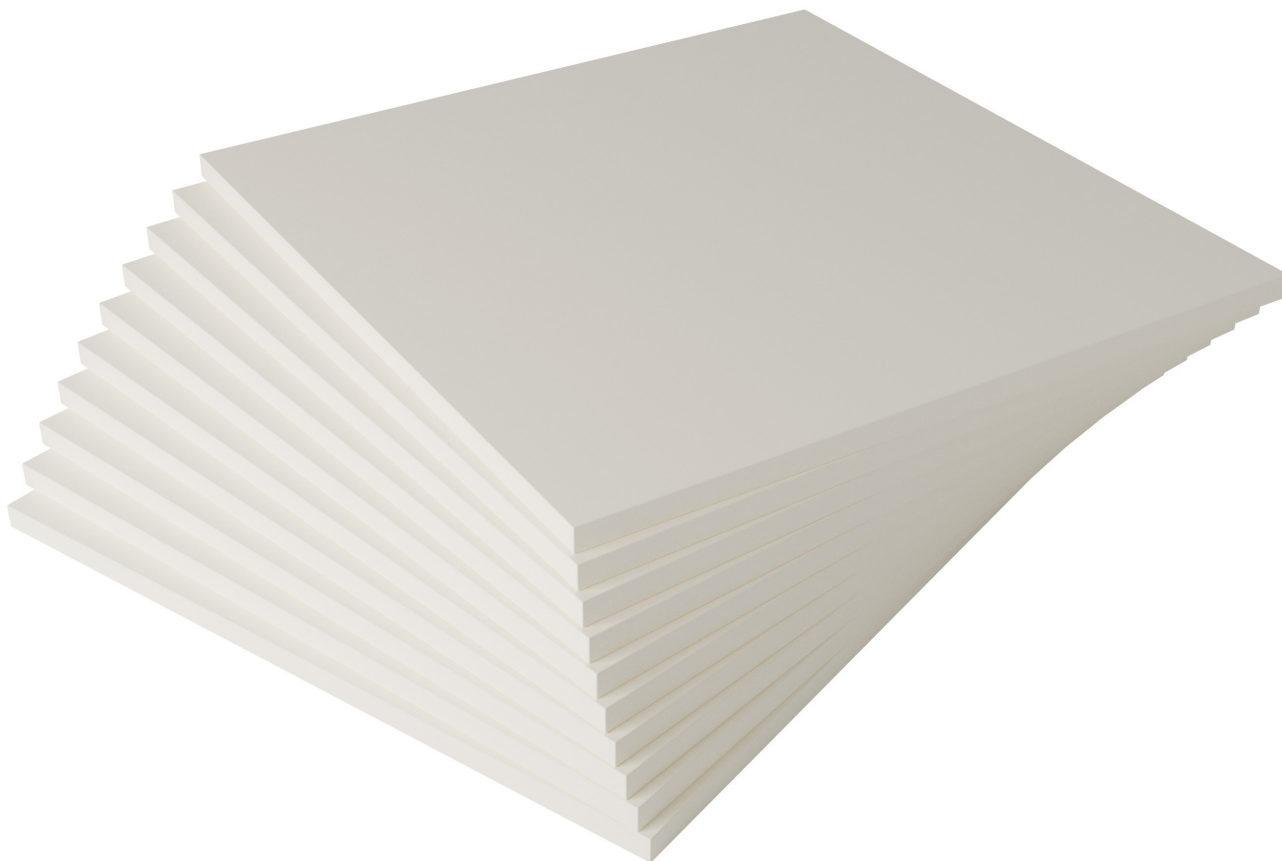
- dimensions 120 x 120 x 120 mm
- material: PMMA
- color: white
- central marker ϕ 8 mm
- 4 markers ϕ 6 mm in an asymmetric arrangement
- External markings of the central and offset position
- markers for the light field evaluation
- carrying case

Product features:

- CE certified
- the Manual provides detailed guidelines for carrying out each test, results assessment and registration

Pro-Water Plates

07-501



Pro-Water Plates makes radiation beam calibration easier than ever. With improved uniformity and durability, Pro-Water Plates enables precise, accurate and effective Quality Assurance. Pro-Water Plates mimics true water within 1% accuracy, supporting accurate calibration for radiotherapy beams.

Technical data (can be modified to customer specifications):

- dimensions: 300 x 300 mm
- 10 mm thick
- 10 pcs set with a case
- optional ion chamber 20 mm plate
- other sizes and thicknesses of plates upon request

Product features:

- CE certified
- the Manual provides detailed guidelines for carrying out each test, results assessment and registration



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