

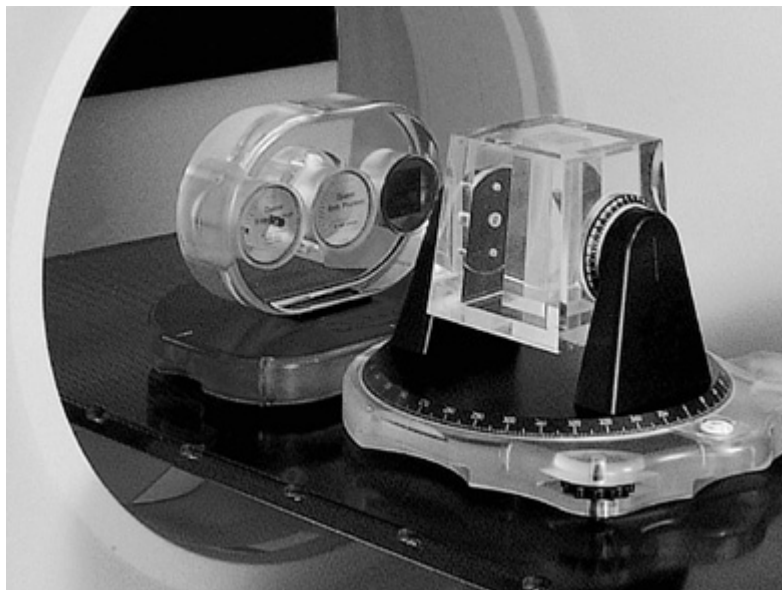
# Nondosimetric QA Phantoms

## QUASAR

### Quality Assurance System for Advanced Radiotherapy

### Beam Geometry Phantom

### Body Phantom



- ◆ Quality Assurance phantoms for performance based verification testing of CT Simulators and Radiation Therapy Planning Systems.
- ◆ Used for commissioning new systems and testing bug fixes, upgrades and repairs. Get your systems online faster, and keep them online with greater confidence.
- ◆ Designed by QA experts<sup>(1)</sup> in response to the TG 53<sup>(2)</sup> report, the phantoms improve patient outcomes through comprehensive characterization of your CT Sim and RTPS.
- ◆ The only system of its kind for efficiently testing a broad range of nondosimetric features and functions including;
  - § Geometric accuracy of multiplanar CT image reconstructions
  - § Graphical displays of 3D radiation beams
  - § Digitally reconstructed radiographs
  - § Automatic, semi-automatic and manual boundary identification tools and automargining
  - § Representation and manipulation of contoured patient anatomy
  - § Dose volume histograms
  - § Conversion of CT number to relative electron density.
- ◆ Test your systems from end to end, including information transferred by Dicom.
- ◆ Evaluate beam and collimator alignment on portal images using the Beam Geometry phantom.

1) A Quality Assurance Phantom for Three-Dimensional Radiation Therapy Treatment Planning, Tim Craig, Denis Brochu, and Jake Van Dyk; Int. J. Radiation Oncology Biol. Phys., Vol. 44, No. 4, pp. 955-966, 1999.

2) AAPM Radiation Therapy Committee Task Group 53: Quality Assurance for Clinical Radiotherapy Treatment Planning, Benedick Fraass, Karen Doppke, Margie Hunt, Gerald Kutcher, George Starkschall, Robin Stern, Jake Van Dyk; Med. Phys. 25 (10), October 1998, pp. 1773-1829.

## QUASAR Beam Geometry Phantom

Designed to test the complex 3D imaging functions of CT Simulators and Radiation Therapy Planning Systems, the QUASAR Beam Geometry phantom reproduces the divergent therapy beam in acrylic. Its features include;

- 5, 10, and 15 cm collimated beam phantom, 17 cm long
- Phantom rotates about isocenter on vertical (couch) and horizontal (gantry) axes
- Rotational scale readouts correspond to ICRU Report 42
- 1 mm diameter steel ball located at the isocenter
- "Z" wire fiducial marker in base
- 3 point leveling system with built in level indicator
- Laser alignment marks
- Phantom overall height 28 cm, width 36.6 cm, length 42.5 cm
- Weight 13 kg
- Materials: acrylic, Delrin, nylon, steel ball, steel wire, rubber
- Container for storage and handling, optional shipping case
- User's Guide with Quality Assurance Worksheets

## QUASAR Body Phantom

Designed to test the complex 3D geometrical features and functions of CT Simulators and Radiation Therapy Planning systems, the QUASAR Body Phantom incorporates a variety of test objects in a solid acrylic housing.

- Main body component, acrylic, oval shape, 20 cm high, 30 cm wide, 8 cm long
- 3 openings for Cylindrical Inserts, each opening is 8 cm diameter by 8 cm long
- Electron density extension, 12 cm diameter with 5 openings at 2.5 cm diameter
- Laser alignment marks
- Phantom overall height, 25.4 cm, width 36.6 cm, length 28.4 cm, weight 9.3 kg
- Materials: acrylic, Delrin, polyethylene, epoxy resin (Electron Density rods), rubber
- Container for storage and handling, optional shipping case
- User's Guide with Quality Assurance Worksheets

Test Objects, within Cylindrical Inserts;

- 27 cc acrylic cube within a 125 cc Delrin cube, within an 8 cm diameter acrylic cylinder, 8 cm long
- 20° air wedge (40 cc) within an 8 cm diameter acrylic cylinder including two Delrin cylinders:
  - 5 mm diameter by 5 cm long (.98 cc)
  - 10 mm diameter by 5 cm long (3.9 cc)
- 60° air wedge in 8 cm diameter acrylic
- Electron Density rods, 2.5 cm diameter by 2.5 cm long; relative electron density (RED)
  - Lung (Inhale) RED = 0.190
  - Polyethylene RED = 0.945
  - Water Equivalent RED = 1.002
  - Trabecular Bone RED = 1.117
  - Dense Bone RED = 1.512

### Ordering Information:

QUASAR Body Phantom

Model number QBDP

QUASAR Beam Geometry Phantom

Model number QBGP

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