



PENTA-GUIDE Phantom

Perform true spatial alignment and coincidence tests on IGRT systems

The QUASAR™ Penta-Guide Phantom contains low-density rings and hollow spheres designed to minimize imaging artifacts. These unique visualization features provide quick confirmation of the phantom set-up before investing time in the QA procedure. They also serve to ensure isocenter alignment in accordance with accepted radiotherapy tolerances using 2D/2D and 3D/3D match.



KEY FEATURES

- ▶ Enables daily testing to ensure on-board imaging targeting accuracy
- ▶ Contains low-density rings and hollow spheres to minimize high-density artifacts
- ▶ Includes FREE image analysis software to simplify CBCT QA testing
- ▶ Apply simple Pass / Fail acceptance criteria
- ▶ Testing does not infringe upon patient treatment time
- ▶ Light field alignment 4x4; 10x10; 12x12
- ▶ 16 cm cube -5kg
- ▶ 1/4 mm accuracy



Carried out by a therapist every morning, testing takes little or no extra time and can be completed during normal daily equipment warm-up procedures.

The phantom ensures the accuracy of linac-mounted image-guidance systems, including cone beam CT (CBCT), x-ray volumetric imaging (XVI) and on-board imaging (OBI), by enabling daily testing for:

- ▶ 3D Cone Beam Registration
- ▶ kV and MV System Coincidence
- ▶ kV and MV Projection Images
- ▶ Laser and Light Field Coincidence
- ▶ Weekly Remote Table Adjustments

User's Guide Includes: An enhanced Lehmann Yoke testing procedure for confirmation of the source to surface distance (SSD).

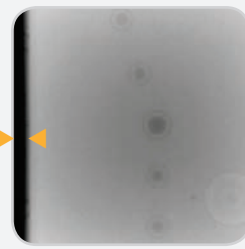


Accuracy. Confidence.™



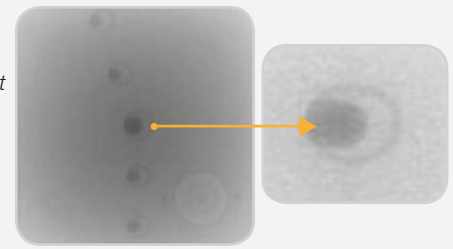
Left: Phantom centered in field of view, spheres centered in rings

*All images 6MV AP



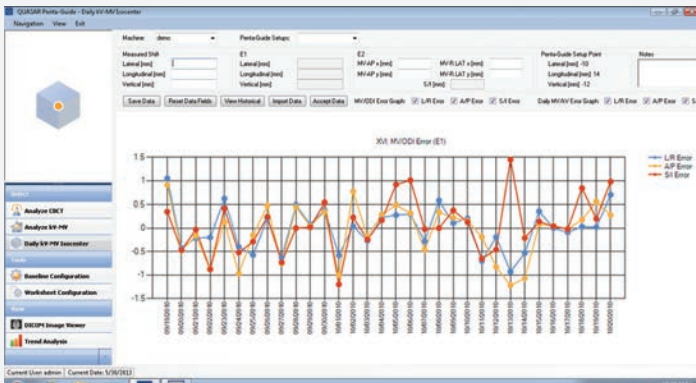
Left: Example of translational misalignment

Right: Example of rotational misalignment



PASS/FAIL CRITERIA

For each test there are simple pass/fail criteria. A typical tolerance of +/- 2 mm in x, y, and z directions is recommended. Displacements can be tracked over time for trend analysis using the Excel spreadsheet provided with the Penta-Guide. Alternatively, shifts can be exported to the record and verify system.



Above: Screenshot of the Daily kV-MV Isocenter Trend Analysis (available in the Enterprise edition only)

IMAGE QUALITY ANALYSIS SOFTWARE

The QUASAR™ Penta-Guide QA Software is a time-saving application designed to simplify, enhance and automate the image analysis, trending and reporting of 3D CBCT and kV-MV projection images and is available in two versions, Enterprise and Lite.

The [Enterprise] edition utilizes a central SQL database to enable administrators to manage LINAC configurations, define user-roles, security access levels and adjust outgoing mail server settings to automatically send test results to physicist to view, approve, analyze and monitor trends. The server runs unattended in the background and automatically analyzes images based on the DICOM tag configuration. Results are archived for long-term trend analysis.

The [Lite] edition is a simpler version of the [Enterprise] application without the advance SQL database features. Modus QA is pleased to offer the QUASAR™ Penta-Guide [Lite] as a FREE Download to customers who have purchased QUASAR™ Penta-Guide Phantoms.

ORDERING INFORMATION

- 100-1009 QUASAR™ Penta-Guide Phantom
- ▶ 1-Phantom
 - ▶ 1-Software (Lite)
 - ▶ 1-Lehmann Yoke
 - ▶ User's guide



Optional: QUASAR™ Penta-Guide Tilt Plate is used to verify Image-Guided shifts for Six Degrees of Freedom Couches

OPTIONAL ACCESSORIES

- 100-3060 QUASAR™ Penta-Guide [Enterprise] Software:
- ▶ 1-Network License for 1 LINAC
 - ▶ 1-Year of Annual (Software) Updates
 - ▶ 4 hours of (Software) Installation Support
- 500-3503 QUASAR™ Penta-Guide Tilt Plate
- 500-3501 QUASAR™ Hood for Frameless Array



Optional: QUASAR™ Hood is used to confirm that the Varian Frameless Array or other visual position indicator is aligned with the CBCT and OBI

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