

MP BODY
QUASAR
BY MODUS QA

Adaptable Dosimetric and Nondosimetric QA

A flexible QA tool designed to perform both dosimetric and nondosimetric tests on radiotherapy systems, the QUASAR™ Multi-Purpose Body Phantom incorporates a wide variety of test objects in a solid acrylic housing.



KEY FEATURES

- ▶ Dosimetric and nondosimetric tests for end-to-end radiotherapy system testing
- ▶ Published pass/fail criteria for a number of tests in the TG 53 and TG 66 Reports
- ▶ Interchange inserts quickly and easily
- ▶ Used for IMRT, IGRT, VMAT, SRS and Tomotherapy
- ▶ Converts to an IGRT gating phantom with the addition of the QUASAR™ Respiratory Motion Assembly

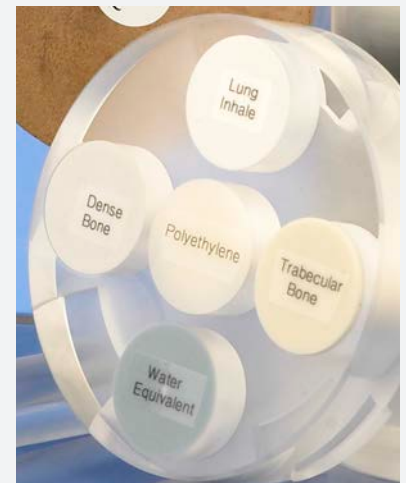
Characterized by its adaptability to on-going advances in QA technology, the QUASAR™ Multi-Purpose Body Phantom offers a broad range of applications for modern radiotherapy clinics:

NON-DOSIMETRIC TEST CAPABILITIES:

- ▶ Geometric accuracy of 2D images and 3D image reconstructions
- ▶ 2D and 3D measurement tools including volume calculation accuracy
- ▶ Automatic, semi-automatic and manual boundary identification tools
- ▶ Auto-margining tools
- ▶ Representation and manipulation of contoured patient anatomy
- ▶ Dose volume histograms
- ▶ Conversion of CT numbers to relative electron densities
- ▶ Comparison of display on simulators, RTPS and other imaging workstations
- ▶ Image transfer, storage, retrieval, DICOM tools on all workstations

DOSIMETRIC MEASUREMENT CAPABILITIES:

- ▶ Perform homogeneous density measurements with blank acrylic rods and inserts
- ▶ Measure in low or high dose areas with multiple measurement locations throughout the phantom
- ▶ Verify dosimetry calculations with Ion Chamber measurements; compatible with Ion Chambers from major suppliers
- ▶ Use inhomogeneous inserts to test density corrections in an idealized near anthropomorphic geometry



Above: 5 electron, 3 cm diameter x 2 cm long, density plugs for lung, polyethylene, water, inner bone and dense bone.

As technology evolves, so does the range of standard inserts for the QUASAR™ Multi-Purpose Body Phantom, offering more complex QA capabilities:

- ▶ 27 cc acrylic cube within a 125 cc Delrin cube, within an 8 cm diameter by 12 cm long acrylic cylinder
- ▶ 20° air wedge (40 cc) within an 8 cm diameter by 12 cm long acrylic cylinder including two delrin rods; 5 mm diameter and 10 mm diameter by 5 cm long
- ▶ 60° air wedge in 8 cm diameter by 12 cm long acrylic cylinder including 3 Delrin spheres; 40, 20 and 10 mm diameters
- ▶ 2 cedar inserts and 2 solid acrylic inserts 8 cm diameter by 12 cm long
- ▶ 1 acrylic ion chamber holder insert drilled in two places to accommodate an ion chamber holder with a diameter of 2 cm
- ▶ 1 ion chamber holder 2 cm diameter by 18 cm long drilled to match ion chamber
- ▶ 1 bone equivalent (B 100) rod, 2 cm diameter by 12 cm long
- ▶ 5 electron density plugs, 3 cm diameter by 2 cm long; lung (inhale), polyethylene, water equivalent, inner bone, dense bone
- ▶ 6 acrylic rods

The optional spatial resolution and slice profile insert is a cost-effective tool designed to carry out important CT scanner QA functions. The acrylic insert contains an array of holes to measure line pair resolution and an aluminum plate at a 45° angle to measure slice profile. Use of the optional insert allows integration of CT scanner QA with radiotherapy QA, thereby saving time and effort. The versatile nature of the QUASAR™ Multi-Purpose Body Phantom's design means that the body oval stays in place while only a quick change of inserts is required to prepare the phantom for the new set of tests.

SPECIFICATIONS

- ▶ Body oval; 30 cm wide, 20 cm high, 12 cm long, acrylic, 6 kg
- ▶ 3 openings in body oval for cylindrical inserts, each opening is 8 cm diameter
- ▶ 6 openings for ion chamber measurements, 2 cm diameter
- ▶ Electron density extension, 12 cm diameter with 5 openings at 3 cm diameter
- ▶ Laser and light field alignment marks
- ▶ Materials: acrylic, Delrin, polyethylene, epoxy resin (electron density rods), rubber
- ▶ User's Guide with QA Worksheets



Above: The optional spatial resolution and slice profile insert.



Above: The cost-effective QUASAR™ Respiratory Motion Assembly for adding IGRT QA gating capabilities.

ORDERING INFORMATION

100-1004 QUASAR™ Multi-Purpose Body Phantom

OPTIONAL ACCESSORIES

100-1012 QUASAR™ Respiratory Motion Assembly
500-3185 Mosfet Holder
500-3189 Spatial Resolution/Slice Profile Insert
500-3190 B10 Bone Rod with 5 mm Titanium Insert
500-3195 Cedar Ion Chamber Holder
500-2001 Heavy Duty Shipping Case

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