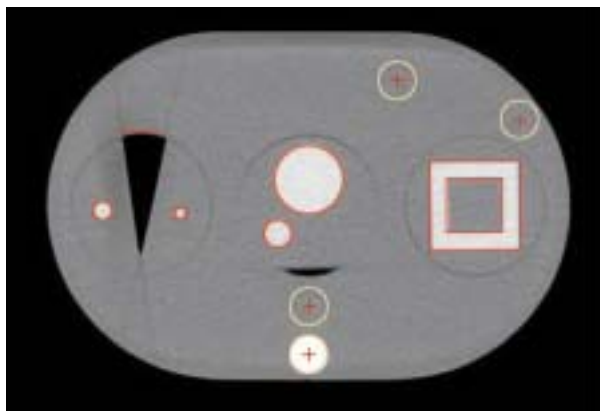


## QUASAR™ Body Phantom – Multi Purpose Version

A cost effective tool designed to perform both dosimetric and non-dosimetric tests on radiotherapy systems, the QUASAR™ Multi-Purpose Body Phantom incorporates a wide variety of test objects in a solid acrylic housing. This extended design retains all the non-dosimetric capabilities of the original Body Phantom with the addition of significant dose measurement capabilities. The QUASAR™ Body Phantom and its partner the QUASAR™ Beam Geometry Phantom were developed<sup>(1)</sup> by Jake Van Dyk at the London Regional Cancer Centre. These phantoms are designed to enable many of the non-dosimetric quality assurance tests recommended by TG 53.



Non-dosimetric features and functions that can be tested with the QUASAR™ Multi-Purpose Body Phantom include;



- 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
- Automargining tools
- Representation and manipulation of contoured patient anatomy
- Dose volume histograms
- Conversion of CT numbers to relative electron densities
- Comparison of display on CT sims, RTPS and other imaging work stations

- Image transfer, storage, retrieval, Dicom tools on all workstations

Dosimetric measurement capabilities include;

- Compatible with Ion Chambers from several major suppliers
- Ion Chamber locations include on axis and multiple off axis locations for measurements in low and high gradient areas
- Blank acrylic inserts for homogeneous density tests
- Two lung equivalent inserts and a spine equivalent rod for a variety of inhomogeneous density tests with precisely determined, near anthropomorphic, geometry
- light field alignment tests

The QUASAR™ Multi-Purpose Body Phantom is ideal for IMRT and Tomotherapy installations.

The QUASAR™ Quality Assurance System for Advanced Radiotherapy tests a wide variety of dosimetric and nondosimetric functions of Radiation Therapy Planning Systems and CT simulators using a single set of test objects.

A valuable part of any quality assurance program the QUASAR™ phantoms are ready to be incorporated into your QA protocols today. The phantoms are used for regularly scheduled testing, as well as commissioning new systems and upgrades, and testing repairs.

QUASAR™ provides you with the confidence that your radiation treatment planning software and CT simulators are performing to their full potential.

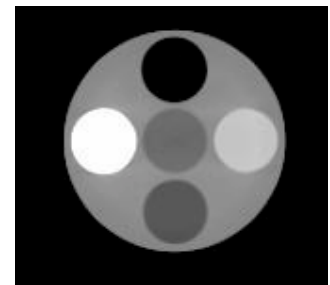
## Body Phantom MP Specifications



- Main body component, acrylic, oval shape, 20 cm high, 30 cm wide, 12 cm long.
- 3 openings for Cylindrical Inserts, each opening is 8 cm diameter by 12 cm long
- 6 openings & rods for ion chamber testing
- Electron density extension, 12 cm diameter with 5 openings at 2.5 cm diameter
- Laser & light field alignment marks
- Materials: acrylic, Delrin, polyethylene, epoxy resin (Electron Density rods), rubber
- Container for storage and handling, optional shipping case
- User's Guide with QA Worksheets

### Cylindrical Inserts

- 27 cc acrylic cube within a 125 cc Delrin cube, within an 8 cm diameter acrylic cylinder, 12 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 including three Delrin spheres 40mm, 20mm and 10mm dia.
- 2 cedar inserts and 2 solid acrylic inserts
- 1 ion chamber insert holder
- 1 Bone equivalent rod 2.5 cm dia 12 cm long
- 5 Electron Density rods, 2.5 cm diameter by 18 mm long; Lung (Inhale), Polyethylene, Water Equivalent, Trabecular Bone, Dense Bone



### References:

- 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.



Modus Medical Devices Inc  
 781 Richmond Street, Suite 201  
 London, Ontario, Canada, N6A 3H4  
 Phone (519) 438-2409  
 Toll free (866) 862-9682  
 Web site: [www.modusmed.com](http://www.modusmed.com)  
 email: [info@modusmed.com](mailto:info@modusmed.com)