**OPTIMIZED TG-142 QA**

RIT software completely streamlines your TG-142 QA by maximizing precision and efficiency in your measurements. Use your EPID to perform all required machine QA tests, with both confidence and ease.

In addition, imaging QA phantoms are automatically scored with easy-to-use tracking and trending functions. Images are sorted and analyzed using Cerberus, a built-in automation script, which can be used to significantly reduce QA time and lessen the burden of performing routine QA procedures.

**RITtrend™**

Monitor your system’s behavior with powerful process control by exporting your results to the RITtrend™ statistical analysis database. Quickly and seamlessly export data with a single click. RITtrend™ is included in most RIT software packages.

**AUTOMATED MLC QA**

RIT conveniently supplies picket fence plans for Millennium and HD MLCs. These pre-made, automated plans allow for fast and accurate MLC QA, with minimal setup. Complete your MLC QA with the RapidArc® and MLC Leaf Speed analysis routines.

- **Automated Varian RapidArc® Tests**
  Images may be taken at any distance from EPID, Film, or CR Images. This includes: Tests 0.1, 0.2, 0.2 HD, 1.1 HD, 1.1 HD, 1.2, and 1.2 HD.

- **Varian Leaf Speed Test**
  Without the use of log files, this test measures the consistency and accuracy of Varian MLC leaf speeds as they move across an imager.

RapidArc® is a registered trademark of Varian Medical Systems, Inc.
IMAGING TESTS

Catphan® 504 & 604 For Varian OBI

RIT’s Catphan® analysis has been carefully designed to provide automated CBCT QA for the Varian OBI. Analyze all relevant slices of the Catphan® 504 or 604 in one easy step, and quickly get comprehensive reports for:

- HU constancy and linearity
- Geometric accuracy
- Slice thickness
- Spatial resolution
- Uniformity and noise

Planar MV (EPID) Imaging

The RIT EPID phantom is designed to provide quality EPID image QA and performs all tests recommended in TG-142. Results are accurate and consistent, and implementation is easy. Quickly perform measurements of resolution, contrast, noise, uniformity, and geometric scaling all in one image. RIT software also supports the Las Vegas, QC-3 (now capable of analyzing magnified images), and PTW EPID phantoms.

Planar kV Imaging

RIT software is designed to support vendor-supplied phantoms for planar kV imaging. Using your Leeds TOR-18 FG phantom, supplied by Elekta, you can quickly and easily meet all TG-142 recommendations for planar kV imaging QA in one exposure. Analysis of the QC-kV1 Phantom is now also supported. Results are consistent, quantitative, and repeatable, and can easily be tracked in RITrend™.

IGRT / kV-MV Coincidence

Perform precision IGRT daily QA with ISOCube™ and RIT Software. Quickly and quantitatively perform positioning-repositioning, laser alignment, field size checks, kV and MV coincidence measurements, CBCT isocenter coincidence, ODI accuracy, and 6 Degree-of-Freedom Couch Test.

Analysis of the Penta-Guide Phantom is supported for kV/MV/CBCT image coincidence.

ISOCENTER OPTIMIZATION

Using only a set of EPID Winston-Lutz images, the RIT system will calculate deviations between radiation and mechanical isocenter, determine ball/BB setup error, and suggest couch alignment adjustments to optimize your system’s accuracy. Additionally, this routine enables individual component (gantry, collimator, couch) characterization to better understand distinct contributions to isocenter deviation, giving insight into adjustments that can be made to improve delivery performance, if needed.

Eliminate your need for films, and increase your accuracy by using RIT’s Virtual Starshot, reconstructed using a set of Winston-Lutz images!


OTHER RELEVANT TG-142 TESTS

Bayouth MLC Test

This test analyzes the MLCs that require leaf gaps between banks.

Radiation vs. Light Field Alignment

Perform quick easy EPID-based radiation vs. light field alignment with RIT L-Rad Phantom. Fiducial markings for 5x5 cm, 10x10 cm, 15x15 cm, and 20x20 cm provide a wide range of testing.

Beam Profiles

Perform quick and easy measurements for Starshots, flatness and symmetry, FWHM, penumbras, depth-dose curves, and more.