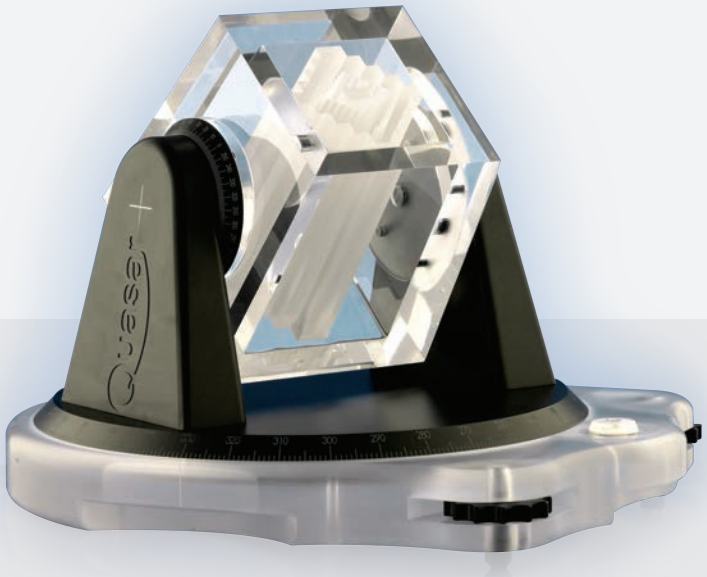
MLC Beam Geometry

QUASAR

BY MODUS QA

Non-dosimetric tests for Commissioning, System Characterization and Routine QA

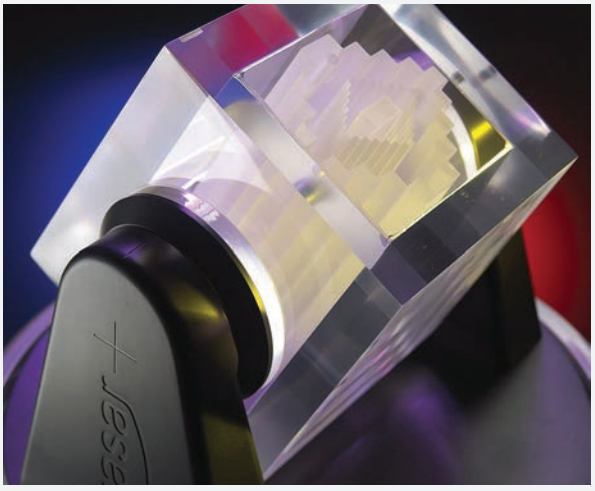
The QUASAR™ MLC Beam Geometry phantom addresses the complex nondosimetric, beam geometry and beam imaging features of modern planning systems and simulators.



KEY FEATURES

- Physical simulation of beam with MLC leaf locations
- Simulates couch and gantry rotations
- Enables end-to-end testing of beam integrity
- Used for commissioning and testing upgrades and repairs
- Compatible with multiple vendors

IMRT and other conformal therapies have led to increased demands on the physicists who commission and maintain these systems. AAPM Task Group reports including TG 66(1), TG 53(2), and TG 51(3) make clear recommendations regarding the importance of dosimetric and nondosimetric tests within an overall integrated QA process.



Above: *Phantom rotations correspond to the coordinate system as defined in ICRU Report 42.*

The QUASAR™ MLC Beam Geometry Phantom addresses these recommendations by testing beam integrity from CT simulation and planning to the linear acceleration and portal imaging system in IMRT, 3D conformal RT, and conventional RT. These tests reveal errors in beam imaging, DICOM transfer, registration, alignment, and orientation, and the User Guide includes a peer-reviewed procedure with pass/fail criteria based on these publications.

Compatible with standard collimators, MLCs, mini MLCs, and micro MLCs from multiple vendors, the MLC Beam Geometry Phantom supports nondosimetric tests for equipment commissioning, technique commissioning, system characterization, and routine QA protocols.

MODUS QA

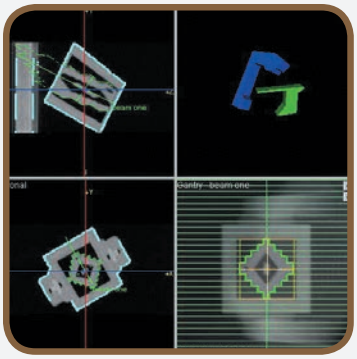
TRUSTED ACCURACY

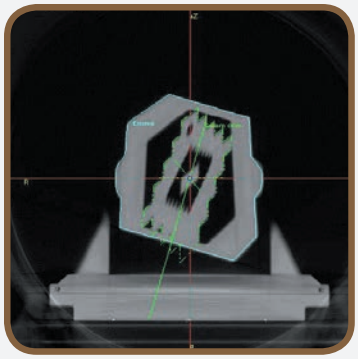
MULTIPLE NONDOSIMETRIC TESTS

- Multiplanar CT image reconstruction, geometric accuracy, orientation, and 3D measurement tools on CT simulators, radiation therapy planning systems and other imaging workstations
- Beam display graphics at oblique gantry and couch angles
- Digitally reconstructed radiographs
- Portal images on linear accelerators
- Image transfer, storage, retrieval, DICOM tools on all workstations
- 2D image geometric accuracy and measurement tools
- 5 mm (MLC), 4 mm (mini MLC) and 3 mm (micro MLC) steps allow medical physicists to test the integrity of treatment planning systems and CT-simulators in the display of MLCshaped fields on transverse or reconstructed images

SPECIFICATIONS

- 10 cm and 15 cm square collimated beam phantom plus 3 mm, 4 mm and 5 mm steps 17 cm long
- Phantom rotates about isocenter on vertical (couch) and horizontal (gantry) axes
- Rotational scale readouts correspond to ICRU 42
- 1 mm diameter stainless steel ball located at the isocenter
- "Z" wire fiducial marker (stainless steel) in base
- 3-point leveling system with built-in level indicator
- Laser alignment marks
- Overall height 28 cm, width 36.6 cm, length 42.5 cm, weight 13 kg
- Materials: acrylic, Delrin, nylon, stainless steel markers





Above: *Digitally reconstructed radiograph from transverse CT images with oblique couch and gantry angle.*

Above: *Beams eye view of the QUASAR™ MLC Beam Geometry Phantom*

ORDERING INFORMATION

100-1003 QUASAR™ MLC Beam Geometry Phantom:

- 1-Phantom
- User's guide

OPTIONAL ACCESSORIES

500-2000 Heavy Duty Shipping Case

QUASAR™ CAN HELP

"The modern RTP process includes many aspects not directly related to dose calculations. Therefore, the RTP QA program must also handle these important nondosimetric issues...for it is in the nondosimetric issues that much of the complexity of modern treatment planning systems is manifest."

AAPM TG 53 Report p. 1782-3(3)

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